

Value drivers within SMEs: growth and value creation within the context of the Economic Value Added® framework

Karen Dennis (2013)

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**Value Drivers within SMEs: Growth and Value Creation  
within the Context of the Economic Value Added®  
Framework**

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## **ABSTRACT**

Value based performance measurement has become popular in modern day financial practices. Of the many value based measurements, the EVA® framework has gained much notoriety. It became the focus of much research because it has been widely implemented in many large organisations with professed benefits in maximizing shareholder wealth. Much of the previous work on the EVA® framework focused on the performance metric; conclusions differed as to whether the EVA® performance metric resulted in better information or whether it was better at indicating performance, and ultimately shareholder wealth. Conclusions were similar when compared to other value based measures and with traditional measures. EVA®'s management and compensation framework was also investigated, again resulting in conflicting results. Other studies focused on the theory behind EVA® and concluded that it is financially sound and was agreed to be based on established theory on residual income.

This study investigates growth and value creation in SMEs within the context of the EVA® framework. The investigation was conducted using and integrating a mixed method approach. Using purposive sampling, a range of SMEs was selected; senior management interviewed and financial reports for a 5 years period were collected. Practitioners are included for their expert views which were utilised when comparing and contrasting evidence obtained during the investigation. The study reveals some correlation between the characteristics of SMEs and the theory for the implementation of EVA®. However, it was found that SMEs lack vital information on value and value creating elements within their businesses for successful implementation of EVA®. The study fills a major gap in identifying and resolving the issue of the value drivers employed in the EVA® performance metric. The study concludes that it may be practical to implement EVA® in SMEs as it can provide information on progress and value creation.

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## **List of Abbreviations**

ACCA – Association of Chartered Certified Accountants

AIM – Alternative Investment Market

APT - Arbitrage Pricing Theory

APT – Arbitrage pricing Theory

ARR – Accounting Rate of Return

ASB – Accounting Standards Board

BBM – BlackBerry Messenger

BIS – Business Innovation and Skills

CAPM – Capital Asset Pricing Model

CFROI – Cash Flow Return on Investment

COC – Cost of Capital

CRM – Customer Relationship Management

CSR – Corporate Social Responsibility

CST – Cost, Schedule and Time

DCF – Discounted Cash Flow

DVA – Dividend Valuation Approach

EBIT – Earnings before Interest and Taxes

EC – European Commission

ECB – European Central Bank

ENPV – Expected Net Present Value

EPS – Earnings per share

EPS – Earnings per Share

EU – European Union

EVA – Economic Value Added

FASB – Financial Accounting Standards Board

FIFO – First in First out

FMCG – Fast Moving Consumer Goods

FTSE – Financial Times Stock Exchange

GAAP – Generally Accepted Accounting Principles

GCPL – Godrej Consumer Products Limited

GDP – Gross Domestic Product

GDP – Gross Domestic Product

HEFCE – Higher Education Funding Council for England

HEIs – Higher Education Institutions

HMRC – Her Majesty’s Revenue & Customs

IASB – International Accounting Standards Board

IC – Investment Capital

ICT – Information and Communication Technologies

IFRS – International Financial Reporting Standards

IPO – Initial Public Offering

IRR – Internal Rate of Return

$k_d$  – Cost of Debt

$k_e$  – Cost of Equity

KTP – Knowledge Transfer Partnership

KTP – Knowledge Transfer Partnership

LIFO – Last in First Out

MRP – Manufacturing Resource Planning

MVA – Market Value Added

NCV – Net Contribution to Value

NOA – Net Operating Assets

NOPAT – Net Operating Profit after Tax

NPV – Net Present Value

PBP – Payback Period

PE – Price Equity

PI – Profitability Index

R&D – Research and Development

RI – Residual Income

ROCE – Return on Capital Employed

ROE – Return on equity

ROI – Return on Investment

RONA – Return on Net Assets

RV – Residual Value

SMEs – Small and Medium-Sized Enterprises

SVA – Shareholder Value Analysis

TBL/3BL – Triple Base Line

TCS – Tata Consultancy Services

UK – United Kingdom

UREC – University Research Ethics Committee

USA/US – United States of America

WACC – Weighted Average Cost of Capital

WEV – Warranted Equity Value

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## *Chapter 1: INTRODUCTION*

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- 1.0 Research Area
- 1.1 Research Rationale
- 1.2 Interest and Justification for the Research
- 1.3 Research Problem
- 1.4 Overview

## 1.0 Research Area

This research centres on small and medium sized enterprises (SMEs) and their performance for sustained development and future growth. Performance however is being considered within the context of the drivers of value within companies and understanding how that translates into overall performance and subsequently, how that performance can be measured. The study seeks to examine these factors within the context of Economic Value Added (EVA®) theory; the Stern Stewart & Company mechanism which gained prominence in the 1980s.

EVA® is a framework which was developed to effectively measure, manage and monitor periodic performance of a company. It consists of a performance measurement metric and a management and incentive scheme. From its introduction, EVA® has been implemented mainly within large organisations. The theory behind the EVA® framework states that it is best to be applied in divisions or projects within large organisations (Young and O'Byrne, 2001; Stewart III, 1999; Ehrbar, 1998). However, very little was found with respect to the applicability of EVA® to SMEs. Hence, this study investigates the applicability of EVA® in SMEs as an indicator of growth and value creation in order to explore this knowledge gap. In doing so, understanding value is integral to the study: what it means to small businesses and also identifying value indicators and determining how they translate into the value variables for use in the EVA® performance metric.

In summary, the topic of the research is value drivers within SMEs: growth and value creation within the context of the EVA® framework.

## 1.1 Research Rationale

For decades, there has been widespread concern regarding the applicability of traditional measures of performance to measure true performance (ArabSalehi and Mahmoodi, 2012 and 2011). These measures have been long regarded as inadequate as they fail to show the creation or destruction of shareholder value arising from the actions of management. Since its introduction, the EVA<sup>®</sup> framework has gained popularity all over the world, particularly in the United States, Europe and Asia. The EVA<sup>®</sup> framework has been used within companies in search of a consistent way of assessing the performance of the organisation in realising its objective of creating value for shareholders.

Academics studying EVA<sup>®</sup> have proven the theoretical significance of EVA<sup>®</sup> (Lehn & Makhija, 1996; Uyemura *et al.*, 1996; Feltham *et al.*, 2004; Worthington & Tracey, 2004; Kumar & Pal, 2008;) – although not all studies were supportive of the claim that EVA<sup>®</sup> was superior to traditional measures of performance (Worthington and West, 2004; Milunovich and Tsuei, 1996; Uyemura *et al.*, 1996). A review of the various papers on EVA<sup>®</sup> also points to EVA<sup>®</sup> implementation in many large multi-national companies (Myers, 1996) or large companies across various industries including the banking sector (Costa, 2012; Uyemura *et al.*, 1996), service sectors (Spinner, 1995; Tully, 1995; Cleverley, 1993) and not-for-profit organisations (Gapenski, 1996). In identifying gaps in the existing literature it was found that very few researchers had looked at the practicality of implementation of EVA<sup>®</sup> in SMEs. Instead the studies such as Roztocky and Needy (1999) investigated the linear implementation on EVA<sup>®</sup> within SMEs without investigating the adaptability or suitability of the model for SMEs. This study aims to address this gap: to look at the suitability for adapting EVA<sup>®</sup> to SMEs in measuring the performance of the company in light of investment decisions, growth potential and general company performance.

## **1.2 Interest and Justification for the Research**

SMEs account for the majority of companies in the UK and are significant contributors in terms of employment, tax and Gross Domestic Product (GDP). Unlike their larger counterparts, SMEs usually operate under strict conditions of capital rationing (restricted funds), and so it is paramount that they are able to make informed investment decisions to maximise the use of funds. However, investment decision-making in SMEs is highly informal (Mäkeläinen and Roztocki, 1998), with a lack of evaluation techniques actively used. This project aims to fill this gap, at least in part, by identifying what constitutes value within SMEs and by examining how; if possible, the growth and value creation can be enhanced within SMEs.

## **1.3 Research Problem**

The purpose of this study is to examine the applicability of EVA® as a performance measure to evaluate the growth potential and measure the performance of SMEs. The overarching aim of this research is to identify the value drivers within SMEs, and to determine the applicability of the EVA® framework for growth and the creation of value within SMEs. This was achieved by investigation with the context of the EVA® framework by taking into consideration:

- A. What are the indicators and drivers of value with SMEs?
- B. In applying the EVA® framework to SMEs what can be deduced?

A number of key research questions have been developed. These are:

1. How do managers determine the value drivers within a SME?
  - a. To what extent are value drivers considered when management within SMEs make investment decisions?

2. If value drivers are determined, how are these value drivers used?
  - a. How is value measured within the organisation?
  - b. Does this inform the strategic planning process within the business?
3. Can EVA<sup>®</sup> be used or adapted within SMEs?
  - a. What would be the variables and the value drivers in the EVA<sup>®</sup> model?
  - b. How are these variables and value drivers determined?
  - c. What other factors needs to be considered in modelling EVA<sup>®</sup> for SMEs?
4. How useful is the EVA<sup>®</sup> framework for SMEs?

## **1.4 Overview of the Thesis**

The traditional methods of measuring performance (appraisal techniques) have been open to much scrutiny by modern financial theorists. The explanation is that there is a need to find a way of measuring the performance of companies which are now competing within a much more complex global environment. With this growing need, there has been a rise in the number of consultancy firms developing and marketing their own performance metrics. The reception to these metrics has been varied, but there have been such fierce competition that articles have been written making reference to the “Metric Wars” (Biddle *et al.*, 1999; Myers, 1996).

One of the most popular metrics is the Stern Stewart’s Economic Value Added. Its popularity was mainly because of the marketing strategy employed by Stern Stewart & Co. Their strategy was to work with academics and their students and by contributing to the publication of texts which claimed to pull together ‘modern day thinking’ in corporate finance. Most importantly, their marketing

ploy was consolidated with the publication of their work in the Journal of Applied Corporate Finance<sup>1</sup> which was founded by the company and later acquired by Morgan Stanley. Nonetheless, there has also been harsh critique of EVA<sup>®</sup>, not so much on its foundation in economic profit but more so on the proclamation of what the metric can do and the evidence of its performance (Chen and Dodd, 2001; Paulo, 2002).

To put the key research questions into context, the traditional methods of performance appraisal techniques and their application within companies is examined. A brief examination of the more popular modern methods of performance evaluation is also presented. This was followed up with a closer look at value, and accounting for value, within the EVA<sup>®</sup> framework for its application within SMEs.

By using a mixed research methodology, case studies were conducted with four SMEs. Information was also solicited from EVA<sup>®</sup> practitioners to establish expert opinion. Companies and practitioners were selected using critical case sampling which is a type of purposive sampling. Companies were identified and screened from various information sources such as Business Park Listings and online data sources for SMEs. By definition, each had to meet the size requirement of an SME. Other criteria used for selecting companies included their level of maturity/history of establishment to ensure sufficient historical data was available and that they must have filed annual reports on an annual basis. As SMEs are known to be less organised/structured than larger companies, the selection criteria was implemented to ensure that the necessary data required was produced by the company. In each case, members from the management team were interviewed, and the financial reports over the last five years were collected. The decision was made to interview only the management team because they are likely to be the key decision makers within the organisation. In soliciting expert opinion, practitioners from academia were

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<sup>1</sup> <http://www.sternstewart.com/?content=published&p=recommendation>

selected mainly on the basis of their published work on EVA® and value creation.

Data was collected using structured interviews for all participants. A modified Delphi technique was adapted to refine the interview questions from previous interviews for both the companies and the practitioners. An interpretative approach using thematic analysis was used. This was then integrated into performing the quantitative analysis of the data required in examining the value and value drivers in proposing a way forward for EVA® for SMEs.

Chapters 2, 3 and 4 cover the extensive review of the literature as follows:

*Chapter 2, Performance Appraisal and Valuation Techniques*, starts out with a general overview of the development of accounting standards, issues and the way forward. This is then followed by a critical review of the more commonly used performance and valuation techniques in practice.

*Chapter 3, Value, Value Drivers and Evaluation*, introduces the concept of value creation and its importance in the development of business strategy. The chapter covers the evaluation of value and the move from traditional accounting measures to the inclusion of value based measures as in line with the development of finance and economic theory. As the value based metric EVA® is a main feature of this study it is covered in detail within this chapter. This includes a presentation of the theory, dissection of the metric, an illustration of EVA® calculation, its application and an empirical review including a critique of the EVA® framework.

*Chapter 4, Small Business Enterprise Development*, covers the development of SME. SMEs are major economic contributors in any economy. The development in thought regarding the definition of an SME was covered starting with the Bolton's (1971) definition to the one currently in use which was put forward by the European Commission (EC Report, 2006). This follows a closer examination of the characteristics of SMEs, their financing and a brief look at the use of

financial information in decision making. As they are recognised as contributors to economic development, influences for growth and barriers to their development are also covered. In line with the objectives of this study, value and performance management within SMEs is explored. The chapter concludes with a summary of the literature on the application of the value based metric EVA® in SMEs practice.

The *Research Methodology* is covered in *Chapter 5*. The chapter begins with an overview of research methods before presenting the stance of the researcher in undertaking this study. The research framework is presented followed by details on the implementation of the research. The implementation of the research includes using critical case sampling for all participants, the application of a modified Delphi Technique to refine all the interview questions and use of a cognitive exercise using flash cards during the interviews with companies to extract additional data. All issues faced during implementation are covered including changes made during the course of the research and the reasons for the changes. Thematic Analysis was used for analysis of the data and theory, and a reason behind this approach is also presented.

In undertaking this research, approval was granted by the University Research Ethics Committee and the process of obtaining this approval is also documented (See also Appendix 2 & 4). The chapter concludes with a brief summary of the limitations of the research.

*Chapter 6, Presentation of Practitioner's Views and Case Studies*, pulls from the transcripts the highlights from interview participants in relation to the key research questions. Interviews were structured using open ended questions giving participants the opportunity to express their thoughts and experience on each question in their own words. Hence the statements made in response to the questions were extracted from the transcripts and presented in this chapter. For ease of presentation and to facilitate the pending analysis, the extracts are presented under the themes arising from both the interviews and the literature.

*Chapter 7, Analysis & Interpretation of Findings*, focuses on the primary research finding related to the key research questions. The analysis began with an examination of Practitioners views and Respondents from the participating companies. This was done under themes arising from the interviews and the literature. This analysis enabled triangulation of the study findings in relation to the applicability of EVA® within SMEs as it relates to two key features of EVA®:

- i. A management system to guide managers to function effectively;  
and
- ii. A system to support reward incentives for staff at all levels.

An analysis of value and value indicators ensued for each company and this was triangulated against the findings from the literature. The chapter concludes with a discussion of the interpretation of the value indicators identified from the studies and how it could then be integrated into the EVA® performance metric within SMEs.

*Chapter 8, Findings from the Financial Analysis*, commences with a detailed synopsis of methodology and assumptions made in conducting the analysis of the financial reports from the companies. A brief discussion of the limitations in the financial model for calculating EVA® is also covered. The EVA® analysis of each of the participating companies followed, beginning with an overview of the financial data collected from each company.

And finally, *Chapter 9, Conclusion & Recommendation*. The chapter provides conclusions on the in-depth discussion of the Case Studies in relation to the findings of the study. Through this discussion, the arguments for the reliability, validity and generalisation of the study are also summarised. This is followed by discussion on how the findings from the study can be practically transferred within SMEs. It also provides the restatement of the contribution to knowledge and practice. Recommendations are also made for future studies.

## ***Chapter 2: PERFORMANCE APPRAISAL and VALUATION TECHNIQUES***

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- 2.0 Introduction
- 2.1 Accounting Practices, Profit Measurement and Investment Decisions
- 2.2 Performance and Valuation Techniques
- 2.3 Single Period Methods
  - 2.3.1 Profit Based Methods
- 2.4 Multi-period Methods
  - 2.4.1 Profit Based Methods
  - 2.4.2 Cash Based Methods
  - 2.4.3 Discounted Cash Based Methods
- 2.5 The Drive for Performance Measurement in Companies
- 2.6 Application of Performance Measurements
- 2.7 Summary

## 2.0 Introduction

In this chapter, the application of the most popular appraisal and performance measurement techniques employed by managers to guide investment decisions and to evaluate company performance has been examined. This spans the use of the traditional measures of performance to modern measures based on economic theory which includes elements of a value variable.

### 2.1 Accounting Practices, Profit Measurement and Investment Decisions

Since its inception, the Financial Accounting Standards Board (FASB) in the USA have issued more than 100 new rules aimed to make income statements and statements of financial position more accurately reflect the performance and financial conditions of corporations (Ehrbar, 1998). A similar, although less prolific story relates to the Accounting Standards Board (ASB) in the UK and the International Accounting Standards Board (IASB) which governs the accounting practices of listed companies internationally. However, Ehrbar (1998) states these attempts created more distortions and have resulted in Generally Accepted Accounting Principles (GAAP) moving further away from, rather than reflecting, economic reality. This view was also expressed by Lev (1998) in *“that the association between accounting data and market values was not only weak but it also appears that the usefulness of financial reports were rather limited”* (cited in Ehrbar, 1998: pp. 161). The resulting gap from this distortion; that is between GAAP and reality, increased over time because of the extreme conservative bias in the accounting profession, and the political nature of accounting standard setting, as how one accounts for items has real economic consequences. Invariably, when faced with the several ways of treating an item, political lobbying dictates that the option which would have the least impact on the income statement or statement of financial position was likely to be the

option of choice (Ehrbar 1998). The conservative nature of the Anglo-American accounting systems was clearly different from that in Continental Europe in which accounting professionals prepare statements primarily for lenders whose interest would be different from the shareholders of the company. However the IASB/FASB has since undertaken the joint conceptual framework convergence project which recognised these issues. The convergence project moved away from the traditional objective of financial reporting, stewardship, to economic decision-making:

*'The objective of general purpose external financial reporting is to provide information that is useful to present and potential investors and creditors and others in making investment, credit, and similar resource allocation decisions.'* (IASB/FASB, 2006: paragraph OB2); and

*'to help achieve its objective, financial reporting should provide information to help present and potential investors and creditors and others to assess the amounts, timing, and uncertainty of the entity's future cash inflows and outflows (the entity's future cash flows). That information is essential in assessing an entity's ability to generate net cash inflows and thus to provide returns to investors and creditors.'* (IASB/FASB, 2006: paragraph OB3)

Consequently there is recognition that financial reporting needs to be more decision-useful and this marks the first moves to try to address this evaluative gap. One would therefore expect future accounting standards to be drawn up on this basis. However, there is still conflict, as for example, fair value accounting is highly relevant for economic decision making, but suffers from a lack of reliability and can lead to excessive distributions of unrealised profit in boom times (Whittington, 2008). The debate is still on-going.

Today, accounting information is used widely in a number of market transactions irrespective of any geographic boundary. With this comes the

challenge once more of providing data which, not only translates across boundaries, but also provides the basis on which singular analysis can be undertaken. Nonetheless significant advances have been made in harmonising accounting practices of listed companies, non-listed companies and private companies following national regulations. Accounting practices between the Anglo-American group and Continental Europe are significantly different. Whereas advances were made with the advent of modern communication, accounting systems remained an integral part of the markets and politics of each country and presents the need for a unified approach (Diaconu and Coman, 2006; Ball, 1995). Accountants are working to provide intelligent data which can be translated across national boundaries. For listed companies in most of the world's stock markets it is now compulsory to adopt international financial reporting standards (IFRS) (Diaconu and Coman, 2006). Whilst these are more closely aligned to provide information for economic decision-making compared to the Continental European/Japanese model, they still have some way to go before they measure value created.

Investment decisions are financially driven and inadequate corporate performance will mean shareholder expectations will not be realized. This results in increased pressure on management to identify alternative projects which are more profitable. One problem related to the application by accountants of the prudence concept is that along with appearing on the statement of financial position as a fixed asset, 'investments' may also appear on the income statement as expenses in terms of public relations, staff training or research and development. The IASB conceptual framework definition of assets is *"a resource controlled by the enterprise as a result of a past event and from which future economic benefits are expected to flow to the enterprise"* (IASB, 2005). The cost of the investment is only recognised as an asset if, and only if, it is probable that future economic benefits associated with the item will flow to the entity; and the cost of the item can be reliably measured. Consequently, investments may be recognised in different ways because the associated

expenditure cannot be separately identifiable, or that the expected future benefits are too uncertain to meet this strict definition for an asset. In some instances the amount of money gained as a result of making an investment is relatively easy to measure such as tangible cost savings or capacity increases. In other instances they may be difficult to measure in terms of improved company image or increased staff education. Amounts to be spent may be relatively easily forecasted, for example the cost of computerisation of a process to reduce the production of non-quality products. However, in many instances, such as internally generated goodwill, the costs can be uncertain or intangible, and very difficult to measure, leading to a write-off of the cost as an expense to the income statement because of the prudence concept.

With the decision to make investments comes the expectation of some tangible or intangible outcome for the business. For non-commercial entities the primary goal may not be for profit maximization from the investment but rather for providing some satisfaction of fulfilling a socially desirable need. Whereas for commercial entities, the general expectations are that from investments, profit would be increased thereby maximizing shareholders' wealth. A profitable investment may be defined as one in which the gains outweigh the costs incurred. The notion of profit was developed by accountants to assist in the process of auditing and reporting. This is achieved by taking a business' continuous process and subdividing it into periods of 6 months or a year (Arnold, 2007). As with other researchers, Arnold described such action as artificial and fraught with problems and concludes that accounting profit may not be a good proxy for shareholder wealth. He further highlights the following reasons to support his conclusion (Arnold, 2007).

1. Prospects: The stock market will give a higher share value to the company that shows greater future potential, regardless of reported profit. For example, a lower value would be assigned to firms where managers chose a short term approach to raise profit by sacrificing long

term prospects. This is on the assumption that the stock market is efficient.

2. Risks: Risks are evaluated on historical performance and future projections over time. The volatility of the company is correlated to price as shareholders will place higher value on a more stable company.
3. Accounting problems: Accounting has scope for judgement, guess work and even cynical manipulation.
4. Communication: Investors are likely to avoid purchasing shares in companies which fail to report on the origins of profits. Hence senior executives of large companies spend much time communicating their strategies, sources of income and future investment plans to shareholders for them to be aware of the firm and its prospects.
5. Additional Capital: A simple way of increasing profit is by making use of more shareholders' money. However, unless the rate of return on shareholders' money is maintained (risk adjusted) continued use of this strategy over time destroys shareholder wealth (Groth and Anderson, 1997).

Due to the accruals principle, profit is not reflective of the actual cash flow of a company and is of little use in decision-making as it only shows relationships between accounting data, which is historic and subject to accounting allocations and distortions (Arnold, 2007; Chen and Shimerda, 1981). Nevertheless, profit is the main language of business and managers need to know the impact of the investments they make, not only on value creation, but on profit, as they are judged on both accounts. This chapter now explores the extant tools and techniques that are available to managers to help in investment decision-making.

## 2.2 Performance and Valuation Techniques

While it is good practice to keep a watchful eye on things like market measures and financial measures, these are by no means sufficient measures to understand why a business performs the way it does. Prone to manipulation and most appropriate for evaluation within the short-term, financial measures can be especially misleading (Copeland *et al.*, 2000). The major concern for business managers should be how to achieve desired financial results and whether functional targets are met. A manager who understands the concept of, and can identify value drivers, has the foundation on which the performance of the business can be measured. Having the knowledge of what the value drivers are will assist in understanding the reasons behind how the performance of the business can be achieved and can give an insight into how performance is likely to progress in the future. Most significantly, value drivers can serve as leading indicators of performance.

In order to maximize shareholder wealth, a company must invest in wealth creating activities in order to renew, extend or replenish the means by which it carries out operations on a daily basis. Generally speaking, in making investment decisions, a company will always seek to invest in projects which it sees as profitable and would result in maximizing the return to the shareholders, and try to refrain from making poor investment decisions which would impact negatively on the wealth generation capability of the company (Watson and Head, 2007).

The decision to invest is driven by how much the future cash flow from the investment is worth today. The value of any investment decision becomes reliant on three main factors:

- i. The size of the gain: If considered and all the conditions (such as risk) are equal, the greater the expected cash flow the more attractive the investment.

- ii. The timing: Embedded with cash is an element of time. Knowing just the size of the expected cash flow provides very little information if the time for the maturity of the investment is not considered. The value of the cash decreases over time; hence the cash flow received today is worth more than the same amount of cash received in the future. This is due to a combination of the inflationary erosion of the purchasing power of the money and the lost opportunity cost of foregoing alternative investments, and the uncertainty or risk involved in the collection of the cash flow.
- iii. Degree of uncertainty: This depicts the element of risk associated with investment decisions. When a decision is made to invest, there is no guarantee that the size of the expected cash flow will actually materialise, as estimates are frequently inaccurate and incomplete.

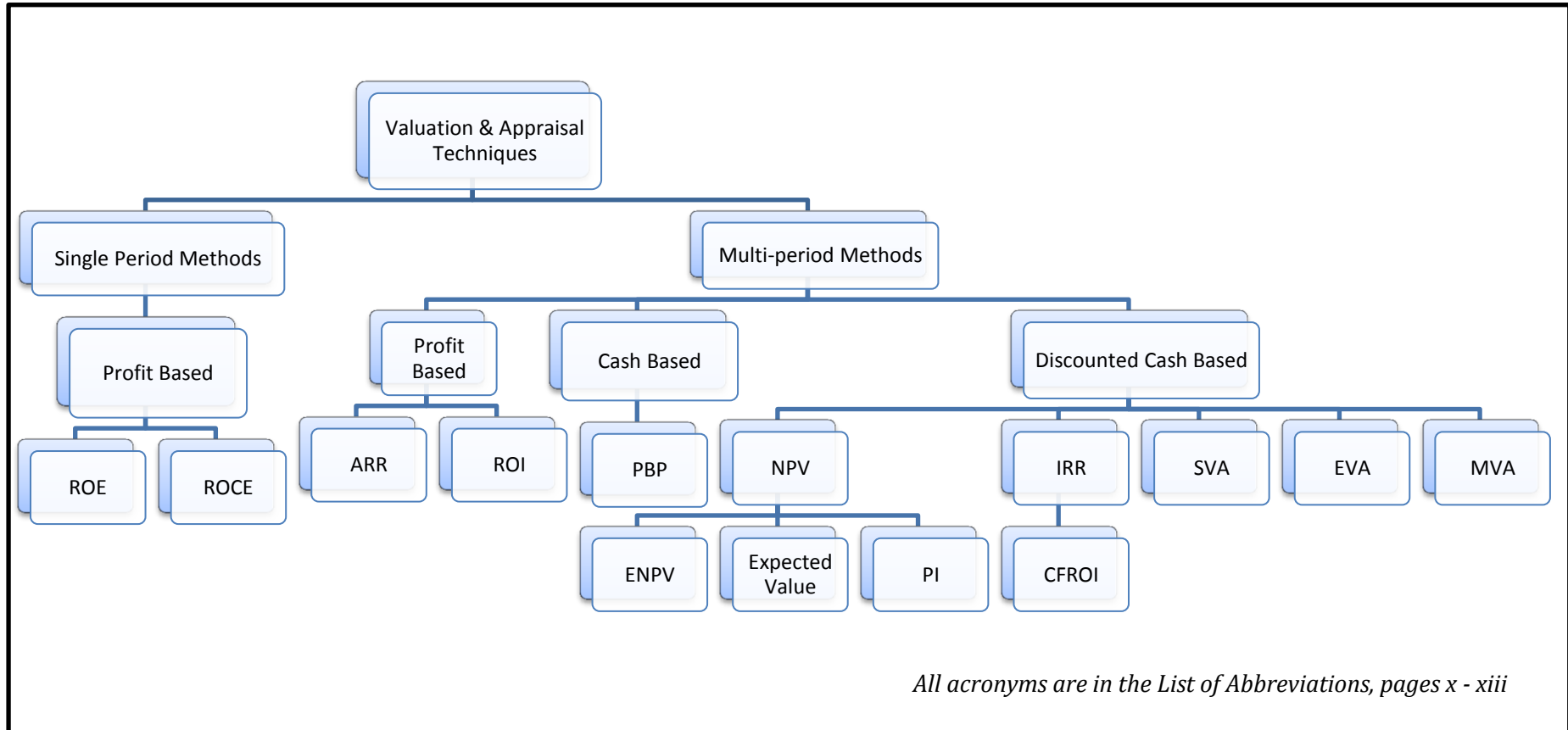
The need to understand the process of value creation and to link them with the company strategy and value creation to facilitate both decision-making and performance measurement is apparent to management (Chari, 2009). The traditional accounting measures of value such as earnings per share and profit margins have been deemed to be no longer relevant as performance measures within the dynamics of a global economy, as they fail to take into account the factors that drive shareholder value (Chari, 2009). Therefore in making investment decisions management need to have at their disposal tools with which to correctly evaluate the financial performance of the firm and its wealth creation capability (Artikis, 2008). Thus, practitioners in the field over the years have proposed other techniques as doubt continues to rise over the traditional accounting measures for performance evaluation. These proposed approaches use economic profit over the traditional measures thereby avoiding the dysfunctional consequences of these measures (Burkšaitienė and Juozapavičienė, 2008).

From the perspective of a modern day investor, a company that reports accounting profit may not be maximizing the value of shareholders (Artikis, 2008; Drucker, 1998). The foundation work on the theory of shareholder value can be traced back to the 1950s and 1960s by various economists, for which some have been honoured with the Nobel Prize for Economics (Jan Tinbergen, and Ragnar Frisch, 1969; William F. Sharpe, Henry M. Markowitz and Merton H. Miller, 1990). The Capital Asset Pricing Model (CAPM) is based on the reasoning that the received and expected returns of investors are affiliated to the risk incurred by owning specific financial assets. Shareholder Value Added, an alternative metric in the late 1980s rose to prominence with the publication of “Creating Shareholder Value” in 1986 by Alfred Rappaport (Petraavičius and Tamošiūnienė, 2008).

With these concerns there is also the likelihood that a company may not have at its disposal, or wish to raise the finance required, to exploit all opportunities which could realise a positive return to shareholders. Hence management resort to formal ways of rationalising their actions. Depending on the life of the project, either single period or multi-period methods of capital expenditure appraisal are available.

Figure 2.1 below is a representation of the performance appraisal and valuation techniques identified from the literature. As shown, these techniques focus on the main concerns of the business manager; cash and profit. The type of technique used is dependent on the task under examination.

Figure 2.1: Valuation Techniques



## 2.3 Single Period Methods

### 2.3.1 Profit Based Method

#### Return on Equity (ROE)

This is a popular measure of the profitability rate; that is how much is earned per £1 of the common shareholders' investment in the company (Horngren *et al.*, 2009). It is therefore a representation of the return on common shareholder's equity and is an indication of the relationship between net income and common shareholder' average equity and is expressed as:

$$ROE = \frac{\text{Net profit} - \text{Preference dividends}}{\text{Average common shareholders' equity}}$$

A company with return on assets which is higher than the ROE is indicative that interest expenses are greater than the ROE; which would be unattractive for potential investors. A major disadvantage of ROE is because it uses financial statement data, it is sensitive to the choice of accounting methods used. Hence it would not present a level playing field for comparison amongst other companies without performing some adjustment (Peterson and Peterson, 1996).

#### Return on Capital Employed (ROCE)

This is a simplistic return on investment which relates accounting profit to a measure of the capital employed (Watson and Head, 2007). Return on capital employed (ROCE) is a measure of profitability against the volume of resources invested. These resources usually include shareholders' funds, net debt and other provisions.

It is generally expressed as:

$$ROCE = \frac{\text{Net profit before interest and taxation}}{\text{Long term capital employed}} \times 100$$

This method is used internally when selecting projects and as a measure of performance for projects and subsidiaries within organisations. As it uses publicly available information it is also used to benchmark performance with competitors.

Although ROCE has little theoretical credibility as a method of making decisions, it has great popularity within companies. Along with its simplicity, its popularity is attributed to the fact that it gives a value in percentage terms to a project which can be compared with the existing ROCE for the company, or division (Watson and Head, 2007) or to mutually exclusive projects. It can also be compared to the company's cost of capital, which must be exceeded to create value. A drawback of using accounting profit is that it is open to manipulation (Peterson and Peterson, 1996). It is also not linked to the fundamental objective of maximizing shareholder wealth (Watson and Head, 2007) as it tends to favour higher risk decisions, it favours leasing and low capital intensive investments. ROCE makes no adjustments for the greater risk for longer term forecasts (Watts, 2006) as it is only concerned with current period returns.

## **2.4 Multi-period Methods**

McLaney (2011) noted the use of multi-period methods of valuation have increased over time; however companies may use more than one valuation technique in practice.

### 2.4.1 Profit Based Methods

#### The Average Rate of Return (ARR)

This is another simple method of analysing capital investment which focuses on the operating income an asset generates, compared to the average amount invested. It is expressed as:

$$\begin{aligned} & \textit{Average Rate of Return} \\ & = \frac{\textit{Average Annual Operating Income from an Asset}}{\textit{Average amount Invested in Asset}} \end{aligned}$$

According to Fritsche and Dugan (2009), although easy to calculate, ARR has been shown to be sensitive to accounting valuation bases and allocation methods, inflation, cash flow patterns, growth rate and the length of an asset's life in some models. It is not always consistent with value maximization but is popular due to similarities with ROCE.

#### Return on Investment (ROI)

This is one of the most commonly used performance valuation tool used by companies (Horngren *et al.*, 2009). ROI is a measure of the amount of income employed relative to the company assets and is expressed as:

$$ROI = \frac{\textit{Operating income}}{\textit{Total Assets}}$$

Although ROI use has been widespread, it has also gained much criticism. The main concern was that it is viewed as a poor indicator of the economic rate of return (Jacobson, 1987). This was because of varying views on the information contained within ROI. However investigation by Jacobson (1987) found that ROI

contains some information about economic rate of return, albeit small. He also found that it correlates significantly with stock return.

## 2.4.2 Cash Based Methods

### The Payback Period (PBP)

This method of performance measure is the most popular (Watson and Head, 2007; Lefley, 1996; Pike 1983) and gives an estimate of how long it would take before the initial cost of an investment is made. It is expressed as:

$$\text{Payback Period} = \frac{\text{Amount Invested}}{\text{Expected Annual Net Cash Flow}}$$

Simply, it is the time period an investment would take to generate the initial outlay (Dyson, 2004; Watson and Head, 2007; Lefley, 1996). That is, it is a reflection of the number of years it would take to recover the original investment from the net cash flow from a capital investment project. The shorter the payback period, the more attractive the investment (Horngren *et al.*, 2009).

Along with being simple and easy to understand, the payback period is also quite easy to apply. Determination of the payback period is dependent on whether the expected net cash flow would be equal or would be different for each year. Given the net cash flow varies, the payback time could then become the number of years ( $n$ ) over which the accumulated net cash flow nears the initial outlay plus the time ( $n + 1$ ) needed to reach the initial outlay (Horngren *et al.*, 2009: p. 1073). The equation then becomes:

$$\text{Payback} = \text{Net Cash Flow}_n + \frac{\text{Balance needed to complete recovery in year } (n + 1)}{\text{Net Cash Flow in year } (n + 1)}$$

Its main advantage is that it is not open to manipulation by managerial preferences for particular accounting practices as it is calculated using cash flows and not accounting profit. Under the payback method of analysis, a shorter payback period is less uncertain than a longer one. With a shorter payback period, it is less likely for external factors like market conditions and interest rate to drastically cause significant change (Watson and Head, 2007).

However, one of the main drawbacks with PBP is the determination of the hurdle rate for project acceptance. Unlike IRR and NPV, there is little evidence to show how the hurdle rate for PBP is determined. Lefley, (1996) stated that the hurdle rate for PBP calculations appears to be a subjective judgement which is based on past experience and the perceived level of risk. From reviewing the literature Lefley (1996), found that a period of 1 – 5 years; and on average 2.9 years, is normally used as the expected time to recover the initial cost of most projects. As a result, the PBP method is said to be bias against accepting long term project which may offer greater benefits. Another serious disadvantage of the payback method is that it ignores cash flows outside of the payback period. Also, it gives no indication of total profitability as it only focuses on how quickly the initial investment can be recovered (Lefley, 1996). For that very reason the payback period should not be used as the only evaluation technique when considering an investment decision. By modifying the payback method, the time value of money can be taken into account by discounting the expected cash flows from the investment, which are detailed in the next section.

### **2.4.3 Discounted Cash Based Methods**

Performance valuation methods for investment decision-making have been advanced in relation to the theory and concept of discounted cash flow (DCF). Described as a truly rigorous technique, its origins can be traced back to the Old Babylonian period of 1800 – 1600BC (Shrieves and Wachowicz, 2001) and has

widespread application in modern day finance in capital budgeting, security valuation and performance management.

With DCF, expected cash flows are 'discounted' at the rate of interest or discount rate which reflects the time value of money and the risks investors take of not having the cash today. For an investment of  $P$  made today, the future value ( $F$ ) at a rate of interest of  $i$  for  $n$  years is:

$$F = P (1 + i)^n$$

Therefore the present value of a future cash flow can be stated as:

$$P = \frac{F}{(1 + r)^n} \text{ or } = F \times \frac{1}{(1 + i)^n}$$

Hence for a company with a cost of capital of 8%, £1m received in 5 years' time would only be worth £680,583 in today's terms. The greater the discount factor, the smaller the present value of future cash flows, for example, at 20% £1m received in 5 years would only be equivalent to £401,877.

### Net Present Value (NPV)

NPV is the financial gain from an investment over a period taking into consideration the opportunity cost of choosing that investment (Arnold, 2007: p. 40). This process uses the difference between present value (PV) of the future cash flows and the amount of the investment (Watt, 2006). The weighted average cost of capital, should be used to discount all cash flows. If the net present value is positive, it gives an indication that the return expected from project would be in excess of the weighted average cost of capital which would lead to an increase in shareholders' wealth. NPV is represented as:

$$NPV = I_0 + \frac{C_1}{(1+r)} + \frac{C_2}{(1+r)^2} + \frac{C_3}{(1+r)^3} + \dots + \frac{C_n}{(1+r)^n}$$

where:  $I_0$  represents the initial investment  
 $C_1, C_2, \dots, C_n$  are the net cash flow in the project for years  
1, 2, ...,  $n$ , and;  
 $r$  represents the cost of capital or the required rate of  
return (Watson and Head, 2007)

Cash flows are assumed to occur at the end of a period to avoid the mathematics of continuously discounting with the initial investment occurring at the beginning of the first time period, although advancement in computerised spreadsheets would make this feasible.

It uses cash flows rather than accounting profit, takes account of both the amount and timing of cash flows along with the relevant cash flows over the life of the investment (Watson and Head, 2007). The more positive the NPV, the better the return; a zero NPV indicates the project repays the initial investment whereas a negative NPV indicates shareholder wealth has diminished (Watts, 2006).

While a decision made on NPV offers sound advice, the uncertainties in using this technique lies with the difficulties in estimating the values of the cash inflows and outflows over the life of the project (Watson and Head, 2007). Calculation of the NPV is based on the assumption that the cost of capital is known and remains constant over the life of the project (Watson and Head 2007), although it is possible to model variables in a spreadsheet.

However studies have shown that even within an apparent range or distribution of possible outcomes, the errors within NPV remains even when risks are recognised (Brookfield, 1995). NPV is based on the assumption that investment capital is unrestrictive. Such assumption gives the illusion that the

company may invest in all positive NPV projects (Lefley and Morgan, 1999). Normally the cost of capital is likely to change over the life of the project as a result of influences within the dynamic economic environment (Lefley and Morgan, 1999; Booth 1999, Brookfield, 1995). NPV pinpoints an investment decision at a particular moment in time, on the information that is available and is applied over the life of the project. On that basis, NPV fails because it doesn't take into account the true amount of the capital expenditure to realise that additional value. Should there be a shortage of capital, it fails to identify the combination of projects which would offer greater benefits (Lefley and Morgan, 1999). However, it can be modified to a probability index to rank projects (see page 31). Also, if the degree of uncertainty for an investment project is significant, it gives no indication of the benefits which could be gained should there be a time delay in making that decision (Brookfield, 1995).

There is also the issue of the discount rate which is used in NPV calculations. If the cost of capital used in NPV calculations is the 'true' cost this signifies that NPV gives the true return which can be expected from that investment (Lefley and Morgan, 1999; Booth, 1999). However, discount rates used in NPV calculations normally includes an allowance for risk such as inflation, and does not give a true reflection of the economic return from that investment. Such allowance for risk exponentially increases the risk with time which may not necessarily be the case (Booth, 1999). What this does is to provide a benchmark against which mutually exclusive and other competing projects can be compared (Lefley and Morgan, 1999). The resulting figure in NPV calculations merely reflects a return after discounting cashflows at the applied rate for each project. Nonetheless, despite the issues, there is apparent confidence in the NPV model that if such resulting changes and cashflows can be forecasted, then NPV can be applied without much difficulty.

### Expected Net Present Value (ENPV)

With all the uncertainties associate with the NPV model, ENPV was proposed as a solution which would take into consideration such issues. ENPV uses a probability distribution to determine the expected return of a future investment. It is used in high risk projects for which the rate of return and the project outcomes are unknown (Tarantino, 2008). In such cases, the NPV and the standard deviation of the NPV is calculated using the cash flows associated with the investment (Arnold, 2007). Such cash flows are expected to occur over a number of years and can be expressed as:

$$ENPV = \sum_{i=1}^{i=n} (NPV_i p_i)$$

where:  $NPV_i$  = the NPV if outcome  $i$  occurs

$p_i$  = the probability of  $i$  occurring

$n$  = the number of possible outcomes

and the operator function means the sum of all the  $NPV \times p$  calculation for each  $i$  outcome.

The standard deviation of the net present value ( $\sigma NPV$ ) is expressed as:

$$\sigma NPV = \sqrt{\sum_{n=i}^{i=n} \{(NPV_i - ENPV)^2 p_i\}}$$

Hence ENPV is a predictive model.

As it attempts to describe the anticipated outcome of a future uncertain event, Tarantino (2008) describes ENPV values as quantitative measures, which are better at forecasting the eventual outcome of a future event compared to using a single element of data.

### Enterprise Value

This is one of the most traditional methods of valuation. Within financial theory the market value of any company can be expressed as a discounted stream of the future cash flows. Formally known as the enterprise value (EV), this can be expressed as (Grant, 2003, p. 106):

$$EV = \sum_{t=1}^{\infty} \frac{CF_t}{(1+r)^t}$$

where:             $EV$  = Enterprise Value  
                       $CF$  = firms estimated free cash flow at period  $t$   
                       $r$  = discounted rate or cost of capital  
                       $t$  = number of years of the investment

This is commonly known as the discounted cash flow model.

The cash flow model is helpful in showing how the overall market value is derived for a company. However, to be useful in practice, generally two simplifications are made to the discounted cash flow model:

1. The market value of the firm is viewed as the present value of the cash flows estimated over the planning horizon period (the reasonable period over which reliable estimates concerning future cash flow can be ascertained) and residual period (the period lying outside of the planning horizon);
2. The firm's estimated value is obtained using simplifying assumptions about how cash flows grow over time, specifically either constant or variable growth in cash flows (Grant, 2003).

Any cash flows generated throughout the project can be reinvested at the cost of capital:

$$EV = \sum_{t=1}^T \frac{CF^t}{(1+r)^t} + \frac{1}{(1+r)^T} [RV_T]$$

*Equation 1*

$$EV = \sum_{i=1}^T \frac{CF_t}{(1+r)^t} + \frac{1}{(1+r)^T} \left[ CF_{(T+1)} \times \frac{RV}{CF} \right]$$

*Equation 2*

$$EV = \sum_{t=1}^T \frac{CF_t}{(1+r)^t} + \frac{1}{(1+r)^T} \left[ \frac{CF_{(T+1)}}{(r-g_{LT})} \right]$$

*Equation 3*

*where:*

The first term on right hand side of first part of the equation is the firm's estimate horizon value and the latter its current residual value ( $RV_T$ );

The second term on the right hand side of the second part of the equation is the firm's residual or continuing value over multiple periods ( $T+1$ ); and

In the third expression, the assumption is that, for the residual value, the cash flow is growing at a long term or competitive growth rate over the post planning period. In this instance, the assumption is that  $g_{LT}$  (long term growth) is less than the discounted rate,  $r$  (Grant, 2003).

### Profitability Index (PI)

The Profitability Index (PI) is a cost-benefit ratio which is used to evaluate an investment decision. It takes into consideration the time value of money as it considers the present value of future cash flows from an initial investment. PI is based on the NPV and is used in situations of capital rationing. It can be expressed as:

$$PI = \frac{PV(\text{future cash flows})}{-I_0}$$

where:  $PV$  = value of future cash flows  
 $I_0$  = the initial investment

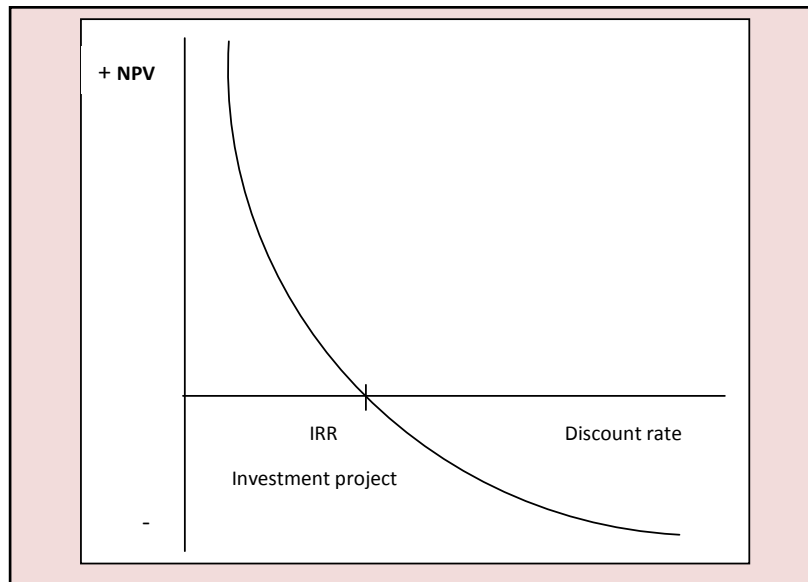
The PI is quite simple and easy to use. An indicator of a worthwhile investment would return a PI greater than one. The decision is usually made to select the projects with the highest PI until the investment budget is exhausted. In ranking projects under capital rationing the PI decision rule is to select the projects in order of the size of the PI.

### Internal Rate of Return

The IRR is widely used as an alternative discount cash flow approach to valuation (Watt, 2009). The IRR is the true interest yield expected from an investment and is expressed as a percentage rate of return. It can be calculated without having to estimate the cost of capital (Young and O'Byrne, 2001). By definition, the IRR is the discount rate at which the net present value of all cash flows is equal to zero (Watt, 2009). It is therefore the rate which must be exceeded to make a viable return. Hence the application of IRR in investment decisions results in the selection of projects whose IRR exceeds the cost of

capital (or the hurdle rate if used) and rejects those whose IRR is less than the cost of capital.

**Figure 2.2: The Relationship Curve – NPV of a conventional project and the discount rate**



The IRR of an investment project is normally determined using linear interpolation and then comparing it with the target rate of return or hurdle rate. IRR is expressed as:

$$IRR = \frac{C_1}{(1 + r^*)} + \frac{C_2}{(1 + r^*)^2} + \frac{C_3}{(1 + r^*)^3} + \dots + \frac{C_n}{(1 + r^*)^n} - I_0 = 0$$

where:  $C_1, C_2, \dots, C_n$  are the project cash flows in years 1, 2, ..., n  
 $r^*$  is the internal rate of return  
 $I_0$  is the initial investment

Nonetheless, as with other performance measures, there are a number of issues with using IRR. Kelleher and MacCormack (2005) describe the deficiencies as technical, even arcane, and could have serious implications for those doing capital budgets. They are of the view that IRR calculations are distorted, leading

to incorrect selection of projects thereby destroying shareholder value. In practice, IRR is normally interpreted as the annual equivalent return on a given investment, hence the source for its intuitive appeal (Kelleher and MacCormack, 2005). However, it is only when interim cashflows are reinvested at the actual IRR that true annual return on that investment is reflected (Kelleher and MacCormack, 2005). IRR calculations more often than not will overestimate the annual equivalent return from the project. According to Kelleher and MacCormack (2005), this is because IRR assumes that there are other projects which are equally attractive in which to invest the cash generated in the interim. This implies that IRR takes credit for the additional projects. By contrast, NPV assumes the cost of capital and interim cash flows are earned on the project in case, leaving any future gains from future projects (Kelleher and McCormack, 2005). Such assumptions on reinvestment can lead to major distortions in capital budgeting. Even in the event that cash flows can be reinvested at the IRR, the view is that it should not be combined with the value of the future investment which is being evaluated (Kelleher and MacCormack, 2005), as this will overstate the actual return.

#### *Cash Flow Return on Investment (CFROI)<sup>2</sup>*

Described as a modified version of ROI, the CFROI for a company is an expression of the estimate of a company's cash flow over a single period as a percentage of its total investment (Petraavičius and Tamošiūnienė, 2008). In essence, CFROI establishes the ROI of the organisation based on the actual cash flow generated, instead of on its earnings adjusted for accruals. Described as a wealth creation measure, it was developed based on cash flow instead of on accounting profits (Artikis, 2008). Compared to the cost of capital, CFROI is used in assessing and interpreting whether the investments of a company

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<sup>2</sup> CFROI developed by Boston Consulting Group and Holt Associates

performs favourably or not. CFROI relates the current market price of the firm to the cash flow of its operations and not to net profit and is expressed as:

$$CFROI = \frac{(Gross\ Cash\ Flow - Economic\ Depreciation)}{Gross\ Investment}$$

Existing assets within the organisation represents the gross investments and can be calculated by adding accumulated depreciation to the net assets while making adjustments for inflation to the book value. Gross cash flow is calculated by taking the sum of after-tax operating income, depreciation and amortization from the net cash flow; where the depreciation is the amount set aside for the cost of replacement of the asset at the end of its economic life (Artikis, 2008).

A reported beneficial advantage of CFROI is that it can be used to determine the performance of the entire firm as well as at divisional level (Artikis, 2008). Artikis (2008) further claims it can then be compared to the inflated-adjusted cost of capital to determine whether a firm produces returns that are greater than its cost of capital. With CFROI, an adjustment is made for accounting distortions arising as a result of inflation and asset lives. The disadvantage of this measure lies in its complexity and difficulty for managers to future cash flows and asset values.

### Shareholder Value Analysis

The expectation of managers and stakeholders of a company is that the invested capital, will in time, be reflective of what the company is worth, and the market uses DCF to connect the firm's financial performance to its market value (Madden, 2007). The relationship between the DCF and its use as a measure of wealth creation was explored by Alfred Rappaport which led to the development of shareholder value analysis (SVA) (Arnold, 2007). Rappaport's

SVA identified seven value drivers. There has been a difference of opinion between researchers as to the number of value drivers, ranging from five to eight but Rappaport recommends seven (Akalu, 2002). These are termed the Rappaport value drives and identified as (Arnold, 2007: p. 339; Rappaport, 1998: p. 171):

- *The planning horizon (forecast period)*

The selection of the planning horizon was found to be very influential in the process of value analysis (Mills, 1998). This is normally based on the product life cycle stage within each business unit (Rappaport, 1981). Also, the planning horizon is normally dependent on the industry a company operates in. For companies operating within stable industries, the planning horizon is usually longer than those in volatile industries.

- *The required rate of return (WACC)*

This is a major determinant of shareholder value as it relates to how management raise the finance and at what cost for the business (McLaney, 2011). This is dependent on the rate of return for all the funding streams within the company; the cost of all its debts and equity financing. Rappaport (1981) states WACC as the most appropriate rate for discounting the cash flow of a company. CAPM was found to be the favoured method of estimating the cost of equity capital (Mills, 1998); whereas IRR for the cost of redeemable debt capital (Arnold, 2007). By using WACC, the debt to equity ratio is optimised hence reducing the overall cost of capital (Largani *et al.*, 2012).

- *Fixed capital investment*

This takes into account all of the indirect fixed capital investment associated with the operations of the company (Arnold, 2007). Non-performing and surplus assets are disposed of and investments are made in assets which will make a return in excess of the WACC (Largani *et al.*,

2012). This is expected to be related to sales growth – if sales increase more assets are needed to support higher sales levels.

- Working capital investment

This refers to all the investment capital invested in net current assets and is directly related to sales growth. Higher sales levels require higher working capital investment.

- Sales growth rate

Sales are a major source of cash within a company. Traditionally, only the cash paid by customers rather than the revenue book value would be considered under the DCF model. Rappaport however considers both the value of sales not yet paid by customers as well as the sales value. The sales growth rate is based on two factors:

- i. the assumption that the sales volume for the previous period, and
- ii. a forecast percentage rate by which that value would grow (Nichols, 1998).

These occur over the planning horizon, and therefore remain static.

- Operating profit margin

Rappaport takes into consideration all the cost and expense cash outflows of a company to account for the revenue level and the operating profit margin. Changes in the working capital are made to reflect instances where costs or expenses have been incurred which have not resulted in cash payments over the same period. However, depreciation was exempt from this treatment. Instead depreciation of existing assets is deducted from the investment in new capital (Nichols, 1998). The ratio of the pre-tax and finance charges of the operating profit to sales revenue gives the operating profit margin (McLaney, 2011).

- Tax rate

This affects cash flow and the value created because it is a levy which is directly applied on the operating cash flow. The company's management usually have little influence over the corporate tax rate imposed on the company (McLaney, 2011), although recent reports of tax avoidance of companies such as Starbucks, Amazon and Google suggests other use!

These value drivers are said to originate from the economic variables which are vital to the cost function and revenue of the company (Akalu, 2002). They also distinguish the value approach from the traditional accounting measures (Largani *et al.*, 2012).

With the introduction of shareholder value, emphasis is on cash flow instead of profit or earnings as a measure of performance although its starting point is historic profit data. The net cash flow of the company can be determined by the sales growth rate, the rate of the profit margin and the tax rate. The total cost of the investment is formed from the sum of the fixed capital investment, and the working capital investment. The free cash flow of the company is therefore the difference between the net cash inflow from the cost of the investment. In order to compute the net benefit, a defined planning horizon and a required rate of return is needed. The value of the firm is obtained by adding the market value of the provisional investment. The value of the shareholder is then the difference between the total value of the company and the market value of the company's external finances.

SVA is amongst the many metrics which have been developed and marketed by a consulting firm, in this instance LEK/Alcar Consulting Group. It has received widespread support within academic circles and Alfred Rappaport's publication "*Creating Shareholder Value*" was well received. He is cited as defining SVA as the amount of value created by a pre-determined estimate of the situation under investigation (Froud *et al.*, 2000). An illustrative spreadsheet is shown in Table 2.1.

Table 2.1a sets out the value drivers and their value for a planning horizon of 8 years. The effect of each of the value drivers on applying a constant WACC of 15% is illustrated at the end of each year. The value added over the period of planning horizon is dependent on the level of investment of each of the value drivers and the growth rate over each period.

**Table 2.1: Rappaport SVA Spreadsheet**

*(Arnold, 2007; pp. 341)*

**Table 2.1a: The Value Drivers**

|  |     |
|--|-----|
| Growth Rate                                    | 12% |
| Operating profit                               | 9%  |
| Tax on operating profits                       | 31% |
| Fixed asset investment (% of sales growth)     | 14% |
| Working capital investment (% of sales growth) | 10% |
| Cost of capital                                | 15% |

**Table 2.1b: The Spread over the horizon of 8 years**

| Year                              | 0      | 1           | 2           | 3           | 4           | 5           | 6           | 7           | 8           | 9 & after     |
|-----------------------------------|--------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------|
| Sales (£m)                        | 1000   | 1120.0      | 1254.4      | 1404.9      | 1573.5      | 1762.3      | 1973.8      | 2210.7      | 2476.0      | 2476.0        |
| Operating Profits                 |        | 100.8       | 112.9       | 126.4       | 141.6       | 158.6       | 117.6       | 199.0       | 222.8       | 222.8         |
| Less Taxes                        |        | -31.2       | -35.0       | -39.2       | -43.9       | -49.2       | -55.1       | -61.7       | -69.1       | -69.1         |
| Less Fixed Assets Working Capital |        | -16.8       | -18.8       | -21.1       | -23.6       | -26.4       | -29.6       | -33.2       | -37.1       | 0.0           |
| Less Working Capital              |        | -12.0       | -13.4       | -15.1       | -16.9       | -18.9       | -21.1       | -23.7       | -26.5       | 0.0           |
| Operating Free Cash Flow          |        | 40.8        | 45.6        | 51.1        | 57.3        | 64.1        | 71.8        | 80.4        | 90.1        | 153.8         |
| Discount Factor                   | 1.0000 | 0.8696      | 0.7561      | 0.6575      | 0.5718      | 0.4972      | 0.4323      | 0.3759      | 0.3269      | 6.6667        |
|                                   |        |             |             |             |             |             |             |             |             |               |
| Planning Horizon                  |        | <b>35.4</b> | <b>34.5</b> | <b>33.6</b> | <b>32.7</b> | <b>31.9</b> | <b>31.0</b> | <b>30.2</b> | <b>29.5</b> |               |
| After Planning Horizon            |        |             |             |             |             |             |             |             |             | <b>1025.0</b> |

**Table 2.1c: The Summary**

| Summary   |              |
|---|--------------|
| Sum of planning horizon present values          | 258.9        |
| Present value of perpetuity, discounted 8 years | 335.1        |
| Marketable securities                           | 110.0        |
| Corporate Value                                 | 704.0        |
| Debt  | 200.0        |
| Shareholder value                               | <b>504.4</b> |

The illustration shows a shareholder value of £504.4 million. According to Rappaport, this can now be compared to the market capitalisation that the company is trading at; that is the share price times the number of shares (Arnold, 2007). This level of analysis using SVA can be applied not only at the company level but also for individual projects, product line, per operation or customer (Arnold, 2007). One advantage of SVA is that it accentuates sensitive value drivers which, if highlighted to managers, can form the focus of management attention.

However, like all the other performance measures, SVA has its weaknesses. One of the main critiques of SVA is that it only benefits shareholder value and provides no clear measure of corporate responsibility. Hence the social responsibility of the firm towards things such as employment, environmental and ethical practices is ignored (Largani *et al.*, 2012). Also, there is the risk that too much attention could be given to increasing shareholder value in the short term which could be harmful to long term shareholder value (Largani *et al.*, 2012; Arnold, 2007). Other problems identified include the lack of data within companies for the use of SVA, the simplification of and unrealistic use of constant percentage increases in the value drivers (Arnold, 2007) and unrealistic assumptions used in forecasting.

### *Economic Value Added (EVA®)*

Proprietors Joel M. Stern and G. Bennett Stewart III of the consulting firm Stern Stewart & Company developed and launched the EVA® framework in 1989. They claim that no other measure is as robust (Stewart III, 1999). However, EVA® presents no new idea: It essentially is a repackaging of sound financial management and corporate finance principles which are already in existence.

The EVA® performance metric is expressed as:

$$EVA = NOPAT - \text{Cost of Capital} \times \text{Capital Employed}$$

where:

NOPAT = Income available to common stock + Interest expense after taxes + Preferred dividends + Minority interest provisions + Changes in equity equivalents.

Cost of Capital = Weighted average cost of capital (WACC).

Capital Employed = Common equity + Interest bearing debt + Preferred shares + Minority interest + Equity equivalents.

The EVA<sup>®</sup> framework is built on the notion that shareholders must earn a return that compensates them for the risk taken. That is, equity capital invested in the company should earn at least the same return as risky investments in equity markets (Chari, 2009). Failure to achieve this minimum return indicates no real profit was made and, from the viewpoint of the shareholders, the company operated at a loss. Until this is achieved, the company is seen as destroying wealth.

Nonetheless, Young and O'Byrne (2001) declared EVA<sup>®</sup> as "an innovation" because it presents modern financial theory and its managerial implications together with such simplicity, making it more accessible to non-financial managers. Based on the theory of economic profit, the EVA<sup>®</sup> framework is based on the well-known and recognised premise that a successful company should earn at least its cost of capital. It is regarded as the profit that remains after cost of both debt and equity capital is deducted from operating profit. The perceived strength of EVA<sup>®</sup> as a metric for evaluating performance is, as a measure, the one most directly linked theoretically and empirically to MVA. In other words, it gives an indication of the premium that the market is willing to place on the company's value based on projected future earnings (Chakrabarti, 2000).

The metrics Economic Profit approach by McKinsey and Economic Earning by AT Kearney are variants of EVA<sup>®</sup>. Nonetheless, according to Chari (2009) EVA<sup>®</sup>

is the most popular measure used and it has gained some prominence on the global scale. There are two differences with EVA<sup>®</sup> and other traditional accounting measures of performance; which are:

1. Both the cost of debt and the opportunity cost of equity capital are both deducted from NOPAT in calculating the cost of capital
2. The adjustments made to NOPAT and invested capital to address accounting distortions distinguished EVA<sup>®</sup> from other measures.

Of all the value based performance measures Young and O'Byrne (2001) believes that CFROI is the most formidable challenger.

As EVA<sup>®</sup> is a major focus of this thesis, it is returned to in more detail in *Chapter 3 Sections 3.3 – 3.7*.

### Market Value Added (MVA)

Market Value Added (MVA) is based on the principle that the primary focus of a company is to maximize the wealth of shareholders. Although this may seem a myopic focus on one stakeholder group, the shareholders, it should enable efficient allocation of scarce resources which, in turn, benefits the economy. By maximizing the difference between the value of the company shares on the open market and the amount of equity capital that is supplied by shareholders, the wealth of shareholders is also maximized. This difference is termed the MVA of the company (Petravičius and Tamošiūnienė, 2008). Hence, the MVA is the difference between its current market value and the amount of capital contributed by investors and is expressed as (Artikis, 2008):

$$\begin{aligned}
MVA &= \text{Market value of stock} - \text{Equity shareholder capital} \\
&= (\text{Shares outstanding}) \times (\text{Stock price}) \\
&\quad - \text{Total common equity}
\end{aligned}$$

MVA is not considered a performance measure but instead is regarded as a wealth metric as it measures the value the company has accumulated over time. It is reported to give an indication of the management within the company. A high MVA indicates to the market that the management of the firm is acting in the best interest of shareholders. In some companies, there are instances where the sum of the equity is the total of the capital supplied by the investor and this total is reflected in the final statements of the company. In these cases, the total market value of the company is the sum of the market values of the company equity, debt and preferred stock (Petraavičius and Tamošiūnienė, 2008).

A comparative analysis of a company's performance can be determined over time if the MVA is frequently determined and ranked. The degree of movement in the resulting MVAs over time is an indication to shareholders of the "value added" in terms of the capital gained with respect of the company's activities (Zafiris and Bayldon, 1999).

The Market Value (MV) of a firm may be expressed as:

$$MV = \frac{COPAT}{c} + \sum \frac{I_t(r - c)}{(1 + c)^t}$$

where:

*COPAT* = Current Earnings after Tax

*c* = opportunity cost of capital

*I* = investment made at time *t*

*r = rate of return*

MVA is the difference between the cash inflows and outflows of a company. That is, it is the difference between the investor's capital investment and what they could be offered for that capital at that point in time on the open market (Chakrabarti, 2000). Therefore it is the cumulative amount by which a company has increased or decreased shareholder wealth. It is viewed as the best external measure which captures the market summation of the effectiveness of management performance in its duty of allocating the scarce resources they have under their control.

Chakrabarti (2000) found a binding relationship between MVA and EVA<sup>®</sup>. For the MVA of a firm to grow, it needs to achieve a growing EVA<sup>®</sup> over a period. When a positive EVA<sup>®</sup> is forecasted over a period, it is the expectation that the MVA will increase which is reflective of the ability of the firm to earn above and over the opportunity cost of capital. Zafiris and Bayldon (1999) state that, to build MVA a company will need to achieve positive EVA<sup>®</sup> over the considered period. MVA is a representation of the NPV of all past and projected capital invested projects, as the stock market determines share price on the basis of the present value for future cash flows for a company. It should be noted that MVA is very dependent on accounting distortions and more prudent accounting practices with regards to the revaluation of property plant and equipment, recognition and impairment of intangibles and so forth will lead to misleadingly high MVA.

## **2.5 The Drive for Performance Measurement in Companies**

What has driven the increase in business performance measures over the past three decades? Bernard (1974) had long established that performance measures play an integral part of the core functions of the business planning and control cycle. The most basic method of the business planning process was

found to have been in place by early 1910 with the DuPont analysis (Neely, 1999, cited in Chandler, 1977, p. 417), which was largely based on ratio analysis. Neely (1999) theorises that, with the knowledge of basic management techniques which have been in existence since 1910, the expectation is that organisations would have progressed and built on those techniques and should now have well developed performance measures in place. Neely (1999) found such an assumption was incorrect as, on brief exploration of the literature of several academics and practitioners (Kaplan, 1984; Geanuracos and Meiklejohn, 1993; Neely *et al.*, 1995) he discovered it was not the case. Highly critical reasons were discovered for the lack of application of the traditional measures of performance by organisations. These were stated as (Neely, 1999):

- They were viewed as being restrictive for any planning in the long term and encouraged short-term planning, for example resulting in the delay of capital investment;
- They provide no useful data on quality, responsiveness and flexibility, and hence lack strategic focus;
- They encourage managers to take minimal risk by sticking to what is considered normal instead of moving beyond boundaries to seek continuous improvement;
- They provide no information on customer behaviour or the performance of competitors, which is central to business performance. Both non-financial and financial indicators are needed in order to capture both lead and lag indicators of performance

Neely (1999) suggested seven main reasons for the support of a move away from traditional methods; namely:

- i. the change in nature of work,
- ii. changing organisational work,
- iii. increased competition,

- iv. specific improvement initiatives,
- v. national and international quality awards,
- vi. change in external demands,
- vii. the power of information technology.

The desire to meet these changing demands has resulted in companies seeking and implementing new and innovative ways to improve performance and maximize value creation. This increasing demand triggered a rapid increase in the number of consulting firms, mainly in corporate America, developing performance metrics in the mid-eighties to capture the minds and hearts of corporate executives. This is as a result of a deviation away from the use of the more traditional accounting methods of evaluation such as net present value, (NPV), return on investment (ROI) and internal rate of return (IRR) in what can be considered a strategic move by corporate executives to maximize the shareholder value and further enhance the value of the firm.

## **2.6 Application of Performance Measurements**

Primarily, the application of performance measures seeks to establish the productivity, profits and the enhancement of shareholders' wealth. The application of performance measures in companies, ranging from small companies to large organisation, has been the focus of many researchers through the years (Pike, 1983, 1988, 1996; Ross, 1986; Mills, 1988; Sangster, 1993; Arnold and Hatzopoulos, 2000; Alalu, 2003; Dedi and Orsag, 2007; Bennouna, Meredith and Merchant, 2010; Kester and Robbins, 2011). Indications are that this is still seen as an important process within organisations. The payback period was found to be very popular across all organisations, but while still used widely, its popularity across companies has decreased (Arnold and Hatzopoulos, 2000). From the studies analysed, it is interesting to note that the preference of measure changed over time across

organisations. Pike's (1988) survey of practices in companies showed IRR as the dominant metric in use. However in 2000, the preference was for NPV (Arnold and Hatzopoulos, 2000).

A synopsis of some of the studies conducted on the application of performance measures within companies between 1983 and 2011 is presented in the Table 2.2.

**Table 2.2: Synopsis of Performance Measures Practices in Companies between 1993-2011**

*Note: Meaning of acronyms can be found in the List of Abbreviations, pages x-xiii*

| Author & Year      | Paper Summary  | Sample size | Company size & Type | Location | Metric  | Summary   |
|--------------------|--|-------------|---------------------|----------|---|---|
| <b>Pike - 1983</b> | Formal capital budgeting techniques procedures and, extent to which newer developments have been adopted.                    | 208         | Large Manufacturing | UK       | DCF – IRR, NPV, ARR<br>Payback Period<br>(Other – sensitivity analysis) | <ul style="list-style-type: none"> <li>• Payback Period most popular technique.</li> <li>• Choice of DCF technique dependent on size of company particularly with the use of IRR.</li> <li>• Most companies use a combination of techniques.</li> <li>• Combination of up to 4 techniques was used.</li> <li>• Techniques used, ranked in order of priority were: Payback Period, ARR, IRR, NPV and Others.</li> <li>• Risk evaluation – normally taken into consideration when 8 techniques were used.</li> <li>• Use of sophisticated practices (sensitivity analysis) was only evident in the very largest firms.</li> </ul> |
| <b>Pike - 1988</b> | Adoption of sophisticated capital budgeting practices and decision-making effectiveness employed over an eleven year period. | 100         | Large               | UK       | DCF – NPV, IRR, non-DCF – Payback Period, ARR                           | <ul style="list-style-type: none"> <li>• Method of analysis varies widely across firms.</li> <li>• DCF techniques IRR and NPV were best known and studies indicated use had increased. IRR was more popular.</li> <li>• Combination of techniques used.</li> <li>• Non-DCF techniques were used in combination with DCF techniques which were considered more sophisticated.</li> <li>• The use of Payback Period technique gained support and continued to be universally applied regardless of the use of the more sophisticated DCF techniques</li> <li>• Form of risk analysis used in decision-making process.</li> </ul>  |

| Author & Year          | Paper Summary   | Sample size | Company size & Type | Location | Metric  | Summary  |
|------------------------|---|-------------|---------------------|----------|---|--|
| <b>Pike - 1996</b>     | Capital budgeting techniques practiced by large firms. This was a longitudinal study with the same (sample) companies from the initial study of 208 companies studied back in 1983. | 100         | Large               | UK       | DCF - Payback Period, NVP, IRR, ARR (Sensitivity testing)               | <ul style="list-style-type: none"> <li>• Indicated use of IRR and NPV within companies was dependent on company size.</li> <li>• The consistency of the evidence - results were similar 17 years after the first study.</li> <li>• Companies have become more aware of the need to assess projects over the 17 years.</li> <li>• Techniques used become more sophisticated with time.</li> <li>• Combination of techniques rather than relying on one measure.</li> <li>• Only a few companies use a single technique.</li> <li>• 50% of companies incorporate inflationary effects within their financial analysis.</li> <li>• IRR and NPV associated with firm size.</li> <li>• Popularity of ARR in decline.</li> </ul> |
| <b>Ross - 1986</b>     | Investment appraisals for 400 projects; 100 complete and 300 at various stages of varying sizes across a selection of large companies   | 12          | Large               | USA      | DCF - RR, simplified IRR Payback Period & simplified Payback Period NPV | <ul style="list-style-type: none"> <li>• DCF techniques widely used.</li> <li>• Used mainly Payback Period technique.</li> <li>• Many companies have internally published hurdle rates for project approval. Some were out of date or were only used for initial investigation to see if the project was worthwhile.</li> </ul>  |
| <b>Mills - 1988</b>    | Capital budgeting techniques practices in the UK. Comparison made with other previous studies in the UK.  | 200         | Large (Listed)      | UK       | DCF - IRR, NPV, non-DCF - Payback Period, Other (Risk analysis)         | <ul style="list-style-type: none"> <li>• Confirms the importance of the Payback Period and preference of IRR over NPV.</li> <li>• Link between size of company and the DCF technique used.</li> <li>• No single technique was considered adequate and a combination of 2 or more was expected to be used.</li> <li>• In line with Pike (1982) findings of the move towards using more sophisticated techniques.</li> <li>• Methods of assessing risk in project selection employed.</li> </ul>   |
| <b>Sangster - 1993</b> | Investment appraisal techniques in Scottish companies compared with finding of earlier UK studies.  | 500         | Large               | Scotland | DCF - NPV, IRR, non-DCF - Payback Period, ARR                           | <ul style="list-style-type: none"> <li>• Payback Period was the most popular followed by IRR, NPV and ARR.</li> <li>• Companies used more than one technique.</li> <li>• ARR is used less frequently and is mainly used with other methods.</li> </ul>   |

| Author & Year                          | Paper Summary  | Sample size | Company size & Type   | Location  | Metric   | Summary   |
|--|--|-------------|-----------------------|-----------|--|---|
| <b>Kester &amp; Tsui - 1998</b>        | Evaluation of capital budgeting techniques used in firms in Singapore.     | 211         | Large (Listed)        | Singapore | NPV, IRR, DCF, Payback Period, EVA® (CAPM, WACC) | <ul style="list-style-type: none"> <li>• Several techniques used.</li> <li>• IRR and NPV were found to be the DCF techniques most favoured.</li> <li>• The most popular non-DCF techniques used were Payback Period and ARR.</li> <li>• Techniques ranked in order of importance were found to be: IRR, Payback Period, NPV, ARR and Other.</li> <li>• EVA® was one of the techniques identified as “other”.</li> <li>• Techniques were used in assessing the riskiness of an investment with sensitivity analysis perceived to be most important for assessing risk.</li> <li>• Sophisticated techniques such as decision tree and probability analysis used.</li> <li>• Use of beta for market risk and CAPM to determine WACC.</li> <li>• More than 50% of companies use single discount rate for all investment decisions.</li> </ul>   |
| <b>Arnold &amp; Hatzopoulos - 2000</b> | Presented evidence pertaining to capital investment practices in UK firms. | 300         | Small, Medium & Large | UK        | NPV, IRR, DCF, Payback Period, (WACC & CAPM)     | <ul style="list-style-type: none"> <li>• UK companies have employed text book methods of financial analysis.</li> <li>• Companies have widened the ways of analysis than try to replace any one method.</li> <li>• By widening the ways of analysis, managers felt it complements the tried and tested methods they have used in their decision-making.</li> <li>• Small numbers have foregone the use of DCF method.</li> <li>• The older methods seem to have some endearing qualities which the modern methods can't provide.</li> <li>• Some managers indicated the use of non-financial means of analysis, example decision made by examining if it aligns with organisation objectives.</li> <li>• Some firms made adjustments to hurdle rates for inflation.</li> <li>• Difficulty by those with WACC: Challenging to use CAPM to determine beta and cost of capital.</li> </ul> |

| Author & Year                  | Paper Summary  | Sample size | Company size & Type   | Location     | Metric  | Summary   |
|--------------------------------|--|-------------|---|--------------|---|---|
| <b>Akalu - 2002</b>            | How companies perform investment appraisals and subsequent follow-up and measurement of performance (success/failure). | 10          | Large   | UK/<br>Dutch | DCF – non DCF as EVA®,WEV, NCV, *TCS, modified DCF – (Others - best practices)<br><br>[TCS – Tata Consulting Services<br><br>CST – cost, schedule and time] | <ul style="list-style-type: none"> <li>• Method used not only dependent on the type of project but also on the type of industry.</li> <li>• ARR use not currently in practice</li> <li>• Combination of DCF techniques – practice is evident in UK firms. Combines with value base measurement tools such as EVA® &amp; SVA.</li> <li>• Dutch companies report project progress using *CST data.</li> <li>• Study shows a shift in behaviour over time with more using value measurement tools and versions of DCF.</li> <li>• Risk associated with timing issues – qualitative and quantitative processes used.</li> <li>• More than half the companies incorporated a discount factor or account for risk from the initial investment.</li> <li>• High performing companies’ measure objectives using market related measures; Low performing companies use traditional accounting measures.</li> <li>• High performing companies use modified DCF techniques; low performing use accounting and DCF based techniques.</li> <li>• Both high and low performing companies process reporting based on TCS.</li> </ul> |
| <b>Dedi &amp; Orsag - 2007</b> | Capital budgeting practices in Croatian firms; comparison with USA, UK, Sweden and other European countries.           | 234         | Shareholding firms and other legal businesses (34 banks included) | Croatia      | DCF – IRR, NPV, ARR, Payback Period, Discounted Payback Period, Profitability index, Annuity method, Modified ARR   | <ul style="list-style-type: none"> <li>• Variety of techniques was used.</li> <li>• For Croatian firms, long term projects evaluation IRR was the technique most frequently used followed by Payback Period and NPV.</li> <li>• USA firms tend to use IRR and NPV.</li> </ul>   |

| Author & Year                      | Paper Summary   | Sample size | Company size & Type | Location | Metric  | Summary   |
|------------------------------------|---|-------------|---------------------|----------|---|---|
| <b>Bennouna et al. - 2010</b>      | Techniques in capital budgeting decision-making in Canada. Comparison with other studies in Australia, US and UK. | 500         | Large (Listed)      | Canada   | DCF – IRR, NPV, More sophisticated methods such as Real Options, Modified IRR, Profitability index, non-DCF – Payback Period, ARR ( WACC) | <ul style="list-style-type: none"> <li>• Trend towards the use of sophisticated techniques.</li> <li>• Use of WACC</li> <li>• Move away from using DCF techniques in larger firms. Those firms which still use DCF favoured NPV and IRR.</li> <li>• In comparison with recent studies done in Australia, US and UK, trend was found to be similar.</li> <li>• Other methods used by firms include Profitability index and modified IRR although use was not considered frequent.</li> <li>• Training needed in the surveyed companies on analysis, capital budgeting &amp; application of DCF in accordance with standard textbook approaches.</li> </ul> |
| <b>Kester &amp; Robbins - 2011</b> | Company's financial policies and practices  | 43          | Large (Listed)      | Ireland  | DCF - NPV, IRR, non-DCF – Payback Period, ARR (CAPM and WACC)   | <ul style="list-style-type: none"> <li>• The companies used a DCF technique in the face of investment decisions.</li> <li>• NPV was the metric most widely referred to, followed by Payback Period and IRR.</li> <li>• ARR was the least used metric.</li> <li>• Decisions were also found to be made within certain specified limits within some companies.</li> <li>• Studies indicated companies employ various risk analysis techniques to inform the decision-making.</li> <li>• Some companies used multiple adjusted risk-adjusted discount rates, others use single for all investment decision.</li> </ul>                                       |

Indications are that the drive in using performance measurement techniques has not waned. Instead managers seek to vary the techniques used to aid their decision-making (Arnold and Hatzopoulos, 2000; Mills, 1988). Arnold and Hatzopoulos, (2000) made a point in stating that investment decisions are only but a small part of the decision-making process. Making investment decisions and measuring the performance thereafter is influenced by other factors, some of which are not easily quantifiable. Payback period was found to be the most popular technique in use (Kester and Robbins, 2011; Pike 1983) whereas ARR appears less favoured as it is either least used or not use at all (Kester and Robbins, 2011; Akalu, 2000; Sangster, 1993). There also appears to be a relationship with company size and the practice of using performance measurement techniques. Larger companies tend to use performance measurement techniques and favour using IRR in combination with other DCF techniques (Dedi and Orsag, 2007; Pike, 1998 and 1996). The evidence points to the adoption of more modern approaches having accepted the short-comings of the traditional accounting methods. Hence research shows a gradual move towards more sophisticated techniques (Bennouna *et al.* 2010; Mills, 1988, Pike 1982). The literature shows that they were used in combination instead of replacing the older methods. However, the use of modern performance measures was clearly established with the objective of including wider factors than accounting figures and economic profit. Arnold and Hatzopoulos (2000) attributed such change to the gradual improvement in techniques as organisations appear to take a more strategic approach to align performance measurement with organisational objectives. The literature shows that the application of these measures and the degree of implementation varies within companies. It was clear that managers have become cognizant of the environment in which they operate and made steps to implement more means of financial analysis to make informed decisions.

The researchers of the papers reviewed in Table 2.2 did not investigate or discuss the issues associated with the use of performance measurement

techniques used by the companies they investigated. However, a few mentioned the implications of using a single discount rate. Kester and Robbins (2011) in their study of listed Irish companies found that only a handful used multiple risk adjusted discount rates in their evaluation. Kester and Tsui (1998) also found the use of single discount rate to be a consistent practice by companies in Singapore. Most companies used a single discount rate. According to Kester and Robbins (2011) this compounds the risk because of the distortions and assumptions inherent within. Consequently the results will bias high risk investments. To compensate, some companies have begun to use WACC in analysis (Kester and Robbins, 2011; Arnold and Hatzopoulos, 2000; Kester and Tusi, 1998) although some companies found it difficult to use CAPM to determine the cost of capital and to compute WACC (Arnold and Hatzopoulos, 2000). Bennouna *et al.*, (2010) made the pointed observation that, from the companies in Canada surveyed for his work, managers needed training on analysis, capital budgeting and the application of DCF in accordance with standard textbook approaches.

## **2.7 Summary**

Traditional measures of performance evaluation have been found to be deficient due to the consequence of the global environment and the growing importance of intangibles, which are difficult to capture in traditional models. It is also compounded by the limitations of traditional measures which focus primarily on profit rather than cash flow. The most salient points arising from the performance appraisal literature are:

- Decision makers are likely to take the action which would have the least impact on the income and financial statement, in the short-run, thereby failing to maximize the wealth of the shareholder in the long term.

Capital investment appraisal is prone to judgement, guesswork and manipulation.

- The prudence concept in accounting makes it easy for costs which are uncertain or intangible to be omitted from calculations.
- Although IFRS have made changes to harmonise reporting practices, further development is needed in order to measure value created.
- Managers think and speak the language of profit, the impact on investment decision and on the value that could be created.
- Whilst profit is not reflective of actual cash flow, managers do not interpret this as such and, other tools and techniques to evaluate investment decisions are needed.
- The modern manager understands what drives value within the business and has an insight as to its performance in the future and reporting accounting profit may not equate to maximizing shareholder wealth.
- Stock market valuations follow modern financial practices as share price is based on the present value of expected future cash flow, not profit.

Hence with the increasing expectations placed on managers; aspiration changed from profitability measures to wealth creation. This gave rise to the creation of performance measurement techniques based on the concept of cash flow and value creation, which is covered in the forthcoming chapter.

## ***Chapter 3: VALUE, VALUE DRIVERS and EVALUATION***

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- 3.1 Conceptualisation of Value Creation
  - 3.1.1 Value Creation and Organisational Objectives
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### **3.0 Introduction**

At the turn of the 19<sup>th</sup> century economists such as Alfred Marshall recognised the importance of knowledge and, management of that knowledge, in order to achieve organisation goals. The pursuit of any business entity is to create and maintain value (O’Cass and Ngo, 2011) not just for the shareholders but also for those that have a stake or invested interest in the business (Haksever *et al.*, 2004). Through the passage of time, the way in which companies undertake managing their resources has evolved. However the fundamental principles outlined in economic theory of the development of the corporation have not changed.

However, in identifying an organisation and its resources; before the drivers of value can be determined, a clear understanding of the purpose of the entity and the reason for its existence has to be established. In this chapter, the researcher will explore the existing theory on value, valued added and measurement of value. Hence, in order to illustrate the progression of a business entity from the initial stages of development to maximizing the use of its resources to create wealth, the early beginnings must be explored.

### **3.1 Conceptualisation of Value Creation**

In today’s society, companies operate within a globally competitive market driven economy. With the added pressures of managing companies within such a dynamic environment, managers are also faced with the greater challenge of allocating limited resources to maximize the value of the business and return a profit to shareholders.

But what is value? The debate on the complexities of value and its definition dates as far back as the Greek philosophers Plato and Aristotle. The debate continued with the classical economist Adam Smith onto Karl Marx, to the more recent scholars who adopt marginalist views such as that of Jevone, Menger and

Walras (Pitelis, 2009; Ramirez, 1999). Perry (1914) summarised the many philosophical discussions around the concept of value, its subjective nature and the springboard used for what is termed as valuable based on individual perception and the complexities of defining the term. Still the debate rages on with various notions of value defined to bring about an integrated approach on the theory of value. The definitions taken forward and explored by scholars includes; 'used value' which refers to the specific quantities of the product perceived by customers in relation to their needs (Bowman and Ambrosini, 2000); 'exchange value' which relates to price and is the monetary amount realised at a single point in time when the exchange of the goods takes place (Bowman and Ambrosini, 2000) and the resource based-view. Although types of value, such as used and exchange value have been defined and explored and theories of value such as marginal utility and cost of production have been used in its analysis there is still no separate definition of "value" (Pitelis, 2009). What came forward was a definition of the term "added value" which is based on this notion of value and defined by Davis and Kay (1990) as the amount by which the value of corporate output exceeds the value of all the inputs which the corporation uses and is inclusive of all resources (material, capital and labour). From these early times, it was recognised that these added value activities would, in turn, generate returns to those stakeholders in the business over and above the opportunity cost of other foregone investments (Brandenburger and Stuart-Jr, 1996).

Essentially, the literature shows the dynamics and inter-relationship between competition, profit, value, value creation, wealth creation and sustainability of the corporation. Michael Porter (2004) puts this all into perspective in his work on value chain and competitive advantage of a business. From his work, Porter concluded that even though management look at competitive advantage of a business in its entirety, it can only be understood by dissecting and examining each activity the company performs. Ultimately the way in which the company manages its limited resources and is able to deliver its activities at a lower cost

than its competition promotes value creation and enhances the sustainability of the business (Porter, 1991). That is, the way in which a company manages its operational effectiveness; how best it integrates the technology, skills, management techniques and rationalises the cost between them: if done efficiently and effectively it should, in theory, enhance the value creation within the company (Brandenburger and Stuart-Jr 1996).

How these resources are allocated is dependent on the process or system in place to integrate the resources within the organisation to realise its goals. The literature also asserts that in order to maximise the use of its resources, management must have an understanding of the key resources within the organisation. Coupled with this understanding, they also need to have knowledge of the capability of each resource. This has been a common philosophy within business practice for decades though traditionally, resources were identified as those elements which had a physical presence within the organisation; such as land, machinery and financial capital (Marr *et al.*, 2004). However, as research evolved in the area of business and management studies, the notion of the resources within an organisation moved beyond that of a physical entity. The thinking behind what constitutes the resources within an organisation saw the physical assets being complemented by human capital (Penrose, 1959). Human capital was being identified as part of a vast variety of intangible assets which are vital to the long term viability of the organisation (Itami and Roehl, 1987). Within the resource of human capital, Drucker (1959) conceded that organisations are knowledge based entities which are highly specialised. Such intangible assets which are classified as information-based assets includes technology, consumer trust, brand, corporate culture as well as the skills which lie within the management team (Itami and Roehl, 1987).

In an empirical study undertaken by Lin and Lin (2006) of 600 companies in Taiwan the conclusion was that corporate value, as within the context of this study, is created from three major sources within businesses; from employees, the service/manufacturing process and from customers or investors through

reinvestment. The contribution of employees within the workplace is one of the popular areas of business and management research. As part of its corporate strategy, an organisation may choose to emphasise value creation that target individuals, teams or divisions. Empowering employees; allowing them to take ownership, make their own decisions and, investing in their training and development (Beach, 1998) were found to be the main activities centred on motivational activities towards employees. These are only some of the ways, within the social aspect of value creation, that employees may add value within an organisation. The results of such measures are employees who are dedicated and demonstrate a high level of commitment to the organisation of which they are a part. Ultimately, this can be reflected in the overall performance of the business; for example by way of employee and customer satisfaction, standards with the corporation and the quality of its product or service. According to Pitelis (2009), organisational value can either be conjectured or realised. Again, this view is reflective of those of the early scholars as stated by Perry (1914) as to the subjectivity of value. Hence, from an organisational perspective, value is created by the organisation when new ways are found to do things, new technologies and new forms of raw materials employed (Lepak *et al.*, 2007). Therefore the value created within an organisation is intrinsically linked to the process it utilises in achieving its end result.

Hall (1989) perceived intangible resources (intellectual assets or intangible assets) to be critical value drivers (Hall, 1992). These intangible resources were later subdivided into intellectual property, which encompasses assets for which the organisation has property rights; and knowledge assets, for which there are no property rights. Although there is general acceptance in the research community of the contribution of intellectual capital to business, there is still a lack of consensus as to its precise definition (Marr *et al.*, 2004). Nonetheless, knowledge resource and intellectual capital are intrinsically linked to organisation process which therefore means that pioneering organisations involved in innovation are viewed as creators of value. Cho and Puick (2005)

believe that innovation and quality, impact positively on a corporation. This positive impact includes such things as growth, profitability and market value and causes the corporation to act strategically in allocating its limited resources.

In terms of the customer value or value for those with an invested interest in the organisation, the value added element appears to be as a result of managing that relationship between the customer and the organisation (Cho and Puick, 2005; Kothandaraman and Wilson; 2001). Bowman and Ambrosini (2000) states that a customer can only value what they perceive; meaning they can only attach that perception on the end product. From a customer's perspective, value is created when a novel benefit is derived from a product or service and they show its worth with a willingness to pay more as it is perceived to be better. They will also choose to receive a benefit previously available at a lower cost resulting in greater volume being purchased. The consumer's view on value therefore relates to value creation and involves a perception of some increase in usefulness or a decrease in actual monetary value.

The organisation also has a role to play in the customer's experience, in that it aids in maximizing the value that is created and experienced in consumption (Priem, 2007). Furthermore, this elusive value that has been discussed is also linked to the competitiveness of a corporation; that is its ability to maximize the returns from the allocation of its limited resources to either exploration or exploitation of its intangible competencies (Pitelis, 2009; Priem, 2007).

From an organisational perspective, in summarising the literature, the resources which translate into organisational value are depicted in Table 3.1 below.

**Table 3.1: Value Indicators within Businesses (in alphabetical order)**

| <b>Value Indicator</b>                                | <b>Source</b>   | <b>Type of Resource</b> |
|---|---|-------------------------|
| Brand Image   | Itami, 1987; Marr & Chatzkel, 2004; Marr, 2005; Gereffi <i>et al.</i> , 2001  | Intangible              |
| Buildings   | Elliott & Elliott, 2010; Horngren, 2009   | Tangible                |
| Capacity Utilisation                                  | Wernerfelt, 1984  | Intangible              |
| Cash  | Elliott & Elliott, 2010; Horngren, 2009   | Physical                |
| Commercial Network                                    | Hall, 1992  | Intangible              |
| Company Reputation                                    | Hall, 1992  | Intangible              |
| Contracts   | Hall, 1992  | Intangible              |
| Copyrights  | Hall, 1992  | Intangible              |
| Corporate Culture                                     | Itami, 1987; Bontis & Fitz-enz, 2002; Marr & Chatzkel, 2004   | Intangible              |
| Customer Loyalty                                      | Marr, 2005; Wernerfelt, 1984  | Intangible              |
| Customer Satisfaction                                 | Ittner & Larcker, 1998; Marr & Chatzkel, 2004   | Intangible              |
| Customer Trust  | Itami, 1987   | Intangible              |
| Distribution Arrangements                             | Marr, 2005  | Intangible              |
| Employee Commitment                                   | Marr, 2005  | Intangible              |
| Employee Competency                                   | Marr, 2005; Bontis & Fitz-enz, 2002; Wernerfelt, 1984   | Intangible              |
| Employee Loyalty                                      | Marr, 2005; Bontis & Fitz-enz, 2002;  | Intangible              |
| Employee Motivation                                   | Bontis & Fitz-enz, 2002; Shukla, 2009   | Intangible              |
| Employee Skills                                       | Marr, 2005; Bontis & Fitz-enz, 2002   | Intangible              |
| External Relationship Building (Government/Community) | Shukla, 2009  | Intangible              |
| Financial Capital                                     | Marr, 2005  | Tangible                |
| Goodwill  | Elliott & Elliott, 2010; Horngren, 2009   | Intangible              |
| Innovation  | Weissmeir <i>et al.</i> , 2011, Neganova & Neganova, 2011; Fernandes & Martins, 2011; Weerawardena & Mavondo, 2011; George <i>et al.</i> , 2012 | Intangible              |
| Land  | Marr, 2005  | Physical                |
| Licencing Agreements                                  | Marr, 2005  | Intangible              |
| Machinery   | Marr, 2005; Wernerfelt, 1984  | Physical                |
| Management Skills                                     | Bontis & Fitz-enz, 2002; Itami, 1987; Wernerfelt, 1984;   | Intangible              |

| <b>Value Indicator</b>  | <b>Source</b>  | <b>Type of Resource</b> |
|-------------------------|--|-------------------------|
| Manufacturing Process   | Wernerfelt, 1984   | Intangible              |
| Network Capabilities    | Marr & Chatzkel, 2004  | Intangible              |
| New Markets             | Prahalad & Hamel, 1990; Shukla, 2009   | Intangible              |
| New Products            | Prahalad & Hamel, 1990; Gereffi <i>et al.</i> , 2001; Shukla, 2009                               | Physical                |
| Partnering Arrangements | Marr, 2005   | Intangible              |
| Patents                 | Hall, 1992   | Intangible              |
| Personal Network        | Hall, 1992   | Intangible              |
| Product                 | Gereffi <i>et al.</i> , 2001   | Physical                |
| Raw Materials           | Elliott & Elliott, 2010; Horngren, 2009  | Physical                |
| Registered designs      | Hall, 1992   | Intangible              |
| Research & Development  | Shukla, 2009; Lin & Lin, 2006  | Intangible              |
| Software Application    | Marr & Chatzkel, 2004  | Intangible              |
| Stock                   | Elliott & Elliott, 2010; Horngren, 2009  | Physical                |
| Technology              | Shukla, 2009; Gereffi <i>et al.</i> , 2001; Porter & Millar, 1991; Itami, 1987; Wernerfelt, 1984 | Intangible              |
| Trade Secrets           | Hall, 1992   | Intangible              |
| Trademarks              | Hall, 1992   | Intangible              |
| Training                | Bontis & Fitz-enz, 2002  | Intangible              |

As businesses differ, the value resources will vary. Table 3.1 is therefore a representation of what was identified from the literature as general representation of value indicators within any company. Notably, the literature did not specify, rank or rate the order or level of importance of value drivers. They were discussed or stated as activities or actions undertaken by a company in an effort to increase intake. Presumably the results from a ranking exercise, whilst exceedingly useful, would be situation specific and therefore would require careful interpretation.

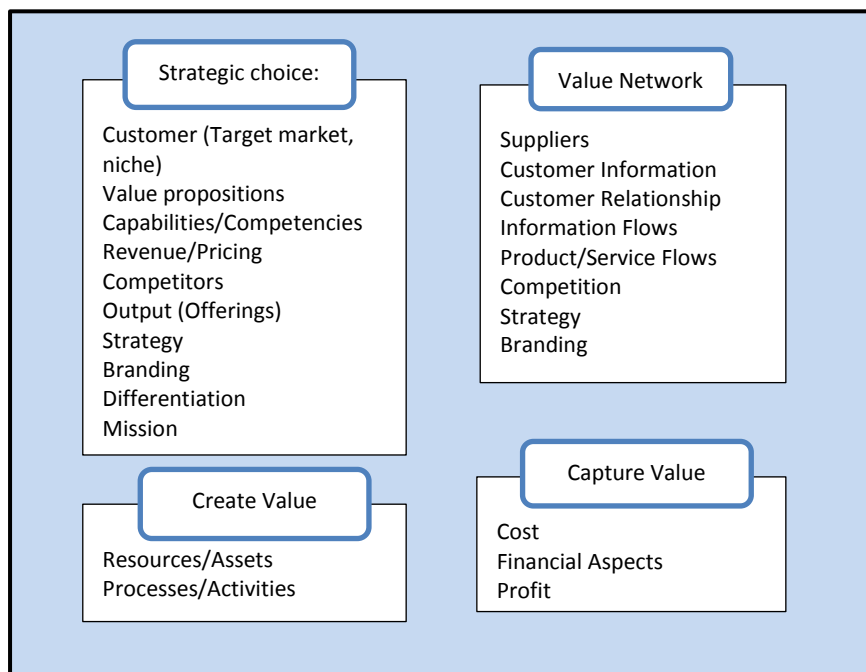
The listing of the value indicators also gives an illusion that each resource is independent of each other. This is not the case as in some instances there is likely to be a relationship between a tangible and an intangible resource which

cannot be easily distinguished (Fernandes and Martins, 2011). Regardless, it is acknowledged that these resources do impact on the capability within the company. To illustrate, Hall (1992) developed a framework to show how these resources link to the capability of the business. For a company to realise its goals, there is an unstated expectation that in executing its function, the business entity would have created a product for its intended market and in the process makes a reasonable return for its efforts. Current practices speak of adding of value to realise the potential of the business; and value is added or depleted through the resources employed within the business.

### 3.1.1 Value Creation and Organisation Objectives

Good business practice dictates that before management of a business can begin to assess the returns on an investment, however measured, it must first set out a course of action to realise its objectives.

**Figure 3.1: Components of a Business Model**



*Adapted from Shafer et al. (2005: 4); The power of business models.*

This forms an early part of the business concept, formation and evolution process as is illustrated in a typical business model which is used by scholars to show the operations logic of the business (Casadesus-Masanell and Ricart, 2009). Adapted from Shafer *et al.* (2005), Figure 3.1 above shows how the value concept is ingrained in developing a business model.

This is in line with the thinking that, whatever the core function of a profit making business entity, the viability of the business is dependent on the value created and subsequently captured and the resulting profits generated from such activities (Shafer *et al.*, 2005). This is also consistent with the thinking of Porter (1996, 1991) on the importance of strategy and how it shapes the process of determining the activities needed to create value. Therefore an organisation will engage in activities to acquire resources to achieve this end. An understanding of value, what it is and how it is created has continued to attract interest from many scholars over the last decade (Lepak *et al.*, 2007). Current studies based on value within business span a wide range mainly because of the multidisciplinary nature of the field; from the strategic value of corporate and social responsibility and resulting performance (McWilliams and Siegel, 2010; Mackey *et al.*, 2007); to the social aspect of values which identifies with and underpin the characteristics and core values within an organisation and could be influenced by the leadership within (Wiener, 1988); the economic aspect such as value added to businesses as a consequence of those exploring business opportunities taking advantage of Information and Communication Technologies (ICT) to the relationship between the supplier and buyer (Ulaga, 2003) and examination of the value element within organisations as a result of its daily functions. Haksever *et al.* (2004) identified three dimensions in which value maybe created (or destroyed) in a business entity; namely financial, non-financial and time. Across these dimensions, stakeholders will contribute and enhance the value within the organisation accordingly (Haksever *et al.*, 2004). Such wide dimensions are indicative that the value creation within an

organisation extends beyond its actual outlay to the suppliers, employees and other vested interests (Brandenburger and Stuart-Jr, 1996).

### **3.2 Value Evaluation within Companies**

There has been a surge in research in the area of value and value creation within businesses and consequently this has been the subject of much theoretical and methodological scrutiny over the last three decades (Lepak *et al.*, 2007; Wiener, 1988). Lepak *et al.* (2007) also found there was much difficulty amongst scholars in agreeing what value creation is, the process by which value is created and what mechanisms there are to capture the value created. Clearly, this indicates that there continues to be varied interpretations of value and more so of value creation and value capture. Stakeholders will have different perspectives of what is valuable; based on difference in inherent interest, knowledge, experience, goals and within the context of what is viewed as the appropriateness, or legitimacy of the value being considered (Lepak *et al.*, 2007; Perry, 1914). Indeed, what may add value to one stakeholder may be at the expense of value to another, as an example, increased salaries for staff may reduce returns in the short run for shareholders. Within the context of this study, and using the views expressed by Lepak *et al.* (2007), value is interpreted as a specific quality that is added to a task or process, adding to the features of, or to create, a new product or service. The concept of value creation refers to the relative amounts of value that is subjectively realised by a target user of the value created which can either be an individual or by the organisation (Lepak *et al.*, 2007). Bowman and Ambrosini (2000) refers to value capture as profit; that is, it is the difference between the exchange value (or revenue) that is received by a business from its customers for the product it provides and the cost the business incurs from its suppliers for the resources to produce that product (Makadok and Coff, 2002). These values possess a monetary amount which can

be realised at a point in time and can be exchanged by the creator and the user of the value.

Traditional accounting measures were used initially to evaluate corporation performance and make investment decisions. The applicability and diversity of these measures within what is now considered to be a dynamic and volatile market place is continuously being challenged. How do managers make decisions when faced with alternative choices competing for the same limited resources? This on-going debate has been the topic of much academic research for decades. However, because of controversies in the agreement of what constitutes profit amongst professionals and academics, the theory around economic profit and residual income has evolved; moving away from the rules, practices and principles of accounting theory to the application of economic theory. As more managers recognise the problems of using the traditional measures of value creation in an increasingly competitive global market, the need for a more robust measure becomes more compelling.

As noted earlier, value capture is an element which is decided from the early stages of developing the business model. Having identified the source of the creation of value, there is now the added challenge of capturing the primary source of the resulting value created (Lepak *et al.*, 2007). Notably, it may appear that value creation and value capture are two autonomous activities; however this is not so as the two are interrelated activities. Pitelis (2009) also noted that value created only manifests itself as value captured. This can be seen from the very beginning in the business model where the strategic decisions made for the business will ultimately impact the value created and the process of capturing that value. Lepak *et al.* (2007) recognise that the value capture process varies considerably and is dependent on the source of that value; that source would ultimately determine the process or means of capturing that value. Nonetheless, despite persistent difficulties, the capturing and measuring of the value element within companies has been feasible (Wiener, 1988). With advances in technology, economies have gradually merged towards a

knowledge-based economy; bringing with it the challenges of capturing value in an information-led economy. Within organisations this has resulted in the development and implementation of knowledge-based resources to capture, store and disseminate this resource. Also, within the information-led economy there is the added challenge of managing and capturing intellectual capital which has now been identified as an important value element of the information age (Teece, 1998).

Tangible assets are normally accounted for and captured by the accounting systems in a well-adapted industrial economy. Whereas, intangible assets are likely not to be given a monetary value and so not captured by the accounting means of the industrial age. Another pointed observation made is that; although contribution made by each of the major sources of value creation is noted in turn, in actual reality the process of value creation is a simultaneous act undertaken by all with an invested interest in the business. Ramirez (1999) seeks to present this notion with his work on value co-production; moving away from the views of the industrial era when value creation was seen as a sequential and unidirectional process. Now, the co-production view of value creation takes on a multi-directional form, is interactive and where each stakeholder or actor in the process undertakes several different roles simultaneously in the process (Ramirez, 1999). Whilst there have been many varied views on value; the creation and capture of value, it is noted that organisations are now seeking to measure and quantify that value.

### **3.2.1 Finance Theory and Economic Profit**

To undertake an in-depth analysis of any business, an understanding of its core function is needed along with information pertaining to the market in which it operates and the way in which it is financed. Since the investigation by Modigliani and Miller (1958), other researchers have further investigated business finance and the impact of investment decisions on the business. This

led to the development of finance theory, which integrates the finance decisions made within the business to its strategic framework with the time value of money. For any period under assessment the economic profit is the amount earned by a business after deducting the operating expenses and a charge for the opportunity cost of the capital employed.

Modern day finance and economics have changed the dynamics of businesses over the last decade. Managers are driven to create value for the corporations they manage. The question remains is how to measure this value? In the past, an analyst examining an enterprising business may look at the cash flow as a guide to determine its success. However, with the change in dynamics in the way in which businesses operate in an increasingly technology driven market, this is by no means adequate. It has been established that accounting profit by no means represents the value created as a result of these efforts, hence justification for the need to convert accounting profit to economic profit (Shil, 2009).

### **3.2.2 Economic Profit**

The notion of excess profit has been a topical issue since the early eighteenth century (Magni, 2009). This is highly significant because of its theoretical and applicative implications for project and corporation valuation, capital budgeting decisions, performance measurement, management compensation and taxing policies. From as early as the 1890s, Alfred Marshall spoke of the notion of economic profit which he described as the real profit a corporation makes when it has covered, apart from the various operating cost, the cost of the capital invested (Kyriazis and Anastassis, 2007). Since then, and leading into the nineteenth century, there was much disagreement and controversy in arriving at a general consensus on what constitutes income and profit. The need for a unified definition and measurement of income grew extensively during the development of economic theory between economists and accountants.

Sir John Hicks; having inadvertently entered the realm of a theorist during his tenure at the London School of Economics in 1929, saw the need to provide a definition of income. His approach to the definition of income came from an individualistic perspective as *“the maximum amount a man can consume in a period and still be as ‘well-off’ at the end of the period as he was at the beginning”* (Solomons, 1961; p. 375). This definition, although accepted at the time as fit for purpose, brings to the discussion a high level of subjectivity which was open to interpretation by different users – a problem Hicks had also acknowledged. A modification to the Hicks definition of income was clearly needed for its applicability within a business context. Within the practices and principles of business, Solomons (1961) defined the income of a business as the amount by which its net worth has increased over a period, with considerations given for allowances for any new capital contributed by the owners or for any distributions made by the business to its owners. This definition of business income was applicable to any incorporated or legal entity.

With the standardisation and formalisation of conventions by the 1960s, accountants became more interested in the business unit and accurate measures of periodic income by way of the application of these now widely accepted practices (Solomons, 1961). Providing accurate records are kept, the real income of a corporation cannot be determined until the corporation has expired. Hence the problem for accountants lies in determining income in the interim periods while dealing with the problems of valuation, depreciation, accruals and other fractions which impinge on the determination of income. On the other hand, it is argued that economists take a logical and philosophical approach in arriving at an understanding and definition of income. In contrast to an accountant, having no commitment to the management of the business and whose problems are less specific, a broader view is taken by economists (Burns, 1990), which is more theoretical, but less practical. With an understanding from the perspective that individuals will strive to maximize satisfaction, the corporation will also strive to maximize its economic position

by striving to maximize income. The economist also recognizes that the actions taken to maximize income are reported back to management as a product of accounting.

In 1961 Franco Modigliani and Merton Miller questioned the measures of corporate performance the market capitalized in determining a corporation's market value. Four alternatives, namely; earnings, cash flow, dividends and investment opportunities were taken into consideration in the determination of corporate value. Under the conditions they presented, all four were identical (Stewart III, 1999). However, like most economic models, the relaxation of assumptions to reflect reality has implications for the predictive nature of such models.

### **3.3 Evaluation of Value**

As outlined in *Chapter 2*, several models have been proposed focusing on measuring the value added element of the business. These models were all based on the notion of Economic profit as proposed by Modigliani and Miller in 1958. However, the EVA<sup>®</sup> model proposed by Stern Stewart & Co. gained much support and was viewed as the “winning metric” in some circles (Myers, 1996), and has been widely implemented within many large multi-national corporations (Young and O’Byrne, 2001; Stewart III, 1999).

#### **3.3.1 Economic Value Added<sup>®</sup>**

EVA<sup>®</sup> is one of the variants of residual income (RI) which was put forward by Alfred Marshall in the 1890s. Residual Income is the income remaining after deducting a charge for the cost of debt and equity capital. The principle difference in the two lies in the handling of accounting distortions (Chen and Dodd, 1997). The initial prominence of RI as a measure of performance arose in

the 1960s with its first appearance in the management accounting literature. Its dominance in application was not then evident in companies. Unlike its predecessor, the use of the EVA<sup>®</sup> performance metric gained widespread application within many organisations (Young and O'Byrne, 2001; Prober, 2000; Stewart III, 1999; Myers, 1996), a feat Shil (2009) attributed to the marketing of EVA<sup>®</sup> by the initial creators Stern Stewart & Co. While there is extensive literature on EVA<sup>®</sup>, most are professional articles which seek to promote or discuss its concepts in relation to consultancy work and therefore tend to be non-critical and fairly self-laudatory. Authors fitting within this category are Dodd and Johns (1999), Damodaran (1999), Bowen and Wallace (1999), Anctil *et al.*, (1998), Mouritsen (1998), and Milunovich and Tsuei (1996).

By the late 1960s, one of the pioneers of EVA<sup>®</sup>, G. Bennett Stewart III developed a clearer understanding of the principal implication of the arguments put forward by Modigliani and Miller that the cost of capital is central to the value of the corporation. From the work done by Modigliani and Miller (1958), Stewart III (1999) stated his comprehension of the material; that a corporation's value is based on timing and the risk of future cash receipts and disbursements. On that account, when looking at the performance of the corporation, in assessing the profit generated, he concluded that a robust approach must be taken and the true profit must be measured as the net of the opportunity cost of capital (Grant, 2003). That is, the EVA<sup>®</sup> proprietors felt that, in ascertaining the profit made on any investment, the cost of taking that decision over another must be considered. This is in line with the theory on opportunity cost and risk in modern day finance.

During the 1980s accounting professionals, practitioners and academics began to voice concerns that traditional accounting methods often generate unsatisfactory measures of a corporation's performance. During this period, American corporations were faced with tough competition from the Japanese. They faced challenges from the internalisation of financial markets and had

experienced huge expansion. This was a consequence that traditional accounting measures are influenced by the accountants' subjective opinion in terms of accounting policy choice (e.g. FIFO vs. LIFO for inventory valuation, straight-line verses reducing balance depreciation methodology and so forth) and this appears to be especially important in the analysis of profitability. As a consequence, managers can easily manipulate performance measures (Gomez-Mejia, 1992; Jensen and Murphy, 1990; Dyl, 1989; Verrecchia, 1986; Hunt, 1985).

While the cash flow generated from investments gives an indication of the contribution made by way of the returns on the capital invested, it provides nothing about the performance of the investment. Likewise, the other accounting measures of performance which are based on cash flow function in a similar manner. Their benefits lie in analysing the returns on individual projects and in assessing the value of the corporation over its lifetime. Business executives now realise this, and the demands faced in responding to these changing demands are increasingly challenging. There is no doubt that in today's business environment, which is competitive as well as complex, there is a call for creative leadership and the ability to respond favourably and decisively to new developments to be able to operate within a truly global market (Abdeen and Haight, 2002). With the imposition of operating within a globally competitive market, the higher exposure to the challenges and opportunities of international competition increased the need for better performance measures. This was the apparent catalyst which led to the development of EVA<sup>®</sup> by Stern Stewart & Co. It is claimed that unlike cash flow, EVA<sup>®</sup> is both a measure of value and performance. It is suggested that it provides the basis on which performance can be evaluated by combining forward projections with capital budgeting procedures (Young and O'Byrne, 2001). However, it should be noted that many of these issues and pressures, and associated theory relates to large, multinational enterprises.

The EVA® performance metric is hinged upon the ability of the corporation to earn at least the cost of capital for it to be viewed as successfully utilising its available resources. Higher returns means that the corporation adequately covers the cost of financing its operations, hence benefiting shareholder value (Prober, 2000). Therefore, a corporation will not make a profit until it has cleared the cost of servicing equity and debt finance. The EVA® framework is built on the perception that shareholders must earn a return that compensates them for the risk taken. That is, equity capital invested in the corporation should earn at least the same return as alternative investments on equity markets with similar risk portfolios (Chari, 2009). Failure to achieve this minimum level of return indicates no real profit was made, and from the viewpoint of the shareholders, the corporation would have operated at a loss. Until this is achieved, the corporation is destroying wealth and therefore no value is added.

By design, Stern Stewart & Co.'s motive was to create a performance measure that would be consistent with both financial and economic theory. They argue that value is determined by discounting future free cash flows to its present value. Free cash flow is defined as cash available for reinvestment or for distribution to the providers of the capital employed, so all mandatory payments, such as taxation, are already deducted. They argued that net income is an inadequate proxy for free cash flow, and thereby suggest adjustments to net income and to the capital determined under financial accounting rules. That is, they adjust income to a cash flow basis after considering the replacement of capital used up during the period. Capital is adjusted to an amount that represents the total cash invested in the business (Goldberg, 1999). Some of these adjustments are discussed in *Section 3.3.3* and illustrated in *Section 3.3.4*.

Stewart (1994) believes that the traditional measures such as earnings per share (EPS) and return on equity (ROE) gives a misleading indication of corporate performance. According to its proposers, when compared with other performance measures, EVA® was found to be the measure which is closest in

measuring the true surplus of a business. They claimed it was found to be the measure which links most directly to the creation of shareholder wealth, and provides a clearer picture, as, they claim, progressively improving EVA<sup>®</sup> figures drives share prices. Stewart (1994) goes further to declare that, as a performance measure, it is the “single best measure” which best measures wealth creation. Such claims should be considered in light of the issues relating to EVA<sup>®</sup>, such as the problems experienced in implementation. Consideration should also be given to the fact that Stern Stewart were also profiteering from the EVA<sup>®</sup> consultancy company which was dependent on widespread acceptance of EVA<sup>®</sup> for success. These issues are discussed in *Section 3.5*. The proprietors of EVA<sup>®</sup> attributed its popularity to; firstly, the dominance of modern economic finance over traditional measures of performance, and secondly to it not being dependent on the information gathered by the accounting process. The supporting argument for this claim was drawn from the view that accounting information is historic and the data may be distorted and may have little relevance to the present reality of the corporation (Shil, 2009). The proposers of EVA<sup>®</sup> also claim it addresses this issue by employing various adjustments to make it economically viable.

Under traditional accounting performance measures, companies may appear to be profitable when they really are not. If operating profit can grow without tying up any more capital, then EVA<sup>®</sup> will increase. EVA<sup>®</sup> will also increase if new capital can be reinvested in projects that will earn more than the full cost of capital, and if capital can be diverted or liquidated from business activities that do not provide adequate returns (Stewart III, 1999). It can also increase if the cost of capital can be reduced, for example through refinancing. Numerically, EVA<sup>®</sup> is expressed as a monetary amount which is reflective of the financial status of the corporation’s wealth creation ability. A positive EVA<sup>®</sup> is indicative that the corporation has earned more after tax operating income than the cost of the assets used to generate that income. That is, the corporation has created wealth. A negative EVA<sup>®</sup> is reflective of wealth destruction, which implies that

the corporation has destroyed wealth by consuming capital. Hence a corporation's goal is to have a positive EVA<sup>®</sup> and strive to increase it over time (Brewer *et al.*, 1999). The scenario where EVA<sup>®</sup> = 0, means that the corporation has fulfilled the basic expectations of the shareholder by making a return which compensates the risk taken (Chari, 2009). Hence, for investors to earn an adequate rate of return, the return must be large enough to compensate for the risk (Stern, 2001).

The proprietors of EVA<sup>®</sup> boast that its dynamics extend beyond a measure of value and performance based on returns. Within the EVA<sup>®</sup> framework, they claim that it is not only a metric for evaluating performance, but it also has within it a philosophical concept which integrates the management of, and relations within organisations (Stern *et al.*, 2001; Stewart III, 1999). Further potentially questionable assertions include that, it also works well as a value based management system for use in the implementation of corporate strategy. From this end, EVA<sup>®</sup> is claimed to be an instrument of change which influences management behaviour and changes the cultural dynamics of the organisation. This led the proprietors of EVA<sup>®</sup> to purport that it is also a management tool which not only has use in maximizing shareholder wealth, but is applicable as well as a compensation system for rewarding staff. Stewart further postulated that, by using EVA<sup>®</sup> to determine the level of compensation in advance, and without making any changes in light of subsequent performance, EVA<sup>®</sup> gives managers the initiative to execute aggressive plans in the interest of the business (Stewart III, 1999).

The deduction is made by the proprietors that, with this initiative, business executives will develop a new mind-set which causes them to think and act more like owners of the business. Hence, EVA<sup>®</sup> is supposed to provide a framework which offers a consistent approach to setting goals and measuring performance, communicating with investors, evaluating strategies, allocating capital, viewing acquisitions and determining incentive bonuses that make managers think and act like owners. This analogy is used to corroborate its use

as a management tool and compensation system (Ehrbar, 1998; Stewart III, 1999; Stern *et al.*, 2001). These claims are critically reviewed in *Section 3.5*.

Since the launch of EVA® in 1989 it is reported that over 300 companies in the United States have adopted the model as a means of retrospectively aligning performance with shareholders wealth (Sullivan and Needy, 2000; Ehrbar, 1998; Stewart III, 1999; Stern *et al.*, 2001). From the literature, the theory on EVA® and its implementation seems to match closely the theory and characteristics of SMEs, yet it was apparent that there was a lack of knowledge, and research, in the area of the applicability of EVA® within SMEs. However, before a discussion of EVA® within the context of SMEs is proposed, further discussion of EVA® is necessary.

### **3.3.2 The EVA® Performance Metric**

Modern financial theory teaches that the primary role for managers within organisations in the decision-making process is to maximise value, which in theory, is the same as creating wealth for shareholders. This is normally gainfully achieved by the effective allocation of resources available to the organisation. To achieve this objective, organisation value has been traditionally estimated by financial performance measures such as profits, earnings and cash flows from operations (Burksaitiene, 2009, Jones and Lowry, 2006).

Empirical analysis of the literature has shown that earnings usually dominate the methods of explaining returns on shares; however more recent literature indicates that this should not be relied on (Burksaitiene, 2009). Other estimates, such as those using cash flows, are found to be limiting because they do not take into consideration the cost of capital. EVA® theory, being loosely based on microeconomics theory, uses the cost of capital as a proxy for the opportunity

cost of an investment in determining the performance of a corporation for a period.

Stewart III (1999, pp. 137) defined EVA<sup>®</sup> as the net operating profit after tax less a charge for the use of capital. Expressed mathematically and working back from first principles;

$$EVA = (r - c^*) \times capital$$

by multiplying throughout by the capital:

$$EVA = r \times capital - c^* \times capital$$

where:

$$NOPAT = r \times capital$$

therefore:

$$EVA = NOPAT - c^* \times capital$$

$$EVA = operating profits - capital charge$$

where:

*NOPAT* is the “net operating profit after tax”.

*C* is the cost of capital.

*r* is the rate of return.

$$EVA = NOPAT - (WACC \times CAPITAL INVESTED)$$

where:

*WACC* is the weighted average cost of capital

However *NOPAT* is taken before the deduction of interest on debt, *WACC* is the weighted cost of capital and the *CAPITAL INVESTED* is the sum of the corporation’s debt and equity. For EVA<sup>®</sup> calculations, adjustments for accounting distortions must be done for *NOPAT*. A charge for the capital

employed is at a rate of the weighted average cost of capital (WACC) and is subtracted from NOPAT which gives the EVA® for the period.

### 3.3.3 Dissecting the Metric

Dissecting the EVA® performance metric by breaking it down into its three component parts provides the background theory for a complete examination of the metric against modern financial theory.

$$\begin{aligned} EVA &= NOPAT - (\text{Cost of Capital} \times \text{Capital Employed}) \\ &= NOPAT - WACC \times \text{Capital Employed} \end{aligned}$$

#### ***Net Operating Profit after Tax - NOPAT***

NOPAT is the earnings of a corporation from operating activities that is revenue less the operating cost of the corporation. It is the operating efficiency of the corporation from a viewpoint of what the cash earnings would be if the capitalization was unleveraged and is formulated as:

$$NOPAT = \text{Operating Income} \times (1 - \text{Tax Rate})$$

Essentially this is the profit or the income earned by the corporation after all operating deductions. This is derived from the income statement of a corporation over a period and reports the income produced from the revenues generated by the corporation less operating expenses (Horngren *et al.*, 2009).

Income statements are prepared following standard accounting principles irrespective of the type of business; that is, whether sole proprietor or a limited corporation, although SMEs are permitted in most countries to file abridged versions of accounts. However, different forms of revenues will be generated by different forms of companies depending on the functionality of the business.

Examples of revenue streams are the cost of goods sold for a manufacturing corporation and interest received from an investment fund (Atrill and McLaney, 2005).

Essentially, finding NOPAT from the income statement is three fold;

- i. Determine the earnings for the period – revenue less the cost of sales.
- ii. Less the total expenses – this is the outflow of economic benefits from the corporation as a result of its business activities.
- iii. Less operating taxes

Although this may seem pretty straight forward, there are complex issues which would have to be taken into consideration when calculating profit. For example, determining total sales and cost of sales over a period from complex revenue streams, determining specific depreciation charges and adjustments for the handling of inventory to establish the total expenses for the period (Atrill and McLaney, 2005). These complexities increase when considering NOPAT for the purpose of establishing EVA®.

With EVA®, the NOPAT is calculated by making adjustments to convert from accounting figures to reflect economic profit. Although a three step process is still used in establishing NOPAT for EVA®, the process is slightly modified as follows:

- i. Calculate EBIT
- ii. Two stages of adjustments
  - a. To eliminate accounting distortions
  - b. To reclassify some expenses as investments
- iii. Deduct operating taxes

These adjustments are necessary to change the book value of profit to reflect the real value created as economic profit (Young and O’Byrne, 2001; Stewart III,

1999). The perspective is that this process gives a proxy for operating cash based on the profit number, which gives investors and others interested in the corporation the 'real' performance of the corporation over the period. Although the Stern Stewart & Co. literature speaks of the necessity of 164 adjustments for establishing NOPAT for the purposes of EVA<sup>®</sup>, research remains silent on how to identify the variables to be adjusted and how these adjustments are to be made. This could be because the pioneers of EVA<sup>®</sup> are protecting their intellectual capital as they are profiteering from consultancy practice. Supporters of EVA<sup>®</sup> believe that, of the over 164 EVA<sup>®</sup> adjustments, only 15 are considered critical in its calculation (Worthington and West, 2001). However, this amount has been reduced by many consultants to around five or six adjustments (Bhattacharyya and Phani, 2004). Critical to note is that these adjustments referred to by EVA<sup>®</sup> supporters are normally only the few indicated in Stern Stewart & Co. literature. There is also no publicly available, generally accepted ways, of making these adjustments, without subscription to Stern Stewart's consultancy.

Some of the variables and adjustments suggested by Stern Stewart & Co. and the claimed benefits and arguments are outlined below:

- *Research and Development Costs*

Stern Stewart begins their arguments by stating that accounting professionals struggle to represent an investment which, at the time of the investment represents an intangible item. Normally, expenses such as research, and some development costs, are treated as operating costs incurred at the time of spend and not as investment with future expected returns. This is because of the difficulty in establishing what the future benefits of the investment will be, and the accountant's predisposition to prudence and reliability of measurement before an asset can be recognised. Therefore these investments need to be recognised and

advocated for the capitalization of R&D expenses (Young and O'Byrne, 2001).

- Depreciation and amortisation

Depreciation and amortisation are allocations of a past cost (the cost of the non-current tangible and intangible asset respectively) it is an accounting adjustment to reflect the accruals principle of matching up costs and benefits of using the asset. As it is not a cash flow it should be added back to NOPAT to reflect cash flow (Young and O'Byrne, 2001).

- Deferred Tax

Deferred taxes are charges arising from the difference in timing between taxable income and book income recognised under GAAP and permanent differences due to tax regulations for non-allowable expenses. Within most companies, depreciation is the greatest source of timing differences resulting in deferred tax. The straight line method of depreciation is used in most instances for book income but accelerated methods are used for tax purposes. Either way, the total depreciation over the life of the asset is the same but there will be a difference in the timing when these depreciation expenses are recognised, hence an impact on yearly profit as aforementioned. Deferred tax can also occur because of permanent differences in the way some expenses are treated for tax and accounting purposes. For example, some expense items are not allowable for tax purposes, such as corporate entertainment, and some expenses are not taxed under corporation tax, but are taxed elsewhere, such as under capital gains tax. These differences cause deferred tax to arise. Some supporters of EVA<sup>®</sup> argue for these expenses to be ignored because they are not cash costs (Young and O'Byrne, 2001).

- Goodwill and goodwill impairment

Goodwill arises when, during the acquisition of one company by another, the acquiring company pays a price which exceeds what is considered to be the fair market value of all the assets identified less its liabilities. The accounting treatment of goodwill differs per country. Under the UK GAAP goodwill, like other intangible assets, it used to be amortised over its useful life, but is now capitalised as an asset with an infinite life but is subject to writing down on an impairment basis (ACCA, 2010). US GAAP historically used straight line to capitalise goodwill and straight-line amortisation over a period not exceeding 40 years (Young and O'Byrne, 2001). However, companies are now required to capitalise goodwill, subject to impairment. There are debates about how goodwill, and the associated impairment should be treated because it isn't a cash cost, but similar comparisons can be made and conclusions drawn with the depreciation of tangible assets. For EVA<sup>®</sup> adjustment; goodwill is a non-cash expenditure as it will distort the capital employed. Therefore, any amounts from the amortised goodwill or impairment for the year is added back to that years' NOPAT while the accumulated amortised goodwill for the end of the financial year is added back to the capital employed.

- Leases

A lease is a kind of secure borrowing and operating lease is the term used for business leases under accounting practices. Under accounting practices, such payments are treated as rental expenses. Also, this expense is only reported in the income statement and does not appear on the balance sheet although it is viewed as an asset. Stern Stewart & Co. believes that the accounting treatment of operating expenses underestimates the capital employed because it is not really a debt. NOPAT is also impacted by this treatment as lease payment also includes

interest costs which are expenses and should not be included in the operating profit. The adjustment for operating leases is made by adding it back to invested capital whereas the interest payments are subtracted from NOPAT (Young and O'Byrne, 2001). Leases are currently under review by the IASB but definitive recommendations are not due until 2015.

### ***The Weighted Average Cost of Capital (WACC)***

The WACC is the rate of return that investors in a corporation expect on the risk of making that investment. The rate of return is reflective of the opportunity cost of not making that investment elsewhere. As investment within a corporation can be obtained through various sources, in determining the true cost of capital, all investment options need to be taken into account, hence the weighted cost of capital is used and is expressed as:

$$WACC = \frac{Ei_E + D(1 - T)i_D}{E + D}$$

*where:*

$E$  = is the amount of equity capital invested

$i_E$  = is the interest rate of the equity

$D$  = is the amount of debt capital invested

$i_D$  = is the interest rate of the debt

$T$  = the tax rate

The WACC represents the minimum expected return from the investment that the corporation must make in order to satisfy investors. Too high a cost of capital will constrain investment, restrict corporation growth and shareholders would miss out on value enhancing opportunities (Arnold, 2007).

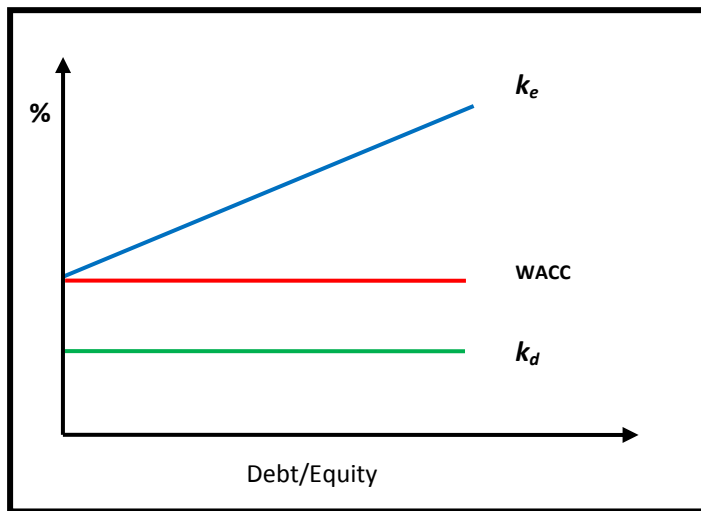
Modern theory on the cost of capital was first put forward by Modigliani and Miller in the latter part of the 1950s. They put forward a series of arguments on

financial arrangements within corporations and likely impact on performance of the corporation. This caused further debate and controversies on the issue of investment under uncertainty. The arguments put forward were underpinned by a series of assumptions, some of which were considered not to be reflective of the real world. The assumptions put forward were (Brigham and Huston, 2009, p. 435; Modigliani and Miller, 1958):

- For simplicity there was no taxation, transaction cost and no bankruptcy costs;
- Investors have access to the same information and so have common knowledge of future returns;
- The same level of risk applies to all corporations in an industry of the same class regardless of its capital structure;
- The same rate of interest applies for borrowing to both individuals and the corporation;
- Earnings are all paid as dividends; that is, they are constant and this implies no growth; and
- The average cost of capital to the corporation remains constant.

From this work, Modigliani and Miller proved the cost of capital is independent of the structure of the corporation and that increase leveraging increases the risk of bankruptcy. Thus the structure of the corporation is independent of its market value. This is illustrated in Figure 3.2 below.

**Figure 3.2: Modigliani & Miller Effect of Leveraging on the Cost of Capital without Tax**



This was established considering two corporations in the same class with one using debt financing and the other using equity financing. By relaxing the assumptions made by considering the effect of taxes, Modigliani and Miller showed that there is an optimal gearing position at which the WACC is minimised and hence the value of the corporation is maximised (Arnold, 200; Brigham and Huston, 2009). This is illustrated in Figures 3.3 and 3.4 below. The figures show that debt capital is cheaper than equity capital. This is because the providers of debt financing take less of a risk than stakeholders who invest at high risk due to the opportunity loss of making a better investment elsewhere. Another reason why debt financing is low risk is because debt interest is tax deductible. Hence, as debt is increased in the capital structure, the WACC will reduce. However, as the level of debt to equity increases, that is the level of gearing, the increased financial risk associated with a heavy debt burden would be perceived by shareholders, increasing expectation on the expected return on equity. This counteracts the cheaper debt and drives up the WACC. The optimal level is therefore before this perceived increase in risk becomes apparent (Figure 3.4).

Figure 3.3: The Effect of Taxes on the Cost of Capital

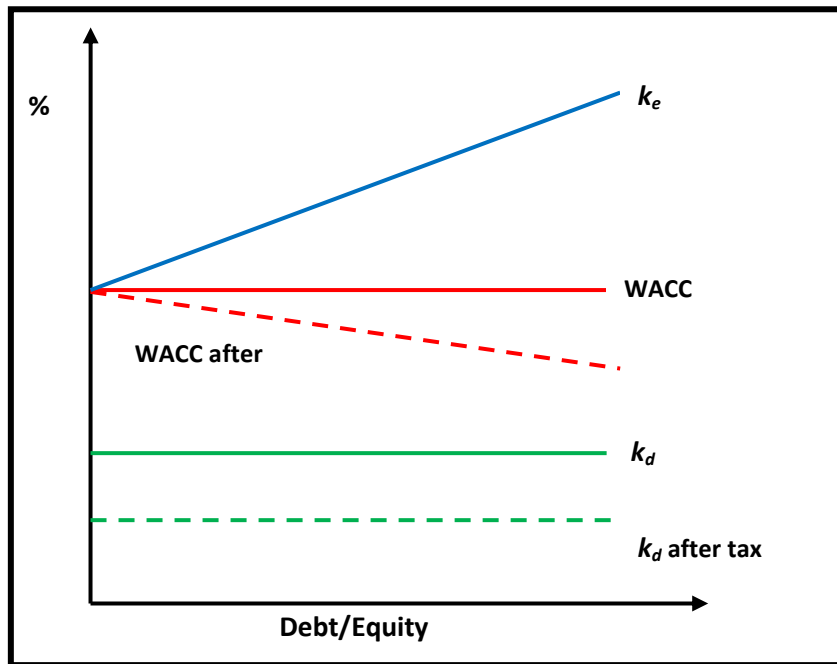
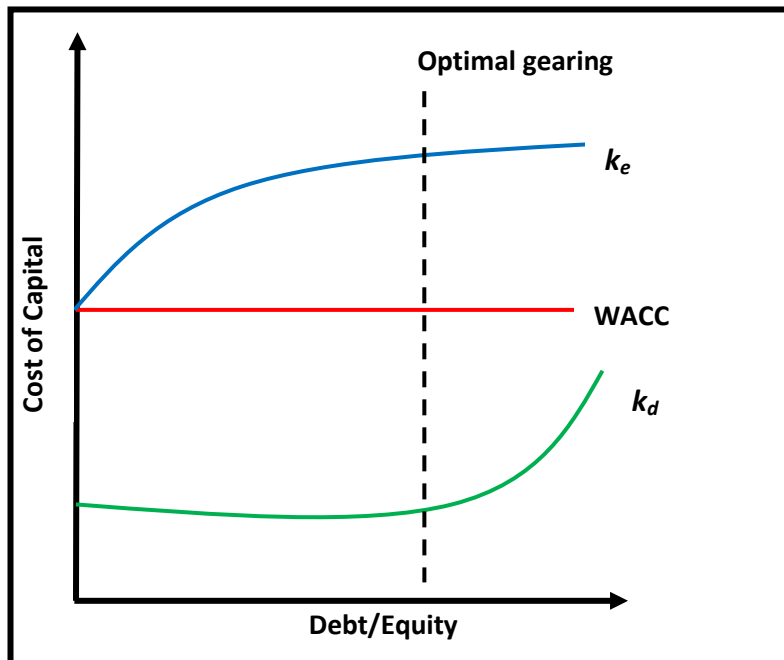


Figure 3.4: The Effect of Taxes on the Cost of Capital showing point of Optimal Gearing



It is from the deductions drawn from these initial works of Modigliani and Miller that Stern Stewart & Co. rationalised the need to consider all avenues of financing and associated cost as an intrinsic part of the EVA<sup>®</sup> performance metric.

Today various avenues of funding opportunities are available to a corporation, which varies from raising funds through the capital market with the issue of shares, retained earnings, loans and government sources to bank loans. The funding mechanism favoured by each individual corporation varies and is dependent on a number of factors some of which are, the management style, the environment in which it operates and the trading history of the corporation and its size. The European Central Bank (ECB) found the preferred source of debt financing for SMEs was through banks (ECB, 2009). This is sometimes used in addition to employing internal funds (revenue financing). Large corporations on the other hand, tend to act more favourable to the option of debt financing by way of the capital market. Whatever the method of financing used, before WACC can be determined, the debt value, equity value and hence the corporation value must first be determined.

The proprietors of EVA<sup>®</sup> have not revealed how WACC may be determined before deriving the value of EVA<sup>®</sup> for corporations. As Stern Stewart & Co. have not made public how the WACC is determined in EVA<sup>®</sup> calculations, it is the author's conclusion based on finance theory, that WACC can be deduced based on the how a corporation is financed. This is fairly straight forward for listed companies, as  $k_e$  can be determined via the capital asset pricing model (CAPM), albeit with limitations. This is more problematic for non-listed companies, such as SMEs.

### ***Estimating the Cost of Equity***

Several methods have been proposed for establishing the cost of equity and have long been the subject of debates. Variations of the asset pricing approach proposed include the three-factor model by Fama and French, the Arbitrage Pricing Theory (APT) and CAPM which have been explored for application with traded companies. These were proposed as an alternative to CAPM to address the inadequacies of the model but CAPM is still the model of choice most widely used today. In cases where the equity is not traded, a normalised PE ratio can be used as a proxy.

- *CAPM*

The CAPM approach was proposed by Sharp in 1964 and has appeal because of its strong theoretical base and the ease with which it can be applied (Ferson and Locke, 1998). The model was based upon the Markowitz theory on portfolio analysis on wealth optimisation based on invested assets, their expected return and risk and how risks can be reduced. The model is expressive of the relationship between the market risk and the expected return and is used in pricing of securities which are high risk. The CAPM model can be expressed as:

$$k_e = r_f + \beta(r_m - r_f)$$

*where:*

$k_e$  = the cost of equity capital

$r_f$  = risk free return

$r_m$  = market return

$\beta$  = is dependent on the market movement and is predicted based on historic cost

The basic principle of the CAPM model is that the average stock return is positively related to market beta ( $\beta$ ). That is, beta is a measure of the systematic risk and determines the returns of a market portfolio. There is a linear relationship between the systematic risks and returns; in that, the higher the systematic risks, the higher the expected rate of returns. A beta coefficient greater than 1 is therefore expected to have over-average effect on the risk of the shares within the portfolio whereas a coefficient of less than 1 indicates an under-average effect of the level of risk on the portfolio. However, the use of the beta coefficient has put the model into disrepute (Borgman and Strong, 2006; Fama and French, 1992). The arguments put forward are that the beta coefficient is not sufficient to be used to explain expected stock returns (Fama and French, 1997). That is, the model was not reactive enough to market sensitivities on which the expected return for traded securities depends. Furthermore, there is the added complexity of what time period to use for the determination of beta, as dependent of what period is used, one, two, five or ten years, beta will be different for each period (Arnold, 2007; Fama and French, 1992; Fama, 1991). Fama and French (1992) also found that beta is also dependent on the size of the portfolio; there is a proportional relationship between the portfolio and the size of beta.

The alternative approach to counteract this deficiency proposed and included a three-factor approach, which uses a wider spread of returns and other variables over time. However, test shows that the true industry sensitivities and distressed risk are volatile in both models (Fama and French, 1997). Another alternative introduced by Ross (1976) was the Arbitrage Pricing Theory (APT) which is a multifactor model and proposes more realistic arguments that those of the CAPM theory. As a 1-factor model, Fama (1991) attribute this as the reason why CAPM does not explain the size and book-to-market anomalies and

gives a poor indication of the relation between returns and beta for stocks.

Although CAPM is still widely used, the main problems with it are the assumptions made and the estimation of beta. In using CAPM, the underlying assumption of consistency in the market is unrealistic. There are also inherent problems in the application of this model if the company under analysis is not listed, as is the case for the majority of SMEs.

- *Gordon's Growth Model*

The Gordon's Growth model uses a dividend valuation approach (DVA), based on the premise that the market value of ordinary shares represents the sum of expected future dividend flows to infinity, discounted to present value. The price estimate used in the Gordon's Growth model does not require a comparable corporation to the corporation being valued. Instead, it uses the assumption of a constant growth rate and a constant rate of dividends to determine the value of a corporation (Kamstra, 2003). Using the theory of cost of equity for the dividend payable for a perpetual loan, and where the market value is discounted to present value by  $\frac{1}{(1+k_E)^t}$ , the current market price of a share  $P_{E0}$  is (Mc Laney, pp. 279-281);

$$P_{E0} = \sum_{n=1}^{\infty} \frac{d_n}{(1+k_E)^n}$$

and:

$d_n$  = expected dividend paid in year  $n$

$k_E$  = cost of equity where

Making the assumption that the dividend payable is equal, then;

$$k_E = \frac{d_n}{P_{E0}}$$

For constant dividend growth rate  $g$ , then;

$$P_{E0} = \frac{d_1}{1 + k_E} + \frac{d_1(1 + g)}{(1 + k_E)^2} + \frac{d_1(1 + g)^2}{(1 + k_E)^3} + \dots + \frac{d_1(1 + g)^n}{(1 + k_E)^{n+1}}$$

This can be reduced to:

$$P_{E0} = \frac{d_1}{k_E - g}$$

Which, rearrange for  $k_E$ :

$$k_E = \frac{d_1}{P_{E0}} + g$$

In practice, the assumption of a constant dividend payable on a yearly basis is unlikely and is expected to increase year on year. The assumptions made in this model are rather simplistic, for example it assumes that if a company declares no dividends there is no value to the cost of its equity! Also negative dividend growth would result in a negative cost of equity, which is preposterous, as this clearly ignores share price appreciation which is deemed to be based on the NPV of future cash flows not just dividends.

### Normalised PE ratio

The dividend yields or the price to equity (P/E) ratio is one of the most fundamental benchmarks of the traditional methods of valuing a corporation

(Kiley, 2004), particularly that of a non-listed company, as a proxy can be taken from a similar listed company. It takes into consideration the expected earnings  $E_0$ , the expected growth rate  $g$ , and the required rate of return  $r$  in determining share price  $P_0$ . In establishing  $r$ , both the risk free rate of return  $r_f$  and the amount by which expected rate of return exceeds the risk free rate, that is, the risk premium  $\Delta r$  making:

$$r = r_f + \Delta r.$$

Using the scenario that assumed earnings is to be paid out as dividends to shareholders, the share price is:

$$P_0 = \sum_{t=1}^{\infty} \frac{E_t}{(1+r)^t}$$

### ***The cost of debt***

There are various types of debt which companies can access in the pursuit of investment capital. Although cheaper than equity capital, debt is also more risky than equity capital (Arnold, 2007). Besides normal bank loans and overdrafts, some companies issue securities; bonds, debentures, shares certificates to name a few, as a means of borrowing to raise the capital needed. These can be classified into two categories; redeemable and irredeemable debt.

### **Redeemable debt**

Redeemable debts are those for which the principal must be repaid within a specified period at a fixed interest rate. These are termed 'securities' but are also referred to as loan notes, debentures, bonds or loan stock (McLaney, 2011). Securities are redeemable loans which must be repaid usually over a period of 10 – 20 years at a nominal rate or the face value of the security.

$$k_d = IRR = \frac{C_1}{(1+r^*)} + \frac{C_2}{(1+r^*)^2} + \frac{C_3}{(1+r^*)^3} + \dots + \frac{C_n}{(1+r^*)^n} - I_0 = 0$$

### Irredeemable debts

At times, perpetual loan notes may be issued by companies to raise capital. These loan notes have no repayment date, but the borrower is required to make repayment of the interest which continue into infinity (McLaney, 2011).

$$Irredeemable = kd = \frac{i}{P_D}$$

where:

$k_d$  = cost of debt

$P_D$  = debt market price (usually for a nominal value of £100)

$i$  = amount of interest (% of nominal value)

If tax exists =  $i(1-t)/P_D$

### Complex financial instruments

With the increase in use of complex financial instruments comes the need to determine its market value. A simple approach of breaking the instrument down into fundamental contracts was recommended by the US FASB as a means of estimating the value of complex financial instruments (Carroll and Brask, 1999). This allows for the possibility of individual  $k_d$  to be calculated for each of the fundamental contracts. This would need extensive information to be presented in financial statements which is not normal practice. However, this

research focuses on SMEs, which are unlikely to have complex debt instruments and therefore this is not a key issue for this research.

### ***Weighted Average Cost of Capital (WACC)***

In calculating NOPAT, non-operating expenses including interest and dividends on securities invested outside of the business are not considered. Similarly, the total capital employed is reflective of the investment from shareholders as well as loans but excluding investments made outside the business. The WACC is normally determined by taking the cost of debt as the after tax cost and the cost of equity and weighing this according to the market value of both debt and equity. That is:

$$WACC = k_d(1 - t) \times \left( \frac{D}{D + E} \right) + k_e \times \left( \frac{E}{D + E} \right)$$

where:

- $k_d$  = cost of debt
- $k_e$  = cost of equity
- D = value of the company's debt
- E = value of the company's equity
- t = corporate tax rate

With complex capital structures additional forms of  $k_e$  and  $k_d$  would be necessary, example  $k_d$  after redeemable and irredeemable debt.

### **3.3.4 Illustration of EVA® Calculation**

The effect of Research and Development expenses and the other adjustments discussed above on NOPAT and capital employed is demonstrated by using a selection range of top four companies on the FTSE 100 as at 31<sup>st</sup> July 2012.

Some essential screening was done to reduce further complexities in calculating EVA®. The top four companies at the close of trading on 31 July 2012 included companies from the energy sector. These were screened out because of the complexities of their Research and Development expenses. Also, companies with annual financial reports which were reported in US dollars were eliminated to present data which were as comparable as possible. By using a four step process, EVA® for each company was determined using data as per end of the financial year 2011 for each company.

The first step in calculating EVA® was to determine NOPAT. By starting out with the Operating Profit for each company, eight (8) adjustments were made to correct for the deficiencies under GAAP. For this example, Research and Development costs for that period along with Operating Lease Taxes and Other Income were added back to Operating Profits. Next expenses namely; Other Expenses, Depreciation and Amortisation for that period, and Deferred Taxes were deducted to determine the adjusted NOPAT (see *Table 3.2a.*).

The second step was making the adjustments for the Total Capital Employed (*Table 3.2b*) which, in this case, was to capitalised Research and Development, Depreciation, Goodwill and the Present Value of Operating Leases. These are capitalised because they are part of the Capital Employed during the year.

The third step was to determine the cost of capital ( $k_e$ ), for which CAPM was used. As discussed above (*Section 3.3.3*), although controversial, it is widely used as the benchmark in estimating  $k_e$  (Costa, 2012).

$$k_e = r_f + \beta(r_m - r_f)$$

As indicated in the note by *Table 3.2c*,  $r_f$  which is the risk free return, was taken as the interest rate at the end on 2011 on UK Treasury bonds. Similarly the market rate of return  $r_m$ , was determined using historical data from Yahoo

Finance (Yahoo, 2012) using data extracted over a period of 32 years. The systematic risk ( $\beta$ ) which is dependent on the market movement and is predicted based on historic data was taken from the FTSE 100 from Bloomberg Finance.

For the final step (*Table 3.2d*), 2 processes were performed; determination of WACC followed by EVA<sup>®</sup>. WACC was found by using:

$$WACC = k_d(1 - t) \times \left( \frac{D}{D + E} \right) + k_e \times \left( \frac{E}{D + E} \right)$$

The value for  $k_d$ , the cost of debt was stated in each of the company reports as was the value for  $D$  (value of the debt) and  $E$  (value of the equity). The tax rate  $t$  was taken to be the UK tax rate for businesses at 30% for 2011 (HMRC, 2012).

EVA<sup>®</sup> was then determined using:

$$EVA = NOPAT - (WACC \times CAPITAL\ INVESTED)$$

**Table 3.2: Example of Calculating EVA®**

*Table 3.2a: Calculating NOPAT*

| CALCULATING NOPAT                     | Associated British Foods | GSK           | British American Tobacco | Diageo       |
|---------------------------------------|--------------------------|---------------|--------------------------|--------------|
|                                       | <i>Emillions</i>         |               |                          |              |
| <b>Operating Profit</b>               | <b>842</b>               | <b>7,807</b>  | <b>4,721</b>             | <b>2,595</b> |
| <b>Adjustments</b>                    |                          |               |                          |              |
| + Other Finance Income                | 9                        | 90            | 233                      | 3            |
| + Research & Development              | -                        | 4,009         | 81                       | 17           |
| + Operating Lease Taxes               | -                        | -             | -                        | 5            |
| + Share of profit from joint ventures | 37                       | 560           | 673                      | 176          |
| + Depreciation                        | 317                      | 9,437         | 3,117                    | 286          |
| + Amortisation                        | 96                       | 3,738         | 58                       | -            |
| <b>Net '+' adjustments</b>            | <b>459</b>               | <b>17,834</b> | <b>4,162</b>             | <b>487</b>   |
|                                       |                          |               |                          |              |
| - Other Expenses                      | 7                        | 20            | -                        | -            |
| - Deferred Taxes                      | 404                      | 2,849         | -                        | 102          |
| <b>Net '-' adjustments</b>            | <b>411</b>               | <b>2,869</b>  | <b>0</b>                 | <b>102</b>   |
| <b>ADJUSTED NOPAT</b>                 | <b>890</b>               | <b>22,772</b> | <b>8,883</b>             | <b>2,980</b> |

*GSK - GlaxoSmithKline*

**Table 3.2b: Calculating the Total Capital Employed**

| TOTAL ADJUSTED CAPITAL            | Associated British Foods | GSK           | British American Tobacco | Diageo        |
|-----------------------------------|--------------------------|---------------|--------------------------|---------------|
|                                   | <i>Emillions</i>         |               |                          |               |
| <b>Capital Employed</b>           |                          |               |                          |               |
| Debt                              | 1,285                    | 9,003         | 7,928                    | 6,450         |
| Equity                            | 4,816                    | 8,827         | 8,474                    | 5,985         |
| <b>Book Value of Capital</b>      | <b>6,101</b>             | <b>17,830</b> | <b>16,402</b>            | <b>12,435</b> |
| <b>Adjustments</b>                |                          |               |                          |               |
| Capitalised R&D                   | -                        | 4,009         | 81                       | 17            |
| Depreciation                      | 317                      | 9,437         | 817                      | 352           |
| Goodwill                          | 2                        | 3,754         | 273                      | 19            |
| Present value of Operating Leases |                          | 354           | 129                      | 19            |
| <b>Total Adjustments</b>          | <b>319</b>               | <b>17,554</b> | <b>1,300</b>             | <b>407</b>    |
| <b>TOTAL CAPITAL INVESTED</b>     | <b>6,420</b>             | <b>35,384</b> | <b>17,702</b>            | <b>12,842</b> |

*GSK - GlaxoSmithKline*

**Table 3.2c: Calculation of  $k_e$  using CAPM**

| Company                  | $r_f$ | $r_m$ | Beta ( $\beta$ ) | $k_e$       |
|--------------------------|-------|-------|------------------|-------------|
| Associated British Foods | 0.24  | 7.97  | 0.83             | <b>6.66</b> |
| GSK                      | 0.24  | 7.97  | 0.73             | <b>5.88</b> |
| British American Tobacco | 0.24  | 7.97  | 0.75             | <b>6.04</b> |
| Diageo                   | 0.24  | 7.97  | 0.80             | <b>6.42</b> |

*GSK - GlaxoSmithKline*

**Table 3.2d: Calculating EVA®**

| CALCULATION OF EVA      | Associated British Foods | GSK           | British American Tobacco | Diageo        |
|-------------------------|--------------------------|---------------|--------------------------|---------------|
|                         | <i>£millions</i>         |               |                          |               |
| <b>NOPAT</b>            | 890                      | 22772         | 8883                     | 2980          |
| <b>Cost of Capital</b>  |                          |               |                          |               |
| <b>Debt (Kd)%</b>       | 8.90                     | 5.00          | 9.80                     | 8.00          |
| <b>Equity (Ke)%</b>     | 6.66                     | 5.88          | 6.04                     | 6.42          |
| <b>WACC</b>             | 6.57                     | 4.68          | 6.44                     | 6.00          |
| <b>Capital Invested</b> | <b>6,420</b>             | <b>35,384</b> | <b>17,702</b>            | <b>12,842</b> |
| <b>EVA</b>              | <b>468</b>               | <b>21,116</b> | <b>7,744</b>             | <b>2,210</b>  |

*GSK - GlaxoSmithKline*

All of the companies returned positive EVA® for the period. This is indicative that these companies engaged in activities which created value during that period.

However it should be noted that a thorough analysis of these companies using EVA® cannot be achieved at arms-length. Some intimate knowledge and understanding of the financial structure and operational processes of the companies would be required. Hence the calculations and the brief analysis are purely for illustration purposes.

### **3.4 EVA® in Practice**

Any change within an organisation is challenging. To be effective, the proponents argue EVA® must be totally integrated within the core of the organisation; hence resulting in a change within the organisation culture. Cagle *et al.* (2003) studied the implementation process of EVA® with the McKee Foods Corporation to investigate the likely issues faced with its implementation. They found there were problems in getting lower management involved in determining WACC. Other issues flagged were the need to provide adequate training including identifying the value drivers.

Stewart (1994), using information gathered from the internal research data of Stern Stewart & Co., stated that companies which had implemented EVA<sup>®</sup> in the 1990s outperformed other similar companies by an average of 8.3% per annum and created total excess shareholder wealth of \$166M in the five years after adopting EVA<sup>®</sup>. This claim was supported by academic researchers such as Tully (1993), Wallace (1997) and Klieman (1999).

The spread of the EVA<sup>®</sup> framework has extended beyond the shores of America and is embraced by companies in Europe and Asia. These countries include Sweden, Hong Kong and India, with EVA<sup>®</sup> practitioners in these countries contributing to EVA<sup>®</sup> theory with written papers on their experience (Vishwanath, 2010; Dagogo and Ollor, 2009; Gandhi and Rajib, 2008; Hui *et al.*, 2007).

### **3.4.1 EVA<sup>®</sup> at GCPL**

Mittal *et al.* (2008) investigated EVA<sup>®</sup> implementation at Godrej Consumer Products Limited (GCPL) a leading fast moving consumer goods (FMCG) in India. It decided to implement the EVA<sup>®</sup> framework to meet the challenges of the economic situation and fierce competition faced in early 2000. EVA<sup>®</sup> was chosen because of its conviction that it offers the best solution in providing a system of internal corporate governance which would empower all managers and employees and motivate them for the best interest of the corporation (Mittal *et al.*, 2008). The implementation of EVA<sup>®</sup> was methodically orchestrated at GCPL and began with a corporation-wide educational drive on EVA<sup>®</sup>. At every opportunity, the EVA<sup>®</sup> framework was communicated to employees. The management at GCPL were conscious that, to ensure that employees were ready to embrace the changes, the reasons and benefits of EVA<sup>®</sup> must be clearly communicated.

EVA® implementation at GCPL was facilitated by Stern Stewart & Co. and was done at all non-unionized levels within the corporation. Mittal *et al.*, (2008) outlined the steps involved in the process as:

- i. Measuring EVA® across the various businesses and understanding the implications of the numbers.
- ii. Setting targets to improve the EVA® numbers over a three-year period.
- iii. Compiling an exhaustive manual about what each function could do to improve the corporation's EVA®. This task was done in collaboration with the consultants, the Human Resources department and the functional managers.

In implementing EVA®, the corporation was faced with alleviating all the scepticism and fears of what was viewed as a new management system which was devised to deprive them of any rewards. They also had to show the link between EVA® and employees' remuneration and all had to be communicated using language that all levels of staff within the corporation could understand. Next was the task of applying the EVA® evaluation measure which includes determining the values of the variables in the metric and was determined as recommended in the theory on EVA®.

The corporation used a SWOT analysis to analyse their experience with EVA®. During the time of what was described as a bad economic period for India as the country faced political and international uncertainties, GCPL was reported to have outperformed the industry (Mittal *et al.*, 2008). The corporation reported positive EVA® of 38% over the period 2001 to 2006, moving from Rs of 301 million to 1089 million and a 40% increase in Profit after Tax in 2006 compared to 2005. In concluding their evaluation of the experience of GCPL implementation of EVA®, Mittal *et al.* (2008) stated that the experience was rewarding for the corporation as positive and increasing EVA® was reported over the period of the study. The corporation benefited; employees and shareholders alike, as wealth was created. However, the study also noted

uncontrolled events which may have some impact on EVA<sup>®</sup>. As an example, should there be a period of economic downturn resulting in diminution of pay for employees this could impact EVA<sup>®</sup> although the real effect remains unknown (Mittal *et al.*, 2008).

### **3.5 Empirical Evidence on EVA<sup>®</sup>**

Numerous studies have been conducted on EVA<sup>®</sup> since its introduction by Stern Stewart & Co. in 1989. These were mainly to examine if EVA<sup>®</sup> was more relevant as an indicator of stock or market return than other traditional accounting performance measures. The findings put forward were mixed.

Sharma and Kumar (2010) reviewed 112 papers on EVA<sup>®</sup> which were published between 1994 and 2008 in order to validate the theory associated with EVA<sup>®</sup>. The materials collected were classified according to the themes of the hypothesis being investigated for analysis (*Table 3.3*).

**Table 3.3: Empirical Studies on EVA® as reported by Sharma and Kumar (2010)**

| Area of Research   | Synopsis of the study  | No. of papers |
|--|--|---------------|
| <b>EVA® and stock returns</b>                              | Represents the most popular area of study. Literature includes relationship of EVA® and performance of the corporation, evidences from stock returns, and comparison of EVA® with other accounting measures, portfolio selection tool, testing information content of EVA®, error-rate, earning forecasts and residual income. | 58            |
| <b>Relationship between EVA® and MVA</b>                   | Covers the links between EVA® and MVA including EVA® as a proxy for MVA, correlation between EVA® and MVA, value drivers, corporation performance and MVA, inter-industry analysis and survey, effectiveness of EVA® and efficacy score approach.  | 25            |
| <b>Behaviour of management and performance measurement</b> | Covers wealth creation, compensation for managers, agency theory and EVA®, performance and compensation, performance evaluation profit sharing and gains sharing plans and EVA® aspects.   | 8             |
| <b>Concepts, criticism and implementation</b>              | Literature covers EVA® as a financial management system, strategy, implementation, limitations, facts and fantasy, misconceptions and EVA® adjustments.  | 12            |
| <b>Value based management</b>                              | Studies in this area examined value based management, true value, value creation and measurement, investment recovery and value added, cash value added and shareholder value creation and shareholder value drivers.  | 4             |
| <b>Discounting approaches</b>                              | The relationship between EVA® and NPV, reconciliation of variation of DCF valuation, inflation adjustments, Residual Income and DCF approaches.  | 3             |
| <b>Literature survey</b>                                   | Comprehensive literature surveys covering the theory of EVA®.  | 2             |

Sharma and Kumar (2012) examined the papers in the order of the year of publication to review the progress made on EVA® studies and to analyse the outcome of each study. They also examined the methodology and contributions made by previous researchers with the intention to identify gaps and areas for further contribution.

From their analysis Sharma and Kumar (2010) found that from the materials on EVA® the empirical evidence was mixed. The literature indicated that many of the studies on EVA® were undertaken on results from other studies; and in many instances using the same data set. Studies mainly examined the theory behind the concept or establishing some relationship or non-relation of EVA® with other performance measures. These studies were mainly done in developed countries using financial data from large corporations, with a few studies looking at EVA® in small companies from a similar perspective to its application in the larger entities.

They found that the EVA® concept was still under development and discussions on the topic were more prevalent in developing countries. A summary of their analysis of some of the material investigated is presented below.

**Table 3.4: Summary of the Empirical Analysis of Sharma and Kumar (2010)**

|   |
|---|
| <p><b>Relationship between Economic Value and Stock Returns:</b></p> <p><i>Supportive claims of a high correlation between EVA® and stock returns.</i></p> <ul style="list-style-type: none"> <li>• EVA® is better placed to derive stock price than accounting based performance measures and is a reliable guide in understanding the value of the company (Stewart, 1995; Medeiros, 2005).</li> <li>• Predictive earnings can be enhanced with the use of EVA® (Machuga <i>et al.</i>, 2002).</li> <li>• EVA® to be the most highly correlated measure with stock returns (Lehn and Makhija, 1997).</li> <li>• EVA® is a significant factor in market returns; higher explanatory powers than accounting earnings (Bao and Bao, 1998).</li> <li>• EVA® provides more information than the traditional measures of accounting profit (Chen and Dodd, 1997).</li> <li>• Traditional measures not empirically least related to stock returns than other value added measures including EVA® (Peterson and Peterson, 1996).</li> </ul> <p><i>Those not supportive of the high claims made about EVA®</i></p> <ul style="list-style-type: none"> <li>• EVA® does not dominate traditional performance measures in its association with stock market returns (Biddle <i>et al.</i>, 1997).</li> <li>• NOPAT and NI outperform EVA® in explaining tax returns (Ismail, 2006).</li> <li>• Operating income more valuable than EVA® (Kyriazis and Anastassis, 2007).</li> </ul> |
|---|

**EVA® Adoption and Firm Value:**

- Firms adopting EVA® reports better profitability better before and after than those that don't (Ferguson *et al.*, 2006; 2005).
- EVA® adopters are more likely to be institutionally owned (Lovata and Costigan, 2002).
- EVA® significantly impacts the value of the firm (Grant, 1996). EVA®, REVA and MVA are better measures of the value of the company (Anand *et al.*, 1999).
- In terms of performance and residual income techniques, EVA® adopters were found to dispose of more assets and have few new investments (Wallace, 1997).
- Managers respond to EVA® incentives. No evidence to support it is more associated with the value of the company than net income (Biddle *et al.*, 1997).

**Relationship between EVA® and MVA:***Support:*

- Strong correlation between EVA® and MVA (Ghanbari and More, 2007; Stewart, 1991). MVA and NOPAT gave stronger positive average but average EVA® over the same period was negative (Kramer and Pushner, 1997).
- EVA® more systematically linked to market value. More powerful tool in understanding the expectation of the investor (O'Byrne, 1996; Finegan, 1991).

*Against:*

- Traditional measures have better correlation with MVA (Wet, 2005).

**EVA® and Managerial Performance:**

- Managers in companies which adopt EVA® performance measures are more driven and make more productive use of the company's assets (Irala, 2005).
- Companies which adopt residual income based incentives plans shows increased income (Biddle *et al.*, 1998).
- Substantial training of management and workers is needed in companies adopting the EVA® compensation scheme in order for it to be effective (Ferguson and Leistiknow, 1998).

Sharma and Kumar (2010) highlighted other areas for contribution on EVA®. They acknowledged that, over the last decade, there has been a remarkable increase in research on EVA®. Yet their analysis revealed that research was lacking in the areas of:

- i. Implementation of EVA®,
- ii. The role of accounting adjustments,

- iii. Empirical evidence from developing countries,
- iv. EVA<sup>®</sup> as a strategy,
- v. Discounting techniques such as NPV and IRR in relation to EVA<sup>®</sup>, and
- vi. The managerial performance measurement aspects of EVA<sup>®</sup>.

They also noted that the focus of research was within the manufacturing (Lehn and Makhija, 1996) industry although there were sightings of application in broader sectors (Kim, 2006; Geysler and Liebenberg, 2003). It was noted that the data in the empirical study related to larger entities which suggested further consideration of the possibility of implementing EVA<sup>®</sup> within medium sized enterprises.

Sharma and Kumar (2010) also found that developed countries were largely supportive of EVA<sup>®</sup>. They also found traditional measures were favoured as better measures of corporate performance. Their analysis also showed the extent to which the EVA<sup>®</sup> framework gained significant attention in advanced economies. However, they found there were widespread issues with its implementation and validity and that it has been the topic of many debates.

From studies conducted internally by EVA<sup>®</sup> developers Stern Stewart & Co., their conclusions, unsurprisingly, supported the hypothesis tested that EVA<sup>®</sup> is a better measure of performance than other measures and is the only measure to give the best measure of value performance on a continuous basis (Sharma and Kumar, 2010). Sharma and Kumar (2010) continued by citing that Stern Stewart & Co. also concluded that EVA<sup>®</sup> is as much as 50% better than the accounting based measures in explaining changes in shareholders wealth. Others researchers giving support to the EVA<sup>®</sup> framework are Forker and Powell, 2008; Lehn and Makhija, 1997; Ferguson *et al.*, 2005; Erasmus, 2008; Chen and Dodd, 1997; Kim, 2006; Palliam, 2006; Lefkowitz, 1999; O'Byrne, 1996; Uyemura, 1996; Peterson and Peterson, 1996.

This study focused generally on investigating if EVA® were to be implemented in medium sized enterprises, bearing in mind the differences and similarities, can EVA® be used to provide added information pertaining to the future growth potential of a medium sized entity. *Chapter 4 Section 4.8* briefly covers EVA® in SMEs.

Chari (2009) found that researchers generally take either one of 3 approaches in analysing EVA®:

1. Evaluation of the relevance of adjusted accounts by comparing EVA® calculated with and without adjustments to realise the significance of accounting adjustments,
2. Surveying the practices of corporations that have adopted EVA®, analysing the responses and evaluating the practices adopted for calculating EVA®,
3. Assessing the theoretical concept of EVA®, providing no numerical evidence of the importance of accounting adjustments but on the theoretical construct and by using hypothetical illustrations, arrive at the conclusion that accounting adjustments are relevant to improve EVA®.

In examining the first approach, Chari (2009) found only 2 such studies have used this approach and had arrived at the conclusion that only five to six adjustments were of any significance in computing EVA®. However, he found these studies inadequate as:

- i. Only the impact of five to eight adjustments as suggested in literature published by Stern Stewart & Co. were examined; and
- ii. Impact had been assessed using a sample of companies which use USA GAAP. This is somewhat limiting as the nature and significance of accounting adjustments can vary depending on the GAAP followed by the corporation (Chari, 2009).

A study of EVA<sup>®</sup> literature by Chari (2009) concludes that a range of 5-16 accounting adjustments are generally required for EVA<sup>®</sup> computation. The adjustments made by a corporation are dependent on various factors; primarily sector, the accounting policy used by the corporation and the country's GAAP. As a result of numerous accounting policies and GAAP variations per country, no universal set of adjustments were discovered for EVA<sup>®</sup>. The principles of modern day finance indicate that if the market is sufficiently efficient, then a 'new' EVA<sup>®</sup> construct can be successfully applied.

To understand the basis of EVA<sup>®</sup> supporters a more comprehensive summary of some of the empirical studies on EVA<sup>®</sup> was undertaken (*Table 3.5*). From this summary, Tully and Hadjian's (1993) work was found to be the most supportive of EVA<sup>®</sup> as a superior performance metric and management tool for motivating managers and establishing rewards. Positive reviews from the likes of company heads from Coca Cola, AT&T, Oppenheimer Capital, and Quaker Oats seems to have cemented their support of EVA<sup>®</sup> without actual investigation or presentation of any supporting theoretical evidence. Tully and Hadjian (1993) also concluded that EVA<sup>®</sup> is powerful and popular because it doesn't prescribe doing anything. It simply requires an understanding of what is happening within the business and from that understanding managers will know exactly what to do. This was unlike Lehn and Makhija (1996) who sampled 241 companies in the US in their investigation of the correlation of EVA<sup>®</sup> with stock price. Their investigation showed that EVA<sup>®</sup> significantly correlated with stock price performance. This is illustrative of the differences in findings on EVA<sup>®</sup> which contributes to on-going debates.

Similarly Forker and Powell (2008) and Peterson and Peterson (1996) found that, in general, value added measures including EVA<sup>®</sup> are theoretically, more related to the value of the firm than traditional measures. They also found that value added measures are more correlated with stock returns than traditional measures. In general, the supporters of EVA<sup>®</sup> made their conclusion after

comparing the theoretical and mathematical construct of the EVA<sup>®</sup> performance metric against traditional performance measures.

However, considering that most supporters of EVA<sup>®</sup> appear to have some association with Stern Stewart & Co., Biddle *et al.* (1999, 1997) conducted an independent review. They investigated the claims that the EVA<sup>®</sup> framework has a stronger association with stock price and the value of the company in comparison to traditional measures of accounting. Through a series of hypothesis testing they investigated these claims and concluded that, in comparison to traditional measures, the information content of EVA<sup>®</sup> was marginal. Hence there was little evidence to prove its dominance over traditional earnings associated with stock returns and the value of the firm (Biddle *et al.*, 1999). Their investigation also revealed that when it comes to information for market participants on the value of a company, earnings generally outperforms EVA<sup>®</sup> as a measure. Similarly Maditinos *et al.* (2006) when examining the traditional measures versus EVA<sup>®</sup> of companies on the Greek stock market, came to the same conclusion as Biddle *et al.* (1999). Likewise Chen and Dodd (2001) in their investigation of companies on the US stock market. Kim (2006) concluded that previous studies have not resolved the issue in the debate about EVA<sup>®</sup> as a performance measure. As with Biddle *et al.* (1997) and Lehn and Makhija (1996), Kim (2006) also points to the need for further exploration of EVA<sup>®</sup> as an alternative measure of performance to traditional accounting measurement. Academic researchers have also not been able to firmly establish the correlation of EVA<sup>®</sup> to market value and stock returns.

**Table 3.5: Some Empirical Studies Comparing EVA® with other Performance Measures**

| Synopsis of the study  | Main Findings   | Author, Year & Findings   |
|--|---|---|
| <b>EVA® and stock returns</b>  |   |   |
| <p>Represents the most popular area of study. Literature included relationship of EVA® and performance of the firm, evidences from stock returns and comparison of EVA® with other accounting measures, portfolio selection tool, testing information content of EVA®, error-rate, earnings forecasts and residual income.</p> | <ol style="list-style-type: none"> <li>i. Accounting earnings are more associated with earnings and firm values.</li> <li>ii. Little evidence to prove EVA® dominates in explaining stock returns than other measures.</li> <li>iii. EVA® components namely, capital charge and accounting adjustments are also not significantly related to stock returns.</li> <li>iv. EVA® can be used to inform market portfolio.</li> <li>v. GAAP adjustments significantly explains changes in EVA®</li> <li>vi. EVA® is as good as RI in explaining stock returns.</li> <li>vii. Accounting adjustments are not significant</li> <li>viii. Accounting information on which variables are based is becoming less significant - those not a part of reported information have powerful impact on stock returns.</li> <li>ix. EVA® is a greater indicator of explaining market adjusted stock returns than earnings.</li> <li>x. EVA® is invalid, unreliable and questionable.</li> </ol> | <p>Biddle <i>et al.</i>, (1999): i - iii.</p> <p>Chong <i>et al.</i>, (2008): ii &amp; iv.</p> <p>Worthington &amp; Tracey (2004): ii &amp; v.</p> <p>Chen &amp; Dodd (1997): vi &amp; vii.</p> <p>Paulo (2002): viii.</p> <p>Lehn &amp; Makhija (1997): ii.</p> <p>Feltham, Mbagwu &amp; Vaidhyathan (2004): ii &amp; ix.</p> <p>Palliman (2006): x.</p> |

| Synopsis of the study  | Main Findings   | Author, Year & Findings   |
|--|---|---|
| <b>Relationship between EVA® and MVA</b>   |   |   |
| Covers the links between EVA® and MVA including EVA® as a proxy for MVA, correlation between EVA® and MVA, value drivers, firm performance and MVA, inter-industry analysis and survey, effectiveness of EVA® and efficacy score approach. | <ul style="list-style-type: none"> <li>i. EVA® explains some variations in MVA; other measures explain less.</li> <li>ii. GAAP adjustments are significant in explaining changes in EVA®.</li> <li>iii. Firm’s market value can be predicted using EVA®.</li> <li>iv. Current operational value is more indicative of market value than future growth.</li> <li>v. EVA®-MVA frameworks are indicators of wealth creation – consistently high EVA® results in increased MVA.</li> <li>vi. EVA® is vital for long term survival of (Indian) companies.</li> <li>vii. EVA®/MVA is an improvement over traditional measures and considers the all the opportunity costs of capital invested in the organisation.</li> </ul> | <p>Uyemura, Kantor &amp; Petit (1996): i &amp; ii.</p> <p>Banerjee (2000): iii &amp; iv.</p> <p>Kaur &amp; Narang (2009): v &amp; vi.</p> <p>Zafiris &amp; Bayldon (1999): vii.</p> |
| <b>Behaviour of management and performance measurement</b>   |   |   |
| Covers wealth creation, compensation for managers, agency theory and EVA®, performance and compensation, performance evaluation profit sharing and gains sharing plans and EVA aspects.  | <ul style="list-style-type: none"> <li>i. Firms with less insider ownership and more institutional investors tend to use EVA®.</li> <li>ii. Firms with a defender strategy, use a proxy of low R&amp;D to sales tend to use EVA®</li> <li>iii. Firms whose current earnings are not related to future success use traditional measures of performance.</li> <li>iv. EVA® is a popular measure of performance with widespread application across industries and continents.</li> <li>v. EVA® and EVA®-like performance measures motivate managers in making decisions which is consistent with creating value for shareholders.</li> </ul>   | <p>Lovata &amp; Costign (2002): i-iii.</p> <p>Chari (2009): iv &amp; v.</p>   |

| Synopsis of the study  | Main Findings  | Author, Year & Findings   |
|--|--|---|
| <b>Concepts, criticism and implementation</b>  |  |   |
| <p>Literature covers EVA® as a financial management system, strategy, implementation, limitations, facts and fantasy, misconceptions and EVA® adjustments.</p> | <ol style="list-style-type: none"> <li>i. Implementing EVA® is worth considering.</li> <li>ii. Consideration must be given to the handling of implementation issues which are unique to each company.</li> <li>iii. Issues which must be determined include linking of EVA® to compensation, the adjustments to be made to capital and NOPAT and identifying the EVA® centres.</li> <li>iv. Implementation of EVA® differs in firms.</li> <li>v. Companies may implement variants of EVA® which are not used as prescribed by Stern Stewart &amp; Co.</li> <li>vi. EVA® as a measure did not provide the focus required on the value drivers.</li> <li>vii. EVA® as a performance measure was incapable of resolving internal trading issues.</li> <li>viii. EVA® alone could not be relied on for decision-making and post control.</li> <li>ix. EVA® as a performance measure is not consistent with the maximisation of shareholder value.</li> <li>x. EVA® has shortcomings as an integrated performance measure.</li> <li>xi. EVA® could be a resourceful capital budgeting tool if implemented within universities.</li> </ol> | <p>Cagel, Smythe Jr. &amp; Fulmer (2003): i – iii.</p> <p>McLaren (2004): iv-x.</p> <p>Rampho (2009): xi.</p> |

| Synopsis of the study   | Main Findings  | Author, Year & Findings  |
|---|--|--|
| <b>Value based management</b>   |  |  |
| Studies in this area examined value based management, true value, value creation and measurement, investment recovery and value added, cash value added and shareholder value creation and shareholder value drivers. | i. EVA® is not to be used as a value based measure.  | Abdeen & Haight (2002): i.   |
| <b>Discounting approaches and EVA®.</b>   |  |  |
| The relationship between EVA® and NPV, reconciliation of variations of DCF valuation, inflation adjustments, Residual Income and DCF approaches.  | <ul style="list-style-type: none"> <li>i. FCF, EVA® &amp; NPV approaches to valuation are equivalent.</li> <li>ii. Both NVP &amp; EVA® are related to shareholder wealth; both can be effective tools for value creation.</li> <li>iii. Value obtained by discounting the FCF of a company at the cost of capital is identical to value obtained using EVA®.</li> <li>iv. The link between corporate market value and EVA® is weaker than the link between earnings and cash flows.</li> <li>v. EVA® is more unstable than tradition ROI and is directly linked to ROE.</li> <li>vi. EVA® ranked as the best performance indicator over traditional measures.</li> <li>vii. Many companies still use traditional measures to measure performance.</li> </ul> | <ul style="list-style-type: none"> <li>Burksaitiene (2009): i-iii.</li> <li>Tsuji (2006): iv.</li> <li>Salmi &amp; Virtanen (2001): v.</li> <li>Kumar &amp; Pal (2008): vi &amp; vii.</li> </ul> |

| Synopsis of the study   | Main Findings  | Author, Year & Findings  |
|---|--|--|
| <b>Literature survey</b>  |  |  |
| Comprehensive literature surveys covering the theory of EVA.  | <ul style="list-style-type: none"> <li>i. EVA® emphasises wealth creation; an essential tool for portfolio managers.</li> <li>ii. Factors having a positive influence on EVA® are: industry returns, capital structure of the company, profitability, size, growth ability and management ability.</li> <li>iii. Intangible assets have a poor negative relationship with EVA®.</li> <li>iv. No significant relationship was found between EVA® and inventory management.</li> </ul> | <p>Abate, Grant &amp; Stewart III (2004): i.</p> <p>Lin &amp; Zhilin (2008b): ii-iv.</p>                                       |
| <b>The EVA model</b>  |  |  |
| The EVA financial model and establishing EVA given a set of data, impact of inflation and sensitivity analysis. | <ul style="list-style-type: none"> <li>i. EVA® may differ for the same company because of the analytic perception of the adjustments which need to be made.</li> <li>ii. EVA® was found to be a good indicator of wealth creation</li> <li>iii. Inflation significantly distorts EVA®.</li> <li>iv. Level of distortion depends on its leverage, the amount and age of the assets.</li> </ul>  | <p>Morard &amp; Balu (2009): i &amp; ii.</p> <p>Warr (2005): i – iv.</p> <p>Baran, Hrotko &amp; Olejnik (2007): i &amp; ii</p> |

The summary (*Table 3.5*) also includes other researchers who examined the implementation of EVA<sup>®</sup> and its usefulness in practice. Cagle *et al.* (2003) reviewed the impact of EVA<sup>®</sup> in McKee Food Corporation. Their review illustrated the difficulties in aligning EVA<sup>®</sup> with compensation schemes, problems in getting lower level managers to buy into the EVA<sup>®</sup> concept, determination of NOPAT and adjustments and confusion around determining the cost of capital using CAPM. While EVA<sup>®</sup> was considered to have worthwhile benefits, Cagle *et al.* (2003) considers that the issues around EVA<sup>®</sup> are worth considering prior to implementation. These were in line with issues identified by McLaren (2004) who concluded that the implementation of EVA<sup>®</sup> would be different for every firm.

The information needed for the computation of EVA<sup>®</sup> is obtained from accounting figures. The accounting information needs to be adjusted to explain the distortions caused by prudence and accruals as well as national GAAP differences if applicable. Prober (2000) estimates as much as 164 items for potential adjustments for NOPAT but concludes that only a few adjustments would be necessary to provide a good measure of EVA<sup>®</sup>.

Stewart (1991) gave the following guidelines for making EVA<sup>®</sup> adjustments:

- i. The amounts should be significant.
- ii. The adjustments should have a material impact on EVA<sup>®</sup>.
- iii. Operating people should be able to readily grasp the concept.
- iv. The required information is easy to track.

Palliam (2006) found there were very few articles which objectively deal with the strengths and weaknesses of EVA<sup>®</sup> as a management tool. He found Paulo (2002) and Bernstein *et al.* (1998) to be the greatest critics of EVA<sup>®</sup>.

Although there has been widespread interest in EVA<sup>®</sup>, there is still a lack of empirical evidence on the effectiveness of the measure. It has been widely

accepted as credible not just as an operation performance metric but as a way in which management's decisions contribute value to the organisation (Kim, 2006). In the United States, companies such as Coca-Cola, Toys R Us, Whirlpool and Eli Lilly have all adopted EVA<sup>®</sup> as the guiding principle for performance measurement (Biddle *et al.*, 1999, 1997). It has also been used specifically as a management compensation tool by management for decision-making in capital budgeting.

### **3.5.1 EVA<sup>®</sup> vs. Other Value Based Measures**

Shil (2009) purported that many of the other shareholder value based measures are more effective than EVA<sup>®</sup> because they are based more on cash flow, although they were found to be more complicated and subjective than EVA<sup>®</sup>. For a successful implementation of EVA<sup>®</sup>, the people factor plays a very important role. It is the expectation, that the people within the organisation should be committed to and develop an understanding of EVA<sup>®</sup> for its implementation to be a success.

Bonus plans which are based on EVA<sup>®</sup> were found to produce positive results. When compared to a bonus plan based on residual income (RI), Wallace (1997) found that companies using EVA<sup>®</sup> performed better. While Stern Stewart & Co. presented the EVA<sup>®</sup> as a means of building and fostering a cohesive relationship, empowering each employee to act as owners, Mouritsen (1998) thinks otherwise. Mouritsen (1998), concluded that not only does EVA<sup>®</sup> ignore organisational structure but regards managers as 'all-knowing and all capable' which makes them even more aloof and isolated to employees. It also failed to provide any guidance on strategic issues. Whereas accounting measures encourage managers to select projects that will improve the current rate of return which may result in them missing projects with returns higher than the cost of capital. By taking up projects that provide returns higher than the cost of capital, finance theory suggests managers will increase the wealth of the

shareholder. Selecting projects by using ARR, ROCE or ROA or similar accounting measures which give a rate of return higher than the current rate of return, may destroy value.

Proponents of EVA<sup>®</sup> claim that the imperfection demonstrated in using accounting measures makes them inadequate as proxies for measuring value creation. Relating this to management compensation, EVA<sup>®</sup> proponents felt conventional measures do not stimulate managers to make value enhancing decisions. Many conventional methods focus on the short term performance of the corporation, to the detriment of its health in the long run.

Investigation of EVA<sup>®</sup> as a better predictor of stock returns or market value did not support the arguments put forward by EVA<sup>®</sup> advocates (Walbert, 1994; Grant, 1996; O'Byrne, 1996; Uyemura *et al.*, 1996). Compared to the accounting profit as a measure of value creation, EVA<sup>®</sup> is classed as a more superior measure. This is attributed to the fact that it takes into account the cost of capital, hence a measure of the riskiness of the investment is considered with EVA<sup>®</sup> unlike the accounting measures (Shil, 2006).

### **3.6 Support for EVA<sup>®</sup>**

Initially, EVA<sup>®</sup> gained significant support because of the claims made by its proposers Stern Stewart & Co. It was also helped by Fortune magazine which ran a cover story about the long term benefits of EVA<sup>®</sup>. The cover story also gave a report of all the major companies that adopted EVA<sup>®</sup>. It was reported to be superior to all other measures in gauging the performance of a company (Chong *et al.*, 2009). It was claimed that companies which implemented EVA<sup>®</sup> outperformed their competitors by an annual average of 8.3% over the five years after implementation. They were also reported to have created wealth of over US\$116 billion over the period (Chari, 2009). The claims made by Stern Stewart & Co. also sparked academic interest resulting in more widespread

research on EVA<sup>®</sup> (Sharma and Kumar, 2010; Chari, 2009). Lovata and Costigna, (2002) and Biddle *et al.* (1999) found that EVA<sup>®</sup> helps to reduce agency conflict and improves decision making. It was also found to improve stock performance (Ferguson *et al.*, 2005) and have a stronger association with stock return than other measures (Madinios *et al.*, 2006; Lehn and Makhija, 1997). Erasmus (2008), Kim (2006), Palliam (2006) and Chen and Dodd, (1997) agreed with claims that the information content of EVA<sup>®</sup> was better at explaining stock returns. Researchers such as Mouritsen (1998) argued in favour of EVA<sup>®</sup> as a superior performance measure over traditional measures such as return on investment (ROI) and return on equity (ROE). Another argument used by supporters in asserting EVA<sup>®</sup> as a measure which has superiority over earnings, is that EVA<sup>®</sup> incorporates the cost of capital (Chen and Dodd, 1997). Lefkowitz (1999), O'Byrne (1996), Uyemura (1996) and Peterson and Peterson (1996) all concluded that EVA<sup>®</sup> and MVA are correlated.

One distinct advantage of EVA<sup>®</sup> as a performance measure is that it gives a clearer indication of a corporation's capacity to produce future earnings in comparison to other measures (Modesti, 2007). Compared to NPV, EVA<sup>®</sup> considers the sum of accounting data over a period whereas NPV works on non-accounting data, usually market data, and provides a global valuation of the investment. NPV is based on market values whereas an EVA<sup>®</sup> principle refers to accounting figures (Modesti, 2007). It is the sum of present value of cash flows of a financial investment.

In reviewing the literature on EVA<sup>®</sup>, although there were supporters of some of the high claims, there was no evidence of other supporters proclaiming it to be superior to all the other measures.

### 3.7 Critique of EVA®

When the EVA® criterion is being used, positive EVA® will arise when a financial bubble artificially reduces the cost of capital and management does not increase the internal rate of return. In a depressive market where stocks trade at very low price earnings ratios, EVA® will be obliterated as price earnings ratios decline even if management is creating intrinsic value; that is because the price investors are prepared to pay for assets is declining and the cost of capital being imputed to those assets is rising. Specifically, in both unstable and depressive markets the EVA® criterion, even if purged of the CAPM problems, cannot provide a reliable or valid indication of intrinsic value created by managers, accountants, workers or financial capital because EVA® is also created and distorted by pricing behaviour in financial markets. The question of what determines asset prices needs to be considered, especially if accounting, economic and financial fundamentals are not the sole or main drivers of market price. If accounting, economic and financial fundamentals are not the sole or main drivers of market price, then intrinsic value will not correspond to market price, and reliance on market price as an indicator of true value is not an acceptable professional practice. Secondly, there is the matter of being able to satisfactorily divorce a juristic concept enshrined in law that strives for fairness in price and rate setting for  $r$ .

Chen and Dodd (2001), Paulo (2002) and Garvey and Milbourn (2000) found discrepancies when they compared their finding with the conclusions of Stern Stewart & Co. Kim (2006) undertook empirical studies on the relative and incremental content of EVA® and traditional performance measures, earnings and cash flow. He revealed that EVA® is not a superior measure to traditional measures in association with equity market value.

The drive by shareholders within many companies leads to increase pressure on corporations to maximize shareholder value. This led to the development by some consulting corporations to derive measures to address this need. Palliam

(2006) has deduced that there has been insufficient empirical research to substantiate the claim that EVA<sup>®</sup> is the best value performance measure. Taking a sample of 500 US corporations from the Stern Stewart database, Chen and Dodd (1997) found that accounting earnings provided more significant information than EVA<sup>®</sup> measures. They also found that, empirically, EVA<sup>®</sup> is comparable to RI. They also found that while improved EVA<sup>®</sup> is associated with higher returns, the strength of the association claimed by the proponents of EVA<sup>®</sup> was not substantiated.

However, in determining EVA<sup>®</sup> the cost of capital is calculated according to CAPM which Fama and French (1997) argued to be a less than satisfactory approach as it is not regarded as a good description of expected returns. Instead, Fama and French (1997) proposed an alternative three-factor pricing model. They believe that traditional profit based performance measures force managers to focus too much of their attention on the bottom line whereas with EVA<sup>®</sup>, not only are they accountable for the earnings generated but also for the amount of capital employed, hence aligning the incentives of managers lower down in the organisational hierarchy with those of the shareholders.

What Biddle *et al.* (1999) found was that management actions in an organisation which had adopted EVA<sup>®</sup> could be influenced by other factors. It was found that organisations implementing EVA<sup>®</sup> style incentives also tend to:

- i. Increase asset turnover by improving its operating efficiency,
- ii. Dispose of assets which fail to earn adequate returns compared to overall cost of capital and also make few decisions to undertake new investment,
- iii. Increase share ownership by repurchasing company shares. This is seen as a way of redistributing underperforming capital to shareholders (Biddle *et al.*, 1999).

However, these factors cannot be attributed to the effectiveness of EVA<sup>®</sup> alone as Biddle *et al.* (1999) were of the view that such actions would be predisposed by managers in response to incentive schemes based on residual income. In that regard, they conclude that further investigation would be necessary to identify any correlation with EVA<sup>®</sup>.

Empirical evidence to support the claims made by the proponents of EVA<sup>®</sup> as an efficient measure of performance has been lacking. Neither is there much literature in respect to its application within small businesses.

Value based management is based on the assumption that benefits are only to be gained from projects with positive NPV; that is, an investment must only be made if expected rates of return exceed the cost of capital. While supporting the EVA<sup>®</sup> framework as a performance measure Cheremushkin (2008) was highly critical of the way in which the WACC was determined. In calculating EVA<sup>®</sup>, it is recommended that the cost of capital be calculated as a product of the market capital based WACC and accounting based invested capital with adjustments made for the accounting items (Cheremushkin, 2008).

EVA<sup>®</sup> is advocated to represent a “quality criteria” directly related to shareholders’ welfare over time. It might be called the “true profit” measure that is the measure by which profit exceeds or falls below all the costs arising from employing that capital to acquire that profit. However EVA<sup>®</sup> is a value indicator which focuses attention on the strategic management of the organisation; it does not take into consideration the different external and internal factors which impact on the strategic business management (Zelgalve, 2005).

Mathematically, EVA<sup>®</sup> is promoted on the basis of being a precise measure of performance. The EVA<sup>®</sup> calculation, though presented in a simple formula, is in practice complicated to perform. This is because of the requirement of precise determination of the value driven indicators. These are:

- Indicators of the operating profit
- Volumes of capital
- Price of capital

Distortions in calculating EVA<sup>®</sup> are prevented with the application of adjustments to the capital and profit volume. The determination of these adjustments is up to the corporation. However, once these adjustments are applied, the corporation has to maintain the same consistency throughout, and the formula derived remains unchanged. Otherwise, the wrong idea about the corporation's performance is obtained. Hence all companies will have the same formula with differences in the principle of the calculation, as all companies will make their own adjustments and assumptions.

Typically, the changes made are as follows:

- Provisions for the expense of credit losses
- Volume of written off loans

Market share expansion is the leading indicator of EVA<sup>®</sup>, but it may also be a lagging indicator of on-time service delivery. Bhattacharyya and Phani, (2004) also drew from the work of Makelainen (1998) which supported the theory proposed by EVA<sup>®</sup> proposers and other researchers about the effect of depreciation on EVA<sup>®</sup>. Distortions with EVA<sup>®</sup> can also occur because of the historical cost straight line depreciation method used by most businesses to evaluate their assets. By using this method, the more current the assets are, the closer the accounting rate of return is to the true rate of return (Bhattacharyya and Phani, 2004). Therefore this can only give a true reflection in instances where the assets in the business are fairly new. Over time, the distortion causes a constant deviation away from the true value. This is therefore an indication of the unlikely possibility that these measures could be used to derive any meaningful conclusions regarding the performance of the corporation.

Another limitation is that conventional measures do not cover the full cost of investment in the corporation beyond that captured by NOPAT. The only capital costs considered is the cost of borrowing which leaves the corporation and shareholders exposed to risks. By ignoring the cost of equity in ascertaining the return on investing, not only are the risks inherent in the project ignored but also whether the return is commensurate with the risks of the underlying assets. The resulting effect is to accept investments which produce attractive rates of return while destroying the value of the corporation because the cost of capital set is higher than that used by management.

The benefits (virtue) of EVA<sup>®</sup> may not be realised in practice because of the difficulties associated in calculating the cost of capital. Difficulties are experienced in using market returns because of market discounts expectations; hence the market return is highly subjective to influences in the capital market. Similarly there are difficulties associated with using CAPM in measuring the cost of equity because of the difficulty in measuring risk-free-return, beta and market premium, as numerous alternatives can be used which in turn generate a range of figures for  $k_e$ . CAPM is highly dependent on the volatility of the market which is indicative of a developed economy having a more stable capital market than a developing economy (Bhattacharyya and Phani, 2004).

Bhattacharyya and Phani (2004) therefore argue that the potential for EVA<sup>®</sup> as a measure of performance is more favourable in an advanced economy. Arguments put forward which support the simplicity of EVA<sup>®</sup> have been contested. This is as a result of the over 160 accounting adjustments recommended by Stern Stewart & Co. The proposed adjustments to accounting figures seek to bring in line accounting book values with economic cost. The purpose of this is to:

- i. Align the cost of capital close to current value;
- ii. Include all investments treated as cost incurred over the period by accountants such as research and development and training;

- iii. Bring EVA<sup>®</sup> closer to the real cash flows of the corporation (Bhattacharyya and Phani, 2004).

Bhattacharyya and Phani, (2004) purport that the adjustments complicates the calculation of EVA<sup>®</sup>, more so as most enterprises do not maintain in-depth data required for these adjustments – and even if maintained, it is inaccessible to those outside the corporation. For corporations with the desired information, this may mean the hiring of a consultant to undertake the EVA<sup>®</sup> calculation – inevitable resulting in additional cost to the business.

Having conducted a comparative analysis of results of numerous researches done on EVA<sup>®</sup> adjustments, Chari (2009) concludes the studies do not provide any information on the relative or absolute impact of individual adjustments on calculating EVA<sup>®</sup>. From the analysis of various studies on EVA<sup>®</sup> adjustments by researchers such as Anderson *et al.*, (2004), Young (1999), Uyemura *et al.* (1996) amongst others; Chari, (2009) also concludes that no empirical evidence was presented to affirm that the adjustments made in computing EVA<sup>®</sup> converts wrong accounting numbers into correct estimates of value.

In 2001, Weaver surveyed the practices of companies adopting EVA<sup>®</sup> based management systems to analyse how EVA<sup>®</sup> was calculated. Having obtained responses from 29 corporations and after analysing the responses, Weaver (2001) concluded that no two corporations used the same set of adjustments in calculating EVA<sup>®</sup>, Invested Capital and NOPAT. Although all corporations had used CAPM in ascertaining the cost of equity, there were differences with respect to the equity risk premium (Beta co-efficient). From his work, he was able to establish that, on average, corporations use 19 adjustments to calculate EVA<sup>®</sup>. This questions the simplicity of approach claimed by Stern Stewart & Co.

### 3.8 Summary

Value and value drivers have become important indicators in business performance in modern day finance. Evidently, it has aroused interest amongst practitioners and academic researchers alike. The literature shows that the meaning of value varies and could be interpreted based on the context in which the word is used. However it was evident that, from a business perspective, the meaning of value converges to the integration of resources and players, both internal and external, to transform resources into the products or service to be provided by the company (Lepack, 2007; Brandenburger and Stuart-Jr, 1996; Porter 1991; Itami and Roehl, 1987). Within businesses, the literature points to the importance of recognising the worth of intangible resources (Hall, 1992; 1989). However intangible resources are not easily identified by businesses. This is mainly due to the fact that accounting conventions normally account for tangible resources. This means intrinsic values derived from intangible resources are easily overlooked if not forgotten. This is because it is not easy to establish the relationship between tangible and intangible resources (Fernandes and Martins, 2011). The literature points to the relationship between strategic businesses planning and the identification of value from the resources to be employed within the business. It also shows the essence of what benefits could be derived by identifying how to capture that value (Shafer *et al.*, 2005). Overall, the literature on value points to its strategic importance for any business entity whether large or small. However, if value is captured and as it is believed to be a wealth creation activity, then there must be some process or tools in place to measure that value.

The literature also highlights the advances in modern day financial theory. With the concept of value becoming commonplace, there has been the development and marketing of value based performance measures; EVA<sup>®</sup>, CFROI, SVA to name a prominent few. However, these measures have come with increasing debate about their effectiveness and performance over traditional accounting

measures. Nonetheless, despite the challenges, ultimately in the realm of creating shareholder wealth, managers need to measure performance against competing ends. Hence regardless, the literature indicates that ultimately, managers will have to understand the tools at their disposal and select an appropriate measure.

While the literature covers studies on value based measures in large companies, very few studies examine the same in SMEs. Most importantly, the review of the literature brought to the forefront that studies on value within SMEs is lacking. The literature indicated that value, value creation and measurement are very much issues for any company whether they be a large organisation or a SME.

In summary, the key points from this chapter are:

- With the passage of time, there have been changes in the thinking on what defines value within a company. Intangible resources are now viewed as value added resources within the context of a business.
- While the literature on EVA<sup>®</sup> speaks of value and value added there are no clear links within the literature between an organisation's resources and the EVA<sup>®</sup> performance model. Instead, the link within the literature is reflective of the book values of traditional accounting measures which are considered in making EVA<sup>®</sup> adjustments.
- The claimed superiority of EVA<sup>®</sup> by its proposers continues to be challenged by other researchers.
- There are still discrepancies as to the information content within EVA<sup>®</sup> compared to traditional measures.
- Problems in calculating EVA<sup>®</sup> range from deciding on the adjustments to problems inherited with the use of CAPM in determining  $k_e$  and henceforth the cost of capital.
- EVA<sup>®</sup> is challenging to implement. It must be adopted in its entirety for an organisation to realise the benefits.

- The internal training associated with the implementation of EVA® is extensive and would require the training of all staff not just managers.
- EVA® implementation is dominant in American. In recent times it has gained some interest in developing countries such as India, Brazil and Malaysia.
- Extensive gaps in the literature on EVA® are identified within the literature review. This indicates the potential for more extensive research on EVA®.
- Although some claims made by EVA® proponents have been substantiated, there is still some opposition to those claims.

## ***Chapter 4: SMALL BUSINESS ENTERPRISE DEVELOPMENT***

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- 4.0 Introduction
- 4.1 The Development of Small and Medium-Sized Enterprises (SMEs)
- 4.2 Characteristics of SMEs
- 4.3 Use of Financial Information and Decision-making in SMEs
- 4.4 Financing of SMEs
- 4.5 The Social Contribution of SMEs
  - 4.5.1 Influences for Growth of SMEs
  - 4.5.2 Barriers faced by SMEs
- 4.6 Value within SMEs
- 4.7 Performance Management in SMEs
- 4.8 EVA® in SMEs
- 4.9 Summary

## 4.0 Introduction

From its beginnings in approximately 1962, small business research has emerged to be an important area of study (Grant and Perren, 2002). Prior to that time, the empirical evidence shows that vast amount of research had been undertaken in larger organisations (Levy and Powel, 1998; La Rovere, 1998). One reason for this is that, until the 1970s, economic development was primarily achieved through mass production in large firms. However, since that time, there has been a continuous trend towards 'downsizing' and this has significantly increased the commercial importance of the SME (La Rovere, 1998).

Interest in areas of research on the economics of SMEs has emerged over the years. (Jovanovic, 1982; Kihlstrom and Laffont, 1979; Lucas, 1978; Schumpeter, 1934; Knight, 1921 and Marshall, 1961). These areas include; understanding the size variation, the effect of company size on behaviour, how they came about, their growth and disintegration, their role in new product creation and evolution of industries, the dynamism of their relationships and their impact on macroeconomics variables such as output and employment. The early work of such researchers who presented various theories in order to understand the intricacies, anomalies and disparities between small and large businesses was the focus of Brock and Evans (1989) in rationalising the justification for specialist and more focused research in small business economics. They concluded that even though research on SME's was sparse at the time, the theories presented were plausible; and not only demonstrated the importance of SMEs but also highlighted the need for focused research for economists to better inform policy makers.

The era of more focused research into the contribution of SMEs began in the United States where they were rapidly increasing in numbers. This later extended to other countries in Europe before materialising in the United Kingdom (Blackburn and Smallbone, 2008). There are now many specialised

academic journals for SME research. Table 4.1 below gives a listing of some of these resources.

**Table 4.1: Listing of Prominent Small Business Journals**

| <b>Journal Title</b>   | <b>Focus</b>   |
|--|--|
| <b>American Journal of Small Business</b>                      | <ul style="list-style-type: none"> <li>• General business.</li> </ul>  |
| <b>Fortune Small Business</b>                                  | <ul style="list-style-type: none"> <li>• Presents information for effectively operating a small business.</li> </ul>   |
| <b>International Small Business Journal</b>                    | <ul style="list-style-type: none"> <li>• Attracts international academics and focuses on theoretical, empirical, policy and practitioner issues in small business and entrepreneurship.</li> </ul>   |
| <b>Journal of Entrepreneurial &amp; Small Business Finance</b> | <ul style="list-style-type: none"> <li>• Entrepreneurship and small business finance. Publish work of academic researchers as well as practitioners in the field.</li> </ul>   |
| <b>Journal of Small Business &amp; Enterprise Development</b>  | <ul style="list-style-type: none"> <li>• Major international research journal which focuses on the formulation, development, implementation and evaluation of enterprise policy.</li> </ul>  |
| <b>Journal of Small Business Management</b>                    | <ul style="list-style-type: none"> <li>• Scholarly research in the field of small business management and entrepreneurship.</li> </ul>   |
| <b>Small Business Advisor</b>                                  | <ul style="list-style-type: none"> <li>• General information on small business.</li> </ul>   |
| <b>Small Business Banker</b>                                   | <ul style="list-style-type: none"> <li>• Financial information.</li> </ul>   |
| <b>Small Business Economics</b>                                | <ul style="list-style-type: none"> <li>• International journal with a broad scope – focuses on multiple dimensions of entrepreneurship including characteristics, new ventures and innovation within firms, life cycle; the role of public policies. Covers broad disciplines – economics, finance, management, psychology, regional studies, sociology and strategy.</li> </ul> |
| <b>Entrepreneurship Theory and Practice</b>                    | <ul style="list-style-type: none"> <li>• Scholarly journal in the field of entrepreneurship studies.</li> </ul>  |

Nonetheless, researching the SME still has its challenges. From the literature it was found that some researchers were uneasy about the quality of SME research. Although small business research was gaining prominence in

mainstream journals, *The Academy of Management Review*, *Strategic Management Journal* and *The Academy of Management Executive*; the standard of the research was of much concern (Blackburn and Kovalainen, 2009; Davidsson *et al.*, 2001; Davidsson and Wiklund, 2001; Low and MacMillan, 1988). Such were the sentiments originally expressed by Low and MacMillan (1988) who reflected on the agenda, methodologies, processes and outputs from research, the subject being investigated, analysis made and the conclusions drawn (Blackburn and Kovalainen, 2009; Davidsson *et al.*, 2001). Since the Low and MacMillan (1988) view, progress has been made and SME research embraces a wide range of issues and has continued to evolve (Blackburn and Kovalainen, 2009). On that basis, this research is intended to continue on the path of development in SME research with investigation into the complexities of understanding the variables in growth and value creation. However, in striving to achieve a high quality analysis, the research was focused on the more formally structured SMEs. The less structured group was eliminated because of likely issues with lack of information and the more informal nature of these businesses (Storey, 1994), and would be more difficult to comment on generalisation of findings. The evidence of the contribution of SMEs to economic development is long standing. In the UK, they provide 60% of jobs and contribute 50% of GDP (BIS, 2010).

This chapter will focus on the general development of SMEs before looking at SMEs in the UK, their characteristics and barriers such as the constraints to financing. The chapter concludes with an examination of decision-making and performance evaluation within SMEs.

## **4.1 The Development of Small and Medium-Size Enterprise (SME)**

Defining an SME is not a simple task and differs from country to country (Cunningham and Rowley, 2010; Ayyagari, Beck and Demirgüç-Kunt, 2003; Brock and Evans, 1989). In the UK, one of the earliest attempts was provided by the Bolton Report in 1971 which made two suggestions at defining a SME. First Bolton proposed a definition from a qualitative or economic perspective in which he tried to capture the range and diversity of smaller companies in relation to larger companies. The economic definition had three criteria which must be satisfied for an entity to be considered a small company; namely:

- i. The company must be an independent entity and not be a subsidiary of a larger entity;
- ii. It should be managed in a personalised manner hence should have a simple management structure;
- iii. It should have a relatively small market share (Carter and Jones-Evans, 2006; Storey and Johnson, 1990; Bolton, 1971).

Although these criteria reflect the features of smaller companies, the definition drew criticism on issues such as the statement of ownership, financing and liabilities (Keasey and Watson, 1993); problems of uncertainty in shifting ownership as the company grows (Storey, 1994) and; the relativity of independence and personalised nature of SMEs which also creates uncertainty (Storey and Johnson, 1987).

Bolton proposed a second definition which was more quantitative or statistical in nature with the intent to capture the heterogeneity of smaller enterprises. The definition differentiated firm size by sector, its contribution to the economy by aggregates such as GDP, employment, exports and innovation (Tonge, 2001; Bolton, 1971). This statistical definition is presented in Table 4.2 below.

**Table 4.2: Bolton Committee (1971) Definitions of a Small Firm**

| SECTOR                      | DEFINITION   |
|-----------------------------|--|
| Manufacturing               | 200 employees or less                              |
| Construction                | 25 employees or less                               |
| Mining & quarrying          | 25 employees or less                               |
| Retailing                   | Turnover of £50,000 or less                        |
| Miscellaneous               | Turnover of £50,000 or less                        |
| Services                    | Turnover of £50,000 or less                        |
| Motor trades                | Turnover of £100,000 or less                       |
| Wholesale trades            | Turnover of £200,000 or less                       |
| Road transport              | Five vehicles or less                              |
| Catering                    | All excluding multiples and brewery-managed houses |
| <i>Source: Bolton, 1971</i> |  |

This too was not without concern as there is no single measure which can be used to give a satisfactory account of the size of the enterprise. It was clear the classification of a SME is not just about size, as defined in simple statistical terms. Although Bolton addressed the issue by proposing a variety of measures to reflect the assortment of business enterprises; example, use of sectoral levels of measurement for employment, turnover and assets to account for the size of the enterprise (Carter and Jones-Evans, 2006), this definition was still problematic. The statistical definition presented no real clarification for what constitutes a small business as it presents four different criteria – employees, turnover, ownership and assets which further complicate the issue (Tonge, 2001). The definition also proved to be challenging because of the different limits for turnover and employees in each sector; and the use of monetary unit in the definition makes comparison over time difficult, particularly when accounting for price changes (Story, 1994).

This was eventually followed up in 1996 by the European Commission (EC) with a more uniformed definition as organisations which employ fewer than 250 people (see *Table 4.3*). It was here that the term “small and medium-sized enterprises” (SMEs) was first coined. This was disaggregated into three parts; independence, employee and turnover or balance sheet criteria. To qualify as a SME, both the employee and the independence criteria must be satisfied plus either the turnover or balance sheet criteria (EC Report, 2006; O’Regan and Ghobadian, 2004; Levy and Powel, 1998). In 2003, recommendations were made for changes, to be effected on 1<sup>st</sup> January 2005, to reflect economic developments since 1996 and lessons learnt from application of the definition.

**Table 4.3: EC Definition of SMEs – January 2005**

| SME Definition                  |           |                |    |                     |
|---------------------------------|-----------|----------------|----|---------------------|
| Enterprise category             | Ceilings  |                |    |                     |
|                                 | Headcount | Turnover       | Or | Balance sheet total |
| <b>Medium</b>                   | <250      | ≤ € 50 million |    | ≤ € 43 million      |
| <b>Small</b>                    | <50       | ≤ € 10 million |    | ≤ € 10 million      |
| <b>Micro</b>                    | <10       | ≤ € 2 million  |    | ≤ € 2 million       |
| <i>Source: EC Report (2006)</i> |           |                |    |                     |

In the early 1980s, the continued decline in the UK economy instigated the Government at the time to back incentives aimed at the formation of new enterprise to stimulate growth within existing SMEs (Froud, 1985). During that time, it was recognised that SMEs are major contributors to a country’s economy. In the United States for example, SMEs (defined as those with less than 500 employees) were shown to contribute about 20% of the value of their

exports (Storey, 1992). For 2010<sup>3</sup>, the U.S. Census Bureau data shows 5,717,302 (2009: 5,749,797) SMEs in the U.S. with an annual payroll of \$2,106,533,020 (2009: \$2,084,818,973) (Country Business Patterns, 2010 and 2009). This represents a 12.52% increase in the number of SMEs in the U.S. and 97.44% increase in the annual payroll compared to 1992 data from Storey (1992) study. SMEs in 2010 employed 49% of the work force versus 53%<sup>4</sup> in 1992. Compared to 2009 data, the number of small companies fell by 0.48% in 2010; annual payroll increased by 2.44% but the percentage workforce employed by small companies remained constant.

As with the rest of the world, SMEs across Europe were impacted by the global financial crisis in 2009. In a report commissioned by the European Commission in 2011, indications were that a modest recovery began in 2010. This recovery was forecasted to consolidate in 2011. Most importantly, it was predicted that this would lead to an increase in employment in SMEs. However the recovery has been fragile due to uncertainties in the economic and financial environment. Nonetheless, the data collated for the report show that SMEs retained their position as the backbone of the European economy. According to the statistics gathered by the European Commission (2011), there were 20.8 million SMEs in the European Union; the same amount as in 2009. Of this amount, 19.2 million or 92.1% were micro micro-firms. As it was in previous years, large companies only made up a modest 0.2% (43,000) in total across all EU member states. During the recession across the EU member states, employment fell by 2.7% in 2009 but slowed in 2010 to 0.9%; resulting in a loss of 823,000 jobs.

In October 2012 the EU published the results of its SMEs performance review which shows the situation remained static. They continue to be the backbone of the economies across the EU despite the debt crisis in the Euro zone. There

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<sup>3</sup> Government department which produces an annual series called Country Business Patterns. Data includes self-employed. Employment size range uses for U.S. SMEs are: 1-4, 5-9, 10-19, 20-99 and 100-499. Figures are normally released with a calendar lag of 2 years. At the time of writing, 2011 data is due to be published in May/June 2013.

<sup>4</sup> Employment data for 1992 excludes sole traders.

were around 20.7 million SMEs accounting for 67% of total employment and 58% of gross value added (GVA) (European Commission, 2012).

The European Commission reports (2011 and 2012) also compared how SMEs in the United States fared during and post-recession with those in the European Union. The data shows that SMEs across the European Union fared better during the recession with only a 2.7% loss in employment compared with 6% in the United States. Although the number of SMEs increased in the European Union and overall total employment increased, the data shows that on average, in terms of size of European SMEs there was a marginal decline in employment. Employment fell to 2.24 persons per enterprise in 2010 across the EU SMEs compared to 4.4 persons in 2003. Salaries in SMEs continue to trail those of larger enterprises which are 2-6 times higher than those of micro-firms in 2010. However, pay levels of SMEs were more close to those of larger entities. SMEs in the US appear to have had a much more robust recovery than those in the EU. Although the report published in February 2011 predicted a full recovery beyond September 2011, the October 2012 report stated that the situation is still challenging for SMEs. With past evidence showing companies in so-called “hi-tech” and knowledge intensive industry performing strongly in difficult times, the focus is now on exploring options to stimulate growth.

The Department of Business Innovation and Skills (BIS) reported 4.5 million<sup>5</sup> private sector businesses in the UK in 2011, an increase of 94,000 (21%) since the start of 2010. The sector employed an estimated 23.4 million people and had an estimated combined annual turnover of £3,100 billion as illustrated in Table 4.4. Similar to the trend across the European Union, SMEs makes up a significant majority of UK enterprises. The distribution was 99.2% were small (0 – 49 employees), 0.7% were medium sized (50 – 249 employees) and a mere 0.1% were large entities (over 250 employees). It is estimated that UK SMEs employed an estimated 13.8 million people with a combined annual turnover of

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<sup>5</sup> Figures rounded to the nearest 100,000. This represents all small business operations including sole traders.

£1,500 billion in 2010. Together, SMEs accounted for 58.8% of the workforce and almost half of the turnover (48.8%) in the UK private sector. A large portion of that contribution comes from the small enterprises (0 -49 employees) which accounted for 46.2% of private sector employment and 34.9% of turnover (BIS, 2011).

**Table 4.4: Number of Enterprises, Employment and Turnover by Size of Enterprise, UK Private Sector at the beginning of 2011.**

|  | Number<br>Enterprises | Employment<br>(/1,000) | Turnover <sup>†</sup><br>(/£million) |
|--|-----------------------|------------------------|--------------------------------------|
| <b>All Enterprises</b>   | 4,542,765             | 23,391                 | 3,052,558                            |
| <b>SMEs (0-249 Employees)</b>  | 4,536,445             | 13,760                 | 1,489,255                            |
| <b>All Employers</b>   | 1,178,745             | 19,707                 | 2,850,127                            |
| <b>With no employees<sup>‡</sup></b>   | 3,364,020             | 3,684                  | 202,431                              |
| <b>1-9</b>   | 968,545               | 3,651                  | 403,871                              |
| <b>10-49</b>   | 173,405               | 3,469                  | 460,500                              |
| <b>50-249</b>  | 30,475                | 2,957                  | 422,454                              |
| <b>250 or more</b>   | 6,320                 | 9,631                  | 1,563,302                            |
| <b>†" All Industries" - Turnover from all industries except in instances where turnover was not available on a comparable basis.</b>   |                       |                        |                                      |
| <b>‡"With no employees" - Comprises sole proprietorships and partnerships comprising only the self-employed owner manager(s), and companies comprising only one employee director.</b> |                       |                        |                                      |
| <i>Source: BIS Statistical Release, 2011</i>   |                       |                        |                                      |

Despite the advances in SMEs there is still no central information on the number of SMEs in any given country (Reynolds, 1997; Storey, 1991). Levy and Powell (1998) described SMEs as volatile entities and believes they are still a vibrant part of the business environment throughout Europe. In the past they have been treated as a single group by researchers and policy makers, however

they have proven to be heterogeneous with diverse needs and objectives. These entities evolved by entrepreneurs wishing to establish a particular lifestyle, to fulfil the excitement of owning an enterprise or simply to satisfy the desire to own a legacy to pass onto their children. Such entrepreneurial spirit has prospered over many decades. SMEs have evolved and grown from a single proprietor or family owned establishment to employ numerous workers and generate millions in profit. They have established formal management structures to organise their operations once staff numbers have exceeded ten employees (Levy and Powell, 2005). Their contribution is widely noted as it is evident that small businesses are vital in any economy (Cagliano *et al.*, 2001; Brock and Evans, 1989). SMEs instigate innovation and create opportunities for employment which are beneficial to communities and contribute to economic development. While they may not create many jobs or offer high salaries on an individual level, collectively they contribute greatly to the economy (Edmiston, 2007).

## **4.2 Characteristics of SMEs**

SMEs are found to be heterogeneous entities with widely varying practices in operations management and strategy, such as human resources management practices (Bhutta *et al.*, 2008; Cagliano *et al.*, 2001). Whilst there has been progress in SME research, Cagliano, *et al.* (2001) feels there still needs to be more focused research on SMEs operation practices and performance and points to two possible barriers to researchers:

- i. No specific investigation focusing on SMEs is required because the view is that SMEs are replicas of larger entities and that research findings from large companies can be directly applied to small companies.

- ii. SMEs are known for their operational flexibility and their technical and technological capabilities. Their ability to use their technical and technological capability helps develop highly specialised products for niche markets. Hence they are able to satisfy customer needs regardless of their informal managerial practices. Therefore the view is taken that operations management is not a critical area in small companies for improvement.

Cagliano *et al.* (2001) questioned those assumptions, and in reviewing the literature came to the same conclusion as other researchers (Levy and Powell, 1998; Storey, 1994) that SMEs are not smaller replica of larger companies. On the other hand, Cagliano *et al.* (2001) found that the effectiveness and good performance of SMEs is widely acknowledged and highlighted some good characteristics which make them grow and compete successfully in the market. These were considered to be:

- i. Their simplified organisation structure
- ii. Lower complexity
- iii. Ability to facilitate communication through informal relationships
- iv. Greater flexibility in the use of their employees
- v. The location of the company and the benefits which are derived from existing in that locality.

The characteristic differences between large and small organisations are perceived to be because of the cultural and structural environment in which they operate (Franco *et al.*, 2011). This was analysed by Smith and Smith (2007) under three perspectives: organisational environment, competitive environment and management practices.

### *Organisational Environment*

Smith and Smith (2007), Zaheer *et al.* (2006) and Masood *et al.* (2005) referenced the work of Cameron and Quinn (1999) that classified and defined 4 types of organisational culture:

1. Adhocracies – exhibits flexible, dynamic characters with a willingness to take risks in order to succeed.
2. Clan culture – strong emphasis on team work and the use of mechanisms to boost and keep staff morale high.
3. Market culture – major concern and focus is the market and achieving results to remain competitive in the market.
4. Hierarchies – focus is on having the right procedures in place and is fully supported by a well-coordinated business structure.

Normally, SMEs have flat structures compared to the hierarchical structure of larger organisations. This structure is a feature of the flexibility of SMEs which potentially makes them adaptable to change and with a high potential for innovation when compared to large firms (Smith and Smith, 2007; Aragón-Sánchez and Sánchez-Marín, 2005; Masood, *et al.*, 2005). Hence SMEs are closely aligned with the adhocracy model. However, no organisation reflects any of the organisational models in its truest form. Although SMEs tend to lack formal structure and bureaucracy, they also tend to exhibit aspects of a clan culture and a highly individualised level of authority and tradition associated with the owner manager. However, many SMEs tend to lack technical and professional expertise and therefore suffer from a lack of business and management skills (Smith and Smith, 2007; Kelly, 1985).

### *Competitive Environment*

The competitive environment within an organisation is dependent on its ability to integrate its internal capabilities against changes in external circumstances (Hart, 1995). The responsiveness of SMEs, their degree of flexibility and ease with which they adapt to changing circumstances is viewed to be a positive characteristic and shows some correlation with the market culture model (Masood *et al.*, 2005).

### *Management Practices*

One of the main differences between a SME and a large company is the management. Compared to a large company, the management of the SMEs tend to be primarily controlled by one person, usually the owner manager or a managing director (Smith and Smith, 2007). In large companies, the management is usually distant from the ownership of the company. The complexities of the management of the small company, ownership and control have been noted by previous researchers. Beaver (2003) stated that, because of the complexities of managing SMEs, the methods and techniques used in the corporate sector are not applicable, valid or relevant. This is because within SMEs resources are scarce; and coupled with the capabilities and expectation of the owner-manager it necessitates a different approach. The effectiveness of how the company is managed has been shown to be dependent on a number of factors; namely, the level of education of the owner-manager, his/her aspirations for the business, and attitude towards risks (Fuller-Love, 2006). Many SMEs managers do not possess the skills to effectively manage issues as they arise, nor the leadership and motivating skills to manage staff. They were also found to have difficulty in delegating or relinquishing control of the company (Fuller-Love, 2006).

## *Innovation*

While innovation is a feature of both small and large organisation, SMEs are thought to be more innovative (Thurik, 1996). This advantage over larger organisation is a result of less bureaucracy, more competitive markets and stronger incentives such as personal commendation and rewards. The propensity of SMEs to be creative, have made them crucial innovators in today's economy and they have risen to be the technological leaders of many industries (Edmiston, 2007). However, larger firms have the advantage in driving that innovation forward to production and sales as they are more likely to possess the finance and resources required to undertake the research and development and the reputation and name recognition to access the market.

The innovativeness of SMEs is also attributed to the structure of the firm and its environment. SMEs tend to operate within highly competitive environment, thus providing the incentives to be more creative to stay ahead of the competition. Also, the managers of SMEs are likely to be the owners and so have higher levels of motivation for innovation as personal rewards have the potential to be greater (Zenger, 1994). The development in the computer industry is an example of small business innovation which has impacted greatly on businesses and economies worldwide.

### **4.3 Use of Financial Information and Decision-making in SMEs**

Financial records of SMEs are said to be unreliable and in some instances are unavailable especially for those in developing countries (Williams and K'nife, 2012). In the UK, SMEs are exempt from many reporting requirements. This could be a reason for the lack of research in this area as researchers would find it increasingly challenging to obtain meaningful and reliable data. When compared to their larger counterparts, the systems of making informed investment decisions are less formal in SMEs (Mäkeläinen and Roztock, 1998).

With limited time, resources and manpower at their disposal and undertaking multiple roles, decision-making within SMEs is less informed than within larger organisations (Lynch and Wilson, 2009).

The performance measures used within SME and decision-making practices have been the focus of research by Lynch and Wilson (2009). Data were gathered from fifty SMEs using surveys with structured interviews, coupled with a group workshop with experts to discuss performance and decision-making in Irish enterprises. Lynch and Wilson (2009) identified 568 performance measures. They found that performance measures tend to exist in what they describe as a haphazard, unstructured environment. They also found that there was no support for these measures at the organisational or strategic level and that managers don't actually know they are doing it, as performance measurement is ingrained.

To understand the decision-making process within SMEs the motivation of the owner-manager needs to be understood. More recent investigation conducted by İBicioğlu *et al.*, (2010), compared the decision-making process of Turkish and European managers of some SMEs. The study showed that these SME managers use financial statements for basic ratio analysis as a guide for decision-making. Turkish managers were found to use financial data mainly for measuring asset efficiency with less interest on understanding profitability indicators. Managers in both European and Turkish SMEs demonstrated an understanding of using financial data to assess liquidity. The study showed that varying levels of importance were attached to the financial statements and elements of the accounts: the balance sheet, income statement and cash flow statements were scored high on the level of importance whereas the components of owners' equity, retained earnings and working capital were regarded with little importance. However, İBicioğlu *et al.* (2010) found that in the face of competition, Turkish managers will take an interest in the working capital unlike their European counterparts.

#### 4.4 Financing of SMEs

Studies have shown that the main obstacle and contributing factor in the failure of SMEs was a lack of access to capital (Slavec and Prodan, 2012; Neely and Auken, 2010; Carter and Auken, 2005). SMEs face the most critical period of their life cycle at start-up when there is the need to balance competing priorities (Adams, 2011). Securing the finance is the foremost fundamental step towards success of the business. For the small business owner, their personal credit rating comes under scrutiny when trying to access finance from the banks or other investors. Banks and investors also take into consideration the investment made into the business by the owner (Adams, 2011). However, this is not the only constraint. Access to bank loans is highly restrictive and other considerations include:

- i. Risk associated with lending to SMEs – Banks consider this as high risk due to limited assets for collateral, low capitalisation and their vulnerability to market risks (Adams, 2011; Daniel and Nicolae, 2011).
- ii. Informational symmetry – Unlike large organisation there is no way for banks to verify the information presented by an SME. The owner-manager of the SMEs is likely to have weaker social ties. His/her success at gaining financing will be dependent on how well he/she articulates himself (Slavec and Prodan, 2012). Hence banks can only rely on the information provided by the owner-manager. SMEs are also less likely to provide standardised financial information and statements (Slavec and Prodan, 2012; Daniel and Nicolae, 2011; OECD, 2006).
- iii. Management skills and ability to service debt – the general capability of the owner-manager to master the role and develop the business including his/her ability to allocate resources and to service debt (Slavec and Prodan, 2012; Daniel and Nicolae, 2011, Adams, 2011).

MacMillan *et al.* (1985) found that venture capitalists, give significant weighting to the personality, experience and qualities of some SME managers when making funding decisions. Typically, the major source of financing for the SMEs comes from limited personal savings and other assets, to those of family and friends who are willing to invest (Adams, 2011; Vos *et al.*, 2007).

Faced with the challenges of access to finance, SMEs have resorted to bootstrapping techniques to generate the capital needed for the business (Bosse and Arnold, 2010; Carter and Auken, 2005; Ekanem, 2005; Winborg and Landström, 2000; Bhide, 1992). Bootstrapping is an alternative means by which owners access the finance to meet the demands of the business without traditional external arrangements or market obligations (Bosse and Arnold, 2010; Ebben and Johnson, 2006; Winborg and Landström, 2000). Winborg and Landström (2000) conducted studies in Sweden to ascertain the bootstrapping practices of SMEs on accessing finance. They also integrated into their studies the work done by Freear *et al.*, (2002)<sup>6</sup> which looked at financing techniques used by technology-based entrepreneurs. The studies concluded that the owner/managers resorted to using other financing techniques without relying on long term external finance. They identified and grouped these 'bootstrappers' into categories based on their favoured technique and preferences. Bootstrappers were categorized into three groups, namely:

1. Those using an internal mode of resource acquisition.
2. Those using a social mode of resource acquisition that is, using social relationships to borrow resources at no financial cost.
3. Those using a quasi-market mode of resource acquisition that is, using subsidies from government institutions to secure resource needs.

Neely and Auken (2010) found bootstrapping techniques to be one of the most common methods used by SMEs as it is inexpensive and an easier way to

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<sup>6</sup> At the time of the Winborg and Landström study, the paper by Freear *et al.* was entitled "Who bankrolls software entrepreneurs?" was available as a presentation paper at the Babson College Entrepreneurship Research Conference, April 9 - 13, 1995, London UK. It was later accepted and published in 2002 in *Venture Capital* under the revised title as referenced.

acquire the required finance. One of the most popular bootstrapping techniques used by SMEs is that of trade credit. Trade credit is an arrangement made between the supplier and the small company for delayed payments for goods/services rendered (Bosse and Arnold, 2010). This technique, if used well, was found to decrease the cost of capital of the firm (Bosse and Arnold, 2010).

Data collected in Sweden by Winborg and Landstrom (2001) revealed that SMEs use 30 bootstrapping techniques to address problems of financing. These techniques, listed in order of the most popular first, are listed in Table 4.5 below.

**Table 4.5: Bootstrap Techniques used in Small Businesses**

|    | TECHNIQUE   |
|----|---|
| 1  | Buy used equipment instead of new   |
| 2  | Negotiate best terms possible with suppliers for goods (goods on consignment)       |
| 3  | Withhold manager's salary for some period   |
| 4  | Deliberately delay payments to suppliers  |
| 5  | Devise ways of speeding up the invoicing process for customers                      |
| 6  | Borrow equipment from other businesses for shorter periods                          |
| 7  | Use interest on overdue payment from customers                                      |
| 8  | Hire required temporary staff instead of recruiting permanently                     |
| 9  | Establish process to minimize the capital invested in stock                         |
| 10 | Co-ordinate with, and bulk buy with, other businesses to increase purchasing power. |
| 11 | Lease equipment instead of buying   |
| 12 | Obtain payment in advance from customers  |
| 13 | Cease business relations with customers who frequently pay late                     |
| 14 | Use of manager's private credit card for business expenses                          |
| 15 | Offer the same payment terms and conditions to all customers                        |
| 16 | Obtain additional capital from managers' employment elsewhere                       |

|    | TECHNIQUE  |
|----|--|
| 17 | Obtain loans from relatives and friends              |
| 18 | Practice barter instead of buying/selling goods      |
| 19 | Offer discounts to customers paying in cash          |
| 20 | Buy on consignment from suppliers                    |
| 21 | Deliberately choose customers who pay quickly        |
| 22 | Share premises with others                           |
| 23 | Employ relatives and/or friends at non-market salary |
| 24 | Deliberately delay payment of value-added tax        |
| 25 | Run the business completely from home                |
| 26 | Obtain subsidies and grants                          |
| 27 | Share equipment with other businesses                |
| 28 | Share employees with other businesses                |
| 29 | Obtain subsidy from County Labour Board              |
| 30 | Raise capital from a factoring company               |

*Adapted from Winborg and Landström, (2000)*

From the study, Winborg and Landstrom (2000) show that companies using bootstrapping do so to create value within the company. The techniques listed are all indicative of ways and means to improve a primary resource, cash. These techniques improve the cash flow by effectively managing the financial resource available; reduce expenses or have the possibility of increasing the cash flow by means of a subsidy.

Access to capital was also found to be one of the main obstacles to females starting their own business. Studies conducted in the US have shown females are less like than males to start a business although the number of females who own a business has grown since the late 1990s (Williams and K'nIfe, 2012; Neely and Auken, 2010). The literature also shows that, although bootstrap is a common means of financing SMEs, indications are there has been little research

in this area (Carter and Auken, 2005). Studies indicate that the focus on SME financing centres around the accessing of capital through venture capitalists and financial institutions.

The lack of financing for business success has also been the subject of research. Kiggundu (2002), Hart (1972) and Harper (1996) all suggest that SMEs compensate for the lack of capital through creativity and innovativeness, but that access to financing or credit does not necessarily translate to the success of the business. Kallon (1990) deduced that SMEs can make positive strides towards enhanced capital growth with the innovative use of limited resources.

The issue of SME finance have been long standing and has been extensively researched to identify the barriers and implications of the access to capital. Historically, SMEs have been found to have a high debt to equity ratio, being largely funded by short-term loans (Hamilton and Fox, 1998). Within SMEs, managers usually exploit their own personal savings first, and then turn to immediate family before approaching financial institutions. This was found to be the case during the early stage of the business life cycle but decreases as the number of years in operation increases (Hamilton and Fox, 1998).

Access to external company financing across the world is now largely shaped by the legal and financial environment within each country (Beck *et al.*, 2008). It is also recognised that, due to market imperfections, SMEs in developing countries have inadequate access to external sources of financing. This has led to organisations such as the World Bank Group working in collaboration with government, channelling resources into the promotion of SMEs with renewed interest (Beck *et al.*, 2008). In the past, measures such as tax breaks and grants were used to incentivise large enterprises to increase economic development. However, in recent years such measures have become less common place as experts become more resilient in providing support structures to advance the development of SMEs. The shift away from implementing strategies for SME

development was as a result of past experience in which such strategies were rarely successful, or if successful; were at a very high cost (Edmiston, 2007).

There is a general consensus that the difference between SMEs financing and that of larger companies is because smaller companies are not small versions a similar larger company (İBicioğlu *et al.*, 2010; Wu *et al.*, 2007; Levy and Powel, 2005). Invariably, listed companies have access to a wider range of financing options than SMEs (Dimson, 1978). Whereas, as mentioned above, financing in SMEs is most likely to be from the owner/manager, family members and from earnings retained through the operation of the business (Vos *et al.*, 2007); all limited sources (Beck *et al.*, 2008). Cassar (2004) and Bates (1997) found that the availability of debt financing was largely based on factors such as:

- Education and Experience - The relationship between experience and education levels of the owner/manager was found to have a greater consequential effect on the access to debt capital (Vos *et al.*, 2007; Bates, 1997). Coleman (2004) showed that SME owners with high levels of education were less likely to apply for loans to fund a business, as highly educated owners operate more profitable firms. Educated business owners were also more likely to make use of trade credit reducing reliance on high interest-bearing loans (Coleman, 2004).
- Location – Generally, large companies everywhere have more access to capital than SMEs. However, studies have shown that the dilemma increases for small companies located in countries with developing economies (Cull *et al.*, 2006).
- Asset structure – SMEs with tangible assets were showed to have more favourable outcomes in accessing debt financing (Cassar, 2004), presumably because tangible assets can be used as security to reduce the risk of non-payments default for the loan provider
- The type of organisation – that is whether it is a sole partnership or an incorporated company. Financial support from banks and other external

agencies appears to increase if the company is incorporated (Cassar, 2004).

- The attitude of the owner manager to risk aversion – New companies are likely to be subjected to and influenced by the owner manager which would influence the choice of financing. An owner manager's personal trait could give an indication of the company's visibility. Hence his/her preference towards risks could influence the route to access financial resources (Cassar, 2004).
- Gender and ethnicity - White woman and Asian men were more unlikely than white men to apply for business loans; although there was no indication they would be denied. Coleman (2004) found that black men were more likely to be denied loans than white men.

Zhang (2010) found that the capital structure within a SME was dependent on the growth, tangibility and profitability within the company. The age of the manager and the size of the firm were also found to be factors in its capital structure. Bank loans for working capital are not free and represent money tied up in the business which could be effectively used elsewhere. Bank loans expose small companies with such borrowing to the risk of failure (Coleman, 2004).

An emerging and increasingly popular avenue of funding for small companies is venture capital. Although seen as a substitute, it is by no means a perfect solution for a small company to attract this unique source of funding; it must have the potential to provide extraordinary return to the venture capitalist (Maier II and Walker, 1987), as well as a clear exit strategy, such as a public listing or take over, which may be counter to the owner's plans and wishes.

## 4.5 The Social Contribution of SMEs

The importance of SMEs in developed and developing countries is widely acknowledged (Okpara and Kabongo, 2009; Wu *et al.*, 2007; Hawkins, 2007; Hussain *et al.*, 2006; Sogorb-Mira, 2005). They have been credited with contributing to employment, factored into the stimulation of growth, technological advancement in advanced economies (Bhutta *et al.*, 2008; Blackmon, and Voss, 2001; Winborg and Landström, 2000) and in fostering social cohesion (Jaing and Li, 2010; Okpara and Kabongo, 2009; Duan, Han and Yang, 2009; Hitchens, *et al.*, 2005). With globalisation becoming an influential force in the world economy, the interest in SMEs has gathered momentum (Okpara and Kabongo, 2009). In recognition of the contribution of SMEs to foster economic growth, employment and poverty alleviation, in 2003 the World Bank approved \$2.8 billion to support micro, small and medium-sized enterprises.

The continued contribution of SMEs has not gone unnoticed by the UK government as for over 2 decades they have been emphasising their significance in the economy. In efforts to provide SMEs with stronger academic input, over the last 10 years, through the Higher Education Funding Council for England (HEFCE) the UK government has encouraged higher education institutions (HEIs) to reach out to business within the community. The programme aims to promote high quality education and research and to add value to society and economy through the transfer of knowledge (Davies *et al.*, 2002). In addition the well-established Knowledge Transfer Partnership<sup>7</sup> (KTP) scheme, which has been operating since 1975, has been a driving force aimed towards strengthening competitiveness, wealth creation and social and economic growth. In 2009 the government expanded the KPT scheme in a bid to assist companies affected by the recession. The scheme benefits SMEs in that

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<sup>7</sup> Originally called the Teaching Company Scheme (TCS) scheme, this was originally aimed at engineering projects but has since expanded to include various sectors. The scheme facilitates the transfer of knowledge between academic and the commercial sector; projects part funded by the scheme and participating company ([www.ktponline.org.uk](http://www.ktponline.org.uk)).

they gain access to outside expertise to learn and develop the skills that they need and universities gain from its exposure to the commercial environment (Sampson, 2009). In recent years, the contributions SMEs make to the cost of the KTP scheme have been reduced to a quarter of the total costs. This effectively reduces their cost and cuts the risk enabling more companies to participate in the scheme (Sampson, 2009).

The characteristics of SMEs are ideally suited for the inclusion of social benefits as part of their value streams. Hence there has been an increase in the investigation of corporate social responsibility (CSR) and SMEs in recent times (Jenkins, 2006). Hawkins (2007) believes that SMEs have significant social impact on the UK economy as they provide the essential part for any economic development and social regeneration. They have the notion to be a 'community' and each individual SME has the potential to impact on the community in which they operate. They provide employment for locals as well as an invaluable environment for technology development and training (Hawkins, 2007).

#### **4.5.1 Influences for Growth of SMEs**

Developing the ability to deal with challenges is a vital aspect of the survival, development and growth of the SME (Davies *et al.*, 2002). This aligns with the heterogeneity of SMEs which, together with the various factors which may affect growth, makes it difficult for the development of a single theoretical framework on small business growth (Smallbone *et al.*, 1995). Nonetheless, attempts have been made to identify those factors which are essential to the growth of SMEs. Storey (1994) studied 306 SMEs over a 10 year period and found that growth and performance is determined by microeconomic variables such as the 'number of jobs', and 'market presence' instead of a financial value. Smallbone *et al.* (1995) concludes that:

- Growth can be achieved within a SME regardless of: how it started, sector, age, or the size of the firm. The growth spurt of SMEs usually occurs within the first few years but may have incremental growth later. The determination and commitment of the manager was found to be instrumental in achieving growth.
- The market environment in which the SME operates is likely to influence growth with a few following in the waves of the market impact. SMEs were found not to do well in highly competitive environments but fare better in environments considered difficult by competitors
- No common type of strategy was found to correlate with growth within SMEs. However, it was found that companies which are quite active and which pay an interest in product and market development, have faster growth rates.
- The most productive firms were highly flexible, such as those that react quickly in adapting to circumstances and which have production processes which align with an active market development strategy.
- To grow successfully, a company must develop their own organisation structure which permits the delegation of operational responsibilities, allowing management to focus on higher strategic functions.
- The sector in which the SME operates will define the technology, opportunities for growth and the likely type of growth strategy.

Future development of SMEs points more towards international trade because of the effects of globalisation. Even as far back as 1997, Reynolds claimed that around 10% of all SME, mainly in the manufacturing sector, were involved in direct foreign investments. This trend is expected to be driven by technological advances in communications and the harmonising of regulatory controls to facilitate trade across economies. In effect, this reduces costs greatly and therefore reduces exposure to market risks.

#### 4.5.2 Barriers faced by SMEs

Despite the contribution provided by SMEs to the economy, the evidence also points to the many barriers to sustained competitiveness and growth of SMEs. Empirical evidence uncovered by Okpara and Kabongo (2009) points to various barriers; namely unfriendly policies and regulatory environment, access to credit, inadequate working environments, obsolete technology, lack of markets for products, and, insufficient access to training. While it could be seen that some barriers were a result of geographical location or other factors innate to the SMEs country of origin, the general conclusion was that there were common barriers to all. The main barriers identified were access to financing, use and access to appropriate technology, access to training, and the capability of management. In many countries, including the UK, governments have intervened by putting in place various support structures to try and eliminate the problems. An early investigation into SMEs by Froud (1985) found that to address the issue of poor access to financial resources, the UK government tried to intervene through the introduction of policies. Such policies were aimed at removing the preconceived belief by financial institutions that new companies and SMEs are high risk and should be avoided (Froud, 1985). Hence UK government policies target support for business start-up and development (Carter and Jones-Evans, 2006).

The rate of failure of SMEs is greater in the developing world, as suggested by Okpara and Kabongo (2009). The main hindrances to SMEs growth and development in Africa were lack of access to funding, lack of managerial education, poor management practices, corruption and a lack of infrastructure.

##### *Access to finance*

As aforementioned, one of the most stated barriers faced by SMEs is access to finance. Duan *et al*, (2009) study on the issue in China revealed that for those

SMEs that have access to finance, it comes at a high transaction cost, such as interest payable. This is further compounded in instances where the SME manager has a poor credit record. In some instances the owner managers are put in a position where they have to use their personal assets as collateral for loans (Duan *et al.*, 2009).

#### *Lack of Internal Control (Technology)*

The lack of internal control systems within SMEs was also identified as a barrier to growth and development, particularly in the current financial crisis (Jaing and Li, 2010). A Chinese study showed the management of many SMEs thought the implementation of control systems was costly and human intensive and that these were found to be inferior to direct management of the business by a manager (Jaing and Li, 2010). The lack of a physical risk warning system leaves the business open to risk and management will lack the ability to accurately assess its operation position. Whilst this was viewed as a problem for SMEs, particular those operating within special conditions such as franchises, Jaing and Li (2010) found this was a greater problem for family and owner manager firms as they are unlikely to have an established effective governance system.

#### *Access to Training*

SMEs need to access training which is tailor-made and prepared in bite-size so that they are imparted with the knowledge necessary for them to remain effective. While on the job training or job specific training is needed to remain competitive, more is needed to be done in terms of accessing more formal training (Lange *et al.*, 2000).

### *Poor Management*

Compared to large businesses, SMEs tend to lack the professional skills needed in some instances to take the company forward. Although the arguments supporting the contribution to economies made by SMEs are well established and accepted, Cagliano *et al.*, (2001) points to the lack of “world class” literature focusing on SMEs practices and performance. They found research in these areas was focused mainly on large corporations and their subsidiaries in advanced economies such as the USA, Japan and Europe.

## **4.6 Value within SMEs**

Although research focusing on SMEs gained more recognition in the UK following the 1971 Bolton report, investigations conducted by Curran and Blackburn (2001) indicate that barriers still exist. The main issue appears be, in comparison to large entities, there is still little work undertaken in the area of SME research. The literature shows business research was widely concentrated in the areas of management and not enough progress has been made in widening that scope in SME research (Curran and Blackburn, 2001).

The search of the literature revealed little in the area of value within SMEs. However a search in the broader context of value in relation to entrepreneurs and entrepreneurial behaviour produced better results. As a starting point, a closer look was taken of SMEs orientation towards culture and position on responsibility towards their stakeholders and society.

Buchanan (2011) explored the core values of companies selected in the US as the top 50 SMEs to work for in 2011. He examined the question of what constitutes the core values within these companies. The article depicts an image of value creation through the development of a culture within the organisation which provides the stimulus which makes employees want to work and remain

with the companies. However his impression on how culture is established suggests two distinct methods. Firstly, a free form evolution of culture which describes the early stage of a small company in which management is less concerned about organisation culture. During the early stages of the business, the concerns are around the lenders, investors and customers, through their support and patronage, the owner manager will see the company develop (Buchanan, 2012). It is within this void, with the company perched precariously between success and failure that the culture and core company values are established. Next was a conscious and coherent approach by the owner manager to create an atmosphere within the company based on his/her ideals from the establishment of the company (Buchanan, 2012). Whatever the route taken Buchanan (2012) stated that the success of the top 50 small companies in the US was in part attributed to the core values of the culture within the company.

In today's ever evolving dynamic and integrated world of business there has been increased attention in the area of corporate social responsibility (CSR) and the value it adds to a company. Hammann *et al.*, (2009) realised that studies on CSR value were focused on large corporations and in turn investigated if CSR created any value within SMEs using a sample of companies in Germany. Unlike large corporations, CSR is not included formally within the codes of practice of SMEs. Instead, CSR tends to be a reflection of the entrepreneur's personal sense of responsibility. Hence, decisions are normally based on significant thought and conscious evaluation against alternatives and the impact on the company, stakeholders or wider interest groups including the community (Hammann *et al.*, 2009). Their study concludes that value creation in SMEs is mediated through specific socially responsible management practices towards employees, customers and society. For employees, Hammann *et al.*, (2009) conclude that CSR practices in SMEs create value by means of staff satisfaction, motivation and have a positive effect on perceived absenteeism. For customers, CSR value orientation was towards perceived customer satisfaction shown by constructive

positive feedback and less price sensitivity.. For society, the effect of CSR on value creation was the positive image and reputation of the company in the society. Hammann *et al.*, (2009) conclude from their work that this all leads to positive economic value creation for the company with increased profits due to cost reductions.

Buchanan (2012), Hammann *et al.* (2009) and others such as Korunka *et al.* (2010), Sahin, *et al.* (2009) also affirmed that those similar qualities were inherent in entrepreneurs and SMEs. Hence they too drive value and value creation in economies. They also attest to how the entrepreneur manages the limited resources of the business within their environment so creating sustainable companies and making a contribution to the economy. The literature also points to small companies as innovators (Koellinger, 2008) and the advantage they have over larger companies in this area. While large companies tend to have innovative advantage in areas such as pharmaceuticals and aerospace, SMEs tend to lead innovation in areas such as in computer application and instrumentation control (Thurik, 1996). Studies also shows that the innovative drive within larger companies are market driven whereas in small companies it is more about the need to be dynamic for survival in an ever increasing competitive environment (Vaona and Pianta, 2008).

An examination of what this means indicates that value within SMEs can be aligned to those covered in *Chapter 3* on the conceptualisation and creation of value within organisations. This could be substantiated by Hogg's (2011) conclusion that an entrepreneur creates value within his/her business by building on the factors that engineer returns; namely, money, the market and by creating a competitive advantage. Similarly Prestney (2012) points to these things as the value which is created within SMEs which determines the worth and success of the business.

## 4.7 Performance Management in SMEs

Although there is a wealth of research on growth and performance of firms, research focus has been more on large organisations rather than SMEs when looking at growth within firms (O'Regan *et al.*, 2006). The literature also shows that research trends are in favour of the definition of performance measures, and its design and alignment with organisation strategy (Turner *et al.*, 2005). There are various types of performance measures within SMEs, both financial and non-financial. While there is evidence of some kind of financial measures in place; such as sales, profit and return on investment (Perera and Baker, 2007) only a few SMEs were found to have other KPIs, all of which were very rudimentary; for example staff turnover (Hudson *et al.*, 2001). SMEs were found to be reactive in trying to implement a performance measure, mainly as a result of external rather than internal stimuli. Development was found to be in an *ad hoc* fashion (Lynch and Wilson, 2009; Perera and Baker, 2007) with staff having little or no understanding of what is required, leading to the collection of poor quality data (Hudson *et al.*, 2001).

The implementation of performance measures is dependent on the organisation, the resources and the reasons behind its implementation (Perera and Baker, 2007). Measurement of performance in SMEs was found to be different from large organisation and was an attribute of their unique characteristics. Within large organisation, the use of performance measures is for the purpose of satisfying the requirements and expectations of stakeholders. In the case of SMEs, its primary use was found to be for assessment of the overall performance of the company (Perera and Baker, 2007). However, the literature found that research is lacking into the issues surrounding the implementation of performance measures within SMEs (Turner *et al.*, 2005).

Largely, the studies on performance within SMEs focus mainly on survival of the firm rather than on the basics of understanding the process of growth within SMEs (O'Regan *et al.*, 2006). Lynch and Wilson (2009) also found that strategic

performance measure within SMEs are normally viewed as an afterthought by many researchers usually after considering the impact on large organisations. They found that financial performance measures exist in SMEs but not in a formal structure; however these performance measures seem to be well understood by the owner-managers. In instances, the measures were found to be ingrained within the organisation in a haphazard unstructured way, without organisational or strategic level support and could easily be overlooked as a performance measure by managers (Lynch and Wilson, 2009). Lynch and Wilson (2009) also found operational staff have quick measures which they rely upon in providing management with the information they need; for example sales, units produced per run/cycle time, cash in bank. The measures used were also found to be company specific.

There are some kinds of performance measurement systems in place within SMEs, and there is an acknowledgement of the role of strategies which support such systems. However there is no indication of steps being taken to redesign or update the measures in use (Hudson *et al.*, 2001). Lynch and Wilson (2009) conclude that while dynamic performance measures such as the Balance Scorecards were suitable for SMEs, managers within these entities are yet to understand them and the potential benefits to their organisation. SMEs were also found to be lacking in understanding the importance of identifying and measuring the performance drivers within the organisation (Perera and Baker, 2007).

#### **4.8 EVA® in SMEs**

In conducting the literature review, very few articles were found examining the applicability of EVA® to SMEs. Whilst there have been many references to the application of EVA® in large companies including multinational corporations trading on the stock markets, banks and government bodies, there was little

evidence of many studies in relation to SMEs. In theory, the principles of EVA<sup>®</sup> should be easier to apply within owner managed SMEs than in large organisations. It could also be a vital tool in helping non-financial managers develop a better understanding of their business. However, this does not mean SMEs are, or would be naturals to grow EVA<sup>®</sup> as they too will need to learn to consider the cost of capital and a wider view of value creation instead of focusing on accounting numbers (Story, 2002).

Although Bahri *et al.* (2011) stated that EVA<sup>®</sup> can be a useful tool for measuring performance within SMEs; there was little evidence of this occurring in practice. EVA<sup>®</sup> appears to be a popular focus for research with developing economies such as China, India, Hong Kong and Bangladesh. However, there is little evidence of its implementation within SMEs in any of these countries. For example, from a study of eight small firms in Bangladesh from which a combined total of 60 employees at various levels were interviewed, Hoque *et al.* (2008) found none had implemented EVA<sup>®</sup>. Although they had heard of EVA<sup>®</sup> and its implementation in SMEs, none had immediate plans for its implementation within their business. They were however found to use the traditional accounting measures of performance. The general perception expressed was that EVA<sup>®</sup> was too complex to understand, and they were unaware of available literature or software on EVA<sup>®</sup> which would enable implementation of a cost efficient EVA<sup>®</sup> system. With that, Hoque *et al.* (2008) concluded that more development on EVA<sup>®</sup> would be required for its implementation in small manufacturing firms. However, Hoque *et al.* (2008) found EVA<sup>®</sup> could provide some promising results in the area of wealth creation for SMEs. However they felt there was much more to be learnt for EVA<sup>®</sup> to be effectively employed. They pointed to the requirement for more knowledge in understanding the cost structure of business which would enable financial security and efficiency. This conclusion goes back to the proposition of Modigliani and Miller (1958) and the optimisation of capital employed in businesses. This seemingly gives support to arguments of the impact,

considering the cost of capital when measuring performance of a business regardless of its size.

One of the most detailed studies found was undertaken by Roztocki and Needy in 1998, as detailed in the vignette in Table 4.6.

**Table 4.6: Summary - Roztocki and Needy (1998) - EVA® for Small Manufacturing Companies in the USA**

|                         |  |
|-------------------------|--|
| <b>Industry:</b>        | <b>Manufacturing</b>   |
| <b>Location:</b>        | <b>USA</b>   |
| <b>Sample Size:</b>     | <b>30 companies</b>  |
| <b>Participants:</b>    | <b>Managers in positions such as President, Vice President or Treasurer</b>  |
| <b>Method:</b>          | <b>Interviews and analysis of financial statements.</b>  |
| <b>Results Summary:</b> | None of the SMEs were found to be using EVA®. They mostly rely on traditional accounting performance measures such as sales volumes and profit margins as indicators of performance. Whereas some managers were aware of EVA® none had heard of its implementation within small business and thought it would be too complex to implement.<br><br>Some of the managers interviewed thought they lack the time and technical ability needed to implement, not only EVA®, but any new emerging managerial tool. As owner managers of the business, the overwhelming demand of daily operations of the business leaves little time for careful consideration of proper investment decisions. They also found SMEs were in very reactive positions and heavily reliant on a small customer base. |

Although one of the most detailed studies undertaken, Roztocki and Needy's study was found to be quite narrow and limited in scope. The researchers sought only to calculate EVA® by using the same terms of reference as the Stern

Stewart EVA® metric. There was no detail pertaining to what was considered as the value drivers for each company. Nor was there any indication of any variation in the metric.

## 4.9 Summary

The analysis of the literature has shown the developments in small business research over the years. SMEs are recognised not only for the economic benefits they produce but also the wider sociological impacts. Research has burgeoned in recent years resulting in the development of specialist small business research academic journals. Most research was found to discuss SMEs growth in terms of contribution to national economy, employment and job creation. It was found that:

- SMEs have the potential to grow, and usually have a growth spurt within the first few years of their life cycle.
- The way in which SMEs grow is dependent on factors such as the environment, the ability to be flexible and adapt readily to changes as well as organisational structure.

Barriers to the growth of SMEs were found to be:

- Locational, as failure rates of SMEs was found to be greater in the developing world,
- Access to financing,
- The capability of the management and practices within the company.

Empirical studies analysing the growth of SMEs at the financial level tend to examine the topic from the perspective of access and barriers to accessing finance. Performance measurement research in SMEs is manifestly lacking. The little research which has been conducted focuses on the more qualitative aspect

of performance; that is, looking at the issues at a strategic level and the development of management strategies and systems.

The literature as it relates to the development of SMEs exposed the following:

- SMEs are consistently contributing to economic development particularly in developed countries.
- Despite the advances in SME research, there is still no central repository for SME data in respective countries.

From the literature, value within business is essential across all business types whether large or small. While the literature may be lacking in more focused research on value within the context of the small business, indications show value is comparative regardless of the size of the entity. The literature shows

- Like large entities, SMEs also create value, although the route taken and the reason for creating that value usually differ for SMEs.
- SMEs create value through innovation; this has come about because of the need for them to be dynamic.
- There are elements of performance measurement within SMEs and they are normally implemented in response to external stimuli. At times these measures are different from those used in large companies and they are normally based loosely on traditional or non-financial measures.

On examining the application of EVA<sup>®</sup> within SMEs it was noted that, although reference were made of its implementation within these entities, they was little empirical evidence. EVA<sup>®</sup> appears to be widely researched in developing economies; however no publications in mainstream academic journals revealed any study of its applicability or implementation with SMEs.

- Bootstrap techniques are still prevalent in the financing of SMEs
- Consequently the financing of SMEs would make it challenging in determining the cost of capital should a value based measure such as EVA<sup>®</sup> be considered.

## ***Chapter 5: METHODOLOGY***

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- 5.0 Introduction
- 5.1 The Research Problem and Rationale
- 5.2 The Research Methodology
  - 5.2.1 Positivistic Research & Application within Business Research
  - 5.2.2 Interpretivist Research & Application within Business Research
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- 5.5 Methods
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  - 5.5.4 Document Analysis
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  - 5.5.7 Data Analysis
- 5.6 Research Ethics

5.7 Limitations of the Research

5.8 Summary

## **5.0 Introduction**

In this chapter, the rationale underpinning the methodological approach of the study is explained, and the key research questions and issues and the factors for justifying the chosen methodology are addressed. To put this into context, there are two main issues which need addressing; first, the advances in SME research and the rationale behind the methodological framework used in this study. Second, the subject under investigation was examined in light of developments in SME research drawing on similarities with other relevant studies. This took into account the methodology employed in studies on value creation and those examining the performance model EVA®.

It is evident from the literature review that a vast majority of the work on EVA® has been based on empirical analysis rather than ground breaking studies and theoretical advancement. There is not much information pointing to how to determine or identify the value drivers for EVA®. It also shows that the use of EVA® within large organisations is well documented, largely in part by EVA® practitioners. The literature mainly focuses on the use of EVA® in large organisations, on-going debate on the EVA® theory and the virtues of the metric. What is evidently clear is that very little has been done on the applicability of EVA® within SMEs.

### **5.1 The Research Problem and Rationale**

The EVA® framework was developed as a marketing tool by the consultancy firm Stern Stewart and Company. They proposed the EVA® framework as an integral framework which, if implemented correctly, enables organisations to achieve and surpass expected performance (Stewart III, 1999). Whilst there is a vast amount of literature on EVA®, support appears to stem mainly from the proprietors of the EVA® framework themselves or close associates. Whereas

this may present an issue with the credibility of EVA<sup>®</sup>, there are also wider issues of its applicability. Supporters of EVA<sup>®</sup> boast and document its implementation and use within many large multi-national organisations with claims of varying degrees of success (Vishwanath, 2010; Kryzanowski and Mohsni, 2010; Young and O’Byrne, 2001; Stewart III, 1999; Ehrbar, 1998). However indications are that this is not the case for SMEs as very little investigation has been done in this area.

The topic of the research “Value drivers within SMEs: Growth and value creation within the context of the Economic Value Added framework” was chosen for constructive exploration in an area where there is limited knowledge. This area was identified as a gap in the existing literature on EVA<sup>®</sup> and its application. The vast amount of literature on EVA<sup>®</sup> was found to extensively cover:

- i. The economic and financial theory on which the model was developed,
- ii. Application of EVA<sup>®</sup> within large organisations and its use as an indicator of shareholder wealth,
- iii. Comparative analysis between other performance measures, and
- iv. The validity of EVA<sup>®</sup> as a performance measure.

The research seeks to ascertain the applicability of the value based performance metric embodied within the EVA<sup>®</sup> framework for evaluation of value and growth potential in SMEs. Information content in main stream journals on the application of EVA<sup>®</sup> in SMEs was found to be quite limited. A further gap was also identified in the application of EVA<sup>®</sup>, as information pertaining to the value drivers of the performance metric was difficult to ascertain. This provides the opportunity for the application of rigorous analysis within academic research thereby contributing to existing theory. There is also the added benefit of the usefulness of the research to practitioners.

## ***Key Questions***

The overarching aim of this research is to identify the value drivers within SMEs, and to determine the applicability of the EVA® framework for growth and the creation of value within SMEs. This was achieved by investigation considering the following research questions:

- A. What are the indicators and drivers of value within SMEs?
- B. In applying the EVA® framework to SMEs what can be deduced?

In order to address these aims, the primary research questions considered in outlining the research problems are:

1. How do managers determine the value drivers within a SME?
  - a. To what extent are value drivers considered when management within SMEs make investment decisions?
2. If value drivers are determined, how are these value drivers used?
  - a. How is value measured within the organisation?
  - b. Does this inform the strategic planning process within the business?
3. Can EVA® be used or adapted within SMEs?
  - a. What would be the variables and the value drivers in the EVA® model?
  - b. How are these variables and value drivers determined?
  - c. What other factors needs to be considered in modelling EVA® for SMEs?
4. How useful is the EVA® framework for SMEs?

The research originally started with a broad view of the topic and an interest in the application of the metric embodied within the EVA® framework for evaluating growth potential, with changes resulting from the implementation of

Information Systems. However, during analysis of existing literature, it became apparent there was a more fundamental gap in the literature; that of applicability. While literature speaks of EVA® implementation successes, the stories were related to large organisations with multiple divisions. It became clear that this was a genuine gap which needs addressing prior to examination at a specific functionality level. The focus was therefore changed to examine the gap in the literature and the practical application of the embodied EVA® framework in smaller entities.

The decision to pursue this topic was based on two factors:

1. Having had previous experience working with SMEs, there are concerns about the limited use of business and financial theory in many of these companies. This can be considered to be a hindrance to growth and future expansion of the SME.
2. In the United Kingdom, on an annual basis, millions of pounds are invested in small businesses through the Knowledge Transfer Partnership, giving practitioners the opportunity to work with academics on specific developmental projects within small developing companies. There is no doubt that there are success stories, however, the present study also investigates the practices and processes pertaining to growth and performance within these companies.

Another aim of the project is to provide small businesses with a simple approach to identifying the indicators of value within the company and how they may grow over time.

Initially, there was a keen interest in finding out how small business managers make decisions to allocate their limited resources. Having worked with a few small business managers in the past, it was noted in more cases than not, there was no formal approach to decision-making. Many times this was left to the “gut

instincts” of, what was more likely to be the owner manager. With these initial observations, interest was further propelled to explore the area upon reading:

- Ekanem, I., (2005), which examines the process of how investment decisions are made in small manufacturing companies and shows the lack of use of formal financial techniques.
- Levy, M. and Powell, P. (2005) which explores characteristics and development of SMEs
- Spivey M.F. and McMillan J. J. (2001) which explores EVA® and the value of small business.
- Lovata L. M. and Costigan, M. L. (2002) which examines companies that have adopted EVA®.

### ***The Significance of the Research***

This research is important because:

- i. Although there is existing research in the field, the review of the literature showed these studies were restrictive and mainly done by supporters or developers of the EVA® framework.
- ii. A vast majority of the existing studies on EVA® were undertaken using the same historic data from previous studies, and includes data put together by the EVA® proposers Stern Stewart & Co.
- iii. EVA® studies and documentation focused on large companies with sparse information on its application with smaller companies
- iv. As EVA® was developed as a commercial product, it is protected by copyright and aspects are shrouded in secrecy. For example, processes for determining the variables and value indicators used in the EVA® performance metric remain unknown. Also, little is

revealed on the EVA® adjustments, when, where and how they should be applied.

In addition, there is the wider recognition of the role SMEs play in contributing to the economic development of any country. This recognition was not immediate and took up to the early 1970s for the original thinking put forward by Karl Marx, that the entire social capital should be united, in a single capitalist state or in one single organisation, to be negated (Acs *et al.*, 1999). The rise in importance of SMEs resulted in governments developing policies to ensure the viability of SMEs including mechanisms for financing (Busenitz *et al.*, 2000; Reynolds, 1997). By the 1980s, in the UK there was marked vibrancy in business research which has since extended to government working in partnership with academics on various aspects to enhance the success of SMEs (Blackburn and Smallbone, 2008).

Clearly, the significance of SMEs has not gone unnoticed. While the research will not look at other aspects of the importance of SMEs such as contribution to gross domestic product (GDP) and employment, it is worth noting the wider impact of SMEs. For example, in China in the late 1990s the country saw a decline in contribution by large firms. However, during the same period SMEs made a significant contribution to the national income and employment (Anderson *et al.*, 2003).

## **5.2 Research Methodology**

Although it is common practice to use the words methods and methodology interchangeably in research, Collis and Hussey (2003) highlighted the importance of distinguishing the two terms and defining each within the realms of research. They defined methodology as the philosophical perspective from which the researcher decides to undertake the research. On the other hand, methods simply refer to the various techniques and procedures used in

collecting and analysing data. Having rationalised and justified the topic of research, the researcher must now examine the philosophical approach to resolve the research problem.

To realise this task, two core functions were performed; that of rationalising the nature of society and the nature of science in order to develop a philosophical stance for the research (Saunders *et al.*, 2007; Blaxter *et al.*, 2006; Holden and Lynch, 2004). The approach taken was based on the characteristics of the research and the researcher. There are two sociological perceptions of the views of society; regulatory, which views society as evolving rationally or radical change in which there is a constant struggle to be free from structures imposed by society. This leads to the two contrasting schools of thought; modernism which encompasses the views of the regulatory society and post-modernism which underlines the perspectives of a radical change society (Holden and Lynch, 2004). Also involved in developing the philosophical perspective of the research is the relationship between theory and research. As research varies from researcher to researcher, the philosophy adopted by a researcher will reflect his/her assumptions and view of the world. These assumptions will underpin the research strategy as well as the methods chosen (Saunders *et al.*, 2007). This is expressed in another dimension, science, which involves either an objective or subjective approach to research. A researcher taking a subjective approach will seek to establish relationships with variables by use of equations and controlled experiments whereas one who is objective is satisfied with proof that a relationship exists between the variables.

Easterby-Smith *et al.* (2008) consider the establishment of the research philosophy as one of the significant milestones for the researcher to achieve. They consider the researcher, having established the research philosophy, establishes a systemic way of realising the objectives of the research by effectively determining three main things:

- i. The overall research strategy,

- ii. Appropriate methods of collecting data and establishing the means by which the evidence will be analysed and interpreted, and
- iii. Stimulation of the research to be innovative, by choosing or adapting research methods outside of the researcher's experience.

The Paradigms or Philosophy

Although there are two main research paradigms, positivist and phenomenological, they lie at either end of a continuum and are called by various terms.

**Table 5.1: Alternative names for Research Paradigms**

| Alternative names for the main research paradigms |                           |
|---|---------------------------|
| <b>Positivistic Paradigm</b>                      | Phenomenological Paradigm |
| <b>Quantitative</b>                               | Qualitative               |
| <b>Objectivist</b>                                | Subjectivist              |
| <b>Scientific</b>                                 | Humanistic                |
| <b>Experimentalist</b>                            | Interpretivist            |
| <b>Traditionalist</b>                             |                           |

*Source: Collis & Hussey (2003: 47)*

**5.2.1 Positivistic Research & Application within Business Research**

Positivistic research is conducted under the premise that social observations should be treated in much the same way as a physical scientist treats physical phenomena. In this instant, the view is that the observer and entities are two distinct parameters and the observer is distinct and set apart from that which is being observed. That is, it is the expectation that the quantitative researcher remains objective, thereby eliminating all biases, and remains emotionally

detached from the objective being studied (Johnson and Onwuegbuzie, 2004). Nagel (1986) believes this contributes to timely and context free generalisation which is a contributing factor in achieving social scientific outcomes which are reliable and valid.

Historically, a positivist (quantitative) methodology has been adopted in small business research. This approach became accepted because of the tendency to apply scientific methodology as interests evolve in popular areas of business research such as marketing management (Hill and McGowan, 1999). Hill and McGowan (1999) also argue that this approach to business research stems from the indoctrination of researchers in this particular paradigm, which is further propelled with the development of analytical tools such as statistical packages to support such an approach.

### **5.2.2 Interpretivist Research & Application within Business Research**

While positivism explains human behaviour, interpretivism places the emphasis on understanding human behaviour within the social construct (Graham and Thomas, 2008). Qualitative researchers argue for the superiority of the interpretivist framework to be adopted to analyse the complexities in organisational research. This is amidst a paradigm shift with positivism gaining ground in management research (Petit and Huault, 2008).

Nonetheless, there are similarities between the quantitative and qualitative methodologies. Both use empirical analysis in addressing the research question, data construct as explanatory arguments and speculate about observations made and outcomes. The difference lies in the researcher's approach and view of his/her interaction with the research problem; that is subjective or objective.

As stated by Johnson and Onwuegbuzie (2004), the researcher is content with employing mixed methodology research as it strengthens the weaknesses of both single research studies and across studies. Hence, the complex interrelations of examining the performance and the value added as a result of decisions made in companies, offers a rounded approach to the examination of the research problem.

### **5.3 Mixed Methodology**

The term 'qualitative' in research is the normative description given to an investigation which aligns with non-positivist inquiries whereas 'quantitative' research is generally aligned with positivist thinking. There is the general belief that research is engendered; it is predetermined and as a result of the researcher's experience – cultural, social, economic, religious, political and other such experiences. This informs an individual's ideology and perception of the world which influences action and the process of research; an event which happens unbeknown to amateur researchers (Giddings, 2005).

In the 1950s, the technique of combining methods was often done in evaluation research and to explore issues and problems in instances where not much is known. It was promoted by Denzin (1978) as a way of increasing confidence in deductions (Giddings, 2006). In an effort to bridge the gap between social science and health research, the notion of combining qualitative and quantitative methods into a single methodology was proposed in the 1990s (Morse, 1999; Creswell, 1994; Miller and Crabtree, 1994). However, this approach has caused much unrest with defenders on either side raising concerns about the incompatibility of the paradigms (Bryman, 2006a; Onwuegbuzie and Leech, 2005). However, such concerns have done little to deter researchers from exploring mixed methodology. This was noted by Bazeley (2009) who observed that more researchers are now taking a more

integrated approach in employing mixed methodology. This newly integrated approach was hailed as a solution to the controversy, on-going since the 1970s, between those proponents which were commonly termed 'qualitative and quantitative research paradigms' (Gage, 1989; Hammersley, 1992). The mixed methods not only promise to bridge the gap between the sciences but are proposed as more diverse methods suitable for researchers to use when faced with complex problems. Other supporting arguments include a holistic approach to problem solving thus providing a much rounder and greater understanding of processes and more certainty in outcomes (Giddings, 2006).

Research methodologies are implicitly or explicitly based upon assumptions concerning the nature of the world and the appropriateness of various forms of actions. These particular views of the world are called paradigms and according to Mingers (1997) they can be classified as hard positivist, interpretivist and critical. A positivist paradigm treats the organisational world as objective, that is, it is viewed in essentially the same way as the natural world. Whereas an interpretivist takes a softer approach treating human organisations as fundamentally different, is subjective and open to interpretation. The critical paradigm accepts both approaches of the positivist and interpretivist, however it emphasises the oppressive and inequitable nature of social systems.

Multi-methodology combines one or more methodologies in whole or in part within a particular intervention. It refers to utilising a plurality of methodologies or techniques within the realm of taking action to solve a problematic situation; consequently it is often referred to as pluralism. There can be several different ways in which a multi-methodology combination can occur, each having different problems or possibilities. Multi-methodology combinations can be the same or different paradigms and can be used in the same or different interventions. Multi-methodology integrates best when combined from the same paradigm. Physical difficulties occur when they are combined from different paradigms. In this case, the situation becomes much

more complex resulting in the best approach to fitting the methodologies or techniques together.

Mingers (1997) put together three favourable arguments in support of pluralism:

- i. The fact that real world problems are inevitably complex and multidimensional, it is then perceived that multiple paradigms much better reflect the different aspects of the situation under investigation. Applying a multi-methodological approach allows for the application of different paradigms to be applied to the various aspects of the situation under investigation.
- ii. In the real world, problems are not normally resolved in a single discrete event. Rather, as problem resolution normally occurs by going through a process which has a number of different phases, which pose different tasks and issues for the investigator, it therefore follows that a multi-methodological approach is better suited. Hence methodologies which have been proven to be more useful in resolving a particular phase in relation to others can be effectively used.
- iii. Mingers (1997) theorises that with the growing combination of the philosophical and theoretical aspect of this technique, its development has been timely, as researchers are now combining methodologies. Evidence of this has begun to appear in several case studies.

Within the context of IS research, Landry and Branville (1992) brought forward strong arguments in favour of multi-methodology and present the different ways in which it can be conceptualised:

- i. ***Loose pluralism***; the discipline as a whole should support and encourage a variety of paradigms and methods within it, but does not specify how or when they should be used.

- ii. **Complementarism**; presents different paradigms which are viewed as internally consistent, and are based on different assumptions about their context of use, such that each paradigm would be seen as more or less appropriate for a particular research situation. This is strongly advocated by Jackson (1991).
- iii. **Strong pluralism**; argues that most if not all intervention situations would be dealt with more effectively with a blend of methodologies from different paradigms.

The application of mixed methods research has gained strong support in the field of evaluation research (Tashakkori and Teddlie, 1998) and several other applied fields such as sociology, psychology, education and health sciences (Azorín and Cameron, 2010). However, the rate of integration of mixed methods within research appears to have moved far beyond these typologies and there is a greater need for guidelines about 'how', 'when' and 'why' research methods may be combined in practice (Bryman, 2006b). While Bryman (2007, 2006b) identified issues such as the irregularity in which specific research questions were used, mixed methods research can also result in a wealth of unexpected data. He found researchers in turn discover use for the data in ways which they had not previously anticipated; and in instances triangulation was a resulting consequence. Although a likely point for arguing against a multi-method approach because of possible data redundancy, it is imperative for researchers to be explicit about the grounds for using a multi methodology strategy to guard against this (Bryman, 2006b). Bryman (2007) also found there was an issue with the integration of the two approaches when researchers present their findings. This presents an opportunity for research employing the mixed methodology approach to draw on work already published and explore possible ways of integrating this in their own work. This would facilitate future development in mixed methodology research and provide the template and guideline for future researchers (Bryman, 2007).

Bringing the focus on methodology and SMEs research, Hill and McGowan (1999) speak of the need to take a more diverse approach when investigating SMEs. This comes from the realisation that SMEs are unique diverse entities which tend to take on the flair and characteristics of the owner manager. Hence the research process is affected by the unique process of the formation and growth of the SMEs (Hofer and Bygrave, 1992). On that basis, and responding to the need for a more robust approach in SMEs research, coupled with the complexity of the topic under investigation, a mixed methodology approach was selected for this study.

In justifying the decision for the methodology of choice, the literature review included an analysis of the methodology employed in studies relevant to the subject under investigation. A search of the literature revealed work on value creation took the form of empirical analysis against existing theories of strategic development, performance and stakeholder management (Casadesus-Masanell and Ricart, 2009; Haksever *et al.*, 2004; Jensen, 2001; Brandenburger and Stuart-Jr, 1996). Papers on these subjects were written with reference to previous research, which, by and large, focused on large corporate entities. A search and review of small business journals revealed no reports or articles on research on value identification, creation and measurement within SMEs.

From the review of existing literature, on EVA<sup>®</sup>, the methodology used was found to be dependent on the objective of the study. Not all methodology was explicitly labelled in the extant papers. Therefore judgment has been made in terms of which theoretical approach most closely relates to the apparent approach adopted by the researchers. In instances where the research focuses on the EVA<sup>®</sup> performance metric a quantitative approach is employed. For example, Forker and Powell (2008) used a quantitative approach employing hypothesis testing in an empirical analysis of the predictability and variability of measures used to gauge the quality of information on earnings used in decision-making by investors. Petravičius and Tamošiūnienė (2008) and Abdeen and Haight (2002) also used a quantitative approach to assess the EVA<sup>®</sup>

performance metric in light of the growing requirements for companies to demonstrate wealth creation. Other researchers employing the quantitative approach in similar circumstances are Lin and Zhilin, 2008; Modesti, 2007; Ismail, 2006; Anderson *et al.*, 2005; Austin, 2005; Palliam, 2006 and Zafiridis and Bayldon, 1999.

Examples of studies on EVA<sup>®</sup> which only explore the topic from an interpretivist philosophy include Otley (1999) who examined the applicability of EVA<sup>®</sup> performance management within management control systems in an organisation; and Karilaid (2002) who undertook an analysis of the development of theoretical evaluation models in corporate finance and the differences between theoretical and practical approaches. Very little evidence of instances in which this approach was employed, were found in the literature review. However, this appears to be due to the focus of EVA<sup>®</sup> research in general, which mainly examines the performance measurement aspect of the EVA<sup>®</sup> framework. This leaves a gap in the study of EVA<sup>®</sup> for further development of the non-financial theory of the EVA<sup>®</sup> framework. This is demonstrated in Sharma and Kumar (2010) who reviewed the literature on EVA<sup>®</sup> and relevant issues using qualitative analysis but taking a deductive approach.

Taking a similar approach as Bryman (2006), a content analysis was undertaken to identify published EVA<sup>®</sup> articles which were based on a mixed methods research strategy. Researchers examining the EVA<sup>®</sup> framework, particularly in instances where its implementation was under examination appear to have used pluralism. For example, Larmande and Ponsard (2006), over the period 1999 – 2006, employed a mixed methodology to examine the properties of the EVA<sup>®</sup> compensation scheme within an organisation which had implemented EVA<sup>®</sup>. Similarly, Ezzamel and Burns (2005) used a mixed methodology to investigate the implementation of EVA<sup>®</sup> as part of a management strategy to drive change within an organisation which had failed. Both Larmande and Ponsard (2006) and Ezzamel and Burns (2005) took a

positivistic stance to illustrate the quantitative assessment of the EVA<sup>®</sup> metric for performance, compensation and bonus schemes which were designed using the EVA<sup>®</sup> framework. These instances also demonstrate the interpretative stance of the researchers cited. Their work shows, in order to analyse the data collected, it had to be analysed and interpreted against the theory and arguments on which the EVA<sup>®</sup> framework was established. They also conducted desk reviews of previous EVA<sup>®</sup> and made deductions. These are all indicative of the mixed research methodology in EVA<sup>®</sup> research. Other EVA<sup>®</sup> researchers using the mixed methodology approach include Rompho (2009).

The literature review revealed that methods of data collection were consistent in EVA<sup>®</sup> studies irrespective of the methodology stance of the researcher. In employing quantitative methodology, researchers tend to use historical financial data and/or undertake case studies to collect financial data. In these instances the methodology is usually refined to enrich the data by using a series of techniques such as longitudinal study (Larmande and Possard, 2006).

## **5.4 The Nature of the Research**

The researcher's general view was that the subject of the study would influence the nature and the direction of the research. By subject, the research is making reference to the debate on the EVA<sup>®</sup> theory and the growing interest on value and value creation. However, in taking a strategic approach, as suggested by Easterby-Smith *et al.* (2003), and having identified a literature gap (*Section 5.1*) which has received little attention in the EVA<sup>®</sup> debate in respect to arguments of value creation, this formed the rationale for undertaking this study.

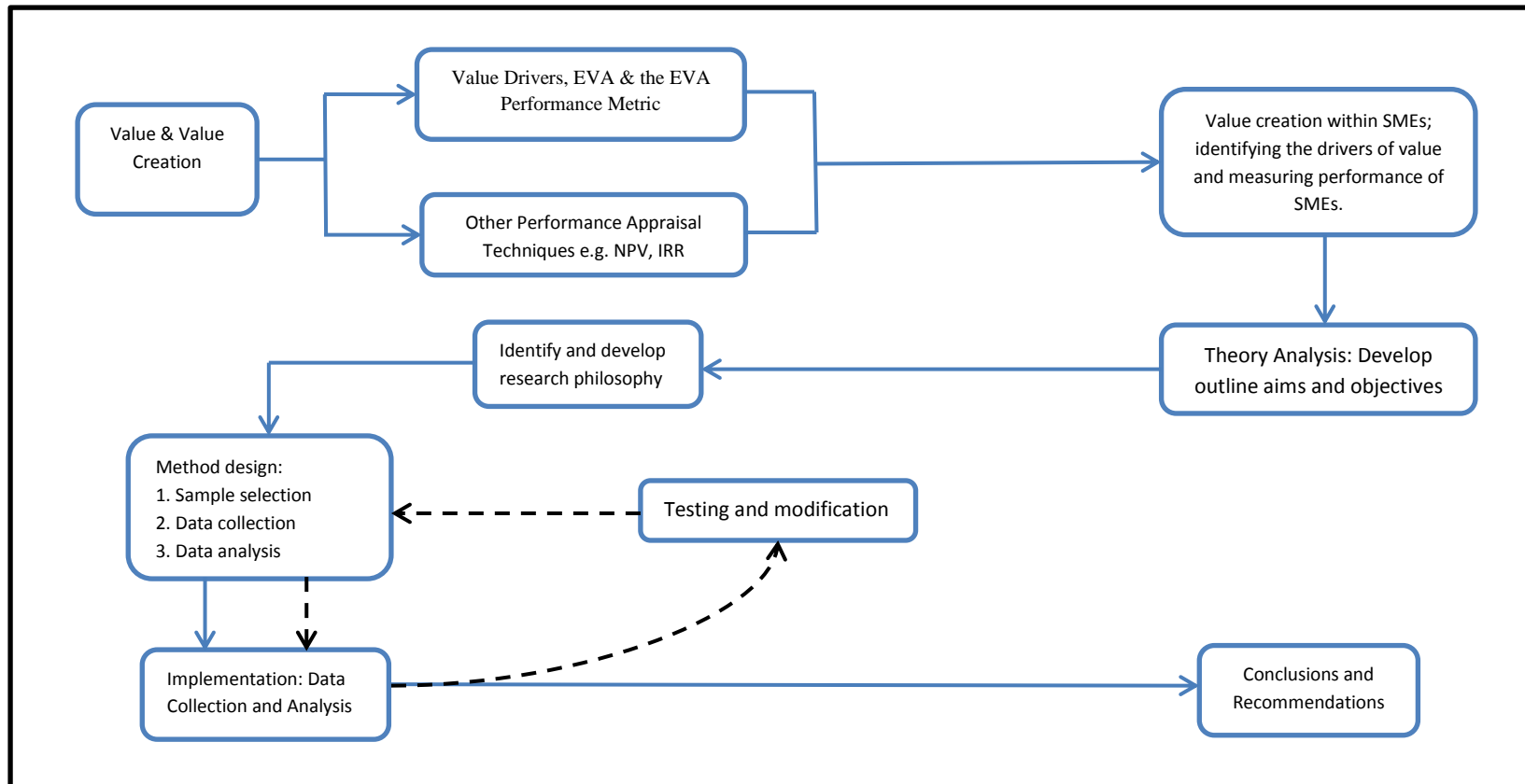
Having identified the gap in the literature, and formulated the objective and key research questions, the development of the methodological framework followed. This was influenced by advances in the approach in conducting small business research, together with the approach taken in undertaking research

into business management with a focus in the area of value and performance measurement.

The research framework (*Figure 5.1*) follows a similar path to that described by Hofer and Bygrave (1992) for the steps which would be reflective of a good research design. The first step in establishing the research framework involves a thorough investigation into three areas; value and value creation, value drivers and EVA<sup>®</sup> performance metric and other performance methods used in evaluating performance.

That is, it illustrates the theory building steps which includes the rationale for undertaking the research and the aims and objectives for establishing the primary research questions to be investigated. The investigation of the methodological framework follows, which includes development of the research design, specifying methods for gathering the data, measurements used, and data analysis techniques. By establishing the research framework, the point at which the testing of the methods to be employed in gathering evidence could be reviewed and modified bearing in mind the questions under investigation.

Figure 5.1: Elements of the Research Framework



Creswell *et al.* (2006), refer to mixed methods research as both a methodology and method because it allows for the integration of qualitative and quantitative approaches in one study. The primary research questions (*Section 5.1*) were explored by examining the process and practices of the company to determine and use information pertaining to the creation of value by employing the interpretivist paradigm. An interpretivist perspective will help to rationalise the way management act and why (Saunders *et al.*, 2007, Bryman and Bell, 2003; Orlikowski and Baroudi, 1991). This approach will be used in order to comprehend the social reality and views of management in the decision-making process.

An exploration of the overarching aim of the research (key research questions and primary questions - *Section 5.1*) on the EVA<sup>®</sup> metric was then undertaken by employing the positivistic paradigm. Thereby, a deductive approach was followed. This approach enables an objective view and allows for logical reasoning to be applied so that precision, objectivity, and rigour replace hunches, experience and intuition (Paré, 2004; Collis and Hussey, 2003). It is the paradigm recommended by Collis and Hussey (2003) and Saunders *et al.* (2006) for research projects exploring studies within the social sciences for which the end result can be generalised similarly to that of a natural scientist. It is also the favoured paradigm demonstrated by Griffiths (2004) and Kramer and Pushner (1997) who investigated the true merits of EVA<sup>®</sup> and value of EVA<sup>®</sup> respectively. This approach was also taken by Grant (2003), Stern *et al.* (2001), Stewart III (1999) and Ehrbar (1998) in the development of EVA<sup>®</sup> and its application within industries.

The deductive approach allows for the development of theory that is subjected to rigorous testing (Saunders *et al.*, 2006). Valuation systems in financial decision-making are long established practices with various systems, such as NPV, IRR and ROI. EVA<sup>®</sup> is a more recent phenomenon of the early eighties (Davis and Boczko, 2006; Lumby and Jones 2003; Lefley and Morgan, 1999;

Ballantine and Stray, 1998; Ehrbar, 1998). This supports the decision for the deductive rather than an inductive approach. In line with the research aims and objectives, the deductive approach will allow for the critical review of existing literature, it allows for the application of a highly structured approach which will be necessary for the collection of quantitative data needed for this research. It also allows for the application of controls to ensure the validity of data (Saunders *et al.*, 2006).

Creswell *et al.* (2006) further explained a type of “exploratory sequential” mixed method design which begins with a qualitative arm which then shapes the direction of the study. This type of mixed method usually commences with an exploratory type of interview from which a quantitative component is then implemented. In considering the proposed ontological and epistemological stance of the research, the key research questions and the research framework, the mixed methodology appears to be the most appropriate for this study. It allows for a level of subjectivity to be first applied and then objectivity in investigating the research question.

#### **5.4.1 Objectivity, Validity, Generalisability and Triangulation in Mixed Method Research**

A significant challenge in this research is to demonstrate characteristics of objectivity, validity, generalisability and triangulation to prove that the research is objective and valid. The objectivity of the research cannot be explored without going back to the paradigm perspectives. A positivist employs a purely scientific approach to research and tries to remain independent of the research. This becomes a possibility only when deductive logic and quantitative methods are employed in the process of the research (Rocco *et al.*, 2003).

The validity of a piece of research is concerned with the integrity of the conclusions reached (Bryman and Bell, 2003). From the positivistic paradigm, validity of research means the same task can be performed repeatedly and the same result obtained each time. This is because the focus in this paradigm is on the scientific approach where precision of measurement is essential hence there is always the likelihood that validity may be low (Collis and Hussey, 2003). The validity focus in the interpretivist paradigm is on authenticity; the ability of the research to capture the experience of the subjects (Onwuegbuzie and Johnson, 2006). In mixed methodology research, validity involves the mixing of both of these paradigms (Onwuegbuzie and Johnson, 2006; Johnson and Onwuegbuzie, 2004). Within the study, by setting criteria companies must meet to be selected, forms part of the process of validity of the findings. Each company was exposed to the same set of questions and value exercise. Whereas responses were different because each company is unique, the methodology used to extract the data remained unchanged.

This sets the stage for the generalisation of the research as the same deductive reasoning was used to draw broad conclusions on particular elements of the study. That is, this allows for a general inference to be made from statements made during the interview and from assessing the data collected (Polit and Beck, 2010). Firestone (1993) identified and described models of generalisation:

- i. Statistical – this is the more familiar mode in which a population is identified to which the results are generalised. For this mode, the population is selected based on probability sampling and inferences are made based on assumptions about this sample (Polit and Beck, 2010).
- ii. Analytic – which is generalisation based on the theory presented. This is normally applied during the analysis and interpretation of the data.

- iii. Transferability – this relates to the extrapolation of findings to a group or setting which is completely different from that investigated (Polit and Beck, 2010).

This study was found to be more aligned with the analytic mode of generalisation.

Triangulation may be described as the use of multiple data collection methods, multiple data sources and multiple methods of analysis using multiple perspectives (Denzin, 2010). Triangulation is also viewed as an alternative to validation because it adds rigor, complexity, richness and depth to the study. The methodology employed for this research strengthens arguments for triangulation as it integrates the findings from the literature with that of the case studies.

## 5.5 Methods

Case study was the method employed for collecting data. Case studies are a deductive form of empirical inquiry which is used to retain holistic and meaningful characteristics of real-life events (Saunders *et al.*, 2006; Yin, 2003). A well-constructed case study enables the development of new hypotheses (Yin, 2003) as well as to explore and challenge existing theory (Saunders *et al.*, 2006). A review of the literature has shown that the case study approach is the favoured method used by many researchers to explore and test a hypothesis in using EVA<sup>®</sup> as a valuation system in many large scale companies within the United States. This is demonstrated in several studies conducted by Grant (2003), Young and O’Byrne (2001), Stern *et al.* (2001), Stewart III (1999) and Ehrbar (1998) in examining the impact of EVA<sup>®</sup> implementation and performance of companies over specific periods. Similarly, Griffith (2004) also uses the same method in performing an empirical analysis of the true value of EVA<sup>®</sup> within companies adopting EVA<sup>®</sup> and those non-EVA<sup>®</sup> adopters. It is also

the practical choice and preferred strategy as it allows investigation in technically distinctive situations in which there are many variables of interest (Yin, 2003).

### **5.5.1 Selecting the Case Studies**

Sampling is an important step in the research process because it helps to inform the inferences drawn from the underlying findings (Onwuegbuzie and Collins, 2007). Purposive sampling is primarily orientated in qualitative studies and enables the researcher to select cases which would meet the objectives of answering the research questions (Saunders *et al.*, 2007; Teddlie and Yu, 2007). It is used in instances where the sample sizes are generally small but the cases selected with the sample are particularly informative (Saunders *et al.*, 2007). In considering the research questions, it was viewed as the best approach to sampling because it allows the researcher to take into consideration the nature of SMEs and also in soliciting the participation of specific practitioners. In making a sample selection, the researcher needed to ensure that a representative sample of SMEs was selected; and similarly, that practitioners who have knowledge of the EVA® framework were selected. In general, a purposive sampling technique is intended to select representative cases, some are also aimed at producing contrasting cases; hence providing the data for comparison and contrast in the data analysis stage. The more common purposive sampling strategies which are based on achieving representativeness or comparability are:

- i. Typical case sampling – used for case selection which are illustrative of a particular profile,
- ii. Extreme or deviant case sampling – used for case selection which is unusual,

- iii. Maximum variation (heterogeneous) sampling – allows for the sampling of different case profiles in which the data collected provides explanation for key themes which can be observed;
- iv. Homogeneous sampling – sampling of a particular subgroup in which members are similar which allows for a more focused study on that group in greater depth, and;
- v. Critical case sampling – sampling done on the basis that the cases selected can make dramatic points or they are important in some way. It also allows for logical generalisation based on the data collected which is focused on understanding what is happening in each of the case study (Saunders *et al.*, 2007; Teddlie and Yu, 2007).

This study employed ‘critical case sampling’. This is justified on the grounds that by using critical case sampling strategy, focus was placed on selecting a subset of the groups within the category of SMEs. This increased the likelihood that the companies selected would possess the information required to answer the research questions. Hence, small to medium-sized companies were selected because they are more structured than the micro entities and are likely to provide the data required for this study (Paré, 2004). This sampling strategy would permit logical generalisation and maximum application of information to similar cases to be deduced from the finding (Patton, 1990).

#### Selecting the Companies

The study was open to selecting companies with some amount of diversity within their operation; such as manufacturing, processing and systems delivery and was open across all sectors. This increased the likelihood that the data collected would provide rich and detailed information needed for this study. In order to collate these rich data, four companies were selected. The initial approach to gaining access to companies was to obtain the support of two main agencies in London working with SMEs: Park Royal Partnership and the London

Development Agency. The researcher began seeking access to companies from summer 2007. A research flyer and the Participant Information Sheet were prepared for this purpose (*Appendix 1 and 2*). The first port of call was with Park Royal Partnership as they work with numerous small businesses in the industrial business parks within the North West corridor in London. However, while the Programme Administrator was supportive, there was no interest from any of the companies they work with. The next port of call was with the London Development Agency which produced a similar outcome. From those experiences, the decision was made to try to cold contact business directly. The reason for this decision was twofold:

- i. The researcher had to rely on these agencies to send the information to their clients citing Data Protection issues.
- ii. This was a time consuming process. The researcher had to wait for a suitable time to meet with or engage in telephone discussions with the Programme Administrators to discuss the research and what assistance was needed. This was followed up with calls to find out if the flyer and the Participant Information Sheet were sent and to check on progress.

An alternative strategy was also put in place for accessing companies. This process involved identifying companies by sifting through various information resources available on the internet for SMEs. The information resources used were:

- i. The Manufacturing Advisory Service (MAS),
- ii. Listing of the top SMEs in 2010,
- iii. Directory of business and industrial parks in London and the South East of England, and
- iv. Searching through science, business, and innovation parks associated with universities in England (University of Surrey, University of Oxford, University of Warwick and Brunel University).

Universities supporting spin-off business enterprises were included because they were thought to be more receptive to academic studies. Possible suitable companies were identified via these sources and were further investigated by visiting their website and reviewing recent activity of the company on the Company House website.

Networking with work colleagues and other associates was also employed. Although time consuming, by adopting the alternative strategy, there was greater control over screening and selecting the companies. The search for companies started in summer 2007 and was done periodically every three to six months until summer 2011. When contacted, most were very abrupt and dismissive with a few citing time constraints as the reason for declining. The most useful resource was the MAS website. By going through case study reports which were updated on a regular basis, three of the four participating companies were found from this source. The fourth company was recommended by the Managing Director of a company at a University science park. Although they were interested, the company declined because the business was still in its infancy.

In total, sixty companies were vetted and forty formally contacted at various times over a three year period. Depending on location and the contact details immediately accessible, this was initially by telephone or by email. Those contacted by telephone were provided a brief summary of the research. If interested, they were sent an invitation letter (*Appendix 3*) and the Participant Information and Consent Sheets (*Appendix 2 & 4*), as prepared as part of the University research ethics approval process (*Section 5.6*) as were those who were initially contacted via email. Telephone calls and reminder emails followed for a period of up to three months in some instances. This was usually determined by the level of interest or the availability of a Director or Manager to take the call. Of the forty companies contacted, only four agreed to participate representing a response rate of 10%. The Managing Director of the SME that declined to participate due to it being a start-up company, recommended

another company which was one of the four which agreed to participate in the study. The full report on company interviews, in the order in which they were conducted are presented in *Chapter 6, Section 6.2 – 6.5*.

**Table 5.2: Company Code and Description**

| Company Code       | Description of Company   | Location in England |
|--------------------|--|---------------------|
| <b>ABC Limited</b> | Manufacturing and Distribution of safety systems               | Greater London      |
| <b>DGE Limited</b> | Engineering Design in Oil and Gas sector                       | South East          |
| <b>SPL Limited</b> | Manufacturing entity   | South East          |
| <b>WIC Limited</b> | Design and Manufacturing of storage units for safety equipment | South West          |

### 5.5.2 The Interviews

The primary data source was in-depth face-to-face interviews with all management team employees of the companies who agreed to participate in the study. Participants interviewed came from a range of organisational positions such as Chairman, Managing Director, Operations Director, Production Manager, Finance Director, Corporate Development Manager, Procurement Manager and Sales Manager. Table 5.3 shows the participating companies, the position of those interviewed and the interview schedule.

**Table 5.3: Interview Schedule**

| Respondent Code    | Respondent Role    | Date of Interview | Length of Interview (mins) |
|--------------------|--------------------|-------------------|----------------------------|
| <b>ABC Limited</b> |                    |                   |                            |
| ABC-R1             | Managing Director  | 15 July 2008      | 90                         |
|                    |                    | 23 July 2008      | 25                         |
|                    |                    | 11 June 2011      | 120                        |
| ABC-R2             | Technical Director | 23 July 2008      | 105                        |
| ABC-R3             | Stock Controller   | 23 July 2008      | 40                         |
| ABC-R4             | Purchasing Manager | 23 July 2008      | 45                         |
| ABC-R5             | Quality Engineer   | 23 July 2008      | 70                         |

| <b>Respondent Code</b>    | <b>Respondent Role</b>         | <b>Date of Interview</b> | <b>Length of Interview (mins)</b> |
|---------------------------|--------------------------------|--------------------------|-----------------------------------|
| <b><i>DGE Limited</i></b> |                                |                          |                                   |
| DGE-R1                    | Financial Director             | 26 May 2011              | 115                               |
| DGE-R2                    | Corporate Development Director | 14 September 2011        | 90                                |
| DGE-R3                    | Managing Director              | 29 September 2011        | 130                               |
| DGE-R4                    | Operations Director            | 29 September 2011        | 45                                |
| <b><i>SPL Limited</i></b> |                                |                          |                                   |
| SPL-R1                    | Chairman                       | 15 December 2011         | 120                               |
| SPL-R2                    | Financial Director             | 15 December 2011         | 45                                |
| SPL-R3                    | Managing Director              | 15 December 2011         | 30                                |
| <b><i>WIC Limited</i></b> |                                |                          |                                   |
| WIC-R1                    | Managing Director              | 11 January 2012          | 150                               |
| WIC-R2                    | Chairman                       | 11 January 2012          | 60                                |
| WIC-R3                    | Sales & Marketing Manager      | 11 January 2012          | 70                                |

All interviews were recorded and later transcribed. Participants were sent their interview transcripts and given the chance to review them to ensure that their statements were transcribed correctly. They were also given the opportunity to share additional comments to the questions asked. Only four of the individuals across two of the four participating companies reviewed the transcripts and replied with comments. These comments were incorporated into the final transcripts (*Appendix 5*).

### **5.5.3 Value Indicator Exercise**

Additional qualitative data were collected from participants by way of flash card exercise. The purpose of the exercise was to add depth to the information gathered from each company on their perception of value. For the exercise, seventeen (17) possible indicators of value were extracted from the literature and from preliminary review of the initial interviews of Case Study 1, ABC Limited. These indicators (*Table 5.4*) were noted each on a small flash card and

interviewees from each company were asked to rank in order of priority the indicator which they thought was of most important to the least important.

**Table 5.4: List of Indicators used for the Value Indicator Exercise**

|  |  |
|--|--|
| 1. Acquire New Staff                           | 9. Effective Management of Working Capital |
| 2. Acquisition of New Assets                   | 10. New Products                           |
| 3. Advertising & marketing Campaign            | 11. Offer New Shares                       |
| 4. Implementation of Information System        | 12. Outsource Administrative Processes     |
| 5. Implementation of Operation/Process System  | 13. Performance Linked Incentive Scheme    |
| 6. Improve Credit rating/Increase Credit Limit | 14. Reduce Company Spending                |
| 7. Increase Cash Flow                          | 15. Reinvest Earnings in Business          |
| 8. Investment in Research & Development        | 16. Staff Training                         |
|  | 17. Waste Management                       |

They were also given the option to eliminate those they thought were irrelevant to their company, add ones they thought were missing on blank cards provided or to amend what was on the card to match their views on the indicators of value within their company. Although interviewees were made aware of the exercise from the onset, they were not privy to what the actual exercise was or what the predetermined value indicators were. Details were only provided at the time of the exercise during the interview. This was to prevent collaborated views, hence ensuring that the views expressed were unbiased and were only based on their views and personal experience within the company. The outcome of the exercise for each participant is presented in their interview transcripts (*Appendix 5*) and also presented in the presentation of each case in Chapter 6. The information gathered from this exercise was used in triangulation of the case studies against information from the literature.

#### **5.5.4 Document Analysis**

The financial reports and management accounts from each of the participating companies covering the last five years were collected and analysed. This included any data available on current cash flow. Budgets and forecast was also collected along with any other information deemed useful, such as the organisation chart, in an attempt to understand each company and to help identify the relevant variables.

The participating companies all had concerns around the use of their commercial and financial information. It was therefore agreed that such information including personal data would be anonymised to protect the identity of both companies and participants. All were happy to share the company abridged reports for the last five years. However, with the exception of one company, it was more difficult to get any useful representation of their management accounts. This impacted on what data could be accessed and how they could be used.

#### **5.5.5 Applying the Delphi Technique for Data Collection**

The Delphi technique was used to solicit EVA<sup>®</sup> expert opinion. The Delphi technique has been supported as a consensus-building forecasting methodology for future research (Dalkey, 1969, Schmidt, 1997). It employs an iterative process and is a method of forecasting based upon the collective opinion of knowledgeable experts (Young and Jamieson, 2001). The Delphi method was first developed in the 1950s by Norman Dalkey of the RAND Corporation for a military project which was sponsored by the United States. In 1999, Row and Wright characterised the classical Delphi method by four key features:

- i. Anonymity of Delphi participants: allows the participants to freely express their opinions without undue social pressures to conform to

others in the group. Decisions are evaluated on their merit, rather than who has proposed the idea.

- ii. Iteration: allows the participants to refine their views in light of the progress of the group's work from round to round.
- iii. Controlled feedback: informs the participants of the other participant's perspectives, and provides the opportunity for Delphi participants to clarify or change their views.
- iv. Statistical aggregation of group response: allows for a quantitative analysis and interpretation of data.

Since its development, the Delphi technique has been widely accepted globally in many industry sectors including health care, defence, business education, information technology, transportation and engineering. Its flexibility is evident in how it has been used (Skulmoski *et al.*, 2007).

Questionnaires are the primary tool used for gathering data and are designed to focus on problems, opportunities, solutions or forecasts. However surveys allow for the data to be quantified and test the strength of participant's views (Williams, 2007). A series of questionnaires can be used; each developed based on the results of previous questionnaires, and the process concludes when the research question is answered. There are a number of resolve as to what the response to research question could be; and is determined at the onset of selecting the methodology employed. This could be when a consensus is reached, a theoretical saturation is reached or when sufficient information has been exchanged (Skulmoski *et al.*, 2007). The Delphi design embraces both quantitative and qualitative research with the questions in each study serving as the true indicator or the most appropriate design.

Since its development, the Delphi technique has evolved into an efficient and effective technique and is particularly used in information systems research. The Delphi technique is a diverse research instrument and it can be used in a

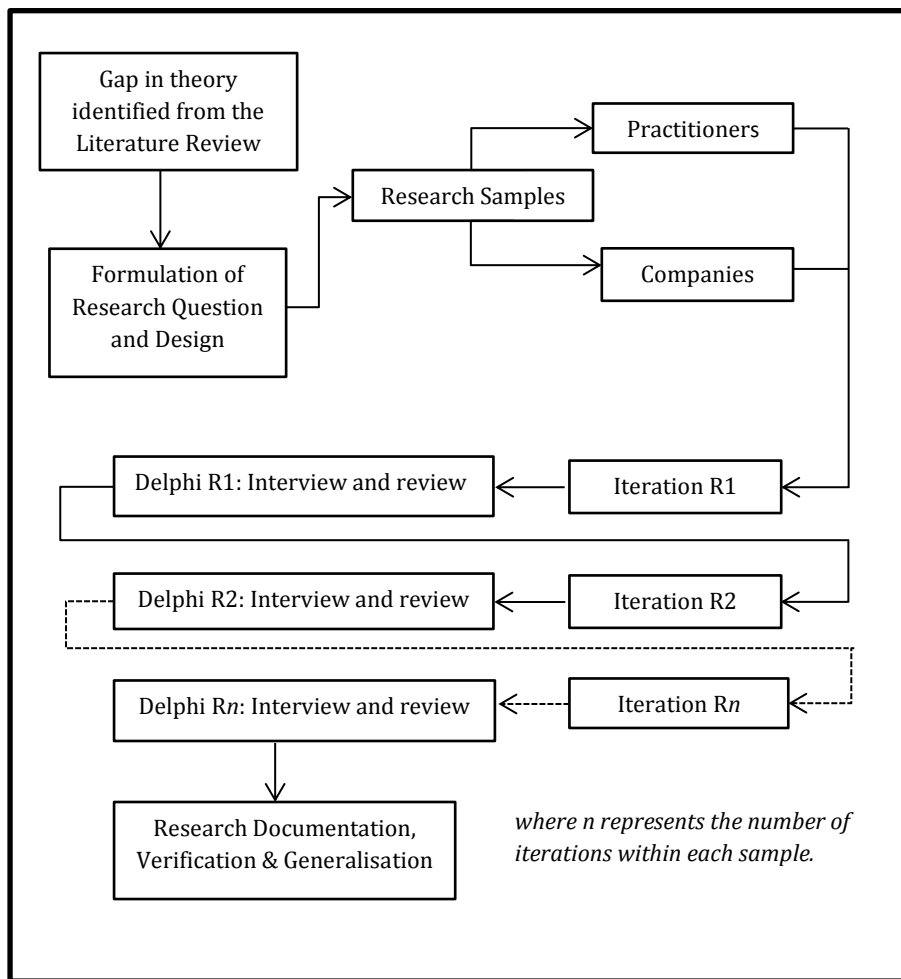
number of research scenarios. These include; instances where there is incomplete knowledge about a problem or phenomena (Alder and Ziglio, 1996; Delbeq *et al.*, 1975), problems to which a precise analytical technique cannot be applied but would benefit from the subjective judgements of individuals on a collective basis (Alder and Ziglio, 1996) and to focus collective human intelligence to the problem at hand (Linstone and Turloff, 1975). It is also used in investigations to bring new knowledge into being (Czinkota and Ronkainen, 1997; Skulmoski *et al.*, 2007). It can be implemented as a tool for improving data collection, the generation of ideas, building consensus on issues, the exploration of future scenarios and informed decision-making (Young and Jamieson, 2001).

In covering the literature, it was clear that there is a high level of secrecy involving the various adaptations made to traditional accounting principles in order to measure true economic profit. Including materials written by EVA<sup>®</sup> proposers, no comprehensive literature detailing EVA<sup>®</sup> adjustments or guidelines was discovered. As a result, the research base was broadened in order to try and develop from first principles, what the value drivers of the EVA<sup>®</sup> variables were, and how these were determined. Hence the Delphi technique was taken and modified within the boundaries of this study in order to solicit knowledge from other EVA<sup>®</sup> practitioners working in both academia and private companies. A similar approach was also implemented for participants in the case study so as to integrate any findings from previous interviews into the next.

As with surveys, the Delphi technique can also be affected by many of the same issues. In the past, postal questionnaires were administered. However with the advent and increasing use of electronic surveys, Delphi studies are more frequently administered using the Internet.

In considering the Delphi technique, the steps in adapting this technique for this study is illustrated in Figure 5.2 below.

**Figure 5.2: Illustration of the Delphi Technique**



Combinations of open and closed ended questions were used in designing the questionnaires for participants. However, due to the complexity of the problem under investigation, the questions were mainly open ended to capture the broad spectrum of views from respondents in their own words (Collis and Hussey, 2003). Questionnaires were administered via the Internet to both case study participants from the companies and practitioners. However, case study participants provided responses face to face in the first instance but were allowed to answer any further questions or revise responses once the interviews were transcribed. Practitioners provided their response via email. The Delphi technique used in this study was more aligned to that exhibiting the characteristics described by Amos and Pearse (2008), that is:

- i. The focus was on obtaining more material on the information being sought (value, value indicators and the EVA<sup>®</sup> theory),
- ii. Made use of expert opinion (the inclusion of practitioners as a source of information),
- iii. Used a remote process of administering the questionnaires (fielding of questions via the internet),
- iv. Adaptation of an iterative process (revisit the interview scripts from the companies and practitioners before moving on to the next set of interviews), and
- v. Creation of a general view.

### *Selecting the Practitioners*

An extensive literature review was performed to determine the value drivers and the key properties used in developing the EVA<sup>®</sup> model. Texts written by the EVA<sup>®</sup> supporters G. Bennett Stewart III and Joel Stern failed to provide details on how the value drivers and variables were determined in establishing the EVA<sup>®</sup> performance model. Having identified this gap, practitioners were included as a possible source of data for the study. EVA<sup>®</sup> authors wrote on various topics ranging from examination of the metric as a performance measure, EVA<sup>®</sup> in comparison to other measures and its implementation to a general critique of the EVA<sup>®</sup> framework. Having determined that only a subset within that group would be targeted, critical case sampling was also employed in selecting practitioners to engage with the study. Criteria for sampling were established by selecting authors who have published recent work (2000-2010) or those who have written multiple papers on EVA<sup>®</sup>, those exploring EVA<sup>®</sup> implementation or those commenting on the EVA<sup>®</sup> framework in some depth (1996-1999). Attempts were made to contact Stern Stewart & Co. London and New York office but access was not forthcoming. However, because impartiality was required, academic practitioners were selected instead on the basis that

they were independent researchers, and therefore experts, and, as far as could be determined, had no affiliation with Stern Stewart & Co.

Based on their work on EVA<sup>®</sup>, a list of 31 academics and industry practitioners were selected and contact details obtained via the Internet using information (name, affiliated Universities, email addresses) found in published journal articles. They were contacted by letter initially (*Appendix 6*). This identified the research team, explained the research project; and requested their input as practitioners. Follow-up emails were sent after approximately two weeks with regular reminders periodically over a period of four to six weeks. Potential participants had the option to contribute by agreeing to be interviewed via telephone or to respond by email. The response rate was very low (26%) with most of those who declined stating time constraints as the main issue; and retirement in one case. Of the thirty one contacts made, eight responses were received, four declined; two provided responses via email, one agreed to a telephone interview and one arranged for a meeting to discuss the research in general and provide some guidance. Table 5.5 shows the practitioners' response rate and full transcripts are presented in *Appendix 7*.

**Table 5.5: Practitioners Response Rate**

|  |  |                 |
|--|--|-----------------|
| Number of Practitioners<br>Contacted: 31   | Number Responding: 8 (26%)   |                 |
|  | <ul style="list-style-type: none"> <li>• Accepted: 4<sup>†</sup> (13%)</li> <li>• Rejected: 4 (13%)</li> <li>- Reasons: Retired, Time</li> </ul> |                 |
|  | No Response: 23 (74%)  |                 |
| Practitioner Code  | Date of Interview/Response   | Location        |
| Practitioner 1<br>Academic   | 8 July 2009 & 4 August 2009  | USA             |
| Practitioner 2<br>Academic   | 10 November 2009 & 19<br>January 2010  | Slovak Republic |
| Practitioner 3<br>Company Manager  | 22 November 2012   | USA             |
| <sup>†</sup> One of the 4 practitioners responded is based in Hong Kong and requested a teleconference to respond to the questions. Several appointments were made to do this but have not materialised. |  |                 |

The Practitioner questionnaire initially focused on obtaining information on the EVA<sup>®</sup> framework and its implementation in practice. Questions covering the principles on which EVA<sup>®</sup> was developed, the value drivers and challenges in its implementation were included. However, by the final iteration the questionnaire was broadened to obtain wider views. These included questions on value, value creation and strategies employed to create value and management's attitude towards value creation. The revisions were due to Practitioners commenting that they were not EVA<sup>®</sup> experts and they appeared to feel more at ease sharing opinions from a much wider view of the topic.

### 5.5.6 Longitudinal Study

During the case study exercise, the opportunity presented itself for a company which was initially interviewed in the very early stages of the research (2008) to be re-interviewed (2011). This resulted in a longitudinal study of that company. A longitudinal study allows for change and development to be

included in a particular case over time (Collis and Hussey, 2003). By employing longitudinal study, observation of key variables can be monitored over time; hence some measures of control can be exercised over the variable under investigation (Saunders *et al.*, 2006, Collis and Hussey, 2003). The first company for which interviews were conducted in 2008 was similar to a pilot case. However, as the research progressed, and as the interview questions were further refined, the decision was made to re-interview the company in 2011. However, only the Managing Director was interviewed because he was likely to have the information required plus he was also responsible for managing the company's finance.

### **5.5.7 Data Analysis**

Qualitative methods usually amass large amounts of data that must be sifted and interpreted by the researcher. Researchers undertaking qualitative analysis usually use a form of analytical categories in synthesising the data (Pope *et al.*, 2000). Pope *et al.* (2000) identify two methods of categorisation of data to describe and explain the data:

- i. Inductively – describes data which is obtained gradually, and
- ii. Deductively – describes data which is either obtained at the beginning or is gathered at various points during the analysis of the data.

Although deductive analysis is seldom used in qualitative research, it is increasing being used in the form of a 'framework approach' (Pope *et al.*, 2000). The framework approach allows for a process for synthesising the raw data so participants' original views can be reflected in the study (Carroll *et al.*, 2011; Kumar *et al.*, 2009; Lillis, 2009). One such process, thematic analysis, is a common process for analysing such qualitative information (Pope *et al.*, 2000). The themes may be formulated inductively from the raw data or generated deductively from existing theory and previous research (Boyatzis, 1998).

During the literature review various themes emerged in relation to investigating the research questions, thematic analysis was selected for analysing the qualitative data. This process allows for the key features in the management theory of the EVA<sup>®</sup> framework to be investigated against findings from the case studies. It also allows for investigating and triangulating the data from the case studies against the indicators of value which emerged from the literature.

The process for analysing the data from this study was twofold as indicated within the mixed-methodology approach outlined in *Section 5.3*. By taking an interpretative stance, the qualitative data was analysed using thematic analysis. This approach was used by Sharma and Kumar (2010) in an empirical review of the literature on EVA<sup>®</sup>. It allows for the researcher to undertake a comparative analysis across each case study thereby improving the possibility to generalise the data.

The next stage of the analysis involved the examination of the financial data. Historic annual financial reports were collected from each case study for the period 2007 to 2011. For the quantitative analysis, all the financial reports were analysed by employing the EVA<sup>®</sup> performance metric. This involves checking the information contained within the financial report to ascertain if it contains information for the performance measure to be employed. Three of the four companies provided a snapshot of their management accounts. This was also assessed for any useful information for the performance analysis.

The primary research question was investigated by integrating the results from the quantitative and qualitative analysis, by deductive reasoning and interpretation. The resulting analysis from the two fractions was then combined to create a single view of the case studies and the overall view in response to the research question. In doing so, this approach addressed the major challenges associated with each individual paradigm with the opportunity for

the best mix of both to answer the research question (Johnson and Onwuegbuzie, 2004).

All the case studies operate within the same economic environment and were classified as SMEs. Therefore the companies all fit the characteristics and culture generally described in the literature as SMEs. This allows consideration for the triangulation and generalisation of the results.

## 5.6 Research Ethics

The object of applying for ethics approval from the University Research Ethics Committee (UREC) is to illustrate that, in undertaking the research; the ethical guidelines<sup>8</sup> set out by the university are met. These guidelines are that:

- i. A research should not cause harm and preferably, should benefit participants
- ii. It is normally the right of potential participants to receive clearly communicated information about the research from the researcher in advance.
- iii. There should be no form of coercion of any kind in order to pressure participants to take part in the study.
- iv. Participants have the right to give their consent prior to participating in the study.
- v. Informal consent should be obtained in instances where third parties are affected by the research.
- vi. In the case of vulnerable individuals, the research should actively seek consent from the participant or a representative
- vii. By principle, honesty should be central to the relationship between the participant, the researcher and institutional representatives.

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<sup>8</sup> Guidelines for applying for Ethics Approval from UREC, Oxford Brookes University can be found at <http://www.brookes.ac.uk/res/ethics/index.html>.

- viii. Confidentiality and anonymity of participants should be maintained.
- ix. Collection and storage of research data by the researcher must comply with the Data Protection Act 1998.
- x. The duty of the researcher is to disseminate the research findings to appropriate participants.

In establishing the need for ethics approval, it is a requirement by the University that any research involving human participants would need approval from UREC where:

- i. Participants are only involved in a part of the research,
- ii. Contact with participants is either through email or letter, and
- iii. Participants are contacted outside the UK.

This study involved seeking participation from persons external to the University, and potentially would meet all three of the criteria above hence approval was sought from UREC. The UREC application for this study was submitted in May 2008. The application involved setting out an overview of the study, aims and justification of the research and the proposed method. It also highlighted some potential benefits to participants should they agree to participate in the research. In completing the application, a number of considerations were made in relation to the location of the study and the participants who would be taking part in the study. These considerations were:

- i. The location of the study – Information had to be provided if the research was to be undertaken on sites external to the University. If so permission had to be obtained from the institution or organisations to be involved.
- ii. Were vulnerable individuals to be involved? All participants are required to give consent to take part in the research. However, in the case of vulnerable individuals including children, the University would have to be informed and additional approval sought and consent obtained from participants or representatives.

- iii. The relationship between the investigator and potential participants. Consideration had to be given to the potential participants in that, is there a dependent relationship with the researcher, in particular those involved in recruiting for conducting the research. This was not an issue for this study. Although independent third party bodies as indicated in *Section 5.5.1* were initially considered in assisting to identify potential companies, there was no relationship between those involved and the investigator.

The application process also includes a risk and risk management analysis. General information about potential participants such as age, ability to give consent, whether they would be in custody or custodial care was indicated in assessing the risk of participants. The age range for potential participants in this study was 27–65 and custodial risks were not risks which impacted on this research. An indication of what would be involved should potential participants agree to participate in the research was also indicated for risk management. For this study, it was indicated that data would be collected via interviews which would be recorded and historic financial data for the last five years would be collected. In providing this information, potential participants were also made aware of their right to confidentiality and the necessary compliance of the study to the Data Protection Act 2008. Potential risk and health and safety of the researcher in conducting the research were also considered in the light of the activities to be undertaken. For this study, the activities identified were considered to be within the normal remit of daily activities and required no additional safety precaution.

Ethics approval involved the researcher providing evidence of, not only receiving consent from participants, but also informing them of what was required from their participation, issues around confidentiality and storage of the information collected and Freedom of Information requests. It also included providing evidence that participants were informed that they had a right to opt out at any point should they decide to do so, how the information gathered

would be used and what would happen to the outcome of the study. For this study, participants were not offered any incentives hence the possibility to be coerced in such manner did not factor into this study. They were also provided with a contact for the University Research Committee, and the names and contacts of the researcher and research supervisors.

All information as required by UREC which should be conveyed to participants was provided via the Participant Information Sheet and the Consent Sheet (*Appendix 2 & 4*). From the application submitted in May 2008, approval was granted until June 2011. However, because of the difficulty in getting participants to sign up to take part in the study, an extension was sought which was approved until June 2012.

## **5.7 Limitations of the Research**

A possible limitation to the study may be attributed to the approach taken in investigating the issue presented. Although more widely accepted than when it was first introduced, a mixed methodology research still has its problems. These were identified by Onwuegbuzie and Johnson (2006) as representation, integration and legitimation.

Blackburn and Kovalinen (2009) contributed to the debate on the lack of development, over a 30 year span, in some aspects in the field of small business research in the UK and Europe. Nonetheless, there continues to be many challenges on all fronts. While there has been a sign of development, SME research was found to be fragmented and is yet to reach full maturity (Curran and Blackburn, 2001). One of the main issues with fragmentation of small business research which was encountered during this study was the difficulty to locate any previous or relevant work in the area investigated. During the course of the literature review, it was found that many articles on EVA® studies undertaken in the developing world were not published in main stream

journals. They were instead found on the Social Science Research Network (SSRN) or on websites whose authentication could not be established. The result of this as described by Curran and Blackburn (2001) is a lack of continuity or of the cumulative characteristics of small business. The problems cited by these authors were found to be similar when trying to review the general and more specific material on SME research in trying to implement the method of choice.

## 5.8 Summary

The literature shows the gradual move away from the more stringent approach of taking a positivistic stance in business research to the now more widely accepted mixed methodology approach. By adopting this methodology it:

- Allows for an interpretivist and an inductive stance to be taken in analysis of the qualitative data.
- Allows for a positivistic and deductive approach for the analysis of the quantitative data.
- Allows for objectivity and deductive reasoning in filling the gaps identified in the existing literature on value indicators and drivers within the EVA® framework.
- Provides the opportunity for an illustration of a smooth integration of qualitative and quantitative analysis, which is illustrative of a new approach in research design to a truly integrative mixed methodology approach.

The literature revealed very few integrated studies on EVA®. In such instances they tend to be studies of EVA® implementation in practice. This therefore is an illustration of a methodological approach for the thorough analysis of the key research questions under observation.

The research design also enabled the careful selection of a sampling technique to fit the research framework.

- Purposive critical case sampling facilitates an objective process of selecting companies which would be ideal to meet the objectives of answering the research question.
- It ensures that companies were selected within the boundaries of the study. Hence it allows for logical generalisation of the deductions from the findings of the study.

The literature showed that many studies on EVA<sup>®</sup> were undertaken as desk studies using data available from within the public domain on companies. By engaging companies and soliciting input from Practitioners richer data was obtained from which an integrated analysis was undertaken.

The thematic approach for data analysis follows an old trend in qualitative research. However, in this instance it was expanded to illustrate an integration of mixed methods from the analysis of the data through to the conclusion.

As with any research there were issues which had to be overcome. For the method employed, the main issues were:

- The sample size of four companies. However, according to Yin (2003), this should have little impact as he concluded there was not much difference in selecting four, five or six companies for a small case study.
- Lack of financial data. This likely possibility was envisioned. Hence companies were informed prior to agreement that they should have produced and be ready to share financial data. SMEs are however not required to file full financial reports hence that limitation was accommodated for by engaging with the various representatives from management. This was hoped to fill any gaps from the financial data made available. However, as found with all companies irrespective of

size, there was a general concern when it comes to the sharing of sensitive information.

***Chapter 6: PRESENTATION of PRACTITIONER INTERVIEWS &  
CASE STUDIES***

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-

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6.6.2.4 Performance and use of Information

6.6.2.5 Identifying Value within the Company

6.6.3 Summary of Key Findings from Case 4

6.7 Summary

## 6.0 Introduction

Qualitative research usually amasses a large quantity of text based materials consisting of interview transcripts, notes from field exercises and other written documents such as reports and charts (Miles and Huberman, 2002; Bryman and Burgess, 1994). Materials collected from qualitative research are normally a reflection of the participant's accounts of experiences within the scope of the research objectives (Kumar *et al.*, 2009). To analyse this material, a process is required in which the data is summarised and classified before it can be interpreted (Lillis, 1999). 'Framework analysis' was developed to analyse qualitative data permitting the original view and experience of participants to be reflected within the research (Carroll *et al.*, 2011; Kumar *et al.*, 2009; Lillis, 2009). It includes a series of steps which allows the data to be sifted and sorted in accordance with key issues and themes (Srivastava and Thomson, 2009; Bryman and Burgess 1994). The steps in performing a framework analysis were formulated by Bryman and Burgess (1994) as:

- i. Identifying and defining tasks – the process of familiarizing oneself with the data;
- ii. Categorizing and identifying themes – identifying common categories or themes arising from the data set;
- iii. Indexing – is the process of applying the thematic framework, that is, identifying the section of data which relates to a particular theme;
- iv. Charting – this is the process of lifting the data from the original context and relating it to particular theme, and;
- v. Mapping and interpretation – the process of pulling it all together to provide an explanation of the data within the scope of the research objective (Srivastava and Thomson, 2009; Miles and Huberman, 2002, Bryman and Burgess, 1994)

As explained in the *Chapter 5, Section 5.5.7*, the interview questions were designed within the scope of the research objectives. Hence the development of

the themes using framework analysis were based on the trends and thinking expressed in the literature on EVA<sup>®</sup> and value, as well as from any recurrent themes arising from participants interviews. The key themes emerging were also considered in line with the research questions as set out in *Chapter 5, Section 5.1*.

To begin the process of analysing all the interviews from the study, framework analysis was used to extract the meaningful information from the qualitative data. For the practitioners, the key themes were around EVA<sup>®</sup>, value and value creation. However, because the response rate was low and sparse, framework analysis was not applied in its truest form. Instead it was adapted to fit the study and to present a general discussion and analysis of the relevant themes arising. The intention was also to try and establish if and how EVA<sup>®</sup> could be adapted or implemented in SMEs. By taking this approach, information which was meaningful to the research was logically separated into the various themes arising for analysis.

The analysis of practitioner's views was undertaken by considering their views under the following themes:

- a. Determinants of value, value drivers and EVA<sup>®</sup>
- b. Strategy for value creation
- c. Barriers to creating value
- d. EVA<sup>®</sup> adjustments
- e. Suitability of EVA<sup>®</sup> in small versus large organisations
- f. Determination of EVA<sup>®</sup> for a non-trading company
- g. Measurement of value
- h. EVA<sup>®</sup> versus other measures
- i. Problems and Issues with EVA<sup>®</sup>
- j. Destroyers of value

For the company participants the emerging themes were:

- a. Management, Structure and Culture
- b. Financial Information
- c. Decision-making
- d. Performance and use of Information
- e. Identifying value within the company

Presenting the findings under the themes as shown above, facilitates a distinct demonstration of the integration of the mixed methodology approach in analysis of the data. This will be covered in further detail as part of the Introduction to *Chapter 7* for the analysis.

## 6.1 Aims and Justification of Soliciting Expert Opinion

From the review of the literature it was established that there was a gap in identifying the value indicators and value drivers for EVA<sup>®</sup>. There was no clear representation of what value drivers were, neither was there much information on how to identify them within a company. What was gathered from the literature was that value drivers would vary depending on the company and its operations (Stern *et al.*, 2001; Young and O'Byrne, 2001; Hall, 2001). In most instances value drivers were addressed using accounting terms such as ROE, NOPAT, ROIC (Hill, 2001; Young and O'Byrne, 2001; Stewart III, 1999; Ehrbar, 1998). This was done without much inference to the company operations and identifying those value added activities which would ultimately determine the accounting values. Having identified those shortcomings in the literature, soliciting expert opinion was included as a mean of gaining insight and added knowledge to build on the existing literature.

Soliciting expert opinion is a well-established method used over the decades in seeking knowledge to solve problems or find solutions to complex issues (Sullivan and Payne, 2011; Kingman *et al.*, 2005; Dalkey, 1969). It draws on the wisdom, knowledge and expertise of those who have encountered the same or similar issues before. It is used in instances where there is a lack of sufficient knowledge or further insight is needed to make decisions or in comprehending complex issues (Muskat *et al.*, 2012; Amos and Pearse, 2008; Scapolo and Miles, 2006). By soliciting expert views, a wider perspective and richer information is obtained from which possible solutions can be derived. It is used in this study to gain a wider perspective from practitioners in particular for gaining broader views on EVA<sup>®</sup> which is independent of EVA<sup>®</sup> proposers or those affiliated with Stern Stewart & Co.

### 6.1.2 Findings from Practitioners

In the first instance, the interview questions were drafted specifically around the EVA® framework and also in line with the research objectives. Although practitioners were selected based on their published work on EVA®, there was a general expression by those responding that they do not consider themselves experts in the field. Hence, for each iteration, in applying the Delphi Technique, the interview questions were amended for their next administration based on comments received or views expressed. There were three iterations in total with the interview questions changing to obtain wider views on value and value creation along the lines of the EVA® framework. However, each Practitioner only responded to one set of questions. This was because they stated they had already shared as much as they could the first time around. This is recognised as a limitation in the study because the robust data expected was not generated by this process. Iteration of the questions is reflected with the responses given by Practitioners (*Appendix 7*).

Practitioners' responses are summarised in Table 6.1. They were summarised based on the general themes around the research questions (*Chapter 5, Section 5.1*). The information obtained was not as thought provoking and stimulating as anticipated but was still insightful. The blank spaces in the table indicate where participants had no views or where the theme in question was not reflected in their particular set of interview questions.

The analysis and discussions arising are set out in the general analysis in *Chapter 7*.

**Table 6.1: Practitioner Views following Iterations 1,2 & 3**

| THEMES   | PRACTITIONER VIEWS  |  |   |
|--|---|--|---|
|  | Practitioner 1  | Practitioner 2   | Practitioner 3  |
| <b>Determinants of the value, value drivers and EVA®</b> | <ul style="list-style-type: none"> <li>• An indication of what those value drivers could be would be those values that could be distorted by inflation.</li> <li>• The main important numbers for EVA® are earnings and depreciation.</li> <li>• Actual inputs to the business [what those inputs were was not commented on further]</li> </ul> | <ul style="list-style-type: none"> <li>• Value created when level of return is increased for the same level of investment.</li> <li>• Increase in sale price, increase in products produced.</li> <li>• Reduction in capital costs – by decreasing the interest rate and adjusting dividend policy.</li> <li>• Value drivers are dependent variables.</li> </ul> | <ul style="list-style-type: none"> <li>• Controlling complexity for stakeholders, especially customers.</li> <li>• Value created is dependent on the stakeholder.</li> <li>• Employee and stakeholders are organised.</li> <li>• Employees and stakeholders are the underlying human assets of the firm.</li> <li>• Not familiar with EVA®.</li> <li>• Factors such as community and management drives value.</li> <li>• Society, the Planet, Supply Chains, Local Communities</li> <li>• Value creation makes little difference in the short term; for the long term it is central.</li> <li>• Value created depends on size of the firm and the influence of managers.</li> <li>• Managers need to understand sustainability and limits to growth.</li> </ul> |

| THEMES   | PRACTITIONER VIEWS   |  |   |
|--|--|--|---|
|  | Practitioner 1   | Practitioner 2   | Practitioner 3  |
| <b>Strategy and Value Creation</b>                             | <ul style="list-style-type: none"> <li>EVA® forces the creation of value without making the enterprise any bigger.</li> </ul>  | -  | <ul style="list-style-type: none"> <li>Impossible to develop a vision without a value position</li> <li>Innovation and R&amp;D creates a customer which is a central stakeholder group.</li> <li>If a business doesn't create value it isn't a business.</li> </ul> |
| <b>Barriers to creating value</b>                              | -  | -  | <ul style="list-style-type: none"> <li>Financial reporting accounts for only one dimension, it is highly artificial and arbitrary.</li> </ul>   |
| <b>EVA® adjustments</b>  | <ul style="list-style-type: none"> <li>Inflation need to be taken into account when considering EVA® adjustments.</li> <li>You either create or destroy EVA® by failing to make adjustments in the presence of inflation.</li> </ul>   | <ul style="list-style-type: none"> <li>Since EVA® entrance data is based on accounting information it is necessary to make adjustments.</li> </ul> | -   |
| <b>Suitability of EVA® in small versus large organisations</b> | <ul style="list-style-type: none"> <li>Not very useful to work out EVA® for a large organisation. Not sure it can be done.</li> <li>More useful at the divisional level.</li> <li>One would need to work out the capital employed for each division.</li> <li>If implemented properly it is more suited for divisions in medium sized companies.</li> <li>More of a compensation tool for managers of</li> </ul> | -  | -   |

| THEMES   | PRACTITIONER VIEWS  |                |   |
|--|---|----------------|---|
|  | Practitioner 1  | Practitioner 2 | Practitioner 3  |
|  | SMEs or as a decision tool going forward. Using it for decision-making isn't the same thing.  |                |   |
| <b>Determination of EVA® for non-trading company</b> | <ul style="list-style-type: none"> <li>• Better if applied to a traded company as one would have already a sense of the value created in the company by its stock price.</li> <li>• For companies not trading the difficulty would be determining the rate of return required by the company.</li> <li>• EVA® is a one period measure.</li> </ul> | -              | -   |
| <b>Measurement of value</b>                          | <ul style="list-style-type: none"> <li>• EVA® could be a good measurement of value for small companies but unsure of who the audience would be.</li> <li>• Not suitable for evaluating projects with long lead time during the R&amp;D phase.</li> <li>• May be useful in evaluating the performance of the manager of the project.</li> </ul>    |                | <ul style="list-style-type: none"> <li>• Measured to control complexity for stakeholders as much as possible</li> <li>• Measures the triple bottom line (TBL) to account for it</li> <li>• Agreed the nonfinancial value created by a company should also be measured.</li> </ul> |

| THEMES                              | PRACTITIONER VIEWS   |  |                |
|-------------------------------------|--|--|----------------|
|                                     | Practitioner 1   | Practitioner 2   | Practitioner 3 |
| <b>EVA® verses others measures.</b> | <ul style="list-style-type: none"> <li>• NVP is a better tool (the decision tool) than EVA® to aid in decision-making although EVA® is closely related to NPV.</li> <li>• They should be using NPV or IRR – not EVA®</li> <li>• EVA® is more of a post measurement [suggesting it is used after the fact, not to assist in decision-making].</li> <li>• Issue with using NPV in SMEs – NPV assumes there is access to capital; this is not likely to be the case for SMEs.</li> <li>• Hence solution is to combine NPV with profitability index (PI). It is not obvious how EVA® can be used in making decision.</li> <li>• NPV and EVA® are intrinsically related – one may consistently pick positive NPV projects and end up with a positive EVA®.</li> <li>• EVA® could be used to see if the right NPV project was selected.</li> </ul> | <ul style="list-style-type: none"> <li>• EVA® is a close proxy to NPV.</li> <li>• EVA® is an economic interpretation which accounts for the cost of investing own capital.</li> <li>• It includes only those returns associated with main activities.</li> <li>• It considers only the capital which is tied in assets exploited by the company [value added activities].</li> </ul> |                |

| THEMES                               | PRACTITIONER VIEWS   |  |   |
|--------------------------------------|--|--|---|
|                                      | Practitioner 1   | Practitioner 2   | Practitioner 3  |
| <b>Problems and Issues with EVA®</b> | <ul style="list-style-type: none"> <li>EVA® is a one year snap shot (which equates to stock price) of the company.</li> <li>It is complicated especially when assets are shared by divisions in large organisations. Need to work out the ROCE.</li> </ul> | <ul style="list-style-type: none"> <li>Inability to precisely define the cost of capital. Even using several models it is still not possible to get a clear indication of the cost of using own capital [taken as equity capital].</li> <li>Accounting distortions and differences in international accounting standards – mainly differences between American and European accounting standards.</li> <li>Although it considers returns and costs, it does not contain expected benefits in future years.</li> <li>Unwillingness of companies to give data for research and not willing to collaborate.</li> <li>Does not publish real information and may modify information given in research.</li> </ul> | -   |
| <b>Destroyers of value</b>           | <ul style="list-style-type: none"> <li>You could either create or destroy EVA® by failing to make adjustments in the presence of inflation.</li> </ul>   | -  | <ul style="list-style-type: none"> <li>Poor treatment of employees.</li> <li>Unhappy, sick, poor and uneducated employees.</li> </ul> |

The views expressed by Practitioners (*Table 6.1*) were not as rich and diverse as anticipated. Practitioners One and Two were the only ones to have in-depth prior knowledge of EVA<sup>®</sup>. Practitioner One studied EVA<sup>®</sup> while researching inflation using the Edward Bell model for the valuation of companies. During this work he examined EVA<sup>®</sup> and its use in providing information on the value of a company. His conclusion was that EVA<sup>®</sup> would need to take into account the impact of inflation when used as a valuation measure for companies. He also expressed views on the suitability of EVA<sup>®</sup> in SMEs. With this he drew comparisons between the theory supporting the EVA<sup>®</sup> framework and its implementation with those similarities with SMEs. That is, the need for EVA<sup>®</sup> to be applied to divisions, hence providing a better fit when compared to the characteristics of SMEs. He also expressed some of the concerns found in the literature on the adaptability of EVA<sup>®</sup> within non-traded companies and challenges in using the measure as a decision-making tool.

Like Practitioner One, Practitioner Two discussed what the value drivers of EVA<sup>®</sup> would be. They both referred to value drivers using accounting terminologies such as earnings, sales price and level of investment. Also, like Practitioner One, Practitioner Two looked at EVA<sup>®</sup> in comparison to NPV. They both consider EVA<sup>®</sup> to be a close proxy to NPV. Practitioner Two was undertaking research on EVA<sup>®</sup> and its information content on the market value of a company. This work was on-going but he identified the impact of accounting distortions on EVA<sup>®</sup> and the challenges in determining the cost of capital. These views also aligned with that expressed in the literature on EVA<sup>®</sup> (*See Chapter 3, Sections 3.3 – 3.7*).

Practitioner Three had no prior knowledge of EVA<sup>®</sup> but was able to share his views within the broader context of value and value creation. From the views expressed it was clear he approached the subject from a non-financial perspective. His views aligned with that expressed in the literature on value and value indicators as presented in *Chapter 3 Section 3.1*.

## 6.2 Findings from the Case Studies

Interviews from the case studies were also analysed to elicit the meaningful data under the themes as stated in *Section 6.0*. The meaningful data is presented in each interviewee's own words although, where necessary, personal data and commercially sensitive information is omitted.

### 6.2.1 Presentation of the Value Indicator Exercise

As explained in *Chapter 5 Section 5.5.3*, participants from each company were asked to complete a value indicator exercise. Seventeen value indicators pre-selected from the review of the literature was set out on flash cards. Each interviewee was asked to arrange the cards in order of priority starting with the value indicator which was most important to the company and ending with the least important. They were also given extra cards to write and include value indicators they thought were missing or to eliminate those which were not considered to be value indicators. No further instructions were given.

At the end of the exercise, some interviewees not only organised the value indicators to reflect the most important to the least important but some also included a ranking of importance at different levels. Hence the arrangements of the value indicators are represented along two axes:

- i. The order of importance along the x axis, where 1 represents the most important to the last number which is the least important value indicator; and,
- ii. A ranking which is shown along the y axis and is expressed as primary ( $1^0$ ) to tertiary ( $3^0$ ) to indicate the level of importance.

In three instances, (*SPL-R1*, *SPL-R2* and *WIC-R3*), the way in which the interviewees completed the exercise deviated from the x-y axis order mostly used. In those instances, the diagram was remodelled to reflect all interviewees' responses within the same plane.

## **6.3 Case 1 – ABC Limited**

### **6.3.1 Company Background**

ABC Limited is a manufacturing company based in London that produces fire detection and fire alarm equipment. The company started in 1973 as an assembly and servicing operation. However, its operations changed when the manufacturing company supplying their products went into receivership. ABC was left with very few options, and made the decision to purchase the ailing supplier.

At the time, the company was based in a small town on the south coast in Eastern England and the decision was made to relocate to a town just outside of London, taking key members of staff who were willing to relocate. At its new base, ABC Manufacturing was born and the company began operations. Initially, the manufacturing operation was done manually, product designs were simple and the products were crudely made. It was a small scale operation with only a few employees with the assembling of the circuit boards done by home workers.

Eventually the operation and design of the products evolved and it became unproductive and unreliable to have the production operation outsourced. The Technical Director, who has been with the company for over 20 years, visited a competitor to gain some insight on improving the operations at ABC Limited. Consequently Surface Mount Technology production systems, a flow solder machine and a just-in-time production system, was implemented to improve efficiency.

At the time of the initial interviews in 2008 the company had a staff count of 40 employees, many of whom were long serving, ranging from 5 to over 20 years. Office and sales team makes up 60% of the workforce and the company has a fairly flat organisational structure. While there were key positions of responsibility assigned to individuals, many had taken on other responsibilities outside of the remit of their specific job description. Back then, the company

operated as two entities, the sales side; ABC Systems and the manufacturing side ABC Manufacturing. ABC Manufacturing sells 100% of its products to ABC System Limited.

The company has seen many changes during its 39 years existence; from changes in its products and processes to a change in management in 2008. Since January 2008, arrangements were put in place to merge the two entities and in 2010 it began operating as a single entity. The company has also reorganised and most importantly, management have developed a greater understanding of the company's position in the market. The corporate vision is to remain competitive in the market, and to look at new product development, new technology and new markets to realise this objective.

Table 6.2 shows a snapshot of the company's financial position at the time of the visit for both sets of interviews in 2008 and 2010. The snapshot of the company accounts show that the manufacturing entity of the company was struggling. It continued to make a loss up to the final date of trading in 2009. These losses were absorbed by ABC Limited.

**Table 6.2: Financial Overview of ABC Limited**

|   |                    |                              |
|---|--------------------|------------------------------|
| <b>Company Name: ABC Limited</b>                      |                    | <b>Sector: Manufacturing</b> |
| <b>Number of Employees: 40</b>                        |                    | <b>Years Trading: 39</b>     |
| <b>Pre-2008</b>                                       |                    |                              |
| Financial standing as at year ending 31 December 2007 |                    |                              |
|   | <b>ABC Systems</b> | <b>ABC Manufacturing</b>     |
| <b>Turnover:</b>                                      | <i>£1,217,514</i>  | <i>£4,361,500</i>            |
| <b>Operating Profit:</b>                              | <i>£57,191</i>     | <i>£161,992</i>              |
| <b>Retained Profit:</b>                               | <i>£44,804</i>     | <i>(£11,099)</i>             |
| <b>Post-2008</b>                                      |                    |                              |
| Number of Employees: 35                               |                    | <i>Trading Years: 41</i>     |
| Financial Standing as at year ending 31 December 2009 |                    |                              |
|   | <b>ABC Systems</b> | <b>ABC Manufacturing</b>     |
| <b>Turnover:</b>                                      | <i>£4,448,340</i>  | <i>£904,706</i>              |
| <b>Operating Profit:</b>                              | <i>£321,305</i>    | <i>(£162,611)</i>            |
| <b>Retained Profit:</b>                               | <i>£308,121</i>    | <i>(£173,851)</i>            |

## 6.3.2 Findings from the Interviews

**Table 6.3: Respondent Code for ABC Limited**

| Respondent Code | Respondent Position |
|-----------------|---------------------|
| ABC-R1          | Managing Director   |
| ABC-R2          | Technical Director  |
| ABC-R3          | Stock Controller    |
| ABC-R4          | Purchasing Manager  |
| ABC-R5          | Quality Engineer    |

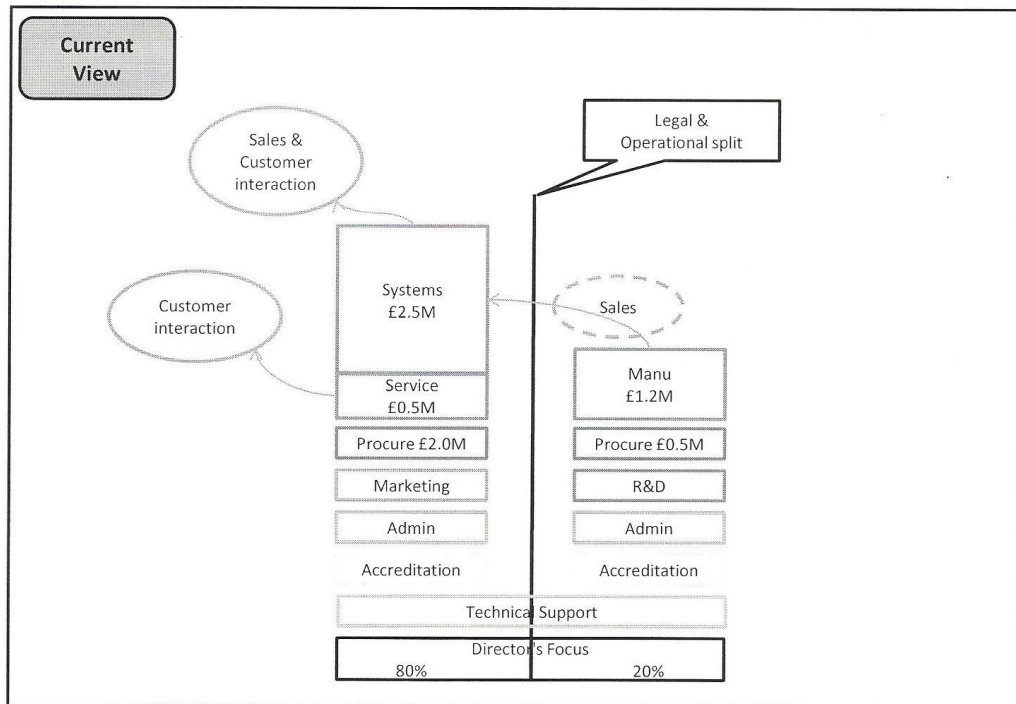
### 6.3.2.1 Management, Structure & Culture

At the time of the pilot interviews, the Managing Director (*ABC-R1*) had been in the post for five months. The company was acquired in a buy-out from a family member and *ABC-R1* was in the process of learning more about the operation and understanding its finances. He has a background in accounting, and had worked in the private sector in the capacity of accountant/information analyst for several years.

The company started out as a cottage enterprise almost four decades ago, and for most of its existence, existed as two separate entities jointly managed by two Directors with an 80:20 ratio of responsibility.

*ABC-R1:*       “.....there are two legal entities here..... *ABC Systems and ABC Manufacturing.*”

**Figure 6.1: ABC Limited Operations Functionality Organisation Chart**



The structure of the company is best reflected in terms of the operational functionality of employees, rather than a traditional hierarchical organisational chart with delegated lines of responsibility (*Figure 6.1* above).

In employing a functional approach to management across both entities, it was customary for lines of responsibilities to be blurred across the various roles. Statements confirming this were made by some of the respondents.

*ABC-R1: "The best example I can use is the lady who works for manufacturing, she is CIPS qualified and she drives a great bargain here (ABC Manufacturing) but does nothing for here (ABC Systems)."*

*ABC-R4: "The Company is very much seen as two companies, the Sales division and the Manufacturing division."*

Throughout the interviews, it was clear that employees were fully aware of the original structure within the organisation and how it had operated. There was

also a strong indication that employees worked well together as a team as well as within and across the various functional roles to resolve any difficult issues that may arise.

*ABC-R4: "..... as the central person that has to do with the production control side of things. We don't overlap as he (ABC-R2) is technical. We do work as a team. He knows what he needs, and then it is up for me to do the best I can on getting him what he wants as economically as possible."*

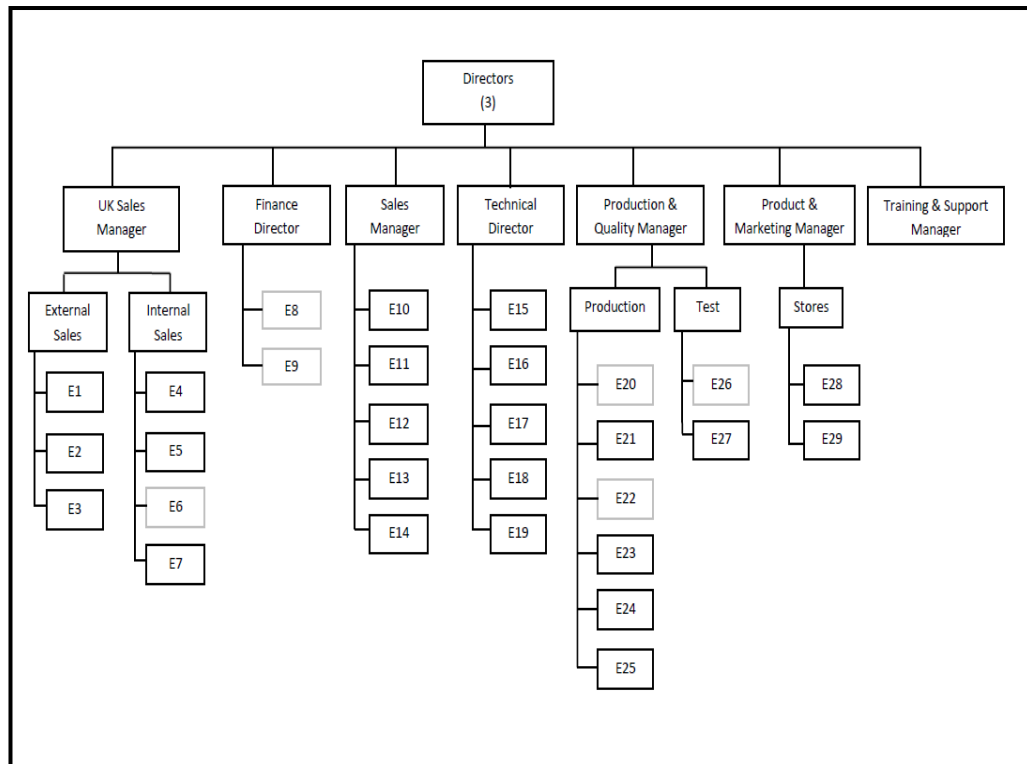
*ABC-R5: "... I am supposed to spend some time with ABC-R4 today; because I believe in figures and facts..... These are all my figures; I have that much confidence in them. I can bring this figure in that time. I need 36 hours per week to cover that much production and to cover that many orders, why do I have 72 hours? So I always work on figures and facts. So that is what we are going to do today...."*

However, there were instances of counterproductive actions, for example the constant debate over lines of responsibility was picked up by the new Managing Director, which further prompted action for a merger.

*ABC-R1: "It (the company) was also organisationally driven in terms of there was a two company feel and it created a lot of animosity between people"*

Since January 2008, significant changes were made to the structure of the company. Since the initial visit, the two entities, ABC Systems and ABC Manufacturing have merged to form a single entity. This was driven partly by changes in rules in company tax, but more so because of the wider organisational challenges such as the allocation of resources and management of investments. The new organisational chart (*Figure 6.2*) shows how the company has restructured, taking on a more traditional structure.

**Figure 6.2: ABC Limited Hierarchical Organisation Chart**



Although the original structure appeared to have worked well, the new Managing Director proposed changes. The intention was to create a single cohesive organisation with senior management, administration and other shared functional roles with 100% responsibility across what would now function as operation departments within a single entity – ABC Limited.

In the new structure each employee now sits within one of two distinct departments, Production including Research & Development or Sales (Figure 6.2). Each department has a lead manager who forms part of the senior management team. The remainder of the senior management team is made up of the head of the remaining 6 functional roles. The company is headed by three (3) directors, one of whom has a non-executive role. The two executive Directors own 60% and 15% of the company respectively, whereas the non-executive Director owns 25%.

The shareholders in the company are paid salary in the form of dividend.

*ABC-R1: "We (I and the other Director) pay ourselves by dividends but is a form of tax planning. In terms of true dividends, none have been paid."*

There are a number of long standing employees who have remained with the company since its early beginnings and watched it evolve over the years. There are many employees with as many as 20 years' service with the company. During the pilot phase in 2008, the newest serving employee who is also one of the owners of the company started just six months prior.

*ABC-R1: "...Most have been here for a long time for more than 20 years. The newest person apart from me has been here for 5 years".*

*ABC-R4: "I have been with the company 10 years ..."*

*ABC-R5: "About 7 years now" (number of years in role)*

Employees grew with the company and worked their way up in various capacities over the years.

*ABC-R2: "I have been doing this for; I think it is about 15 years. Prior to being Technical Director I was the Service Manager; so for about 8 years I was dealing with service instillation projects on the other side of the company."*

*ABC-R3: "When I first started here my role was down in the warehouse packing in the office and I have done that for most of the time and then I do a supervisory role which I still really have...."*

ABC Limited does not have an issue with staff turnover as employees have continued to show a high level of loyalty and commitment to the organisation over the years. However, by the time of the post pilot interviews, the Managing

Director had made the decision to make some staff redundant and recruit 2 additional staff.

*ABC-R1: "We have made 6 redundant in total but then we have taken on a couple of others. We have taken on 2 new posts; one was a software developer (the other the new Director)."*

While the Managing Director sees the value to the company in having loyal employees, he is aware of the potential disadvantages and impact on the organisation.

*ABC-R1: "As a result very few fresh ideas come into the organisation...."*

This was part of the reason to release some staff and employ a few new ones.

*ABC-R1: "He is a younger developer than we ever had before. So therefore bringing in newer ways of working and in comparison to the other guys is fairly good at communicating. He could sit and talk to anyone about what he is doing and then turn and speak to his colleagues in 1s and 0s [binary language of a software developer]. And he can do it both quite comfortably."*

The employees interviewed all seems to share a common desire to acquire and share knowledge; a feature which seems to be a part of the embedded culture within the organisation.

*ABC-R2: "...So I want to make sure that we get the right training and we understand what we need to understand to keep the machine going because if the machine doesn't go nothing is made."*

However, it was clear that this was mainly due to instances where the employee in post had needed additional support. In such instances, others within the organisation stepped in to provide support when needed.

*ABC-R2: "Yes, well ABC-E5, nobody else does technical support; he is on holiday this week, so I am just covering the phone calls. I don't normally do technical support. For many years I did technical support as well as everything else and it just became too much and so they had ABC-E5 join the company to give technical support to customers. It's quite a busy position, you get lots of calls."*

In this instance, ABC-R2 had the technical knowledge and knows how to function in this role not only because of having worked in this role but because he was also the designer of the products made in-house.

*ABC-R2 "Well I do have the distinctive advantage in that I design them all in the first place. And obviously we have evolved over 25 years; we tend to get questions about the latest models. The old ones of course are long gone, so I could keep on. It's pretty easy for me, it's harder for ... (ABC-E5)... because he doesn't necessarily know so he may have to come through to me and say I have got a customer with this problem what do we do. What's the answer because he doesn't know, I'll assist him with that and hopefully he will remember over time."*

The culture existing within ABC Limited was one which appears to encourage staff development and caters to the well-being of each employee, viewing staff as a valuable asset to the company. Historically, the management of the company had ensured they were accessible and employees had the freedom to express ideas and were encouraged to engage in development to enhance their roles. Indications are that employees embrace their responsibilities and felt a

sense of being an important part of the company. This was evident in the long service records of employees.

During some interviews it was noted that employees appear to have interest in learning (*ABC-R4, ABC-R5 and ABC-R2*). In particular *ABC-R2*, held a long term vision of the organisation and the future development of its products. There was a sense of pride and dedication amongst employees as each aspired to ensure that the company continues to grow and develop.

*ABC-R2: “(ABC Limited) has great potential. One of the things we are doing at the moment we are in a big project where we are developing a completely new control panel system and we are putting it forward for third party approval which is something which has become a legal requirement because of the Construction Products Directive ... so if we get the approval we can open up big markets that we currently can’t supply because we don’t have approval. So we could supply the Middle East, supply the Far East, we can supply Europe, Germany, France and these kinds of things. So there is the potential for expansion for exporting abroad so we go through this big and painful process it can be good times for us if we manage to manage and market it well.”*

*ABC-R3: “In our efficiency, sick leaves, performance monitoring, that and marketing strategy, branding, placing everything; that is it hopefully so maybe sales people we got to get them on the road, get them knocking on more doors”*

This provides an insight into how past experiences has shaped the organisation current thinking and gives an indication of likely attitude towards change.

Although those employees interviewed expressed the view there was freedom to express and contribute views, the experience of the new Managing Director appears to go against such views.

*ABC-R1: "They are coming out of their shells now and saying, well, if you are doing it this way have you thought about this"?*

This appears to be brought on because of the change in the management style within the organisation.

*ABC-R1: "I think because in the past, in certain parts of the company they were – the management style was, you are the worker and I will tell you what to do. Whereas, if we just say, I value your opinion tell me what you think".*

Although, the employees adapted to change over the years, indications are those decisions were not taken at a strategic level. Prior to 2008, the focus was on retaining and keeping staff regardless of any strategic decision. Job security was almost a guarantee unlinked to the demands on employees to justify their contribution made to the company. The onset of the recession appears to have forced the new Directors into making some strategic decisions to ensure the survival of the company.

*ABC-R1: "Where there has been no, or very little change there have been now: its big changes".*

*ABC-R2: "So we then took some very tough decisions; we made a number of people redundant which had never really happened before".*

This move appeared vital in prompting and causing a shift in the culture of the organisation. The 2008 recession seems to have created an opportunity for the new management to change direction as they strive to ensure the survival of the company.

*ABC-R1: "It gives us a chance to pause and reflect on what is happening and make the necessary changes. And the numbers as well, they allow us to do it. People knew redundancies were coming, so they accepted the redundancy".*

The experience appears to have ignited a different feel within the company. Together with the structural change, there were also new experiences with a resultant change in culture within the company.

*ABC-R1: "Bizarrely, in designing a panel we wouldn't listen to the guy who takes all the technical calls, the guys in our service department, the guys who actually interact with our customers/installers – what's their feedback?...Before, those questions were never asked or input was never received. Therefore it was never factored in....So we now actually have the panels been designed by a committee."*

With the impact of the difficult economic climate, it became clear the importance of having the right people in place to do what is required. There has been a move away from the previous thinking of just providing job security because of loyalty to the company.

### **6.3.2.2 Financial Information**

The company produced financial reports which are published each year. It is important to gain an understanding of any established accounting systems and practices the company has in place and how it uses information gathered from this process. Speaking with the appropriate member of the team, the Managing Director and the Purchasing Manager, it was clear that no accounting systems were in place for this process. They did however have systems such as a Manufacturing Resource Planning (MRP) system which collates some

information, but there was no evidence that this information was used other than to inform operational processes.

Also, prior to January 2008, no management accounting was undertaken. This seems to have been the case because of a lack of the necessary skills in-house to undertake this task. Now the new Managing Director who has experience and knowledge in aspects of accounting has done some post-analysis of previous data and also some forecasting and cash flow projections for that year (2008) and the next (2009). However, there was no complete acceptance of the way in which costs were assigned:

*ABC-R1: "Yeah, we make about 33 (%) gross margins. But I am not sure I technically agree with some of the cost that sits in overheads. No service engineer's time sits in overheads, there is no allocation that would say, one of those things that you could sit and say, oh I can do that. I have left it because it's a simple, you start go and changing it"*

Prior to January 2008, management had only pursued what is required in terms of annual financial reports. There was no indication of any systems implemented neither to manipulate company data nor to interpret it, to inform operations or being used to inform the decision-making processes.

During the pilot study, it was evident that employees were far removed from any financial information within the company. It was also noted that the systems in place to aid operational processes in each entity had almost no financial information apart from invoice and payment data. Previously, resources were spent on implementing different manufacturing and information systems across both entities. It appeared decisions were made based on a particular need within one entity without any consideration to what the needs might be in the other entity. From these systems, little or no data was collected; nor was consideration given to available data which could be a vital source of information.

Employees had little understanding of costs incurred, neither was there any expectation for the manufacturing entity to operate at a profit.

*ABC-R1: "...the view is that we are ever going to lose money. We were not expected to make a profit and labour is a sunk cost."*

With the merger of the two entities, a new accounting system, Sage, was implemented and a new approach by management, for the first time, vital information was collated, generated and analysed.

*ABC-R1: "...for the first time in ABC's history a couple of months ago, we have actually generated a full accurate bill of materials.... And that was a bit scary, because when you actually started analysis, it was like – oh, we only made that much money on that.... And again, it was because they didn't factor labour in as a cost of production. That was never understood"*

A strategic practice now in place is the dispersion of vital financial information about the company so employees all become more aware.

*ABC-R1: "... the service department's annual contribution to the company is about £400,000. Here is a guy who had worked for the company for 18 years and he had no perception of what that was before. So we try to do an annual update of; this is where we are and this is what we are doing; and include high level numbers because most are really scared of numbers."*

At the time of the pilot interviews, ABC Limited was going through a period of change with a new Managing Director who had plans on introducing measures to improve the operation efficiency. At the same time, the staff interviewed also appeared to share a common vision of how, and what needs to be done, to improve the operations.

An understanding of the operational processes of ABC Limited was important as it provides the foundation for understanding the business and for identifying the operations of greatest concern within the company. This will be important when looking at the actions which prompt the organisation to engage in activities to enhance the outcome of the various processes within the business. This will inform the process of identifying what would be considered as the value driven activities within the company.

*ABC-R2: "Yes, sometimes they come up with improvements. We are quite responsive to the staff. If they come up and say 'I am having a problem in trying to do this task'; then we would look at how it can be improved, how can we reduce that problem; so if there is a problem fitting up screws we might decide to rivet it instead or something. Those are things that we have done, or they might have a problem with a tool they are using, it might be pinching their hand or something, we might have to find a different tool, or a different way of doing it. Like riveting, we were riveting with hand pliers then we found that production was becoming more increased and the matter was, because it was hurting their hands, so we bought air powered riveting guns which reduces the stress on them."*

*ABC-R2: "Well that was surely one of the biggest changes. It's been many things. When we first started the work it was very labour intensive, so we were assembling units which were taking time and effort."*

*ABC-R2: "...assembly was very much hand based and required quite a high level of skill; so we had to find people who were prepared to sit and put very delicate components onto a circuit board; and were very cost skilled work, and also quite tedious work because there are thousands of components*

*and they are doing the same thing. So we used to have a problem keeping staff, or it seems to be that some people were quite happy to do that and were very good at it, and other people tried and didn't like it and couldn't cope, or couldn't concentrate and made lots of mistakes, so there was a high level of errors in assembly, that sort of thing. So the cost was high because the time it took to load the boards and, the solder quality was poor because they were hand soldering and joints, and so the pressure on them to obviously produce, to try and keep production going, and the cost was too high, so we weren't competitive in the market place. So investing in the Surface Mount, which was quite a long and painful process, because we had to continue the production at the same time as switching to the new."*

*ABC-R4: "We have formalised ourselves much more. We introduced a MRP System."*

*ABC-R4: "It was introduced in 2004. As far as production planning and efficiency, that was one of the things that made its difference. So I would say the introduction of SMT (Surface Mount Technology) and the MRP are big influences and the third biggest is the exercise that ...(ABC-R5)... did with a lean tap on saying where is our wastage - a bit of a time and motion exercise, and in moving testing procedures and processes to reduce down."*

*ABC-R5: "Well different ways of working in production... working smarter instead of harder. So they are more relaxed than when I came ...as you know there is resistance whenever you make changes."*

ABC-R5: *“So they are physically doing more production without any hard work, so they are more than like it now. And where the company is concerned we used to hire contractor during holiday ....and for last 2 years we didn’t hire anyone.”*

ABC-R5: *“We are now used to working in an efficient way, ok and I have made changes in layout, production layout so wherever they use tools on their tables ...it is not exactly lean because we have 2 floors, upstairs and downstairs so we do Surface Mount downstairs then those come up, then we do PCP upstairs and then go back downstairs for final assembly and final test. So it’s not clearly very.....100% ....some sort of obstacles in production ....so I removed all this obstructions.”*

The company is still evolving through a period in which it was forced to re-evaluate the core function of its operations. This was brought on by a sudden awareness of where they are in the market and customer expectation.

ABC-R1: *“I happened to go to an exhibition there and saw all our UK competitors and actually realised we weren’t a serious panel manufacturer.... And I just realised we are not there! We are miles away..... It was the confidence to come back and say, this is where we sit in the market... Our niche is here so let’s get a lot better at it”.*

*“...manufacturing is 30% of our business. And it was scary when 50% of our customers saw us as a manufacturer and we don’t see it as a main part of our business”.*

Previously, the company had made decisions to drive, develop and support the manufacturing operational processes. However, in 2008, they realised their position in the market and have restructured to reflect this and to be more responsive to market demands. This comes with the appointment of a

management team which is aligned with the revised operational process. This is reflected in the new organisational structure (Figure 6.2, Page 233).

*ABC-R1: "...we are not there and we will never get there – therefore let's not try and compete in that space but be really clear as to what our strengths are. One of the things we then did was – most of our business, 60% is distribution and we historically distributed one of our competitors' (name omitted for confidentiality reasons) products (panels). And they make the best – we now accept that they make the best panels. They are a lot more expensive. We got to the point where we said, you know what, they have a lot of cool features, they do a lot of things – we will never get there – that's fine."*

*"For a small company we need big management because we need R&D, we need Production, we need Sales, we need Marketing and actually our Technical Support and Service Manager".*

With the changes in place, focus is placed on getting the various support systems and processes ready to drive the distribution side of the business. The implementation of Sage to meet the demands of Internet sales, production of a more informative product brochure and devising a marketing and advertising campaign are all indicators of this.

The systems and processes in place to support the process of making financial decisions were also examined.

*ABC-R1: "Historically there has not been one. It has always been a matter of can we afford it. Is this thing going to cost £5000.00, we have got to know, or if not maybe put it on hire purchase; that kind of thing."*

ABC-R1: *“... in terms of your previous question of what is the process of making financial decision, it means I am in the process of change. I have not got anything formal in place that says if we were to spend £1000 the process we would go through...”*

The Managing Director indicated that the company had high debts although he didn't see it would be a problem with the banks. His concern seemed more that the company was already hugely in debt hence highly geared.

ABC-R1: *So in terms of excess barriers, the bank is happy to lend us money but we extended it to borrow some more money to buy the company when I bought it and we probably run close to it all the time; it has been tight. The size of the overdraft varies; it ranges from probably £400,000 to £600,000 depending on where we are at any one point in time.*

He also commented that the rate of borrowing was fairly low.

ABC-R1: *We actually get quite a good rate, it's not many points above base because we changed it all when I bought the company and the banks were still giving amazingly good deals. So we are 1.5 points above base (base is currently 0.5%). The problem is the size of the debt. It is an inhibitor in terms of, there is no money*

### **6.3.2.3 Decision-making**

The lack of an agreed process for making decisions was clearly evident when it comes to acquiring equipment or systems for the purpose of improving the operations of the company. While it has been stated that the decision was based on knowing that it would be needed, or that it potentially could improve current

practices, there was no systematic financial process in place to use to determine if the investment would be worthwhile.

*ABC-R2: "Well generally speaking we are obviously interested in the efficiency and keeping cost down.... part of what I do would be sort of to keep an eye on things with the market place so it might be to get magazines and journals, go to exhibitions and things and then you might see something on offer there which looks interesting for our company. ....So once we decide to buy something to improve a process then we would literally put it to management. So we would put forward a case like write a report saying we think we need this and it is going to have these benefits and make some judgement on that."*

*ABC-R5: "Well management wasn't very pleased for that. It was hard to convince management especially when it cost about £20,000.....we are paying £20,000 for this software. I can't say if it is a very clever decision or not. I was not very convinced either that we spent £20,000 on only one software..."*

*"We develop a checklist-what we need. So what we need, cost – which one would cost more, which one will fit our purpose, which one will be ready quickly, and which one we can handle easily, easy to learn because that sort of thing takes time to understand because it's a complete new software. It's a complete new technology and we didn't have any one here before. .... So it is not something you can learn in 2 days, so we need to see which one we can adopt easily, which one fits our purpose....."*

In the absence of processes for making financial decisions, the organisation employs a team approach; although ultimately the final decision lies with the Managing Director. They also rely heavily on the knowledge and supporting arguments put forward and is driven by their perception of the needs of the organisation at the time for future prosperity.

*ABC-R4: "Ultimately the management makes the decision. ABC-R2 and I would put the proposal to them, what we believe, think. And ultimately we decide, in those days with ABC-RMD1 and ABC-RMD2, we decided whether or not they felt that the monies we should dispense are defensible."*

Although it was stated that they just knew it was the right decision to do something, it was reported that a SWOT analysis was also undertaken as a process to aid in making decisions.

*ABC-R4: "But we knew in our hearts that what we were doing was the right way to go now, that we have to make improvements and the best. We have done SWOT Analysis more recently on making decision with this tool to assist us."*

Since the pilot study, the company now have a wider range of financial skills within the company than previously as the two executive Directors have financial backgrounds. This has resulted in more processing and analysis of the financial information within the company than ever before.

*ABC-R1: "Having 2 Directors who are accountants, we have a ton of data. We analyse lots of things".*

There is still no formal process of making financial decisions in the company because they stated that there is currently no need for it. The present financial standing of the company shows it hasn't been focusing on making investment decisions as a means of growing the company.

*ABC-R1: "It comes back to the point of investment decisions; we haven't got any money to invest. So things like Sage, we are changing the servers (they are 7 years old, it keeps falling over) – it is if we don't change, we then can't sell. So these decisions are born out of necessity as opposed to trying to generate new business."*

There seems to be a crude informal process in aiding the decision-making process for non-investment decisions. A process of rationalising the need, then doing some comparative cost and benefit analysis has been used in such instances.

*ABC-R1: "...by the time we had a look at all the different systems we were supporting, using and running compared to Sage, the annual support over a 3 year period would have paid for the new software. So we made the decision, we need to change"*

*"The financial benefit was – it makes the decision easier to make. If the maintenance was the same, we still would have made the decision. It got to the point where we could just about justify it on the financials. We had big business reasons why we wanted to do it – better business reasons I should say – why we wanted to do it".*

#### **6.3.2.4 Performance and use of Information**

During the pilot study, ABC Limited had no formal process of evaluating the performance of the company. Within each entity, performance was a measure of how well obligations were met. For ABC Manufacturing, the focus was on whether or not they were able to meet production targets and pass quality checks. For ABC Systems it was a matter of returning a profit at the end of the financial year.

When asked how performance was generally measured, the indication was there wasn't anything in place. However there was an expectation that the turnover for the distribution side of the company should return a certain amount on a monthly basis.

*ABC-R1: "Then coming back to your question of how we measure performance, there is nothing really. They do look at turnover around every month. Should be around £400K."*

Having stated the expectation, it was then queried what was done to ensure that the expectation was met. Indications were there was nothing in place previously for assessing performance against expectation. However, the new Managing Director was in the process of changing that.

*ABC-R1: "This is the thing, it is almost a false measure, an inaccurate measure and the reason why I say that is (then demonstrate something on the PC). This is just a tracking thing that I had built for myself. As I say, they have in their mind they need to do £500K, and they didn't do."*

*ABC-R1: "...in terms of your previous question of what is the process of making financial decision, it means I am in the process of change. I have not got anything formal in place that's says if we were to spend £1000 the process we would go through this process to make get certainty that we make a return on this. In the future that is something I wish to change."*

There was also the recognition that having some process in place could provide information which would be beneficial to the company.

*ABC-R4: "I don't have any facts and figures that can say that we were looking at and to say listen, this is what it used to cost us then, this is what it is costing us now."*

*ABC-R1: "At least if there was something that says here is the problem and here is how we are going to fix it and it is worth saving."*

There was no mention of traditional accounting measures of performance which may be as a result of not having that skill within the company. Apart from the newly appointed Managing Director who has knowledge and skills in accounting, there is limited accounting/financial knowledge amongst the other employees.

Post 2008, ABC Limited still does not use any traditional methods of performance appraisal techniques in the company. Again, in instances where a need arises, a crude form of evaluation was utilised.

*ABC-R1: "We then look and say, could we afford it, can we make a return from it? So it was a simple exercise, almost a back of a cigarette packet sort of thing – where we say, to do this it would be 6 months' worth of development, it would cost about £20,000 to get it approved. We now only see this many, it should last 5 – 6 years then what that equals? It's £4. Then the cost of making a new one is £4 or £5 each – yes, it is worth doing".*

As the company had different operational functions; manufacturing, systems and service, an attempt was made to try to get a perspective on what the expected profit margins were and how that information was used. However, there appears to be no real expectation and no real use of such information.

*ABC-R1: "Yes. I know there are different margins between the three"  
"Having said that, profit margin would change slightly. So they class customers into generally those that have (installed a system) so they get a higher percentage*

*discount. As opposed to people who are sales they only give 20% discount to, historically there are standards..."*

This was probably because prior to 2008, there was no indication that any sort of management accounts were done for the organisation. Instead, it appears that actions and decisions were made without much supporting evidence.

However, the company uses sales margin as an indication of minimum performance expected in order to meet its operational expenses.

*ABC-R1: "We have a rough idea of what we need it to be. I think it's around £85,000/£90,000 on our sales margin we need to be hitting. We won't get that every month because our sales are seasonal. So one month we will do £120,000 and one month we could do £70,000. So that's what we look on".*

### **6.3.2.5 Identifying Value within the Company**

During the initial interviews it was evident that employees did not employ many accounting measures in informing processes. Therefore questions were asked in such a way so as to gain insight into areas and activities of value. One of the most important findings was that the company spent a reasonable amount of time and resources to improve the production system and to improve the quality of its customer service. Some excerpts of the transcripts give an indication of value added activities undertaken by the company.

The implementation of a new production system resulted in benefits which were recognised as additional value streams to the operation. The statement by *ABC-R3* was indicative that the system allows the company to gather vital information about customers.

*ABC-R3: "That system now, the greatest thing about it is that it is very visual so there are lots of ways where we can add*

*constant reminders. So it saves a lot of paperwork and running around to everybody, you can see what is going on. It gives correct access to everybody. They can see what is going on with the invoices and the accounting.”*

By taking note of this information they can take customers' views into consideration in the development of a product. This is just one example of how they could use the information captured to strengthen the relationship with customers. This resource seems to be untapped within the company.

A significant achievement by the company in adding value was to design, develop and gain accreditation for a new product. For the first time, the company opened up the potential for them to explore the European market.

*ABC-R1: “when you were here we were in the process of developing for the first time an approved panel because of the changes in rules and regulations. ....we don't want all our competitors to have approved products, so we needed to be just on a parallel with them. Also I didn't want us to be in a position where we were not meeting the necessary regulatory standards... So a lot of work went into that. And that finally got approved about 12 months ago.”*

The company also developed a product catalogue and improved its website but appears not to have a marketing strategy, neither does it appear to advertise the business and its services. The introduction of new products to the market appears to be mainly via word of mouth from the sales representatives.

*ABC-R1: “There is a trade show every year.”*

*ABC-R2: “That comes back to the sales force really. They would create brochures and ...and things. They would go and approach their customers and introduce them to the idea of the new product, or they might put out adverts in the trade*

*magazines, they might put something on the Internet; we have a website where information is displayed”*

In other instances, the value added from having adequately trained staff has been cited.

*ABC-R2: “We could probably be doing better in that area. We do have difficulty with that because some of the training isn’t available for what we do. Obviously it’s very specific consistent training organisations; so we have to create our own training. So training tends to be either, if it’s a new person, they will work with an experienced person who will show them like vocational training. We would get some specialist training from manufacturers...”*

*ABC-R1: “The best example I can use is the lady who works for manufacturing, she has CIPS, she drives a great bargain here (ABC Manufacturing)... She has £0.5M spent, £2M spend, she use her skills here to save the company some money, she got the skills to get on drive the manufacturing systems”*

However, some activities undertaken by the company could be construed as value destroying. From the above extract, it can be see where effective skills and knowledge were used in value enhancing activity in one entity but weren’t used to realise value creation in the other entity.

*ABC-R1: “....she drives a great bargain here (ABC Manufacturing) but does nothing for here (ABC Systems).”*

The pilot interview indicated that the value drivers of ABC Limited were the systems and processes in place to drive the manufacturing operations of the company. However, from the post case study interview this all changed as the company came to realise its niche market and where the strength of the

business lies. The limited resources available were therefore utilised in such a way that activities were centred on maximising the output from these areas. This was demonstrated in the outcome of the exercise which required the Interviewee to arrange, in order of priority, his perception of the indicators of value within the business.

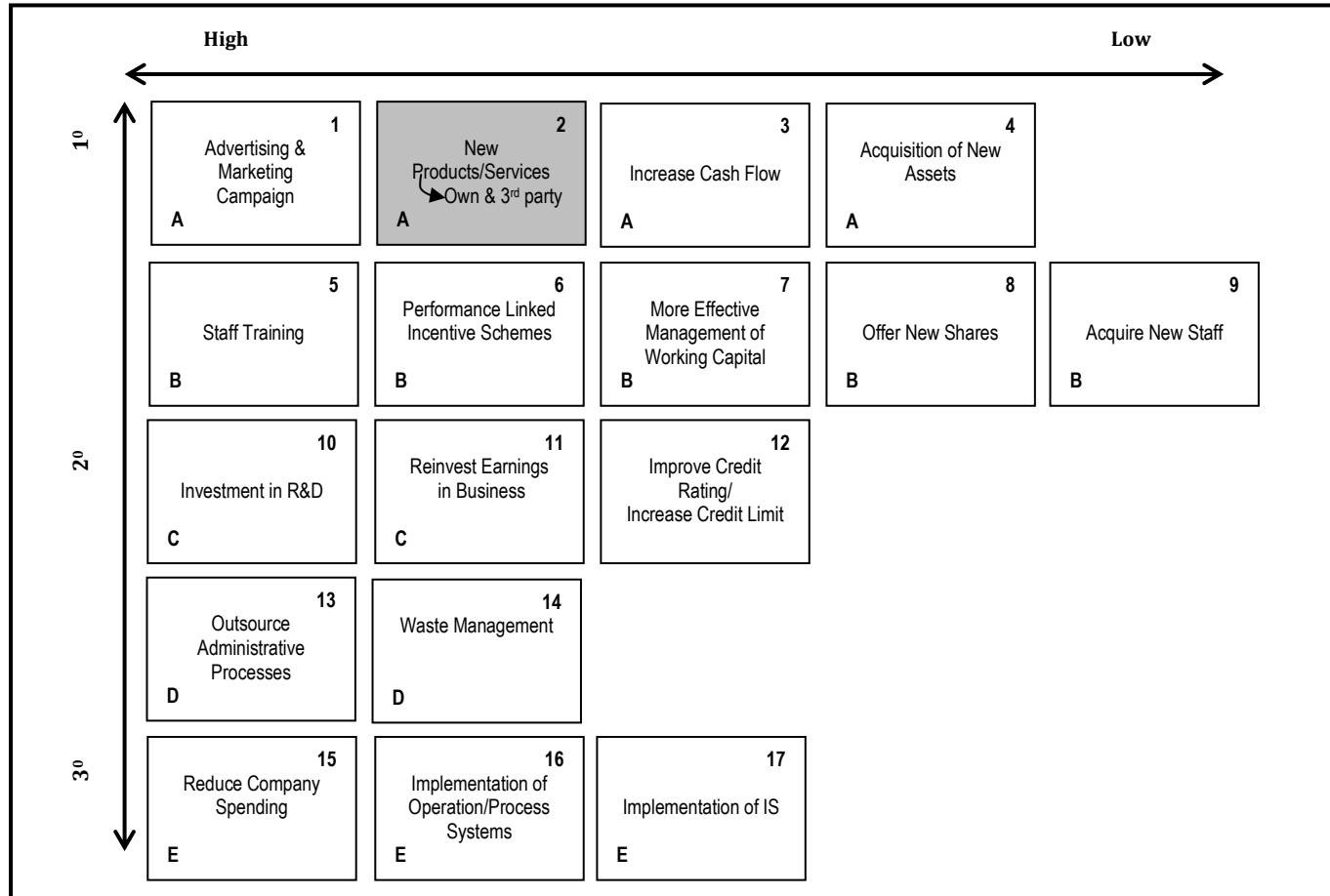
### **Results from the value exercise**

*ABC-R1* used a two tier system to rank the value indicators. The order of importance, which was indicated in numbers from left to right starting with the most important; and the level of importance which was indicated as primary, secondary and tertiary.

The exercise brought home to the *ABC-R1* the way the company has changed over the last three years. It appeared to have caused some impact because *ABC-R1* was thoughtful through the exercise. He also commented that he actually had to think about the company, where they are at present and what they hope to achieve.

In completing the value exercise, *ABC-R1* did not add any new value indicators. However, the value indicator 'New Products' was modified to read 'New Products/Services' because the company also provides a service. He also wanted it noted that the company produces its own products as well as sell some third party equipment which complements their products. None of the 17 value indicators were eliminated; they were instead all arranged and ranked in order of priority and at five levels.

**Figure 6.3: Value Indicator Exercise – ABC-R1**



**Key:**  
 Amended by Respondent

*ABC-R1* identified 4 main value drivers for ABC limited; namely 'Advertising & Marketing Campaign', 'New Products/Services', 'Increase Cash Flow' and the 'Acquisition of New Assets'. The company has had a history of cash flow problems in the past. The Managing Director is of the view that more needs to be done to attract new business to the company. By advertising and offering new products and services, the company would be in a better position to increase its cash flow and could ultimately be able to acquire relevant assets. The 2<sup>nd</sup> level rankings of value drivers were 'Staff Training', 'Performance Linked Incentive Scheme', 'More Effective Management of Working Capital', 'Offer New Shares' and 'Acquire New Staff'. This comes from the view that adequately trained staff would be needed to take forward the development of new products and provide excellent customer care. This would be complemented by having an incentive scheme in place to keep employees motivated. Having employees understand the product and services would enable the organisation to better manage its financial investments. By offering new shares, this could potentially generate much needed revenue into the operation. New staff could also introduce new ideas which could have a positive impact on the company. The next level is indicative of the value which potentially could be derived as a result of previous activities. These value drivers; 'Investment in R&D', 'Reinvest Earnings in Business' and 'Improve Credit Rating/Increase Credit Limit' would set the company on a path for long term growth. Over the past two years, it had become evident to the Managing Director that they were not where they thought they were in the market. The company had to move to carve out their niche market but then realised the market is very competitive. They would therefore need to get their finances in check and slowly begin to grow the company.

At the next level were 'Outsource of Administrative Process' and 'Waste Management'. The outsourcing of administrative process is not considered at the moment. Over the last couple of years, the company had invested heavily in Information Systems. Looking back, it was felt better decisions could be made as

actions were duplicated across the two arms of the business and they didn't work well together.

Finally, 'Reduce Company Spending', 'Implementation of Operation/Process Systems' and 'Implementation of IS' as the last tier value drivers. The Managing Director admitted that should he have completed this exercise during the pilot phase; these would be the top tier value indicators. This was because of where he thought the company was heading then, however things have changed.

On reflection, ABC-R1 summed up his thoughts on having to complete the exercise.

*ABC-R1: "I did actually have to think about it. It was hard because I actually think some of these; well not hard but it is nice to think 3 years ago these were the things (Row E) which would have been in Row A; they are helping but not important.*

*Then again I probably would have put R&D higher but it is good to think about it. We are at the point now where Marketing & Advertising of our products and services are what we are putting together to actually grow the business and to add value back in. In my mind we have now got to a point where down here (Row D) we have eliminated waste and costs and short of something radical, I'm not going to make much of a difference by changing things. Whereas, these kinds of things (Row A) this is where we need to make the most value change. These in here (Rows B, C, D) would be the supporting; yes we need staff to be able to step up and actually getting more involved in the company. This is something that we are looking at even for a couple of other people to step up. Do we give them shares; different incentives? The value is going to come from growth as;*

*whereas before so many things needed to be fixed. I am not going to say things don't need fixing.*

*It was a good exercise."*

### **6.3.3 Summary of Key Findings from Case 1**

- ABC Limited was found to be the least sophisticated of the four companies from the case studies. It is the least hierarchal of the four companies and decision-making is still made solely by the owner Managing Director.
- During the period of the study, the company went through a major reorganisation including an integration of its operations.
- It was found to be lacking in financial capabilities. Financial analysis, budgeting and forecasting were not activities undertaken prior to the appointment of the new Managing Director in 2007.
- A bootstrap method of financing is practiced within ABC Limited.
- Employees in major roles of responsibilities appear to be unaware of the need for the business to be profitable.
- Of the four companies, ABC limited appears to engage, albeit unknowingly, in more wealth destroying activities.
- Only the Managing Director had some prior knowledge of EVA®.
- Value, value indicators or value added were not terms used within the company.
- It appears to unknowingly practice some crude form of measurement and evaluation techniques.
- ABC Limited has implemented various information systems and operation processes but appears to capture very little information to inform management.

- Off all the Managing Directors, *ABC-R1* was the only person to reflect on the Value Indicator exercise and in retrospect, realise the positive changes which had occurred in the company over the period.

## **6.4 Case 2 – DGE Limited**

### **6.4.1 Company Background**

The company which is coded as DGE Limited began its former life in 1979 when a group of engineers came together to start a consulting firm providing specialist services to the Oil and Gas Industry. During this time, the company functioned as an engineering consultancy specialising in providing solutions for subsea architecture and connections. In 2002, it was purchased by an engineering company and incorporated into its operations. The company continued to evolve and develop and in 2005, it was purchased by the current Managing Director who changed it to its current name.

The Managing Director retained several engineers who had started with the company in 1979. He has overall responsibility for the company and is assisted by three other Directors who are responsible for finance, corporate development and operations. Under his leadership the company evolved, and from an early stage, took on the challenge of developing and offering services as a design and manufacturing entity. There are 65 employees across both the assembly facility and the main office, most of who are trained Mechanical Engineers. The company has also diversified its operations, investing in research and development and is forging a path in renewable energy.

At the time the company signed up to participate in the study there were 65 employees and the company had been trading for seven years. At the end of that financial year (2010), the company reported a turnover of just over £8 million which was £3m more than the previous year (2009). The company expect to make a turnover of £20 million in 2011. The operating profit and retained earnings for 2010 was 3.5 and 2.5 more than the previous year. Indications are that the company is in a growth phase and this trend is expected to continue over the next few years.

**Table 6.4: Financial Overview of DGE Limited**

|   |                   |
|---|-------------------|
| Company Name: DGE Limited                             | Sector: Oil & Gas |
| Number of Employees: 65                               | Years Trading: 7  |
| Financial standing as at year ending 31 December 2010 |                   |
| Turnover:   | £8,302,924        |
| Operating Profit:                                     | £352,974          |
| Retained Profit:                                      | £261,436          |

## 6.4.2 Findings from the Interviews

**Table 6.5: Respondent Code for DGE Limited**

| Respondent Code | Respondent Position            |
|-----------------|--------------------------------|
| DGE-R1          | Financial Director             |
| DGE-R2          | Corporate Development Director |
| DGE-R3          | Managing Director              |
| DGE-R4          | Operations Director            |

### 6.4.2.1 Management, Structure & Culture

All the directors were part of the former company performing similar roles and remained with DGE Limited after the management buy-out. These 4 individuals make up the senior management team at DGE Limited.

The Managing Director owns 100% of the company shares while the other directors benefit from the company wide

*DGE-R3: "At the moment there is one which is me... When we acquired the business, we instituted an EMI scheme – Enterprise Management Incentive."*

Since the company started, DGE Limited reported to have only made dividend payments in the first two years.

*DGE-R1: "We paid dividends in the first year, then a little bit in the 2nd year. We haven't paid dividends since then. We have been reinvesting."*

The company boasts a well-defined structure which is not normally synonymous with SMEs. The roles and responsibilities with DGE Limited were found to be clearly defined although some of their responsibilities were clearly much wider than similar job titles if compared to other companies.

*DGE-R1: "The day job of the role is obviously to keep the finance records up to date and compliance with tax and accounting - Company House rules and regulations. From the administrative point of view, keeping the support of the company running in terms of IT facilities and all the HR systems as well. My other job is to think of the future in terms of how we meet the financial challenges because our business is very variable in terms of revenue and we could meet some high growth times and some disappointments at some other years."*

*DGE-R2: "My role is the Corporate Development Director. I am jointly responsible for sales as well as product development. The reason that we combine those two aspects under one area is so that any new products or things that we research are directly applicable to our client's needs or problems."*

*DGE-R4: "I guess I have a number of individual reports. Primarily the production procurement group report to me. They are responsible for purchasing, manufacture and delivery of product to the client. So that side of the business reports to me. And engineering comes under my responsibility and QA - quality assurance. I think conventionally QA would normally go straight to the MD but in our organisation it*

*comes to me so I essentially have production engineering and quality assurance.”*

They view the way in which the company is structured and roles assigned as a means of combating competition. By putting the structure they have in place, they seek to emulate the image portrayed by big businesses; a feat they have managed over the years.

*DGE-R4: “I suppose as a small company; well we have a structure, people do pretty much know what their roles are within that structure because people can have more than one role because we have to appear to the outside world exactly the same as our competitors would look like.”*

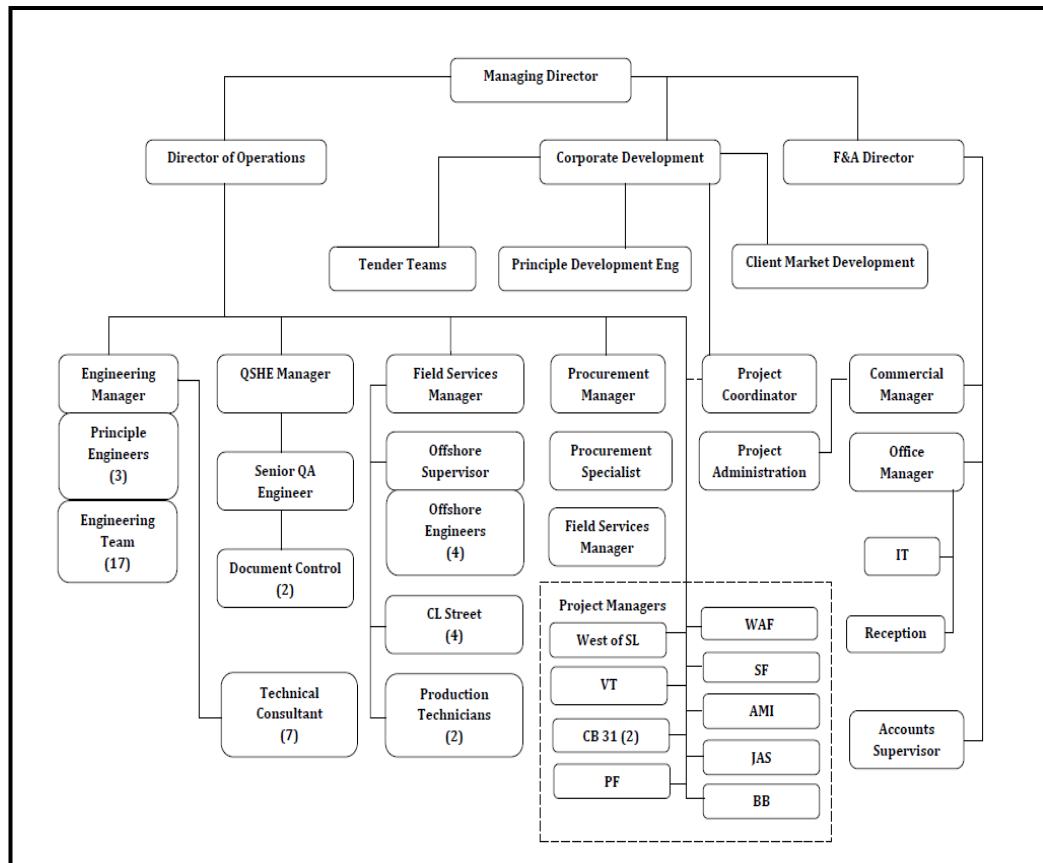
The company is organised into four functional teams, each of which is managed by a member of the senior management team which includes the Directors (Figure 6.4). There are also key employees in major positions of responsibility. There are clear lines of responsibility; work is normally project based except for large projects for which dedicated teams are assembled.

*DGE-R3: “I would say our organisational structure; it is probably quite traditional for a mechanical engineering design and assembly outfit.”*

*DGE-R4: “I don’t think there is anything special or particularly unique. It is pretty traditional.”*

*DGE-R1: “The overlay to this is that we have different projects and each project will have its own team; project manager, lead engineer designers - a lot of persons work for several projects. Only if it is a large project will there be dedicated teams.”*

**Figure 6.4: DGE Limited Functional Organisation Chart**



However, with projections that the company is likely to triple its turnover in 2-3 years, the team is conscious that this would mean a structural change within the organisation.

*DGE-R4: “...So the basic structure has not changed but it will change in the near future because our annual turnover is going to grow by a factor of 2 or 3 in the next 2 or 3 years so the organisation will have to change to deal with that.”*

Such thinking shows the company’s willingness to keep abreast with and to adapt to changes to meet client expectations and continue to remain competitive.

Unlike the other companies participating in the study, there are no family relations between the Managing Director and the senior members of the team.

Yet it was evident that they all work as a close knit team and had a lot of respect and admiration for each other.

*DGE-R1: "Sometimes engineers are quite reserved people, but we do stick to each other."*

*DGE-R2: "...respect we have a very close knit relationship..."*

*DGE-R3 "....I am saying this partly to make the point of how significant DGE-R1 is to the operation and it is not an introspective role at all being the Finance Director of this business."*

*"....but we are quite close as 4 individuals."*

The majority of the employees at DGE Limited have a mechanical engineering background and it emulates a culture which fosters continued growth and development of each and every staff.

*DGE-R1: "...we are members of Institute of Mechanical Engineers (IMechE) also members of Institute of Marine Engineering, Science and Technology (IMarEST) as well. So, all our young engineers go through a mentoring programme to become chartered."*

*DGE-R4: "There is a lot of on the job training. We run a graduate training scheme which we put people through with the appropriate degree."*

The organisation also focuses on innovation and has implemented a system by which such creativity is rewarded. The Managing Director has implemented a scheme whereby talented and creative individuals will be rewarded for the development of any new product idea. The company seeks funding and channels resources into research and development. When the company started its operation, they had only one product. Since then, the company have been

working on some possible solutions for its customers. With new products, a scheme is implemented whereby a new product could mean the creation of a subsidiary company.

*DGE-R2: "What DGE-R3 does is, for every new company that DGE Limited wishes to create, he divides the shareholding between the 4 Directors or whoever is appropriate for inventing that company."*

*"...in fact on a recent research and development business where we are currently investigating the idea of setting up a new business for [omitted as commercially sensitive]. One of the inventors of that technology is in the research and development team and he was offered a shareholding equal to myself in the company."*

With a share offer scheme for any new company arising from the development of new products, the Managing Director seeks to keep creativity and innovation alive within the company.

Employees with other skills and knowledge are also encouraged and supported within the company; and are channelled on a path to make the best use of their capabilities.

*DGE-R4: "(DGE-A) – well she started as a temporary receptionist and we spotted that she had a degree in something so we got her up and put her into Project [name replaced as it is commercially sensitive]. And two other girls, one of them we moved through as a patent taker/office manager, she came here as a receptionist and one of the girls who run the stock control system also turned up as a temporary receptionist but who turn out to have a PA background in a very big companies and she is really quite talented. So we are*

*actually quite good at realising what peoples' ability might be."*

Like many small businesses, DGE Limited has long serving employees. Indications are that the environment within the company is one which encourages participation and gives each employee the opportunity to develop in their area of interest.

*DGE-R1: ".....we have people here who come from the late 70s who like to work with the group; and the atmosphere of consensus decision-making and discussion and openness helps a lot. People put a lot of value into going to work every day and not having to listen to nonsense and being forced to do things which they don't like."*

#### **6.4.2.2 Financial Information**

Besides the annual reports, the Financial Director also produces various financial accounts, some of which are shared with all staff on a regular basis. A set of reports is also prepared on a monthly basis which is discussed each month at operations meetings. Management accounts such as Cash Flow and Budget reports are produced and used on a monthly basis to assess against actual performance and forecast.

*DGE-R1: "Basically we have a profit and loss, the actual for the month – the actual year to date. We have our budget, the forecast for the end of the year compared to the budget and we also have forecast for the next three years".*

The organisation values the information produced as it is a vital resource for their continued survival. Financial information is used to inform decisions, forecasting as well as in the management of operations.

*DGE-R1: "We are in a very volatile environment of client and sometimes delayed projects. And so by the time we make our budgets six months later; the budget is a bit irrelevant."*

*DGE-R2: "The models that are used for the revenue forecast is what we call a bottom-up approach."*

*"Obviously we are using it to track our progress versus our budget."*

Some of the benefits derived from producing and using management accounts were noted; they mainly centred on making strategic decisions at a particular moment in time.

*DGE-R1: ".....they change their minds as well. Or sometimes they ring you and they want you to do a larger job. It is that volatile, it is very tricky to plan for resources. Hence the reason why we have to look at the budget on a regular basis. So behind this (the profit and loss accounts) there is a lot of data there..."*

*DGE-R2: "...If we do not know what the budget contains we don't forecast it. So we maintain a prospect list and those are all the un-forecasted projects and then we have our forecast register and those are forecasted projects..."*

The company is financed by debt and equity and currently have a high level of gearing. The reason for the high gearing is because the company doesn't hold a large number of assets to offset the loan. Considering that this is an engineering design company and the industry in which it operates, the value of its tangible fixed assets in 2009 was just £248,720 and £245,085 in 2011. However, they do believe that the level of gearing is normal for the sector in which they operate. The cost of debt was thought to be 8%.

*DGE-R1: "the level of gearing we have is high but it is coming down. ....As I said, we deal with a lot of volatility so we need to have extra and head room to deal with it. "*

For this company, because of the sector in which it operates, it feels some level of comfort in the midst of a recession. Although the company has loans (secured and unsecured), they are confident in their ability to service the loans and to access further capital if needed. As a small company, they can also benefit from incentives initiated by the Government for SMEs to access loans.

*DGE-R2: "The current funding of the company is basically a nature of how the company has evolved organically. And that's really the best thing that I can do for investment for the company is to keep winning projects. That is by far the best way and the cheapest way to raise money."*

An EMI (Enterprise Management Incentive) scheme was implemented which gives employees options with benefits from tax breaks at the point of buying as well as selling shares. An EMI option was first issued in 2006 and then a second of up to 35% of equity was issued in 2008.

Overall, the Directors view the company as a good investment opportunity as it is expected to grow; and use the sector they operate in to classify the company as medium risk. The company turnover was £3M more in 2009-10 than the previous year and is expected to continue on a similar growth path.

#### **6.4.2.3 Decision-making**

The Board of DGE Limited is made up of the four Directors. There are no non-executive Directors. Decision-making was described as extensively devolved with very high level decisions taking place at Board level. This was the general consensus of the Directors.

*DGE-R1: "Decisions are made collaboratively [by Directors], via meetings and overall consensus."*

*DGE-R3: "...we are extensively devolved. But we have board meetings and we do take very high level decisions at the board level...."*

*DGE-R4: "Decisions are made at board level."*

However, *DGE-R2* went a bit further by indicating the type of decisions made by the Directors.

*DGE-R2: "At the board level all strategic management decisions are made. So the direction of the company, who we are as an organisation, our identity and which geographic markets we wish to enter into – those type of decisions."*

It was also noted that on rare occasions, the owner manager states he does influence decision outcomes.

*DGE-R3: "...Yes (to influencing decisions) but only to a limited extent to the question of my influencing outcomes as the Owner but it is not because of the shareholder agreement or the article of association, it is because I am older and greyer than the rest of them...."*

Only one other Director thought the owner manager influenced decisions and put into context his reason for saying so.

*DGE-R4: "Oh yes [the owner manager does influence decisions]."*  
*"All 4 of us are very different because no doubt we all have quite different perceptions of our roles. But basically everything I do is related to creating deliverables we currently do and to – it's pretty much what we do in [information removed – commercially sensitive] is pretty*

*much up to me. But in terms of any changes to the company; obviously we will have suggestions but the final decision sits with DGE-R3.”*

Another Director thought differently and stated that the owner manager was unique in the sense that the owner manager management style was very democratic. This he believed was not a normal trait of owner managers.

*DGE-R2: “...actually compared to other Managing Directors (DGE-R3) has very little influence on the decisions. He is very much a democratic type of person and he takes strongly advice from myself and DGE-R1 and DGE-R4. He formalises the decision, but frequently the decision would be made among all four of us.”*

It was also noted that, in some instances when there are disagreements between Directors, other members of the management team would be included in discussions to get a more general consensus.

*DGE-R1: “We have four directors, plus we have some key people as well in each function. So we tend to try and get a consensus type of decision-making and this is achieved sometimes when there is a bit of thrust between directors. So there are a lot of discussions not only between directors but managers - commercial managers, project managers.”*

It was also indicated that financial decisions are likely to be taken by the owner manager and the Finance Director. The other Directors tend to give advice on future work and long term projects for future business.

*DGE-R2: “The financial decisions are primarily made by DGE-R3 and DGE-R1 directly whereas DGE-R4 and I, that is, DGE-R4 Operations and I Corporate Development – we advise more*

*on what work is coming in the future and in forecasting of future business.”*

The company keeps information on appraisal techniques such as NPV and IRR within their management accounts but stated this is for information purposes only. Use of these is only drawn upon in illustrations to clients in informing them about their product. What the company does is to utilise a series of targets and growth margins which they compare against the budget and project forecast and use it in informing decisions. The company aims to operate at a base margin of 40%.

*DGE-R1: “We have targets for growth margins so we also have to monitor our database, our cost especially the bits where we outsource....”*

*“..We had said that the minimum we would like is 34 (%) so that we can invest in other areas that need more, but we aim at 40% if we can. And that viability also has to do with a mix of projects we have during the year.”*

#### **6.4.2.4. Performance and use of Information**

From the interviews, it was evident that the performance of the company is evaluated at different points using different variables. The company has strong financial representation and a vast amount of data, financial and non-financial, is collected and used in evaluating performance.

*DGE-R1: “Basically we compare with the budget we have for the project in terms of growth margin and we try to, if its lower, we try to find out what was the difference.”*

One of the key pieces of information used by the company in evaluating its performance is the monitoring of the budget against actual. It could be deduced

that the way in which the organisation manages and monitors its financial resource proved instrumental in projecting the turnover for financial 2012/13 at over £23M.

*DGE-R2: "...we have shifted from having £5M of turnover in 2008 to almost having £16M of turnover this year and next year we will have over £23M of turnover..."*

Budgeting and forecasting appears to be a common method used within the company to monitor performance and is normally done per project. While there is an expectation to maintain a base margin of 40% growth margin, there is no indication of what return is expected by the shareholders. Hence the true cost of capital is unknown and it isn't information used by the company.

*DGE-R1: "Well I don't have a clue because we don't know; we haven't really asked the shareholders how much return they want. I know the cost of debt obviously. The cost of debt we have at the moment is around 8%."*

Instead, the company appears to rely heavily on using budget and forecasting information to assess the performance of the company over time. Forecasting information is sent to the Finance Director by the Corporate Development Director. From the interviews, it was evident that these two directors work closely together in assessing and using financial information gathered within the company.

*DGE-R2: "So my involvement in the financial information is primarily forecasting the revenue. So I provide the input to a part of DGE-R1's team that is only involve in forecasting the revenue. We forecast the revenue on a month by month basis throughout the entire year. And so we have three levels of forecast, we have a forecast that is the long term forecast for as far into the future as we can see. Our current forecast runs to 2020. We then have a medium level forecast which is*

*– we forecast for that specific financial year and that is the basis of our budget.”*

#### **6.4.2.5 Identifying Value within the Company**

From the interviews, the team DGE Limited identified a number of resources which drive value within the company.

*DGE-R1: “...It is technology innovation, operation performance (thinking) - those are the main drivers I think. ...technology innovation is definitely the key thing.”*

*DGE-R3: “...in terms of driving value the really fundamental thing which I try to allude to, ...is the continued ability to read the industry’s upcoming needs and to try and be in a position, ahead of the game, with a qualified superior technical solution...”*

In instances, a description of the impact of an action undertaken by the company indicates the importance of the action.

*DGE-R4: “Well ultimately value has to be measured by return to the shareholders I guess.... Then the question of how do you do that? As I was saying to you before, that for us the key thing we have to achieve – we have to deliver on time, we have to deliver a high quality and we have to do that safely...”*

*DGE-R3: “...we are able to offer a product that they can’t get anywhere else we listen to their issues and understand their processes technically and then come up with a bespoke offering...”*

## **Results from the value exercise**

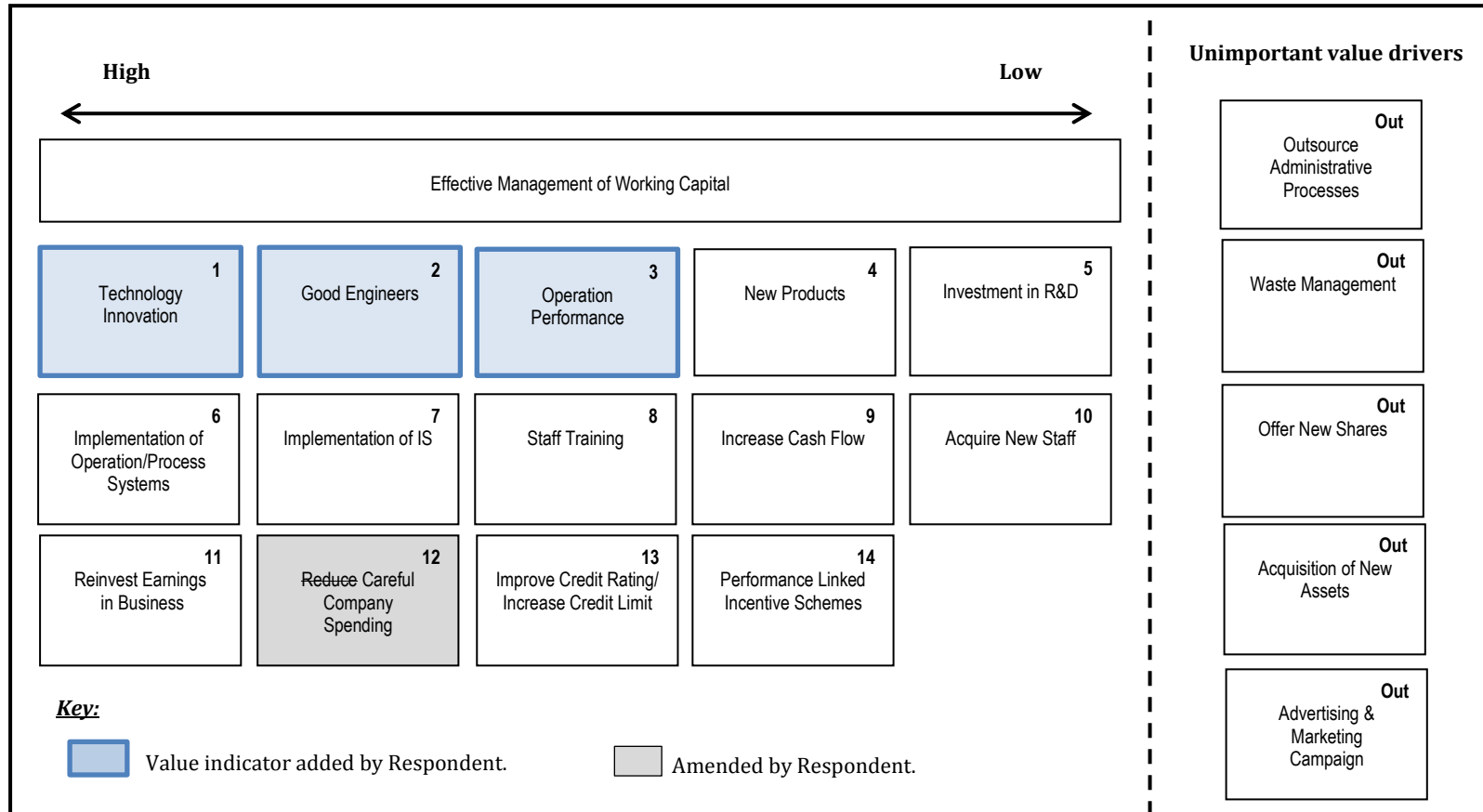
### **DGE-R1**

For DGE Limited, *DGE-R1* believes that their strength lies in innovation. To take this belief forward, the company will need to provide the atmosphere to nurture creativity. He therefore added three value drivers to the list; 'Technology Innovation', 'Operation Performance' and 'Good Engineers'. There was also a modification of the value driver 'Reduce Company Spending' to 'Careful Company Spending'.

In arranging the value drivers in order of priority to DGE Limited, *DGE-R1* viewed it from a perspective unlike any other. To begin with, he selected 'More Effective Management of Working Capital' as the overarching value indicator. This he believes governs everything and must be managed throughout the entire operation.

Hence his belief that this is more of a requirement which must be managed to get everything right; from winning a contract through to invoicing and delivery. 'Technology Innovation', 'Good Engineers' and 'Operation Performance' were selected as the three leading value indicators. This depicts what the company does and the sense of commitment to their customers and staff. With these value indicators, the company developed 'New Products' having made the necessary 'Investment in Research & Development'. Next was 'Implementation of Operation/Process System' which is very important as it reflects on the 'Operation Performance'. They also made significant changes in their Information System to complement the Operation Performance.

**Figure 6.5: Outcome of Value Exercise for DGE-R1**



Staff Training was placed ahead of 'Acquiring New Staff' because they value their employees and are committed to their development. It was also interesting to note that 'Staff Training' was ranked more of a value indicator than 'Increase Cash Flow'. The next three value indicators relates to how well the company is able to manage its limited resources and sustain itself. They are 'Reinvest Earnings in Business', 'Careful Company Spending' and 'Improve Credit Rating/Increase Credit Limit'. The final value indicator selected was 'Performance Linked Incentive Scheme'. With this selection, the Finance Director commented that *'people are not necessarily driven but they like it.'*

The value indicators which were eliminated by the Finance Director were:

- i. Outsource Administrative Processes – Outsourcing was viewed to be too expensive, and as they are a small company, not something they have considered.
- ii. Waste Management – stated they don't have a lot of waste so not a value driver.
- iii. Offer New Shares – not keen on making share offers at present but appears willing to consider other investment arrangements as they are currently seeking an investor.
- iv. Acquisition of New Assets – the company doesn't amass assets; this is a natural consequence of how the company operates.
- v. Advertising & Marketing Campaign – not considered as a value driver. Although they have reduced advertising, it is not what brings jobs to the company.

### DGE-R2

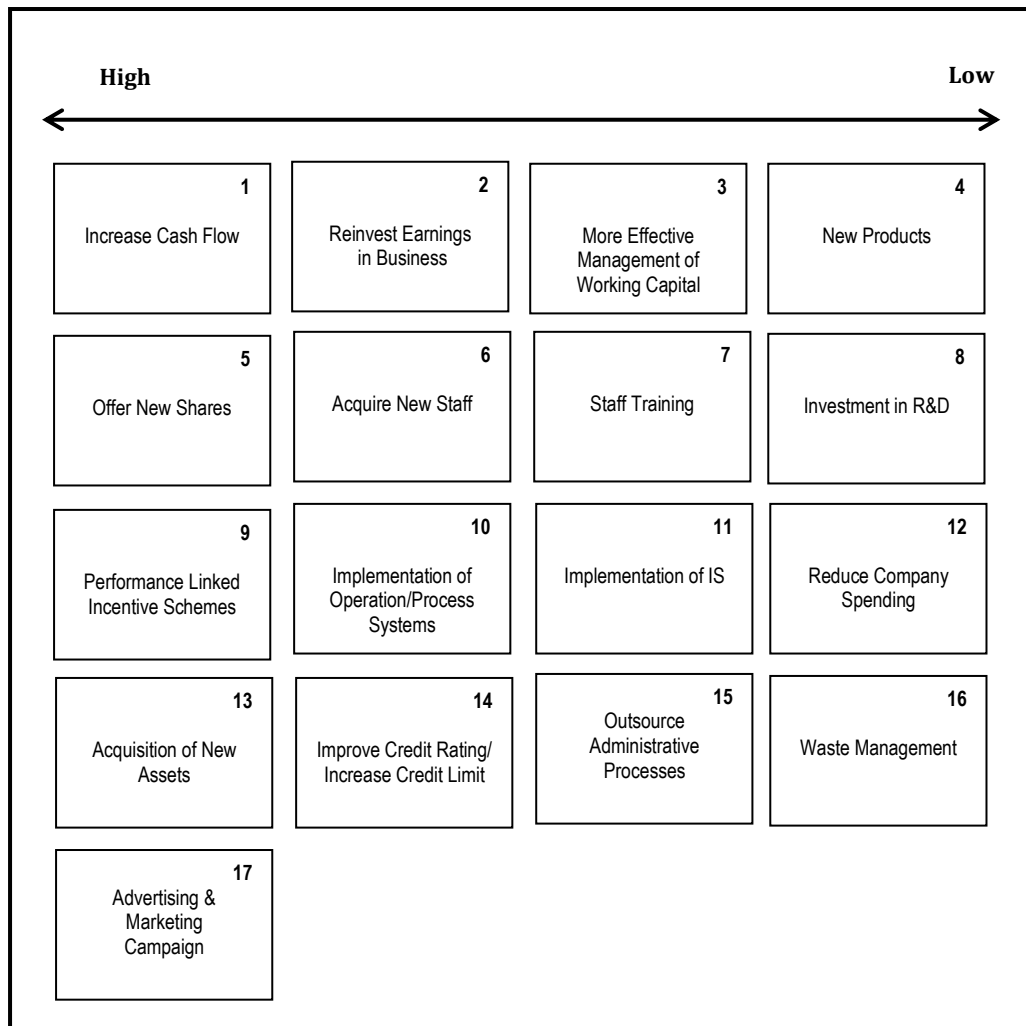
DGE-R2 provided one of the most comprehensive explanations while completing the value indicator exercise. His top priority was 'Increase Cash

Flow'. This was viewed as first and foremost and was described as the '*life blood*' of everything.

He believes this to be the fastest and easiest way to increase the value of the business as all the other value indicators would take time to implement. Next selected was 'Reinvest Earnings in Business' as it is directly related to 'Increase Cash Flow' and also a good way of increasing the value of the business. At present, DGE Limited invest 100% of earnings in the business hence his reason for ranking them as the top two value indicators. He then stated that the next obvious indicator as 'More Effective Management of Working Capital'. With this comes the reasoning that it doesn't help to increase cash flow if the worth per pound of investment isn't achieved. Next was 'New Products'. This comes with the ability to demonstrate to customers that they can provide different product solutions. When the company started, they had one product and one customer. Now with two products and a few concepts in development, they work to increase sales by selling these concepts to clients.

*DGE-R2* spoke of the long term plan for the company which is to double its current size. For this to become a reality new investors would be needed. This plays into the next value indicator and the potential to 'Offer New Shares'. The next value indicators were determined to be 'Acquire New Staff' and 'Staff Training'. This also plays a part in being able to manage the capital investment by having the quality staff needed. DGE Limited has the expectation that employees should have a level of creativity; something which is needed for the development of new products. Hence the next value indicator selected was 'Investment in Research and Development' and was followed by 'Performance and Incentive Scheme'. In order for the company to perform at the highest level, employees must be motivated.

**Figure 6.6: Outcome of Value Exercise for DGE-R2**



The company has therefore implemented systems to reward employees based not only individual performance but the overall performance of the company. By doing it this way, it was believed that everyone within the company will be recognised for their efforts. Next were 'Implementation of Process/Operation Systems' and 'Implementation of IS'. Again, these need to be kept in line with the growth of the company and be efficient enough to manage its complexity. These incur additional costs which need to be managed, as invariably with a high growth company comes a creep in company cost. This leads to the next value driver which is to 'Reduce Company Spending'.

The remaining value indicators were organised in the order of 'Acquisition of New Assets', 'Improve Credit Rating/Increase Credit Limit', 'Outsource Administrative Processes', 'Waste Management and 'Advertising and Marketing Campaign'. The explanation of the order was that 'Acquisition of New Assets' could then be a viable approach with the need to attract capital and investors. One possible approach could be to actually start to buy other companies. This way the company would be able to create a more complete offering to their customers as a total system. With a low credit rating and by increasing the credit limit, his perception was that most of this doesn't have to do with the bank credit rating per say but to do with their client approval rating. Therefore, because they currently have relatively little finance from banks it is not as important. 'Outsourcing Administrative Processes' was perceived as a good way to possibly reduce cost. However, outsourcing isn't an option at present because their administrators have intimate knowledge of projects. As DGE Limited believes they are a relatively efficient company, they don't have a lot of waste; therefore, 'Waste Management' is not an issue. However, as they grow, the expectation is that it will become more significant. With 'Advertising and Marketing Campaign', although viewed as important to have the right image, ultimately it is the actual performance that drives the company. The Corporate Development Director believes that most of their clientele don't buy their products based on a brochure or on their website. Instead, it is more about reputation and references from other customers. Hence they focus more on building customer relationships.

### DGE-R3

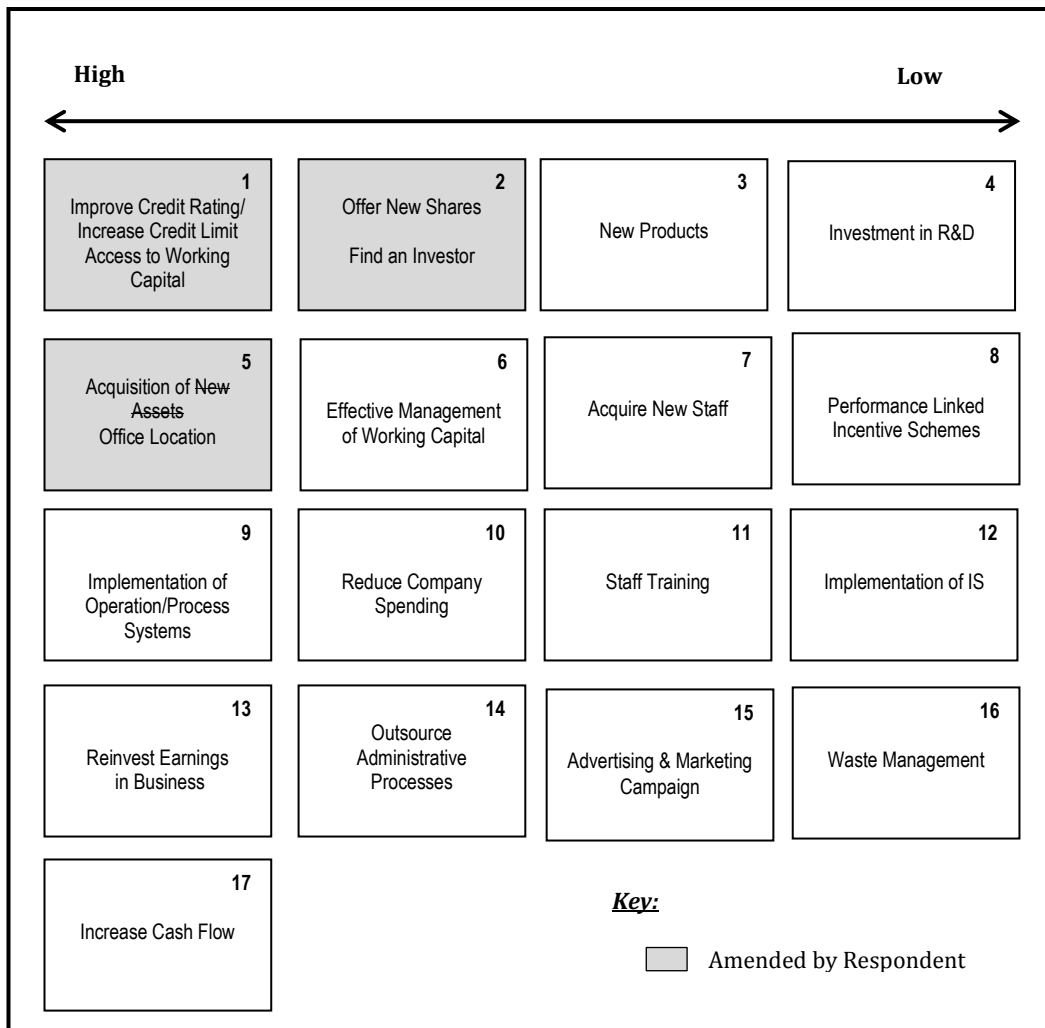
*DGE-R3* did not eliminate any of the pre-set value indicators from the exercise. Instead he modified three of the cards. Modifications made were, 'Access to Working Capital' was added to 'Improve Credit Rating/Increase Credit Limit', 'Find an Investor' was added to 'Offer New Shares' and 'Acquisition of New Assets' was modified to 'Acquisition of Office Location'. The first two value

indicators selected were noted to be extremely important; 'Access to Working Capital' and 'Find an Investor'. The company is currently actively engaged in finding an investor. This is because the company is in, what could be described as a growth phase. They had started out with one client and maintained this for quite some time. However, have they have built up a reputation in the sector and are receiving much more interest. Only recently their effort was awarded with a big contract which they are working hard to fulfil.

Next is 'New Products' and 'Investment in Research and Development'. The company provides technical solutions to problems faced by their clients. At times, this may mean the development of a 'New Product' hence they invest in research and development. They also encourage employees to be creative in their approach to solving problems.

The company operates in a highly competitive sector and their competitors are generally large multinational corporations. Their strategic approach is to have 'Office Locations' closer to the market. Consequently, because of the way the company operates and the product/service they deliver, this was identified as a value indicator. This is also why the company does not have a lot of tangible assets. Continued performance of the company is also dependent on how best the company uses the financial resources at its disposal hence the 'Effective Management of Working Capital' was selected as the next value indicator. As noted earlier, as the company is actively searching for an Investor at present, the value placed on achieving this can be seen in the thought process during this exercise. *DGE-R3's* view is that, finding an investor aside, they have cracked all the other value indicators.

**Figure 6.7: Outcome of Value Exercise for DGE-R3**



The company operates in a highly technical sector which requires some specialist skills and knowledge. They therefore strive to have the best staff on board and have implemented a scheme to award high performance hence 'Acquire New Staff' and 'Performance Linked Incentive Scheme' follow. The next value indicators effectively relate to the operational capability of the company. Having the right Operation/Process Systems in place is also vital to its success as this also plays into managing the finances of the company hence 'Reducing Company Spending'. This was followed by 'Staff Training' which is taken seriously by the company. Besides the mandatory training, such as Health and Safety, the company ensures that all their Engineers attain their

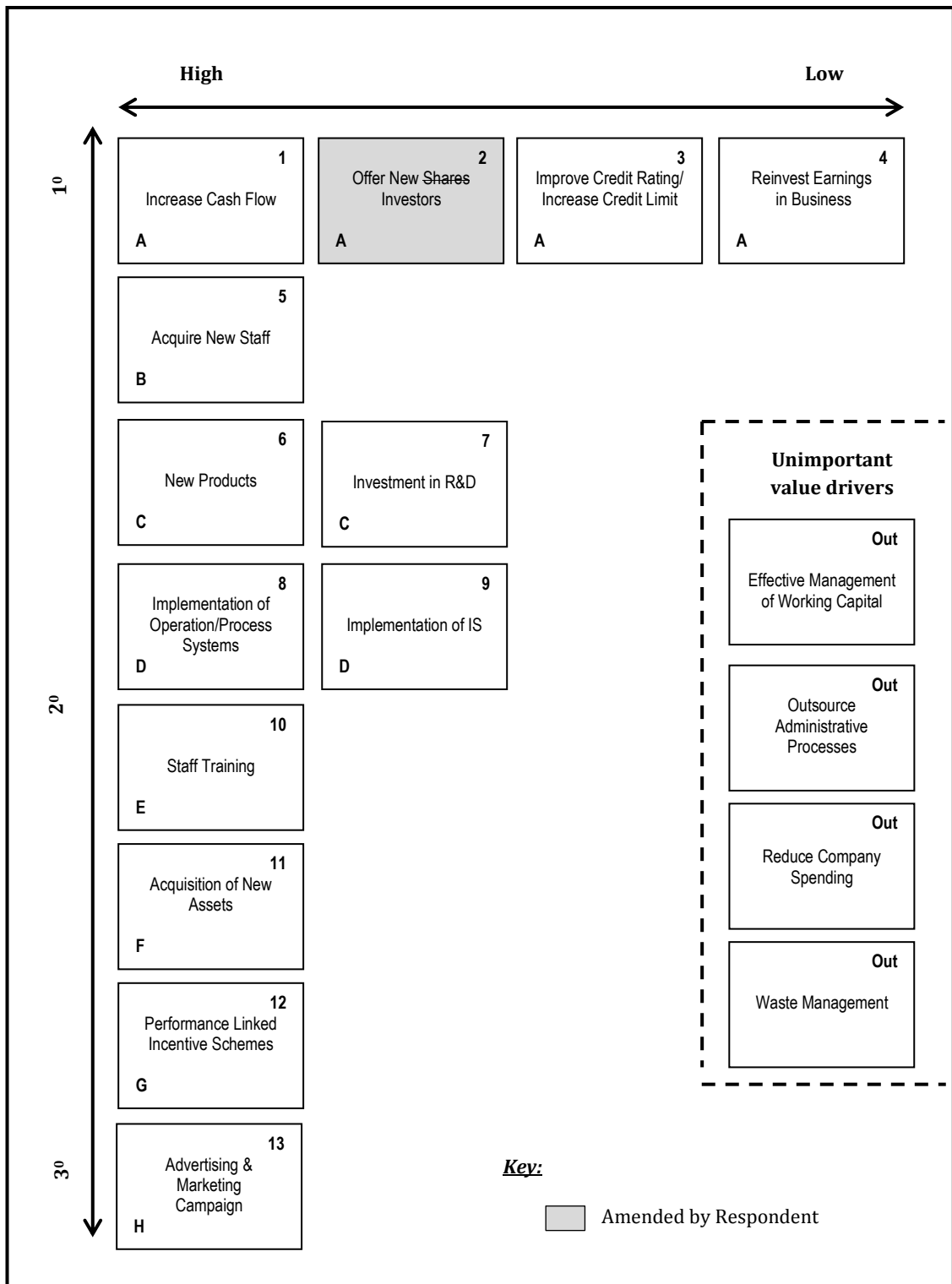
professional memberships. They also actively use informal measures such as shadowing.

The company has an integrated Information System which is part of the process and financial system. 'Reinvest Earning in Business' was assigned the 13<sup>th</sup> position and 'Increase Cash Flow' the 17<sup>th</sup>. This was an interesting line up but as stated by *DGE-R3*, all indicators from the 5<sup>th</sup> position onwards, the company has already achieved. However, 'Outsource Administrative Processes' and 'Advertising & Marketing Campaign' are not currently considered by the company at present. These are in the 14<sup>th</sup> and 15<sup>th</sup> position respectively. 'Waste Management' is also not considered to be of major concern hence a low placing.

#### *DGE-R4*

*DGE-R4* opted to eliminate four of the value indicators; 'Effective Management of Working Capital', 'Outsource Administrative Processes', 'Reduce Company Spending' and 'Waste Management'. These were eliminated because they were not viewed to be of any concern within the company. No new indicator was added to the list however, 'Offer New Shares' was modified to read as 'Offer New Investors'. This is because while the company may be interested in getting new investors in, there seems to be no interest in shares offers for a potential investor.

**Figure 6.8: Outcome of Value Exercise for DGE-R4**



The top indicators of value within DGE Limited were identified as 'Increase Cash Flow', 'Offer New Investors', 'Improve Credit Rating/Increase Credit Limit' and 'Reinvest Earnings in Business'. This indicates clearly that how the company accesses and manages its finance was of greater importance to the Operations Director. Next was 'Acquire New Staff' as the company always strive to invest in high calibre workers. This was followed by two other indicators which were ranked at the same level; namely 'New Products' and 'Investment in Research & Development'. Understandably, the company strives on technological innovation and encourages employees to take a creative approach in problem solving. This was followed by another two value indicators which were also ranked at the same level. These were 'Implementation of Operation/Process Systems' and 'Implementation of IS'. These are the essentially the backbone of the process as they could impact on the level of service delivery to clients.

The remaining four value indicators were listed in linear order starting with 'Staff Training', 'Acquisition of New Assets', 'Performance Linked Incentive Schemes' and 'Advertising and Marketing Campaign'. The company has shown a commitment to its employees by offering them all, every opportunity to develop. They have an incentive scheme which acknowledges both group and individual performance. The company does little by way of marketing itself. Most of their contracts were obtained by word of mouth. Due to the nature of the company, they do not tend to amass much in terms of tangible assets.

#### **6.4.3 Summary of the Key Findings from Case 2**

- DGE Limited was found to be the most organised and professionally managed of all the case studies
- The company has highly qualified employees which includes a highly competent Finance Director.

- The management style is highly democratic. Decision-making is very much a team effort.
- There are systems and processes in place to reward innovative employees and to keep them motivated.
- For a small company, they have one of the most sophisticated incentive schemes.
- DGE Limited has a clearly defined well organised organisational structure.
- However management appears to widen their area of responsibility to project a more corporate image when dealing with clients.
- The environment and culture within the organisation encourages and facilitates learning.
- Information pertaining to the company finances is shared with employees on a regular basis.
- DGE Limited collects and uses information about the operation and processes within the company to inform management accounts.
- Management accounts such as budgeting and forecasting and cash flow are prepared and reconciled monthly with actual figures.
- More sophisticated forms of bootstrap financing were found within DGE Limited.
- Members within the management team were familiar with EVA® although they did not wish to comment on it.
- Although the terms value and value added were not used, from the interviews DGE Limited engaged in a variety of value added activities such as customer relationship management. However, in many instances aspect of this was not capture to inform management decisions.

## **6.5 Case 3 – SPL Limited**

### **6.5.1 Company Background**

Based in the South East of England, SPL Limited is a family owned enterprise which started 21 years ago. The proprietor had spent many years working in various capacities in the private sector before leaving to start his own business with his son. The company operates within the manufacturing sector and has a wide geographical market covering the UK, Europe and North America. At the time of the interviews, the main product was hairbrushes, but overall the main target market is the medical sector. This came about because the company recently invested in a fully automated clean room to improve the efficiency and quality of their medical product range.

The business of acquiring ailing companies has become an integral part of its operations. Over the last 15 years, the company grew organically by acquiring 11 other businesses and consolidating them within SPL Limited. The senior management team is made up of the proprietor; who after 21 years has retired and appointed himself Chairman, his son who is now the Managing Director and the son's wife who is the Finance Director. There is also a middle management team which assists with the daily management of the company. The Chairman and Managing Director each own 50% of the shares of the company.

According to the Chairman, the size of the UK plastic moulding industry has been dwindling over the last 21 years with a dramatic reduction to just over 760 companies from over 5,000. He is of the view that, by and large, the industry is still mostly dominated by family owned operations as it is a type of business which can easily commence operations in a garage. In his opinion, SPL Limited remains one of the most successful in the industry despite being plagued by many challenges, including the effects of what is viewed as a dormant UK manufacturing sector.

Unlike the other participants in the case study, attempts to obtain SPL's financial reports from the company were unsuccessful. Their reports were obtained from Company House which contained only an abbreviated balance sheet and notes to financial statement. Table 6.6 reflect key figures on the performance of the company which was extracted from the published report at the time of the interview in December 2011.

**Table 6.6: Financial Overview of SPL Limited**

|  |                              |
|--|------------------------------|
| <b>Company Name: SPL Limited</b>                             | <b>Sector: Manufacturing</b> |
| <b>Number of Employees: 50</b>                               | <b>Years Trading:</b>        |
| <b>Financial standing as at year ending 31 December 2009</b> |                              |
| <b>Shareholders' Fund:</b>                                   | <i>£141,052</i>              |
| <b>Profit &amp; Loss Account:</b>                            | <i>£52,067</i>               |
| <b>Called up Share Capital:</b>                              | <i>£54,630</i>               |

## 6.5.2 Findings from the Interviews

**Table 6.7: Respondent Code for SPL Limited**

| <b>Respondent Code</b> | <b>Respondent Position</b> |
|------------------------|----------------------------|
| SPL-R1                 | Chairman                   |
| SPL-R2                 | Financial Director         |
| SPL-R3                 | Managing Director          |

### 6.5.2.1 Management, Structure & Culture

After handing over the reins of the role of Managing Director to his son, and appointing himself Chairman, the founder of SPL Limited now has reduced responsibility in the company.

*SPL-R1: "And when I reached retirement age at 65 I retired as Managing Director, appointed myself Chairman as the*

*majority shareholder and he [my son] became Managing Director. So the formal handover if you like."*

The company also has in place a junior management team, but on the whole, the Chairman's view is that the management of the company is top down.

*SPL-R1: "We have got a good middle management structure as well that we are bringing along because the value of that is for SPL-R3 to be able to step back from the MD's job because it runs well. We have good systems, surprisingly good for a company of our size I suppose."*

The Managing Director, with the assistance of the Finance Director and the junior management team, is responsible for the daily operation of the company. All the members of the senior management team sit on the Board of the company and are responsible for making all the major decisions.

*SPL-R1: "So decisions in terms of investment, acquisitions, company direction if you like - is very much with the three of us."*

The company has an organisation chart which essentially covers all the key functions. It was also stated that the company has a history of high staff retention and recognises the importance of having the right people for the job.

*SPL-R1: "The key functions are covered for example purchasing, the production control, quality and tool making – those are our key functions – oh, one other which is essentially personnel function and management of people on the shop floor; it's a joint function. The nature of the business is that we have relatively low staff turnover. Getting the right people is the key."*

Apart from being a part of the Board, the Chairman has a specific role; that of seeking opportunities to expand the company organically by acquisitions. For him, this is a very active role.

*SPL-R1: "...although the key management decisions are made by the Board, in the case of let's say an acquisition – if we take that as an example, I would advertise in the trade magazines and contact agencies on looking at acquisitions. So that is an active role – it is an active role rather than a passive role."*

*"So my main activity now is to look at long term projects that we do. I concentrate on trying to find more acquisitions because we are an acquisitive business."*

Along with the responsibility of managing the company, the Managing Director is also responsible for bringing new contracts into the business.

*SPL-R1: "And in the case of a new contract, and we have a lot more of those – people that have projects that they are interested in new product of some form, that would go to the MD."*

The Financial Director, even though not a formal directorship, also functions as the company Secretary.

Historically, a top down approach to management is a characteristic of SPL Limited. However the new Managing Director has a vision for the company which involves staff taking ownership and managing the company in the very near future.

*SPL-R1: "I confess that we are a sort of top down organisation and we have really, really tried to change that."*

This vision calls for a revolutionary change in the approach to management which involves getting all staff involved. The change is being encouraged through engagement with each member of staff with offers to access training. This is a formal part of end of year assessment and each staff has to undergo the necessary skills training at their level.

*SPL-R1: "So on training, every single person has a developmental and training programme. So we sit down and have a formal one-on-one meeting."*

*"There are about 5 levels of tool setting we can do and everyone within the company is on some sort of training course or another. So it is quite formal and we adhere to it."*

However, for those who aspire to do more and progress within the company, they are also encouraged.

*SPL-R1: "SPL-E1 who started as a machine minder, she then started on sales and having progressed her way through and is now our Production Planner. SPL-E2 who started in the sorting bay downstairs and now she handles production. She knows the products because obviously she had handled them and she understands them and it's a tremendous benefit. Now she is actually production planning and she runs production planning meetings every day."*

The company also employs a series of vision meetings to encourage wider participation and change the culture within the organisation.

*SPL-R1: "So we have tried over the last two years to have a series of what we call vision meetings where, each department head gathers together his staff. And they said 'How would we make the job simpler and faster, better and easier for ourselves? What do we need? Do we need any extra tools in order for us to do that?'"*

By adopting an interactive management style, the vision is that the culture within the organisation would eventually change. There was however different views as to whether or not the desired effect have been achieved.

*SPL-R1: “Now, we have done that but we have found out that in particularly in the meetings, people would say, ‘Well there isn’t anything much that we can do or there is nothing we can suggest.’ We find it extremely difficult and I know Japanese companies do this on a daily basis, we found it extremely difficult. And of course the moment Senior Managers and Directors get involved in that, it kills it. So it’s an issue and I would like another way around that.”*

*SPL-R3: “We spend quite a lot of time over last year training people; business improvement techniques from the bottom up, and I think that has been reasonably successful. I think that now people are starting to see that it makes a financial difference at the end of the year suddenly it is more tangible for them.”*

### **6.5.2.2 Financial Information**

The company uses a computerised information system to store data on inventory and also does product costing. However, with the recent rapid increase in material cost, they are finding it more challenging to provide accurate costs for jobs.

*SPL-R1: “We used to be able to quote on raw materials in particular over a long period of time because you would assume if you are paying whatever it is; £1 for it now then it wouldn’t be £1 in 5 years’ time.”*

With high inflation rates on raw materials, the company have seen a fall in profits before interest and taxes; a trend which is also reflective of what is happening in the industry.

*SPL-R1: "Now inflation on raw materials is so high that we will literally go from production line to production run checking the raw materials it is a constant operation because it's been extraordinarily dramatic. One of the difficulties is the PBIT for this industry as it is now around 1.2 for the industry average. Last year for example it was 2.1, it is now 1.2."*

The data collected by the company is used to compile monthly financial reports and also daily sales report which are used to monitor targets within the established budget.

*SPL-R1: "We have a formal report every month on turnover, profitability and so on and so on. And we have a daily report on sales and sales against target – that's daily."*

*SPL-R2: "We are looking at obviously cash flow forecast, budgets and basically all aspects of our profitability."*

This information is shared with all the managers. Based on the order position, financial information and the target levels, daily production and staffing levels are worked out; bringing in temporary staff if required.

*SPL-R3: "Yes, we set budgets for people so, in terms of staffing levels, spend levels over months, quarters, year. We publish sales figures. We report back at the end of each month to say this is the target and this is what was achieved – so we do that regularly."*

At the start of the recession in 2008/9, the company had lots of debts. A portion of those debts were largely due to an SPL Limited buy out of an American company with which they had a partnership. The buy-out was completed only two months prior to the interview in December 2011. This achievement was attributed to two extremely good years despite the recession.

*SPL-R1: "Some of the debt was incurred because we were paying off my American partner and it kept us really – we were short of cash nearly all the time because we have to buy him out and that ceased only last month so we had 2 extremely very good years. This has been a record year for us so it had helped enormously."*

When asked what the level of gearing for the company was, there was no clear response as to what that was, even though the response was yes.

*SPL-R2: "We do, yes.... We are geared towards cash flow. That is our biggest thing. Have we got enough money basically? Gearing only really affects us when we want to borrow money from the bank because they go by gearing. But we are very cash orientated. So the money that we make is ploughed back into the business; improving machinery, buying robots and better technical ability; updating the clean rooms; basically updating our infrastructure."*

This response appears to indicate that the company tend to try to finance the company with the use of equity capital. This was deduced because of further statements made by the *SPL-R2* in trying to establish what the origin of the invested capital was for the company.

*SPL-R2: "I think that's small business for you though. I think gearing is for when you are in a multi-pound business; then gearing is important because you have all the shareholders and things. But to us, this is a family run business and so for us, cash is king."*

One of the most challenging issues pointed out by the Chairman was lack of Government support for a fledging manufacturing/tool making industry including and access to finance by small companies.

*SPL-R1: "Tool making is an active shadow of what it used to be even 20 years ago and people are leaving tool making, very few are coming into it. And it is dying off at a huge rate – almost nonstop in the UK."*

*"...if you should make a comparison with the Germans or say the French who will defend their manufacturing industry, the German people will buy a German – if you look at the BMWs they are probably no better than the Ford Mondeo – Ford Mondeo are made in the UK aren't they – but anyway they are similar cars, but because of the BMW badge on it, you get more money for it. And I think that this Government will probably recognise that that is true, but whether it is too late to do anything about it it's a – I hear the rhetoric, but I see no actual positive Government help."*

The view is also that in general, banks are usually less likely to support the small company. This leaves them to turn to other companies offering loans at the market rate.

*SPL-R1: "In fact, the only loans that they [investment companies] have are no different from loans that you could get from a bank. They are not interest free loans, they are loans of 8 or 9% which, for a company of our size, is the going rate of borrowing in the marketplace."*

However, the overall view is that SPL Limited can access funding from banks; the issue is the high price of borrowing from a bank.

*SPL-R1: "I think we can access money but at a high price. When you think that the inter-bank transfer figures are now 2% or something; we are having to borrow at 9%."*

Access to cash was stated as the main barrier to financing the company. However, the issue appears to be a matter of not having access but more so of ensuring that the access they currently have is maintained. That is maintaining steady revenue so earnings can be reinvested in the business.

*SPL-R2: "Pay a huge amount of attention to our cash flow. We use the money to buy new machines and we are looking at the moment to fit all the machines with this special gizmo which would save us a lot of money in terms of energy. Because energy is a huge amount of cost for us so by fitting these little gizmos we would save a lot of money. So granted, gearing in all of that is very important. But it is not as important to us at this stage as it is for the bank when they want to lend us money - or when we want to borrow money from them rather."*

It wasn't clear if the cost of debt or the cost of capital was known by SPL Limited. It appears the thinking is there is zero cost as the company is currently debt free.

*SPL-R2: "Yes and no again; because when we borrow money it's because we have no other solution. But in order to go forward with the business we have to borrow money and it is expensive. But we only do that when it is strictly necessary."*

### **6.5.2.3 Decision-making**

When it comes to making investment decisions, the company did not use any performance appraisal methods to aid in the decision-making process. The Chairman cited that this is a gap he immediately realised from the interview

and that this omission may be a consequence of just making judgement calls over the years.

*SPL-R1: "I realise we may have a gap there. Because we have been doing the same thing for 20 odd years..... We tend to, I suppose, make a judgement on the return on investment in terms of knowledge in the way that the business is going rather than saying, OK when it gets to – rather than putting a percentage or figure on it."*

However, they look at ratios when making financial decisions.

*SPL-R2: "Yes, we use the ratios – gross profit, net profit and others."*

The dissemination of information from Board meetings flows down to the shop floor through the management team.

*SPL-R3: "We have regular board meetings where the Finance Director, the Chairman and I would make the key decisions that need to be made. And then we have, going down – we have management meetings so the Manufacturing Manager and Departmental Manager as well; and we would all meet with them and discuss where we are going."*

However the route taken to disseminate the information appears to be dependent on what it is that needs to be conveyed.

*SPL-R3: "Not always, sometimes it comes from me. It all depends on what we are doing. So the Finance Director does a lot of financial stuff and the Chairman does the marketing side of it and I do the people side of it."*

It also apparent that the Managing Director has a vision of getting employees involved in identifying opportunities and to share ideas on possible investment

options. However, should ideas come forward; he has the expectation that the staff would also be able to put forward financial assessment to support the idea.

*SPL-R3: "What we also do, we tell people they can take any new ideas they have; they have to put the financial case forward. So they will have to say this is how much it will cost you to invest in 'x', this is what payback would be in terms of people – wage structure, this is the payback and this is the payback within 3 years."*

After over 20 years, both the Chairman and the Managing Director still have their homes as security against the business.

#### **6.5.2.4. Performance and use of Information**

The company appears not to have a method of evaluating the overall performance of the company. It seems this is done as a judgement call on what is expected from the amount of investment in raw material for the manufacturing of a product.

*SPL-R1: "It is better utilisation of raw material, you look on the return on investment, and it is totally difficult to do. We tend to, I suppose, make a judgement on the return on investment in terms of knowledge in the way that the business is going rather than saying, OK when it gets to – rather than putting a percentage or figure on it."*

However, the company appears to monitor and use various bits of information on a daily basis in managing the operation as it impacts on the overall performance of the company.

*SPL-R2: "Our current system encompasses everything so all the information is put in such as raw material cost, cycle time for the parts, if there is any additional packaging, carriage – all that is put in and then the system basically calculates; so we update the day's keys to make sure that we pay double attention to the margins basically. And they change because the cost of the goods and materials – they fluctuate quite often. At the moment they are going up. So that is very important for our size of business to make sure that the margins are not deteriorating. And again that's cash."*

The drive to get employees more involved in the business has already proven to be beneficial as some have clearly taken on the challenge presented.

*SPL-R3: "They came up with £200K worth of ideas last year - which is most important. They had a bendy forklift truck which reduces the width of the pallet racking so that we could get more storage into the same space. And having a pallet wrapper because the nature of our business had changed from lots of bags and boxes to pallets and they need wrappings. By taking that in and we have taken 10 hours per week off our warehouse man so he has more time. Before he used to run it with somebody else, now he has much more time on his own."*

The initiative to rise to the challenge may be fuelled by the company bonus scheme. At the end of each year a bonus is paid to all employees regardless of their level. The amount paid is based on the general performance of the company over the year.

*SPL-R1: "Bonus and incentive scheme – we have one, and we have just given out sort of a record amount to everyone. What we*

*did we give a set amount to all staff members regardless of what their salary levels were – as their Christmas bonus in fact! And it obviously meant more to people who are on the lowest salaries than those that are on higher salaries.”*

#### **6.5.2.5 Identifying Value within the Company**

Over the past few years, SPL Limited has implemented various measures in its attempt to control cost and maximise its operation efficiency. One of these measures was to improve its production capability by installing a fully automated clean room.

Limited access to investment capital means that SPL Limited endeavour to ensure that each company within their acquisition portfolio must be able to stand by itself. Hence for each acquisition, only the section of the business which would be able to operate independently was retained. All other sections and usually some of the equipment is redeemed for cash and used towards closing the deal.

*SPL-R1: “And we are very disciplined when we buy a company, we make sure for example that they stand alone as a business - that we never subsidise a new section of a business with profits from the rest of the company. It has to stand alone as something that makes money or we are not in it, so we are very keen on that.”*

Ultimately, SPL Limited always strive to buy assets in the form of equipment and goodwill and never shares because of what they view as the complexity of resolving the tax position in these instances.

*SPL-R1: “we always buy something where there are assets and goodwill; we never buy shares because of the share*

*complexity of the financial positions and having to understand their tax position and so on. If we buy assets and goodwill, it is something we can manage in-house and it's easy to just check how and what they have done before."*

*"So what we say is well, you sell your factory yourselves, we will buy the assets – all the contents essentially."*

Nonetheless, the view expressed is that SPL Limited is a low risk company operating within a high risk environment; with the high risk environment being as a result of the acquisition operation. The Chairman believes this because they are operating at a profit which is at least three times the industry average.

*SPL-R1: "if you are typical for the industry you are typically retaining capital probably; typical PBIT and so on – then you are high risk. But our profitability is at least 3 times better than the average for this industry."*

On request, an explanation of the questions on value and value drivers was provided for the Chairman. In his response, he stated that the question was difficult and stated that it had invoked deep psychological thought. In trying to explain what value is for SPL Limited, the Chairman began by distinguishing that the company is both an acquisition company as well as a manufacturing entity. Prior to stating his position, he pointed out that it is common for people to discount the asset base and only focus on profitability as indicators of value.

*SPL-R1: "They frankly don't care whether you have got 10 moulding machines or 50; or whether they are 2 years old or 52 years old. They don't care. What they are looking at is the profitability of the business or the PBIT if you like or the EBITDA. And that in a sense has nothing to do with the investment value."*

On that basis, he then relates this to how potentially, profitability could be raised in SPL Limited.

*SPL-R1: "You would typically for example, in order to build up the EBITDA you would tend not to carry debt. You would tend to have some money in the bank. You would tend to under invest in the business; and you wouldn't take as much money out of the business or show as much net profit as you can."*

He then went on to state some activities undertaken by the company and; considering the common perspective on profit, the likely impact had they not invested.

*SPL-R1: "we are still investing this year; we have invested more heavily in the business than in any other year of our existence. So we bought new machines, robots; we painted the floor; we invested in – we painted the floor costing us £50K to do it; we invested in more energy saving devices and so on and so on. We have done all kinds of investment decisions; state of the art measuring equipment in our quality office, all that kind of stuff. So we have invested very heavily. And if you would put it on the market tomorrow, that wouldn't show up as being a positive thing to do. All they would see is that the profits – OK the profits are better than they were last year, but they are perhaps nearly £200,000 less from the bottom line of what they could be had we not invested."*

However the Managing Director gave a much more succinct response stating that people are the key drivers of value. From the perspective of the Managing Director, he believes that it is the employees who are the drivers of value within the company.

*SPL-R3: “Well in terms of people, I do think people drive value in the business; so staff training definitely. The more we effectively train our people, the more efficient we become. So that is a key value.”*

As he had indicated that staff is essentially the drivers of value, he was then asked to indicate how this value is managed as the company implements changes. One of the main tools used in getting employees to adapt to and manage the process of change was training.

*SPL-R3: “We spend quite a lot of time over last year training people; business improvement techniques from the bottom up, and I think that has been reasonably successful.”*

Throughout the interview, it was noted that only a description of activities or investment decision was made. However, words such as value or worth were not used or referenced in descriptions. However, from the specific examples given during the interviews it was clear that some worth was placed on the things described.

### **Results from the value exercise**

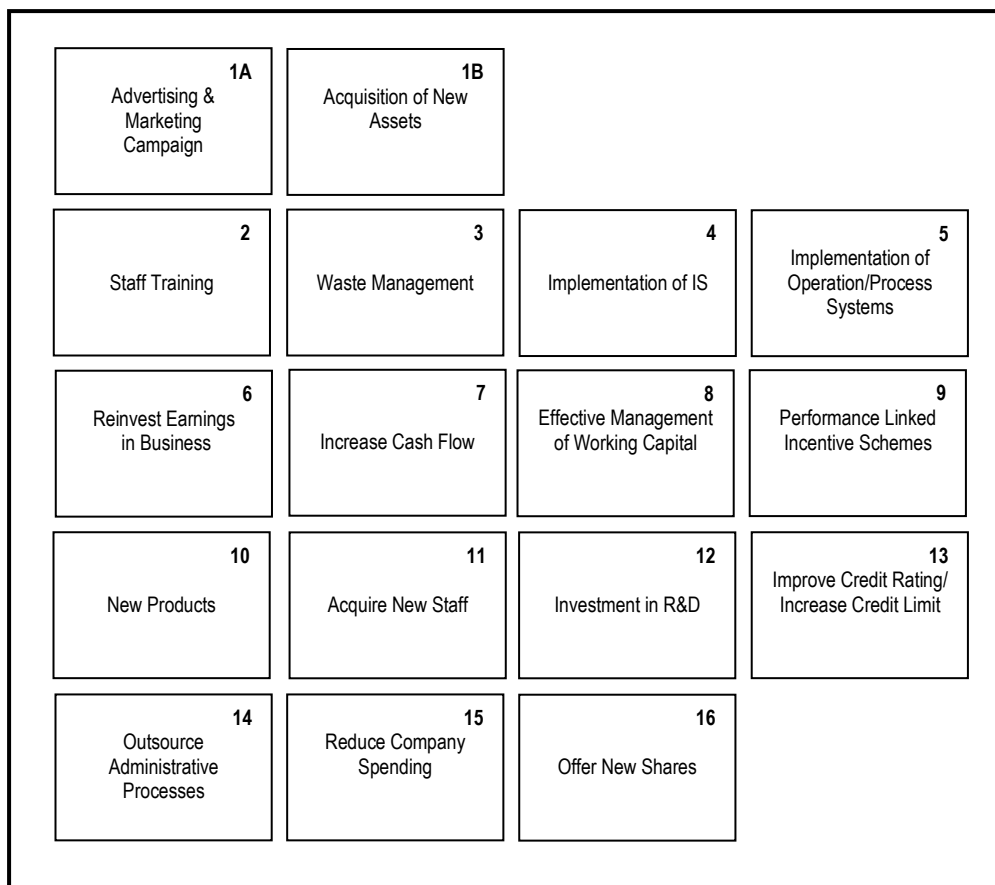
#### **SPL-R1**

In completing the value exercise, *SPL-R1* did not modify or eliminate any of the 17 cards, nor did he make any additions. *SPL-R1* selected ‘Advertising & Marketing Campaign’ and the ‘Acquisition of New Assets’ as the main value indicators for SPL Limited.

These were seen as vital activities that could boost the revenue generation capabilities enabling them to maintain their cash reserves. All the other value drivers followed a linear path with ‘Staff Training’ followed by ‘Waste

Management' following the two main value indicators. The view is that having employees who are aware and highly competent, able to operate efficiently, can reduce waste and maximizing production. Next the systems needed to be in place to enable effective communication; hence the 'Implementation of IS' adds the next value element. The systems for managing the operation are also vital. Hence 'Implementation of Process/Operation Systems' logically follows next. The example of installing a fully automated clean room is one such example of the measures employed to improve the operation. All the previous value indicators ultimately help the company to achieve the objective of increasing revenue. This increased revenue will enable the company to continue to 'Reinvest Earnings in the Business' resulting in 'Increased Cash Flow' which is something the company strives to maintain.

**Figure 6.9: Outcome of Value Exercise for SPL-R1**

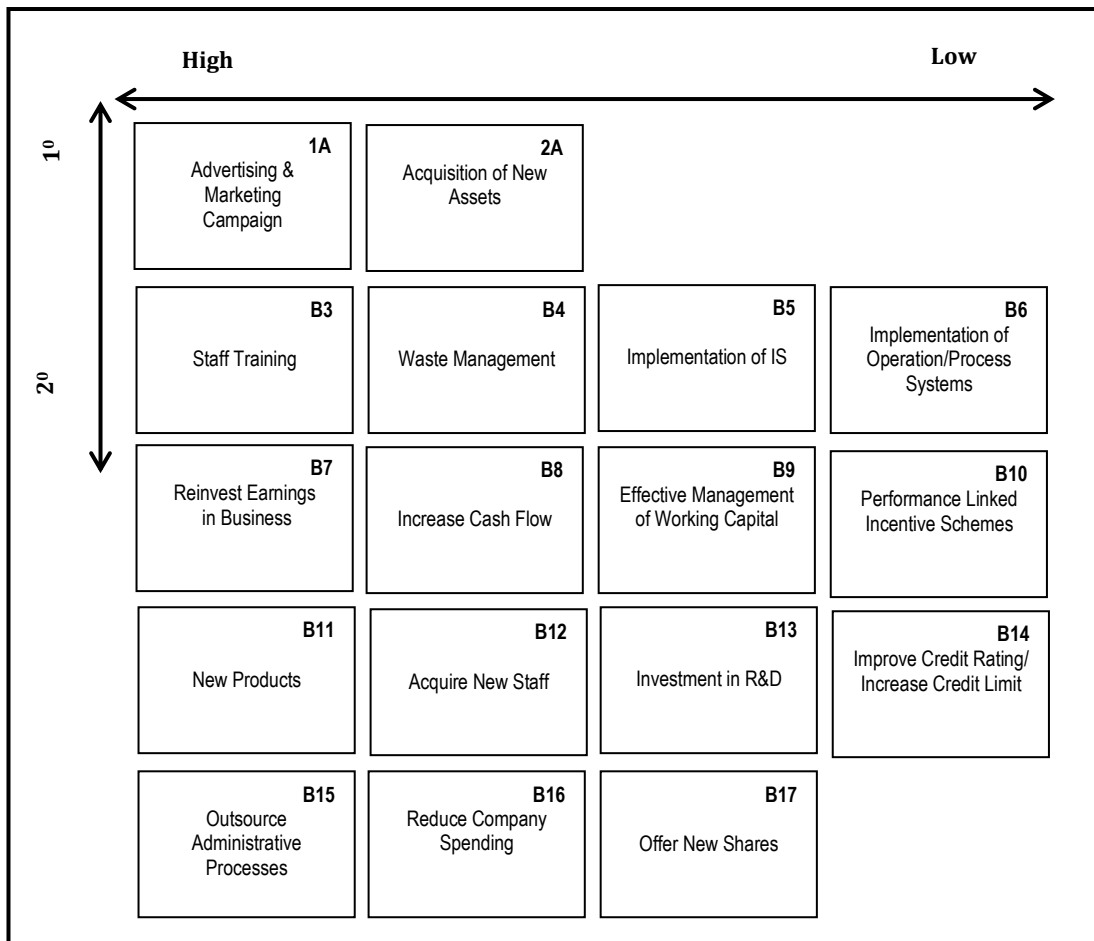


Having met the objective of making the necessary revenue to reinvest, the company endeavours to 'More Effectively Manage their Working Capital'. This is important because it also plays a major role in their secondary interest, the acquisition part of the business. They aim to make investment decisions for each part of the operation which they perceive would ultimately be a success. They try not to use finances from one part of the business to support the other.

The next value indicator selected is intended to motivate employees. The company has implemented a 'Performance Linked Incentive Scheme' which is basically a general bonus which is paid to everyone at the end of the calendar year. The better the performance of the company of a whole, the more each employee receives in bonus. There is also the view that 'New Products' and 'New Staff' who may bring in new ideas are important and so are the benefits of 'Investment in R&D'. The final 4 value indicators were not of much significance to the Chairman as they are not things which are relevant to the company at present. As the belief is that the company is stable and has excess cash, there is little or no need to 'Improve Credit Rating/Increase Credit Limit'. Similarly, there is no interest to 'Outsource Administrative Processes' even though there could be potential benefits. The view is that to 'Reduce Company Spending' is always a bonus but they had worked hard over the years to achieve that. At present, there is no interest to 'Offer New Shares'.

The remodelled exercise for SPL-R1 is shown below.

**Figure 6.10: Remodelled Outcome of Value Exercise for SPL-R1**



SPL-R2

SPL-R2 admitted the exercise was quite difficult; nonetheless she eventually worked through the exercise. She began by trying to eliminate those value indicators which she thought were of little significance to SPL Limited. The first value indicator to be eliminated was 'Offer New Shares'. The reason given was that it was of lesser concern mainly because of the nature of the business. After some thought, attention was turned to trying to identify and put in order of priority the indicators of value within SPL Limited. After much consideration, the value indicators were separated and ranked into 3 main groups. The main value indicators which were ranked at the highest level and rated as the top 4

were 'Acquisition of New Assets', 'Advertising & Marketing Campaign', 'New Products' and 'Investment in R&D'. These the Financial Director felt were the activities which attention must be focused on as they would help in increasing the cash flow. At the second level were two value indicators; 'Staff Training' and 'Performance Linked Incentive Schemes'. These were vital as employees will need to be properly trained and offered incentives to performance.

Finally, the 3<sup>rd</sup> level was 'Reduce Company Spending'; which was not of particular concern as cash flow was not an issue. However, the decision to include it at this point was in consideration to other things, like better machinery, which would also have the same effect. Hence the following 6 value indicators were determined to be part of the overall effect of reducing the amount spent by the company:

- i. Implementation of Operation/Process Systems
- ii. Implementation of IS
- iii. Improve Credit Rating/Increase Credit Limit
- iv. More Effective Management of Working Capital
- v. Reinvest Earnings in Business
  - a. Waste Management
- vi. Increase Cash Flow.

It was interesting to note that 'Waste Management' was viewed as having the effect of improving the indicator of reinvesting the earnings made.

**Figure 6.11: Outcome of Value Exercise for SPL-R2**

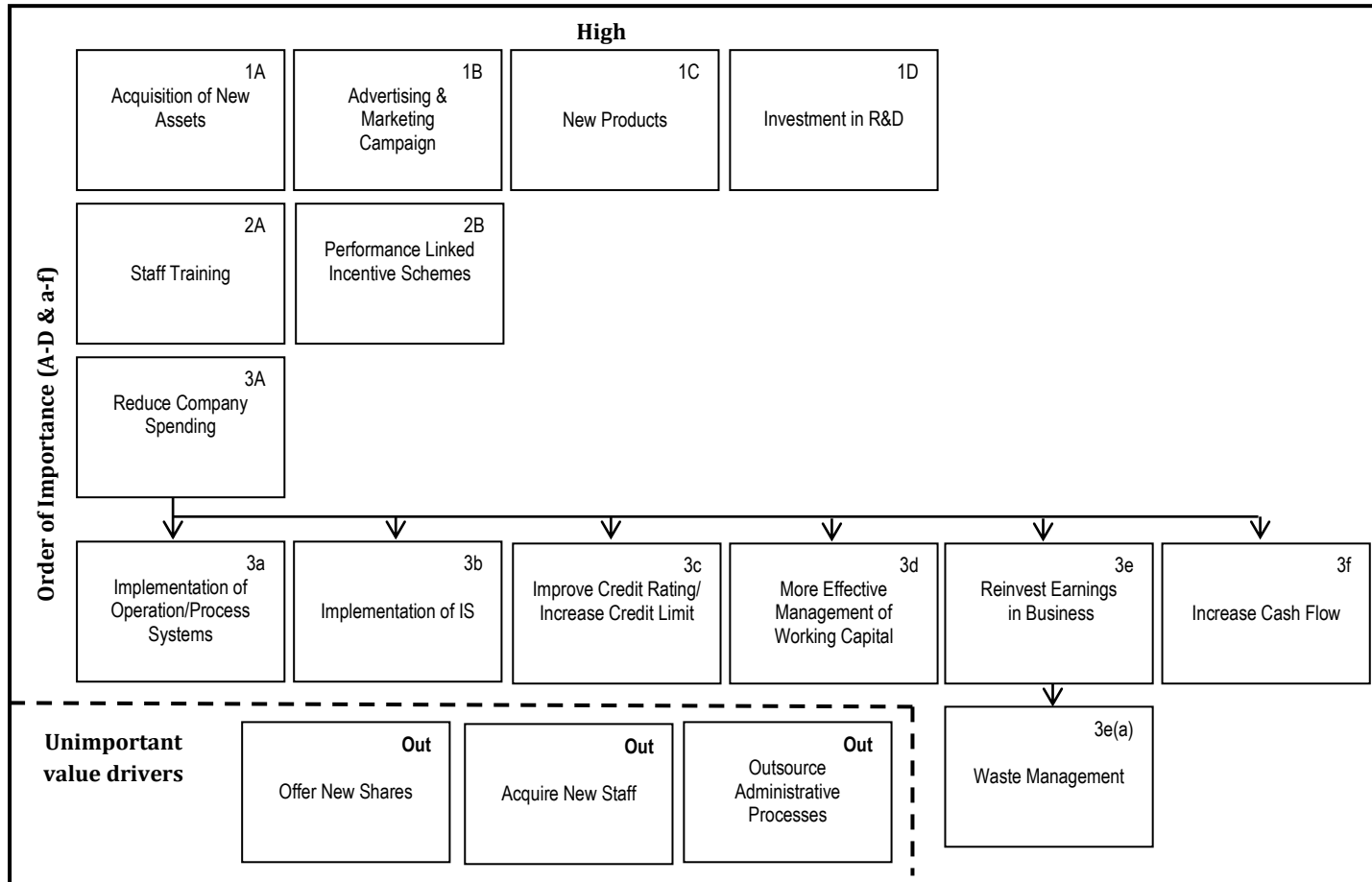
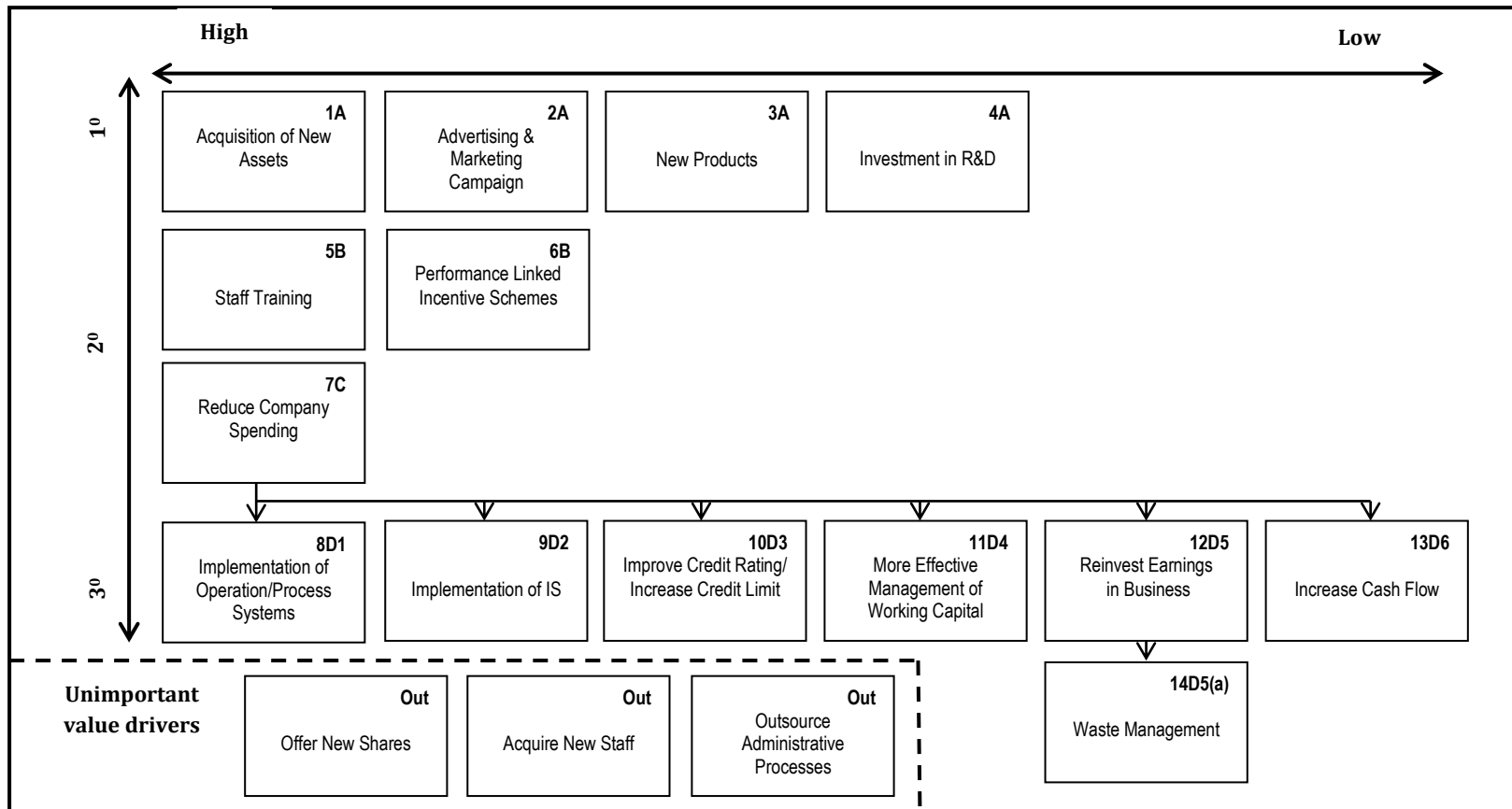


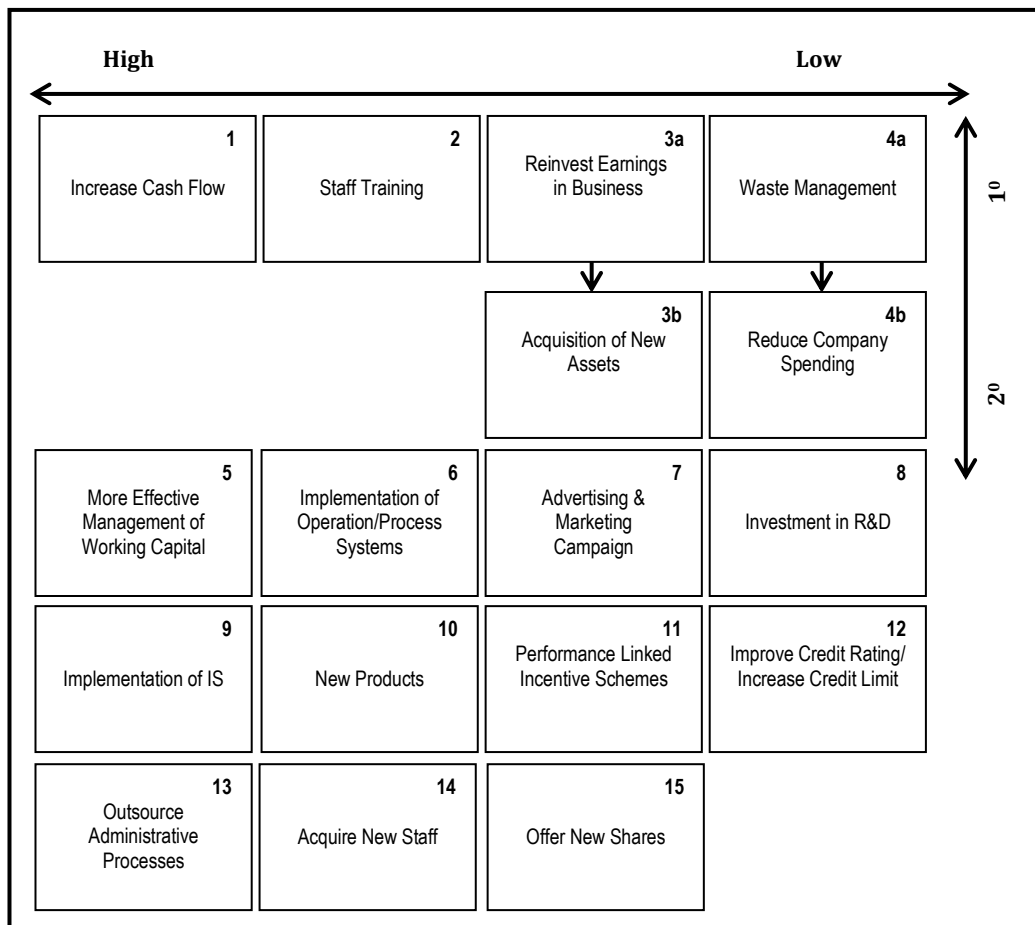
Figure 6.12: Remodelled Outcome of Value Exercise for SPL-R2



SPL-R3

The Managing Director began by stating that for small businesses cash is king; for SPL Limited cash is king. Therefore 'Increasing Cash Flow' was viewed as the foremost indicator of value.

Figure 6.13: Outcome of Value Exercise for SPL-R3



'Staff Training' was next as *SPLR-3* believes that highly trained staff have a direct impact on performance. Over the past year, the company has trained 45 of the 50 employees. 'Reinvesting Earnings in Business' and 'Acquisition of New Assets' were two activities rated at the same level. This relates to the initial view that cash is king and is an indication of what drives one of the main business undertakings of the company; the acquisition business. The next two

indicators of value were again rated at the same level because they also help in improving cash flow; 'Waste Management' and 'Reducing Company Spending'. These value indicators also inform the next stage of the process which is 'More Effective Management of Working Capital'. This gives a clear picture of the importance of managing working capital effectively because without it, the business won't work. Next is the task of improving the operation which is ongoing. For this to be realised, they would need to have 'Implementation of Operation/Process Systems' which are appropriate for the business. Following on from this, the view is that it would be necessary to have some 'Advertising & Marketing Campaign' to attract new business. Next it would be necessary to have some 'Investment in R&D'. However it was interesting to note that he placed the 'Implementation of IS' before 'New Products' as an indicator of value. Although he gave no specific reason for his decision, he stated that he was happy with that placement.

As *SPL-R3* is a believer in the contribution that individuals bring to a business, the next value indicator was 'Performance Linked Incentive Schemes'. Next was 'Improving Credit Rating/Increasing Credit Limit' as he would be keen to hear the views of others. Although he didn't eliminate the last three cards, it was clear that they were considered to be less important. The last three were arranged in the order of 'Outsourcing Administrative Processes', 'Acquire New Staff' and 'Offer New Shares'. In true form in reinforcing his belief in people, *SPL-R3* stated that he would rather train from within the organisation than to 'Offer New Shares'.

### **6.5.3 Summary of the Key Findings from Case 3**

- SPL Limited is currently trying to implement a new "hands-off" style of management.
- However decision-making is still very centralised amongst the management team.

- Attempts have been made to engage with employees and to motivate them to access training. This is being done to improve employees' capabilities as well as to identify those capable of managing the company.
- EVA® was not known by the management team.
- The terms 'value' and 'value added' were not terms used by the company. Yet from the interviews it was clear that they engage in value added activities.
- SPL Limited was the most secretive as they did not disclose aspects of their financial reports.
- Bootstrap method of financing was also practiced in SPL Limited.
- The management team appears to lack strong financial capabilities. However, it appears that some financial analysis using traditional measures are used. A review of figures such as turnover, profitability and sales analysis are done on a regular basis.
- SPL Limited also operates an acquisition business. However, as details on the finances were not forthcoming, this activity will not be considered in the upcoming analysis.

## 6.6 Case 4 – WIC Limited

### 6.6.1 Company Background

WIC Limited is a design and manufacturing entity which makes safety and storage equipment. It was founded by the Chairman in 1982, he had been working as a salesman for a company which marketed safety gears and he recognised a niche market. . He solely owned the company until around 5 years ago when he began off-loading shares because of his impending retirement. The company is now family owned by the Chairman, the Managing Director, his wife and brother. The company gradually grew and expanded its market to include an international clientele from companies across Europe, Australia and the Far East. In 1986, the company acquired and moved to its present location.

The company recently took on a few more employees bringing the total number to 20. Employees tend to be local and in recent times the company has made a commitment to ensure that all staff receives the minimum training required for their role. Table 6.8 below gives a synopsis of the company's performance based on the published annual report at the time of the interviews in January 2012. According to the Managing Director, the company was on course to make a 12.5% increase on turnover in 2012. The company invested capital in 100% equity and recently repaid an interest free loan from the Chairman.

**Table 6.8: Financial Overview of WIC Limited**

|   |                              |
|---|------------------------------|
| <b>Company Name: WIC Limited</b>                        | <b>Sector: Manufacturing</b> |
| <b>Number of Employees: 20</b>                          | <b>Years Trading: 30</b>     |
| <b>Financial standing as at year ending 31 May 2011</b> |                              |
| <b>Turnover:</b>  | <i>£2,109,167</i>            |
| <b>Operating Profit:</b>                                | <i>£238,579</i>              |
| <b>Retained Profit:</b>                                 | <i>£188,540</i>              |

The company managed to consistently operate at a profit over the last five years making £238,579 at the end of the financial year in 2010. According to its financial reports, it has been consistently able to reinvest equity capital.

## 6.6.2 Findings from the Interviews

**Table 6.9: Respondent Code for DGE Limited**

| Respondent Code | Respondent Position       |
|-----------------|---------------------------|
| WIC-R1          | Managing Director         |
| WIC-R2          | Chairman                  |
| WIC-R3          | Sales & Marketing Manager |

### 6.6.2.1 Management, Structure & Culture

The handover of the company from the Chairman to the Managing Director began 5 years ago. Prior to that time, the share distribution was: the Chairman 70%; the Managing Director 25%; and the Sales Manager 5%. However as the Chairman was approaching retirement he began the process of offloading shares so relinquishing his ownership of the company. Having made the decision to take entrepreneur relief, the Chairman could no longer hold over 30% shares. The Managing Director bought as many as he could, and some was bought by the company. Consequently, the Managing Director and his wife now own 65%, the Chairman 30% and the Sales Manager still has 5%. The wife of the Managing Director also holds the position of company Secretary although not an employee of the company.

Dividends are said to be paid twice per year and are determined by the level of investment that would be required for the next 6 – 12 months period.

*WIC-R1: "Dividend is paid twice yearly. How it is determined – by the requirements of the company. So we – I would say roughly as I think of it, it is probably about 25-30% of the profit will*

*probably be distributed to the shareholders. But it really depends on what – it's from the company's perspective what's the investment requirements it is going to have over the next 6 – 12 months. That's the most important thing really – what does the company need for its cash flow and investment. Can we therefore afford to give a dividend and what is reasonable?"*

It also seems difficult for management to determine what would be an acceptable rate of return for investing in the company.

*WIC-R2: "I think that is a difficult question to answer. Yes we expect a level of return if the company makes a profit. Shareholders would go on riot if they didn't get something for their investment in the company."*

There is a general expectation that investments would lead to growth of the company and that the shareholders would benefit. While there is this expectation, there was greater uncertainty about what percentage should be paid to shareholders as dividend.

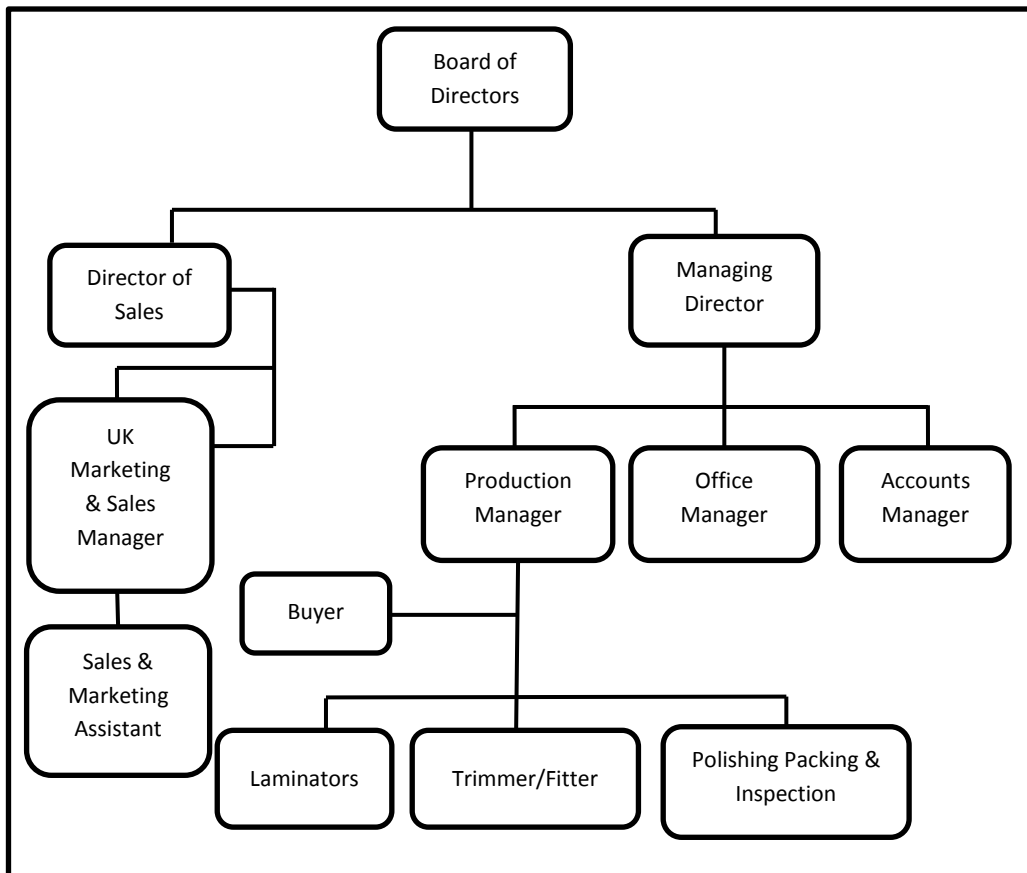
*WIC-R2: "But as a general idea, we would expect that, something like 10 to 15 per cent of profit would be distributed as dividend."*

*WIC-R3: "No, not really. I am hoping that it will be positive – that there will be some return and so far there has been."*

The company appears to have a typical flat organisational structure,

*WIC-R1: "We are not too hierarchical. We try and be easily approachable"*

Figure 6.13: WIC Limited Organisation Chart



Although there are defined roles in the organisation chart, it appears that a number of the employees also perform much wider duties than their official job title.

*WIC-R3: "I was originally sales manager but it has changed somewhat; and being a part of a small company I wear a number of hats like everybody else."*

A number of managers assist with managing the company on a daily basis. Although not a shareholder, the Production Manager also sits in meetings with the senior management team. Information flow is generally top down but the company also have an open door policy to facilitate the flow of information to the top.

WIC-R1: *“...we are very much open door – so it is informal.”*

WIC-R3: *“From my side, I think it works very well in terms of it is obviously a short management structure; and because everybody has a sort of open door policy that works well.”*

The cross functional role of some employees is evident amongst the management team. Duties within this team are based on specific knowledge in dealing with customers from a particular geographic location.

WIC-R2: *“When it comes to project related to incoming work, i.e. sales, if you are referring to that as well, then project work tends to be mainly me really if it is in the UK or Europe and MD’s strongest point is Australia and the Far East in particular.”*

WIC-R3: *“Primarily on a day to day basis I am doing quotes for projects and orders and I also have sales responsibility for Northern Europe. So that is UK, Scandinavia and parts of Northern Europe; Holland, Belgium and Germany. And that is about it at the moment; slowly the Chairman is relinquishing countries to me.”*

There appears to be a strong working relationship between the Managing Director and the Chairman.

WIC-R2: *“But he is anxious to carry me along with any changes in direction or just the general direction of the company. And so I would say that between us, the MD and I in particular, have a strong working relationship; and we don’t always agree but we generally reached not a compromise – reach agreement, very rarely it’s a compromise.”*

The Managing Director refers to the Board of the company as himself and his wife. Although there may be informal discussions “around the kitchen table”, ultimately he is responsible for making financial decisions and overall, the team makes decisions.

*WIC-R1: “Decisions can’t be by the board because the board is me – and my wife – and she won’t take financial decisions.”*

*“It is quite simple when the owners are the Board and the Director – which I think from our point of view, makes the decision-making easier because we are the shareholder sitting around the table as well as effectively the Board who are going to make the decisions at that time.”*

Overall the general view is that the company is low risk and could be an attractive prospect for any investor.

*WIC-R2: “I would say we are a relatively low risk entity. We have some competition, we are aware of the competition we strive to be the best and for the last three years we have been successful. Although I would say for anybody who might invest in us; if that were the case, we would be – yeah - low risk.”*

Their low risk status is also attributed to the fact that they have a wide customer base which was also recognised as a threat to the company.

*WIC-R3: “Hopefully low risk, whether you are feeling positive – I mean we have a very diverse customer base, so hopefully that does reduce the risk somewhat. There is always the possibility of a large Chinese manufacturer can appear out of nowhere and taking the market away.”*

Historically, it appears staff, in particular those on the production floor, had little interest in learning. However, the management of the company is striving to change that culture.

*WIC-R1: "in fact earlier on we try to get people up to like the idea of learning – which is an odd thing to say, but a lot of people here didn't do particularly well at school so they don't see learning as something that they would want to go and do; to go in the class room."*

One approach is to have staff training and development engrained in annual appraisals. This is also tied into the needs of the organisation for the coming year and appears to be working well for office staff.

*WIC-R1: "We have annual appraisals which we do of which training is a part. The appraisal we do, working out, particularly within the office what the objectives are for the next year, what training therefore is likely to be needed to enable that to happen."*

*WIC-R3: "on an informal basis we would have a chat about what we think once in a while – the MD and I will also discuss things that might need to be done and then there is the more formal appraisal that happens twice per year."*

However the schedule for training for staff on the production floor appears to be more ad hoc with a systematic approach to training only applying to the training required by law for someone to perform a specific role.

*WIC-R1: "And within the factory it is also carried out but with a slightly different approach but it is also carried out. A lot of it though is ad hoc because it is not something that is planned; you have got all the legal training that you have to do – manual handling, forklift truck driving...."*

In this regard, skilled workers within WIC are well trained in their respective areas.

*WIC-R3: "Yes absolutely, particularly when it comes to people like the laminators; it is highly skilled work. They have to be trained for probably 6 months plus so it is all on-going, and I think people in this company support each other well when it comes to this (training)."*

The Managing Director also extends support to those who wish to attend night school to take up any course of interest. To those taking up the offer, the cost of their course was covered in full.

*WIC-R3: "I think it has been mixed; there are some that have been quite keen and have done a couple of NVQs which were completed last year"*

### **6.6.2.2 Financial Information**

The Managing Director also has the responsibility of handling the company finances. On a monthly basis, management accounts are produced which are then scrutinised by the management team.

*WIC-R1: "I produce the monthly management accounts. So what we do, we discuss that at management meeting. So the four of us get around the table and we will go through the accounts and start comparing the budgets and margins and; those sorts of things, just to make sure we all have a picture of where we are."*

The accounts are used to aid in the decisions made by the team. These accounts, reports and financial information are usually presented in a reasonable and concise manner and are quite easy to understand.

WIC-R1: *“It is used to adjust our decisions based on how we have done so far.”*

WIC-R2: *“...he provides me with the information; he is excellent at his accounting. I would go so far as to say he is first class at it. And so he provides me with very readable and understandable information. So it is easy for me, who is not an accountant by the way, to help reach an agreement on the way forward from the information that WIC-R1 provided”*

The financial information prepared is used in monthly meetings to go through the current state of financial affairs within the company.

WIC-R1: *“we have monthly management meetings, when we have, one of the item on the agenda is finance. And we have monthly discussions during which all aspects of finance; it could be bad debts although that is not an issue here. All aspects of finance are discussed monthly and so it is a very open situation.”*

WIC-R3: *“We discuss in our management meeting the finances on a regular basis.”*

*“the profit and loss statement and so forth, I will go through that as we all do. Like with sales primarily and profitability in what areas are performing well and which aren't. So there is some information and we have to take on board; and if some area is underperforming, then obviously I need to look into why that might be.”*

The unified approach taken in making decisions within the company seems to work favourably.

WIC-R3: *“It is quite democratic if I must say; everyone has their say also ultimately everyone does have to make the decision. The nice thing is I used to work for a large company where decisions can take a long time to make. Working for a small company, it is so different.”*

The approach to budgeting is conservative; that is forecasting and budget is done based on what is deemed reasonable.

WIC-R1: *“We tend to do a conservative budget. It is what we think is realistic without getting too optimistic so we know it is financially viable and then try and do much better. It’s also a part of making sure that when we are agreeing whether it is salaries or any other cost increases that we know with reasonable certainty that that’s a profitable situation and then try and do a lot better.”*

The company is currently operating debt free and has been doing so for a few years.

WIC-R1: *“The Company now is debt free. So we haven’t had to worry about getting any funding from bank”*

WIC-R2: *“we are generally cash rich here, so we are in a happy position of being in a position where we don’t have to borrow. So we are in a happy position where we are self-funding; we have grown organically and we have the cash.”*

However, during the management buy-out, the company had insufficient cash reserves and had to rely on a loan from the Chairman. That loan was repaid within 18 months and the company have since remained debt free.

WIC-R1: *“But when we did the shares buy out the company had to use its cash reserves to buy those shares. But in fact we didn’t*

*have sufficient cash reserves to do it, so the Chairman lent back. He loaned back the company about £150,000 but we managed to pay that off at a cash flow in about 18 months - so as of a few months ago; so at the moment - no debt."*

At present, the only type of investment arrangement that the company has which could be construed as borrowing is the mortgage for the property which is held by the pension fund.

*WIC-R1: "Apart from the mortgage that the pension fund has - the pension fund owns the property here - and so the pension fund has a relatively small mortgage. And the company pays for it - the pension fund."*

The company also had an overdraft facility with its bank which can be readily accessed if needed. Also, should there be a need to access funds for capital investment; there are no concerns that this would pose any particular issue.

*WIC-R1: "It's not that we have a problem borrowing. For the first 10 years of the company, yes we had quite large overdraft and things. But now we don't need to. We continue to get a lot out of cash flow anyway."*

Admittedly, there has been no attempt to determine the cost of capital of the company.

*WIC-R1: "I have never calculated it."*

Also, it was apparent that the focus was more on the opportunity forego of making one investment over another which was of greater concern than the cost of capital.

*WIC-R1: "When it comes on to cost of capital, I would say more it's the opportunity cost because if I spend all then I can't spend on something else and that's more the issue for us. I don't*

*think in 18 months or 2 years' time we actually might need it for this. If I spend a huge chunk on a warehouse I can't spend on machinery."*

### **6.6.2.3 Decision-making**

The team usually makes joint decisions. The Managing Director has a clear vision of the direction of the company and appears to be influential in the decision-making process.

*WIC-R1: "We tend to make joint decisions. OK I tend to have the final say but it tends to be done by agreement."*

*"Well 5 years ago I took over as MD..... In reality it doesn't make a huge amount of difference because we are all making a lot of decisions as a group anyway. But I have certain ways of doing things. I've got a different idea of what I want for the company; so that has probably propelled quite a lot of it."*

*WIC-R2: "Well WIC-R1 of course is now Managing Director; and the decisions of course are finally his as the senior director and major shareholder."*

*WIC-R3: "Yes, they [owner manager] always get their way of course."*

However, WIC-R2 views are that his years of experience mean that he is still valued by the company.

*WIC-R2: "I think I have a strong influence probably because I think I still have some – I am still valued I think because of my past experience, I do have some influence. Not influence and that I would necessarily wish to force but I think my influence is noted."*

#### 6.6.2.4 Performance and use of Information

The Managing Director believes in Maslow's hierarchy of needs theory and also believes that the absence of money demotivates individuals. The belief is that employees will feel they are valued if a bonus is given but that the size of the bonus is of less importance.

*WIC-R1: "I think the absence of money is a demotivator. Bonus is good; the physical amount of the bonus is soon forgotten; maybe the thought of getting one is most important rather than getting one."*

The bonus system within WIC Limited is based both on individual and company performance. Usually, the bonus paid is dependent on how well the company is doing.

*WIC-R1: "Bonus is really related to the performance of the company and the individual. The overall sum is determined by how well the company is doing, but the division of the sum depends on the performance of the individual."*

The Managing Director stated that he had used a performance evaluation technique only once in the 22 years he has been with the company. This was done recently in examining the returns to be derived if an investment was made in implementing measures to reduce their energy bill.

*WIC-R1: "So I was trying to work out to the public, either the discount rate of 2% and at different rates foregone and the decrease in feed-in tariffs because the feed-in tariffs goes up with RPI. But with interest rates being effectively 0, it didn't seem very high. We don't tend to use them (performance appraisal methods)."*

No other member of the management team has used any appraisal technique. If ever required, that responsibility lies with the Managing Director to ensure that it is done and the information shared with the team.

*WIC-R2: "I don't really understand all that but that – that's highly physics - but for instance where we are making a decision whether to put a building in around the back (which I am sure WIC-R1 showed you this morning) and we obviously look very, very carefully at the costing on that. And in terms of ROI, that is a vital ingredient."*

In processing customer's orders, the initial information collected is vital. Once a customer provides information for an order, it is assessed and a recommendation for the appropriate products made. The process also includes an assessment of the production requirements and cost before final negotiations to sell with the customer.

*WIC-R3: "The main focus for me is receiving the information from the customer.... and just making sure that I have enough information to actually put together a recommendation of the products that we should be selecting for that project. And also looking at the internal layout and looking at the equipment needed to be stored. I will come up with the internal layout and then cost them out and then sell it to the customer."*

This forms a very important part of the process because the company needs to be efficient and effective at this as this is vital in staying ahead of the competition.

### 6.6.2.5 Identifying Value within the Company

The idea of value and value added wasn't something any member of the WIC team interviewed gave consideration to on a daily basis. The interviewer had to put into the context the term value and value added before respondents were able to reply to those questions in the interview. However on reflection and in responding to the questions, it was clear that WIC Limited implement and initiate value and value added activities within the company. The issue here was they didn't consider the wider implications of their actions, only that they made good business sense and that they improved their business.

WIC Limited indicated that they believe the drivers of value within the company can be affected by a multitude of variables. An indication of their most valuable resource is the ability to provide custom made products for their clients. They are able to provide a product based on customer needs and requirement whereas their competitor competes based on price.

*WIC-R1: "Quite a few things really I suppose. From a sales point of view, the value that we add is by the customisation of the product. So we can engineer it to suit the environment whereas our competitors tend to sell on price."*

*WIC-R2: "The drivers of value I would say would be quite simple; we strive to be the best in what we do. Nobody makes better products than we do in our particular market"*

*WIC-R3: "Value, I think are things like quality of the products we produce"*

They also place a lot of emphasis on providing their customers with a highly specialised customer service which is aimed at providing almost a seamless service from concept to finish product.

*WIC-R1: "So we take a lot of the headache out for the client. We give them the confidence that we know what we are talking"*

*about. And then we do a lot on the service side of things as well which is - things that we do now, we draw everything in 3D. So we can do a lot of the drawing which previously would have either been done by our customer or the contractor at the end who is out on the rigs. So a lot of that is now coming down to us. So I think that is helping us to maintain our margins against cheaper competition. So we are very much trying to do a bit more for the customer."*

Another important indicator of value for WIC Limited was the way in which they use their resources to meet their objectives and deliver to their customers. One of the things they have invested in to achieve this feat is lean manufacturing.

*WIC-R1: "You see here (pointing to some charts posted on the walls from a recent training exercise on lean manufacturing), is just the latest that we have done in bringing lean manufacturing in, laminating all the bays - with our lean manufacturing in with moulds. We have done it within the office and we have saved 600 plus hours - and that's just in a small office like this by looking at how people - how their work went around, who did what - very little investment in the actual case, I think it was £1500 or something."*

A perceived benefit from implementing lean manufacturing has been more active involvement and interest on the production side of the operation by employees and management.

*WIC-R1: "it has gradually changed our attitude I think; rather than doing things the way we have always done it. One of the things when I started is that I have been here a long time and actually I never really got involved in production"*

The company also make use of information gathered during international travels to improve their operation and improve their chances of competing with competitors.

*WIC-R1: "I see what else is going on and will give a spur to come back here and say actually there are people out in Korea making cabinets; there are people out in Thailand making cabinets and they are doing that or the other so we have got to improve something else to keep ahead of them. So again I think that reducing costs within the company; also better buying and we keep a close eye on overheads and as you can see, things are going up well ahead of profit on budget we might spend a bit more, we have a flexible approach."*

The Chairman also felt that what the company does and the people working for the company also add value.

*WIC-R2: "The true value of the company is in the quality of the products that it manufacturers and the loyalty of the staff that we employ."*

The Sales Manager shared a similar view but used an example to illustrate which was in line with his area of work.

*WIC-R3: "So people have the information which means we may then be the preferred supplier for the products. And we could also add additional information that people might need such as specialised drawings of the products with layouts using their templates. There are all things that some of our competitors do and some don't, so it is some sort of value added in that respect and it could hopefully lead to more orders and it does in some cases."*

A vital part of the operation is the mould designs. These are basically the base templates for each of their products and one is needed for each type or model of product. Although this appears to be an invested interest in intellectual property for the company, *WIC-R1* conceded that it was never considered as a part of the capital outlay. This suggests that the design and manufacture of a mould was not seen as part of the value added capital outlay.

*WIC-R1: "I haven't seen it as a part of capital but I would - intellectual property is certainly something that we have invested in"*

This was followed by a statement indicating what was considered to be intellectual capital.

*WIC-R1: "I mean, I am about to sign off a design rights for a handle for an injection moulding cabinet - I signed it off yesterday. It has got some protection. We can't patent it as it isn't patentable. But we registered out trademarks, we register the company name. We have design rights on one of our micro housings. We do as far as it is reasonable; and we have benefited from it. One company wanted to use fibres in the same class as us and they pay us £2500 for 5 years to use it. It didn't cause any confusion in the market - a very nice bit of money."*

However, there was an admission that intellectual capital could add some value to the company should it be considered in the future.

*WIC-R1: "Yes, I suppose in theory it is, or you could say it is an insurance policy. In some cases it is an insurance policy to prevent someone coming into the market and using that brand or a copy of - so, we don't see it generally as a money earner but it's more of a defensive position to take."*

Another activity the company had undertaken was to invest in solar energy panels to help reduce its electricity bills.

*WIC-R1: "Yes, we have ISO 14001 environmental standard and we try to improve our performance year on year; and that was part of it. It reduces the amount of electricity we use and once we have got to that stage then we can generate some in a green way; hopefully it will have a long term advantage to the company"*

The outlay for this investment will be covered by a Government incentive scheme which pays for the electricity produced including whatever amount is exported to the grid for the 25 years.

While interviewees were able to identify value enhancing activities within the company, it was more difficult for them to say if and how the value identified was measured.

*WIC-R2: "I am not sure I can really answer that. I think whether WIC-R1 does, we don't actually measure it per say. I would say we don't really measure it. The only yard stick we have is the meetings we have and the staff meetings that we have where we are gathering information, we are gathering comments and feedback from everybody. We take an interest, a great interest in what people have to say. So if that is a form of measurement then that is how it is measured. I cannot think particularly in any other way. Not that I would be able to identify it – obviously anyway."*

## **Results from the value exercise**

### WIC-R1

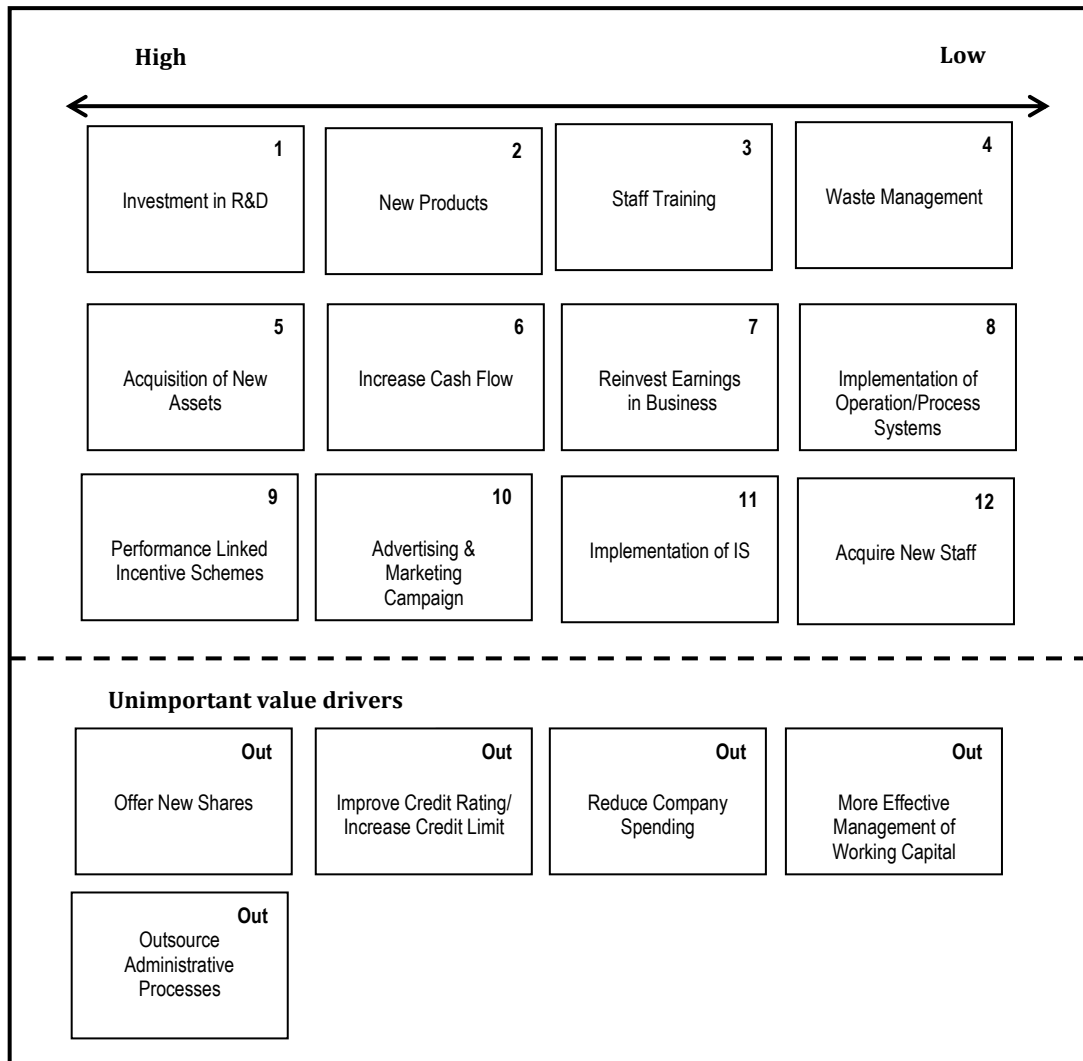
WIC-R1 did not add or modify any of the value indicators on the cards. He however identified and eliminated five of the seventeen indicators which he thought were not relevant to WIC at present. The indicators eliminated were:

- i. Offer New Shares – not something worth pursuing at the moment.
- ii. Improve Credit Rating/Increase Credit Limit – Company is cash rich; not an issue.
- iii. Reduce Company Spending – not an issue.
- iv. More Effective Management of Working Capital – not an issue.
- v. Outsource Administrative Process – not of interest.

WIC-R1's thinking is that the company needs to invest in research and development for new products to take the company forward. This means staff will need to be adequately trained to deal with changes and to understand the new requirements of the job. They also need to be able to minimise waste; hence creating a more efficient operation. With R&D and new products comes the need to acquire appropriate assets to complement the operation process. This could mean investment in new machines to make new products or to improve the quality of existing products. There is the general belief that cash is good; so increasing the cash flow will enable the company to reinvest earnings without the need of acquiring added investment from the banks. There is always the possibility of improving the way operations and processes are done within the company; whether by making improvements to the operation or use of process systems to control production. The next stage would be to ensure that employees are motivated to work by implementing an incentive and reward system. Next is to find ways of generating new interest and business into the company. In his estimation, the next value indicator is the use of Information Systems to improve communication and aid with collecting and

processing data. And finally, to ensure adequate staff levels to support the needs of the organisation.

**Figure 6.14: Outcome of Value Exercise for WIC-R1**

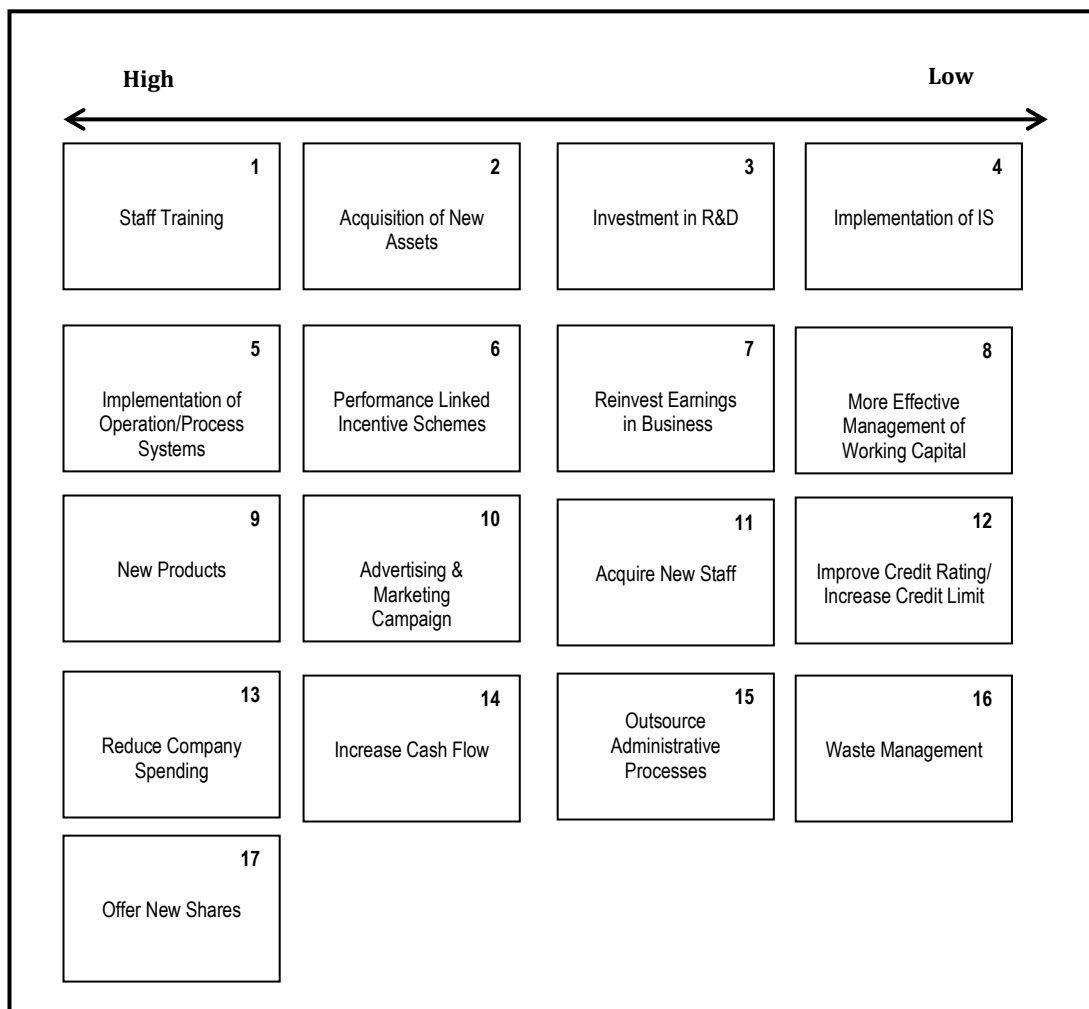


WIC-R2

For the value exercise, *WIC-R2* used all 17 of the value indicators prepared. Each of the cards was arranged in a linear progression with 'Staff Training' as the first value indicator. This fits in with the statement he made earlier that

employees are also the drivers of value within a company. This was followed by the 'Acquisition of New Assets'; which also aligns with his earlier statement that products made by the company are also indicators of value. His next choices were basically a list of actions and activities which improve product development and set up the systems and processes which would ensure that the best quality products were produced. This was then followed by a reward scheme to keep staff motivated. The result of those actions would have a net effect on the company resulting in excess revenue which could be reinvested in the company and support the development of new products.

**Figure 6.15: Outcome of Value Exercise for WIC-R2**



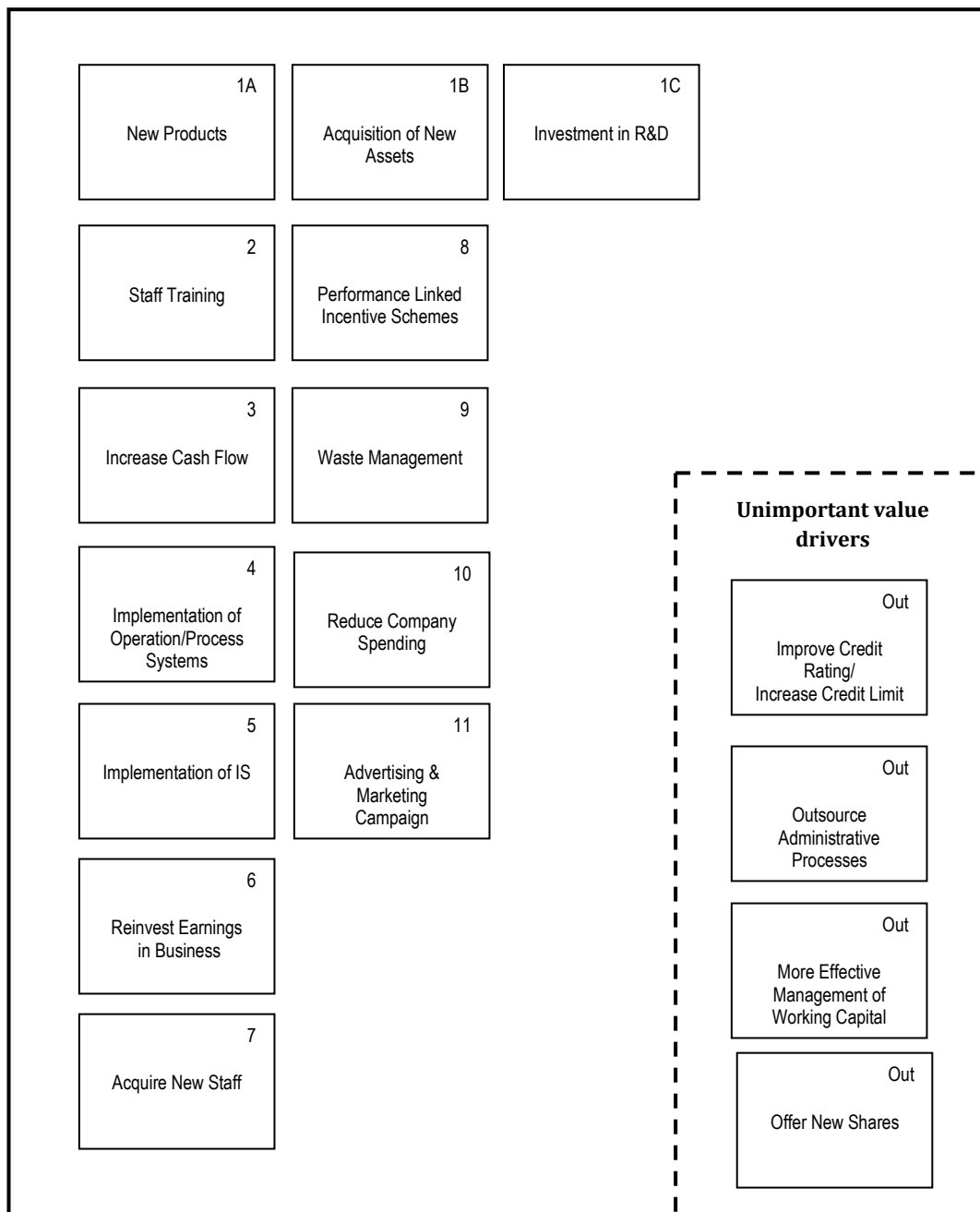
It was also recognised that there would be a need to attract new business so consideration should be given to advertising and marketing campaigns to attract new business. This would then be followed by acquiring new staff if needed and improving the credit rating or increasing the credit limit if required. Other activities which could be undertaken but are not an issue at WIC Limited at present are 'Outsource Administrative Processes', implement measures to improve 'Waste Management' and as a last resort, to 'Offer New Shares'.

### WIC-R3

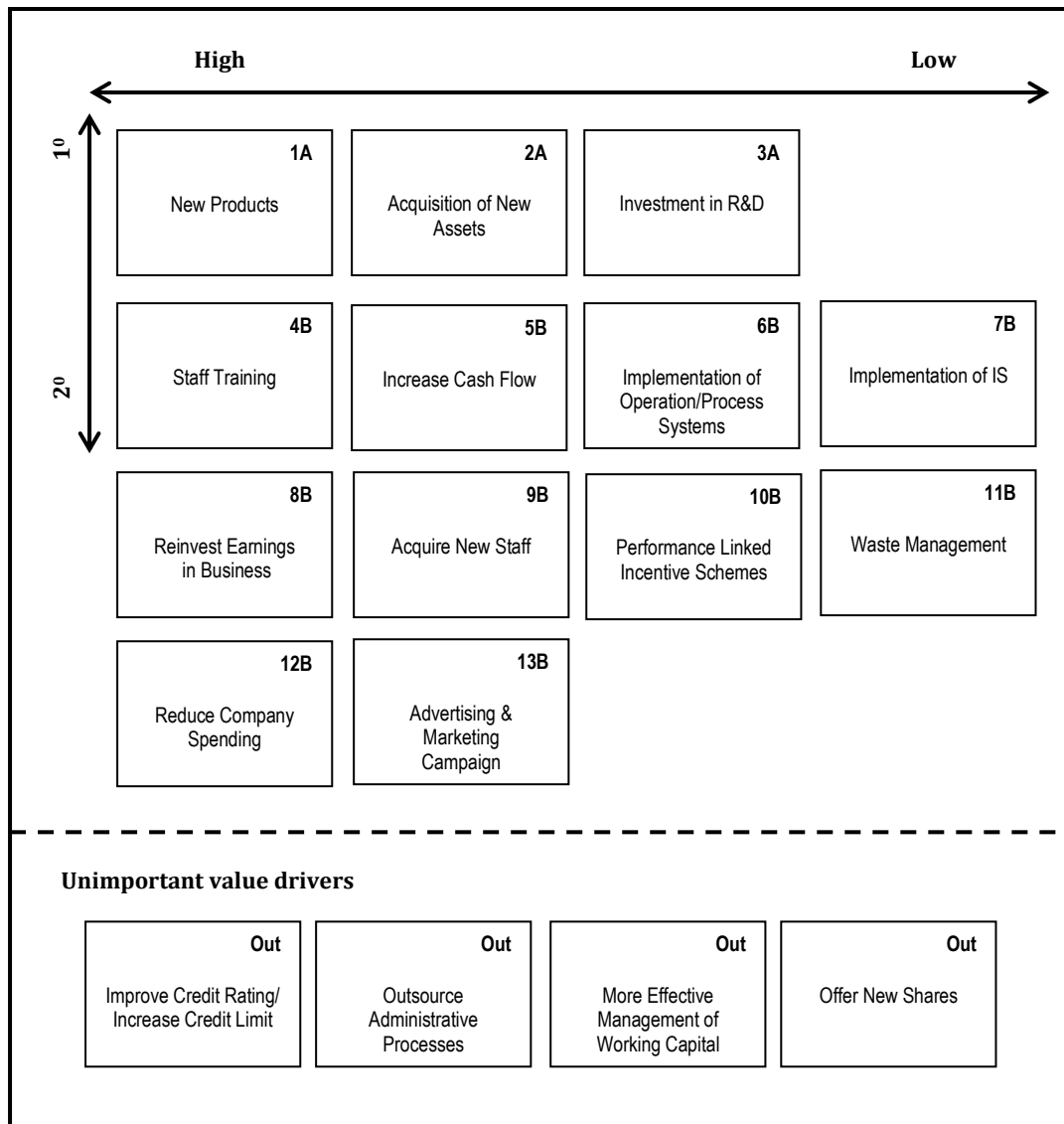
During the value indicator exercise, *WIC-R3* started out by identifying the three most important indicators. These he felt were necessary and hard to split; they were 'New Products', 'Acquisition of New Assets' and 'Investment in R&D'. The thinking behind this is that the company would need new products to progress; new products means investment will need to be made in machinery and ideas for new products comes from investing in the necessary R&D work. This is where he thinks the company should be heading. This should be top priority and is urgently needed. With new products, staff will need to undergo the required training for them to be able to function adequately. Ultimately, this could result in an increase in the cash flow for the company. This would mean that the company would need to have the necessary systems in place to aid with the process. Hence the operation or process systems need to be in place to complement the operation as well as the information system. In line with its plans for development, the company would need to keep reinvesting earnings in the business. Next would be the need to get new staff and to ensure that they have the skills needed to carry out their duties. The Sales Manager felt it was important to have the necessary performance and incentive schemes in place to keep employees motivated as well as providing a means of monitoring their performance and making personal development plans. In addition, in order to maximize output, the company would need to manage waste and also its

spending. He also felt that some investment in advertising and marketing to attract new contracts to the operation would be good but it wasn't awarded a high ranking as a potential indicator of value.

**Figure 6.16: Outcome of Value Exercise for WIC-R3**



**Figure 6.17: Remodelled Outcome of Value Exercise for WIC-R3**



WIC-R3 eliminated 4 of the value indicator cards;

- i. Improve Credit Rating/Increase Credit Limit – the company is in a good position now and is cash rich so they are fine in this regard.
- ii. Outsource Administrative Processes – This is done in-house and there is no real need to consider another approach.
- iii. More Effective Management of Working Capital – This isn't an issue because the company has done well in managing its finances.
- iv. Offer New Shares – Not something they have any immediate plans for.

### 6.6.3 Summary of the Key Findings from Case 4

- Decision-making within WIC Limited is done amongst the management team.
- Employees are generally not keen on accessing training. Only the training required by law to fulfil certain technical roles is undertaken.
- The organisational structure is typically flat where the management team has the responsibility for the major roles.
- Of the case study companies, WIC Limited appears to be the second most efficiently managed company.
- Management reports are prepared regularly and are used by management to make informed decisions.
- WIC Limited takes a conservative approach when preparing its budget and forecasting figures.
- The company is 100% financed by equity capital and has been so for years.
- Bootstrapping techniques are also employed with WIC Limited.
- WIC Limited has a bonus scheme for its employees.
- 'Value' and 'value added' were not terms used within the company. However the company was found to be engaged in value enhancing activities.

## 6.7 Summary

Although there were shortcomings in applying the Delphi Technique, a wealth of information was gathered from both Practitioners and the interviewees from the respective companies. The primary purpose for engaging Practitioners was to obtain additional information because of the gaps identified in the literature. The key findings from Practitioners were:

- The theory behind the EVA® framework makes it potentially an ideal measure for implementing in SMEs.
- Practitioners shared a common concern around EVA® adjustments and its implication for the value of a company.
- NPV was viewed as a better tool to be used for decision-making. EVA® is however a close proxy to NPV.
- Practitioners with knowledge of EVA® refer to the value drivers using accounting terminologies.
- The Practitioner with no knowledge of EVA® focused on the human and social elements as the drivers of value within a company.
- Indications from the Practitioners are that an EVA® model would not be easy to implement.

From the case study interviews it was realised that:

- The way in which the case study companies are structured fits with the theory on EVA® for the implementation of the model.
- The unique and, what could be viewed as direct access to management fosters greater communication within SMEs and is a positive indicator for the implementation of EVA®.
- All the companies were found to engage in value enhancing activities. However information on such activities rarely translates across into the financial records.
- In all cases the companies practiced some type of performance measurement mostly based on traditional accounting techniques.
- The companies engaged in wealth destroying activities.
- All cases have in place a system to recognise and award employees for outstanding performance.
- All cases were found to practice some kind of bootstrap technique.
- All the management teams interviewed were able to work through the value exercise to identify the drivers of value within their company. The value indicators were found to align with those in the literature.

The detailed analysis of Practitioners and the case study interviews is dealt with in *Chapter 7*. *Chapter 8* then covers the analysis of the financial information with practical demonstration of an EVA<sup>®</sup> analysis for each company.

Only the participants from DGE Limited had some knowledge and experience of EVA<sup>®</sup> from a previous organisation. However they did not think their brief experience of EVA<sup>®</sup> would add any value to the study should they participate under that premise. The Managing Director of ABC Limited had some limited awareness of EVA<sup>®</sup> whereas the participants from the other companies did not. What was evident was that all the companies participated in value enhancing activities. From their responses, it was evident that there was a clear understanding of value; although they did not think and tag activities as value and value enhancing activities. Also, from their account of events and activities there seems to be a disconnect between value added activities and what is presented in their financial records.

Nonetheless, the contribution from practitioners and company interviewees to the topic of value and value creation within the context of the EVA<sup>®</sup> framework will be covered in the ensuing chapters.

## ***Chapter 7: ANALYSIS of INTERVIEWS***

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- 7.6 Summary

## 7.0 Introduction

In framework analysis, qualitative data is analysed by focusing on the interpretation of the data under the themes identified (Dixon-Woods, 2011; Braun and Clarke, 2006; Ritchie and Lewis, 2003). The themes from the case studies were determined by evaluating the responses and cross referencing them with common themes from the literature. A mapping exercise converged and incorporated the data which demonstrated how qualitative data was integrated into a quantitative analysis in applying the EVA<sup>®</sup> performance metric (*Chapter 8*). This approach showed how the findings from the study relate to the overarching research aim which is to identify the value drivers within the EVA<sup>®</sup> performance metric. It also demonstrated a holistic approach to the interpretation of the research findings as well as strengthening the approach to mixed-methodology research.

### 7.0.1 Analysis of the Qualitative Data in Practice

The literature on value, value creation and the theory behind the EVA<sup>®</sup> framework formed the basis of the analysis of the findings from the interviews. As the literature on what constitutes the value drivers within the EVA<sup>®</sup> framework was silent, it was important to establish what was stated in the literature on value so it could be cross referenced with information provided by the Practitioners. From the literature it became clear that organisations which engage in value creation have some key features embedded within the organisation and its practices. Elements of this appear to be in line with the Shafer *et al.* (2005) business model (Figure 3.1). That is, in developing the strategic plans for the business, the value network must be taken into account as well as the resources to create that value and the method of capturing that value. Researchers such as Weissmeir *et al.*, 2011; Neganova and Neganova, 2011; Buchanan, 2011; Lin and Tang, 2009 and Lin and Lin, 2006 all identified value within companies and how value can be created. Also Practitioner's views

on elements of the EVA<sup>®</sup> framework were used to identify and establish the vital elements within the EVA<sup>®</sup> framework for analysis. The theory on EVA<sup>®</sup> framework covers the expectation of companies for successful implementation of EVA<sup>®</sup>. Hence it was concluded that for EVA<sup>®</sup> to be implemented in practice an organisation must have some core features in place which must align with the theory on EVA<sup>®</sup>. These core features were identified with the concept which underpins the theory on EVA<sup>®</sup>. As there was no apparent guide to the implementation of EVA<sup>®</sup> in practice, these features which inform the main theory on EVA<sup>®</sup>, were assessed from the literature on the EVA<sup>®</sup> framework.

By cross referencing the information in the literature with the data from the interviews, the following themes were developed for the analysis of Practitioners interviews.

- i. Determinants of value, value drivers and EVA<sup>®</sup>
- ii. Strategy for value creation
- iii. Barriers to creating value
- iv. EVA<sup>®</sup> adjustments
- v. Suitability of EVA<sup>®</sup> in small versus large organisations
- vi. Determination of EVA<sup>®</sup> for non-traded company
- vii. Measurement of value
- viii. EVA<sup>®</sup> versus other measures
- ix. Problems and issues with EVA<sup>®</sup>
- x. Destroyers of value

Similarly the literature on EVA<sup>®</sup> was used in establishing the themes for analysing the interviews from the case studies. The themes identified were:

- i. Management, structure & culture
- ii. Financial information
- iii. Decision-making
- iv. Performance and use of information
- v. Identifying value within the company

As the term 'value' and 'value creation' was not used within the case study companies, the value indicator exercise was used to draw out any vital information on value for each of the case study company. This was then aligned with the literature and assessed for any new themes arising although none was identified.

## **7.1 Thematic Analysis of Practitioners Interviews**

The responses provided by the three Practitioners were, in some instances, lacking in depth and on occasions were considered incomplete across the range of questions. This was due to knowledge, background and level of confidence on EVA®. Although Practitioners agreed to participate, they were less keen in expressing their views on EVA®. This was because they felt their knowledge was limited as the work on EVA® was not the primary focus of their work. Hence they felt that they were unable to express wider views on EVA® and did not wish to go beyond responding to any further iteration of the interview questions. In one instance, the Practitioner's own investigation was on-going and he felt it was not appropriate to provide further input. One Practitioner only had knowledge on value and was not an academic. His response was more reflective of his background as a graduate and a business manager. Hence there was limited scope to contrast views. However, where possible, the analysis compared and contrasted the views expressed between respondents and the literature.

### **7.1.1 Determinants of value, value drivers and EVA®**

Value drivers are those variables which create an impact, positive or negative, on the value of a company. A value indicator may be described as a resource which can be modified in order to improve or maximize its expected output.

Value and value creation was viewed as a combination of complexities which management would need to manage effectively. Interestingly, Practitioner Three points to community, management, the planet, supply chains and society in general as the drivers of value. He concluded that employees and stakeholders are the underlying human assets of a company. As in the literature, employees, management and the relationship with stakeholders creates value within a company (Lin and Tang, 2009; Lin and Lin, 2006; Shafer *et al.*, 2005; Haksever, 2004). Practitioner Three also had the view that the value created is dependent on the stakeholder and that for value to be created, both the employees and the stakeholders must be organised. Similar to others authors such as Young and O'Byrne, 2001; Hall, 2001; Stewart III, 1990; Practitioner Two made reference to the EVA<sup>®</sup> value drivers using accounting terminologies. Reference was made to 'level of returns', 'sales', 'sales growth', 'gross profit' and 'retained profit' which identify the end variable but gave no indication of how that variable could be or was determined. More so, Practitioner One made reference to the effect of inflation and distortion on the value indicators of EVA<sup>®</sup>. What was found in studies on the application of EVA<sup>®</sup> was that focus was placed on the application of the variables of the EVA<sup>®</sup> formulae (Costa, 2012; Vishwanath, 2010; Kryzanowski and Mohsni, 2010; Morard and Balu, 2009; Shil, 2009; Griffith, 2004; Cagle *et al.*, 2003). Looking at the cases from the literature, at face value, there is a clear disconnect between the activities of the firm and the EVA<sup>®</sup> performance measure which comes across as a mathematical exercise in finance. This same disconnect came across in the responses provided by Practitioners One and Two. Practitioner Three had no prior knowledge of EVA<sup>®</sup> but was included to obtain views on value.

### **7.1.2 Strategy for Value Creation**

Practitioner Three believed that if a business does not create value then it is not a business. He believes that there must be a vision otherwise there will be no

value position. This is in line with Porter's (1996, 1995) work on strategy and theory of the firm. Essentially Porter believes that the success or failure of a company is dependent on its strategy. A company with clear a strategy will engage in creating value through activities such as innovation and research and development to attract and build its client base. As with the literature on value creation, innovation (Weissmeir *et al.*, 2011; Neganova and Neganova, 2011) was identified as a value creator, as was research and development (Shukla, 2009), which is also a central issue to the creation of value to shareholders. Interestingly, Practitioner Three was also of the view that there needs to be some vision before value can be created. Such a statement appears to be similar to the thinking of Shafer *et al.*, (2005); that a business must have a strategy and then develop a network to create and capture the value created.

Practitioner One believes that companies that use EVA<sup>®</sup> force value creation without necessarily expanding the business. From the literature, EVA<sup>®</sup> is about evaluating the performance of the company over particular periods (Ferri *et al.*, 2005, Stern *et al.*, 2001; Young and O'Byrne, 2001; Stewart III, 1999 and 1994; Ehrbar, 1998). The EVA<sup>®</sup> framework therefore empowers managers to make strategic decisions in order to give the best optimal outcome on the capital invested. In making these decisions, managers would be duly compensated based on the outcome of their decision-making. EVA<sup>®</sup> therefore could encourage managers to formulate and implement actions to succeed instead of relying solely on experience and gut instincts. Hence it could be construed that EVA<sup>®</sup> could be a means by which a company monitor its viability within a competitive market.

Within SMEs, the literature speaks of value creation through the development of organisational culture (Buchanan, 2011) and through innovation (Edmiston, 2007; Zenger, 1994). Within all the case study companies, a major focus of management was the development, care and wellbeing of employees. Management ensured that employees were motivated and had the necessary skill sets. They were given encouragement and support in order to progress.

Within all the case study companies, employees had relatively easy access to management as there is less bureaucracy than what would be found in large companies. All the companies seem to have a system to channel information down to all employees.

It was evident that value was created within all the case study companies. However value, value creation and value added were not terms used by any of the case study companies. Decisions were made with improving production efficiency and staff capabilities, increasing sales profitability in mind. Neither was there any conscious effort to measure or assess the actual performance of the company. Performance measurement was undertaken more on the basis of assessing profit, sales and cash flow in the companies.

### **7.1.3 Barriers to Creating Value**

A company creates value through its employees, its operational processes and through its stakeholders including customers, suppliers and investors (Lin and Lin, 2006; Cho and Puick, 2005; Kothandaraman and Wilson; 2001; Beach, 1998; Brandenburger and Stuart-Jr, 1996). Some of these are external to the company, are not easily controlled and may present more of a barrier to the company. Clearly, because value can be created from the various sources mentioned, then they all have the potential to impose some kind of barrier to the creation of value within the company. For example, a company can exercise control over the quality of its employees however it has no control over loan rates for investment.

From the Practitioner interviews, only Practitioner Three commented on the issue of barriers to creating value. His view was that financial reporting was one dimensional, highly artificial and arbitrary from natural laws. This is similar to the views of the proposers of value based management theorists (Artikis, 2008; Stewart III, 1999; Drucker, 1998; Rappaport, 1998) who approached the subject

of value using economic theory rather than accounting principles to measure value created.

#### **7.1.4 EVA® Adjustments**

The literature indicated that the adjustments made in computing EVA® would vary depending on the company (Weaver, 2001). Stern Stewart & Co. stated that up to 164 adjustments could be made for accounting distortions when computing EVA®. However only limited information was provided on what those adjustments could be or when to make an adjustment. The limited information relates to the capitalising of investments which were classified as expenditure such as research and development costs; and accounting for all cash flow by eliminating allowances made for incidentals such as bad debts. Other researchers suggest between 120–150 adjustments indicating a disparity as to the number of EVA® adjustments that could be made. The issue is complicated further by researchers such as Chari (2009) who stated that only five to six of these adjustments contribute to any significant difference in computing EVA®. On the other hand, Worthington and West (2001) found that companies implementing EVA® made up to 15 adjustments whereas Young (1999) noted that companies were making fewer than 15 and Chari (2001) as many as 19. Costa (2012) states that EVA® proponents decide what adjustments to make based on ease of communication, their materiality and incentive effects. Other factors could also include availability of data and knowledge or understanding of adjustments needed. In the case of SMEs it would more likely to be a lack of understanding of the overall requirements for the implementation of EVA®. This suggests that a company could easily choose adjustments to reflect a favourable EVA® value.

In computing EVA®, Practitioner One commented that adjustments for inflation would need to be made when considering EVA® adjustments. Practitioner Two commented that it is necessary to make adjustments because data used for

EVA® is based on accounting information. No other reference to EVA® adjustments was made despite this being an important issue raised in the literature (Costa, 2012; Chari, 2009; Young and O'Byrne, 2001; Weaver, 2001; Stewart III, 1999; Young, 1999). This suggests that the complexity in determining EVA® adjustments still exists.

### **7.1.5 Suitability of EVA® in Small versus Large Organisations**

In the literature, large organisations; and in many instances multinational organisations were selected for the implementation of EVA® (Stern *et al.*, 2001; Stewart III, 1999; Ehrbar, 1998). It is also acknowledged that EVA® is best implemented in divisions within large organisations (McLaren, 2004; Stern *et al.*, 1996). Practitioner One stated that it was not very useful to work out EVA® for a larger organisation. It was more useful at divisional level, which is also in line with the small amount of freely available guidance by Stern Stewart & Co. on how EVA® should be implemented. According to the literature on EVA®, because it looks at the value added by decision makers over a particular period, it seems reasonable to be applied per division. This is because in reality, large companies may have divisions with their own budget, strategy, managerial and operational team. Capturing the performance of the organisation at divisional level would give a much better picture of the overall performance of the company than attempting to assess its EVA® at a companywide level. It would also appear less complex to implement.

Practitioner One also commented that large traded companies already have a better indicator of value, the stock price. This thinking is in line with Biddle *et al.* (1999, 1997) who concluded that there was little evidence to support the superiority of EVA® over other measures in determining stock value or the value of the company. Other researchers found little to support the information content of EVA® over other measures in determining the value of a company.

Although none of the Practitioners conducted studies on EVA<sup>®</sup> within small companies, Practitioner One concluded that, if implemented properly, EVA<sup>®</sup> would be more suited for divisions in larger medium sized companies. His view was that it could be the tool to reward managers in SMEs or even as a decision tool for moving the company forward. His statement was based on his comprehension of the theory behind the application of EVA<sup>®</sup> framework and not on investigation of EVA<sup>®</sup> in medium-sized companies in practice. Presumably this is due to the fact that as a company grows it is more likely to develop specific functions such as management accounting and explicit strategic appointments, which in turn make the application of EVA<sup>®</sup> more straight forward.

#### **7.1.6 Determination of EVA<sup>®</sup> for Non-traded Company**

In practice, the studies showed that EVA<sup>®</sup> has only been applied in publicly traded companies (Mittal *et al.*, 2008; Cagle, 2003; Stewart III, 1999 and 1994; Myers, 1996). Practitioner One felt it would be better applied to a traded company as they would have already have some knowledge of the value created by the company by virtue of its stock price. The view expressed by Practitioner One indicated that in determining EVA<sup>®</sup> for a non-traded company, some market measure would be needed to give some validity to the computed EVA<sup>®</sup>. For traded companies, the stock price gives an early indicator of the value of the company. The same comparison could not easily be made with non-traded companies because of the difficulty in determining the value of shares for such a company.

While the value of a non-traded company could be ascertained by dividends paid and number of shares owned, this information is not readily at hand for non-traded companies. Examples of this were encountered in trying to ascertain the EVA<sup>®</sup> for the companies which participated in this study (See

*Chapter 8*). Information presented in their published accounts was insufficient in some instances to work out dividend payments

### **7.1.7 Measurement of Value**

Although Practitioner Three was not familiar with EVA<sup>®</sup> he appeared to be very much in tune with value and value management. His view was that within a business there are various complexities which need to be controlled in order to maximize the wealth of shareholders. In managing those complexities, the company will also need to account for the triple bottom line (TBL or 3BL). This means, together with the focus of creating value for shareholders, the company would need to create wider societal/ethical objectives to further enhance this value (Norman and Mac Donald, 2004). By doing so, the company also focused on its degree of social responsibility, its environmental responsibility together with the economic value created. Although Practitioner Three did not comment on how these values could be measured, he agreed that the non-financial value created by a company should be measured.

Practitioner One further voiced his support for EVA<sup>®</sup> for SMEs by stating it could be a good way for them to measure value. However, he was unsure who the audience would be. Unlike large companies, the audience would be its shareholders and external stakeholders with vested interests in the company. EVA<sup>®</sup> may be predicated on the basis of maximum shareholder wealth, but it is generated for management, not shareholders. He also felt it would be a good tool for managers to use in evaluating the performance of the manager on a particular project.

From these comments and the possible benefits identified from implementing value based management and measurement in companies, this could be something positive for SMEs. The literature shows very little has been done on value within SMEs. Studies on SMEs highlight issues with management, access

to resources and viability of SMEs for which a value based management approach might prove effective. Of the various value based measurement techniques, the theory around the EVA® framework appears most suitable for SMEs. The theory states it is best applied at divisional level, it is easy to understand and makes managers think and act like owners of the company. It also encourages the dissemination of information within the company. This encourages greater communication within the company as employees are informed about company performance and the contribution made by each employee. It also has a compensation scheme which is based on management performance. Essentially, the theory on the EVA® framework aligns well with the structure and management style found in SMEs.

#### **7.1.8 EVA® versus Other Measures**

Practitioners One and Two commented on EVA® versus other measures of performance with Practitioner One more in favour of NPV as a better decision tool than EVA®. Practitioner One also believes that NPV and IRR should be used for decision-making whereas EVA® is best used for measuring performance of a project after the decisions are made. Both Practitioners believe that EVA® is a close proxy to NPV and is the economic interpretation of the former which accounts for the cost of the capital invested. The views expressed by the Practitioners are not surprising as they are very much in line with other researchers on EVA® (Burksaitiene, 2009; Modesti, 2007; Irala, 2005; Shrieves and Wachowicz, 2001). The general view in the literature was that NPV and IRR were much better evaluation tools for selecting projects and making decisions than EVA®. There were also strongly held views that EVA® is similar to NPV. Both EVA® and NPV are seen as measures which take the economic perspective, however EVA® has limited scope as it can only be applied over a period of time. Also, while it was suggested that NPV can be used in selecting projects and making decisions, EVA® was seen more as a post evaluation tool and cannot be

used by itself in decision-making. While the literature covers other measures such as MVA, CRFOI, RI, the Participants in the interview only mentioned IRR and NPV.

### **7.1.9 Problems and Issues with EVA®**

The problems and issues with EVA® are well documented in the literature which can be summarised as:

- i. Its suitability as a measure for all types of companies regardless of the industry. Although it has been popular in large companies, and the theory aligns with the characteristics of SMEs, there is no evidence of EVA® being used in SMEs.
- ii. Its accuracy; as it is dependent on financial statements which are based on accounting principles which may vary, be subjective and are open to manipulation,
- iii. It is short sighted because it can only be applied to a particular period of time;
- iv. Its usefulness as a tool for creating solutions is questionable as it cannot, by itself, be used as a decision-making tool,
- v. It suffers from benchmarking problems; for example a high EVA® often corresponds with a low ROI (Brewer *et al.*, 1999).

These issues are also intertwined with the accounting adjustments to be made when implementing EVA®. Both Practitioners shared similar views, with Practitioner Two highlighting the added problems in applying EVA®. He cited the difficulty in gaining access to information from companies who either withhold or publish modified information. Such concerns were also expressed in the literature on research involving large companies (Pike, 1983) but more so with smaller companies who are more hesitant in participating in research (Curran and Blackburn, 2001; Storey, 1994).

### 7.1.10 Destroyers of Value

The proprietors of EVA<sup>®</sup> believe that if value can be created it therefore can be destroyed (Grant, 2003; Stern *et al.*, 2001; Young and O'Byrne, 2001; Stewart III, 1999). The whole premise behind EVA<sup>®</sup> is to induce managers to cultivate value enhancing behaviour and to reward such actions. Within the EVA<sup>®</sup> theory, value is created if the decisions made by managers result in a return which is greater than the cost of capital. If it is less, then value is being destroyed.

Practitioner One responded to the question on value destruction by relating it to the financial view, stating that inflation must be accounted for when making adjustments to appraise value. His response centred on the fact that EVA<sup>®</sup> proposers base their assumptions on low inflation (Stewart III, 1999) which would distort EVA<sup>®</sup>. Hence managers could be unknowingly destroying value if they do not take into account inflation.

On the other hand, Practitioner Three believes that value is attributed to human resources in and outside of the company. The belief is, if such value isn't nurtured then it is destroyed; poorly treated, unhappy, sick and uneducated employees cannot create value. Likewise unhappy, unsatisfied customers do not create value.

There is a general recognition in the literature that what creates value in businesses includes both the tangible and intangible resources at their disposal. It was also evident from the literature that this value which is created, if not allocated or used properly can in fact impact negatively on the business. Value based measures were meant to be tools managers could use to measure and monitor value creation to ensure that they met the objective of maximizing shareholder wealth. It should be noted that this objective is highly questionable. Stakeholder theorists (Freeman and Miles, 2006; Phillips, 1998 and Freeman 1984) suggest that value should be maximized for the entire nexus of

stakeholders. This view concurs with the comments expressed by Practitioner Three.

## **7.2 Thematic Analysis of Interviews from the Case Studies**

Interviews were conducted across a range of functions within four SMEs. However sporadic and incomplete responses were received to the set questions. This was due to the diversity of function, diversity of SMEs and the awareness of respondents on specific performance management techniques, EVA® and value drivers. Consequently there was limited scope to contrast views. However, where possible, the analysis compared and contrasted the views expressed between respondents and the literature.

Nonetheless a vast amount of data was captured from the case studies. By using thematic analysis only the most salient responses as they relate to value, value drivers and EVA® theory have been considered for this analysis.

### **7.2.1 Management, Structure & Culture**

With the exception of DGE Limited, all the other companies are family owned and managed. In all of the cases, each member of the management team has additional roles other than their prescribed job titles. This is indicative of the way in which SMEs organise and manage themselves and has remained consistent throughout the years.

All the companies studied have a formal hierarchical structure. However relative to large companies, a SME structure remains relatively flat with a minor management level/supervision team below senior management. Organisation culture relates to norms, values and attitudes within an organisation. Within SMEs, culture is also dependent on the leadership style of the owner manager as

the owner manager imprints their personality on the organisation (Storey, 1994). How well a company performs is also attributed to the general attitude towards training. Evidence of this was seen within each of the participating companies. The participating companies all exhibited characteristics of adhocracy and clan cultures. Masood *et al.* (2006) summarised the characteristics of these types of groups as innovative and risk orientated with an effective leader with a vision. Such characteristics were evident at DGE Limited; the senior management team strive to emulate an effective and efficient leadership style and actively encourage all employees to embrace creativity, experiment and acquire new knowledge. For them, innovation is vital and a special incentive scheme is in place, which offers inventors shares in the product if developed successfully.

There was a noted difference in the way in which DGE Limited operates in managing the company. Three of the four directors (*DGE-R1*, *DGE-R3* and *DGE-R4*) worked as consultants in a former company. It was evident that the consultancy style of management was carried across and instilled within the company. This was evident in the way in which the team describes undertaking their roles and responsibilities. This level of organisation was less evident in the other case studies; however they all strive to empower employees to take more initiative and to feel part of the company. The Managing Director of SPL Limited hopes to step back from the day to day running of the organisation by enabling the employees through training and delegation of responsibility. All the case study companies offer training opportunities to develop their staff with incentive schemes to reward performance.

The proprietors of EVA<sup>®</sup> stated that EVA<sup>®</sup> is best implemented from the top down within an organisation. To integrate EVA<sup>®</sup> well within an organisation, it is best implemented at divisional level where a manager is given the responsibility to lead and cultivate a sense of ownership of that division (Lovata and Costigan, 2002; Stern *et al.*, 2001; Stewart III, 1999; Ehrbar, 1998). This suggests that EVA<sup>®</sup> is best implemented in an organisation with a defined

hierarchical structure but with hierarchical sub-structures. Clearly, this describes the general sense of what each of the managers in the case studies strives to emulate within their companies. Although they are managers, they also assign responsibility to others who in turn are responsible for their division and a group of employees. These cultural, management and leadership styles are characteristic of well-established SMEs which makes them ideal for the implementation of EVA®. Hence any barriers to successful implementation, for the case SMEs, do not relate to culture and organisational structure.

### **7.2.2 Financial Information**

With regard to financial decision-making, bootstrapping techniques were evident in all companies. They ranged from making decisions based on gut feelings and years of experience to borrowing from retired directors (ABC, SPL and WIC Limited). All four companies nonetheless have cash flow statements, balance sheets and budgets from which information on the company's financial standing is shared with the senior management team on a regular basis. This behaviour was found to be common practice amongst European and Turkish managers (İbicioğlu *et al.*, in 2010). All four case studies prepared the statutory annual financial reports. Financial reports were made available for the period covered by this study, 2007 – 2011. ABC, DGE and WIC Limited presented full reports whereas those obtained for SPL Limited were abbreviated accounts. All had some management accounts; cash flow forecasts, budgets and forecasting, balance sheet and profit and loss accounts. With the exception of SPL Limited, snapshots of some of these data were shared. The snapshots from DGE and WIC Limited were just one page of a section of their budgeting and forecasting accounts. ABC Limited presented a full spreadsheet budgeting and variance analysis which was done by the Managing Director whilst trying to get to grips with the company finances when he acquired the company. However, there were difficulties in relating the data in the tables to the information published in

the financial reports, as variance analysis that reconciled actual figures to budgeted figures were neither undertaken nor provided.

All the cases commented that they use the information to monitor performance and make operational plans for their respective companies. DGE Limited use the financial information collected to assess actual performance against the budget. They also use the cash projections in assessing the cash flow and financial position of the company. At ABC Limited the Managing Director began sharing financial data on the performance of the company with employees in an attempt to make employees more financially aware. SPL Limited used information on production schedules to assess staff and production costs on a daily basis; and WIC Limited used its financial information in preparing job quotes to clients.

The Managing Directors/Chairmen all expressed concerns about the general attitude of Banks towards financing SMEs, especially around the high cost of loans. Although challenging, they have all built a relationship with their individual Banks; ABC Limited for example have a large overdraft facility. However, because of the high cost of borrowing, all the companies work towards reducing or removing dependency on Bank loans despite being tax efficient and cheaper, according to finance theory. At the time of their interviews, SPL Limited and WIC Limited stated they were operating debt free. They had succeeded in reinvesting earnings back into the business. DGE Limited on the other hand was seeking an investor for the business. This is because they have recently received a big contract and they are in another growth phase.

Both ABC and DGE Limited reported a high debt to equity ratio. The more debt capital invested, the lower the WACC until an optimal point at which the value of the company is maximized (Brigham and Huston, 2009; Arnold, 2007; Modigliani and Miller, 1958). Beyond this, the company becomes too highly geared and is exposed to a high risk of a takeover or bankruptcy. The Directors of ABC and DGE Limited were unsure of the gearing level and they were

unaware of the impact of debt on WACC and value creation. However as mentioned in the literature review SMEs are often faced with limited choices over how to source funds and often resort to what is available. SPL and WIC indicated low gearing and no gearing respectively. Information on gearing for all the case studies was ascertained using Morningstar Database.<sup>9</sup>

**Table 7.1: Companies Gearing Data from Morningstar**

| <b>Gearing</b>      | <b>ABC Limited</b> | <b>DGE Limited</b> | <b>SPL Limited</b> | <b>WIC Limited</b> |
|---------------------|--------------------|--------------------|--------------------|--------------------|
| Borrowing Ratio (%) | 153.48             | 21.69              | -                  | -                  |
| Equity Gearing (%)  | 20.75              | 25.6               | 18.14              | 50.81              |
| Debt Gearing (%)    | 1.52               | 12.23              | -                  | -                  |
| Interest Cover (x)  | 12.26              | 40.9               | -                  | -                  |

The data showed WIC Limited with the highest equity gearing as they, along with SPL Limited, only use equity financing for investment capital. It also shows ABC Limited with an abnormally high borrowing ratio (153.48%) and a debt gearing ratio of 1.52% indicating a low net worth of the company. ABC Limited is shown to be operating in a highly critical state, but is comfortably covering its interest (12.26 times). This indicates that whilst this level of gearing is high, current profitability and cash flow is sufficient to service this level of debt.

Further analysis of the financial information presented by the companies is covered in *Chapter 8*.

### **7.2.3 Decision-making**

All the participating companies have regular management meetings in which decisions about the company are made. Such meetings seem to be much less

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<sup>9</sup> Morningstar provide detailed financial analysis of registered companies at [www.morningstar.co.uk](http://www.morningstar.co.uk)

formal and structured in ABC Limited than the other companies. Financial decisions in ABC Limited were described as a team effort in which employees put proposals forward using knowledge and supportive arguments in order to convince managers. Employees claimed they sometimes used a SWOT analysis to support their arguments. It was evident in ABC Limited of the impact of not having any systems or process in place to make decisions. Decisions were made on “instincts and gut feelings”, at times at a financial cost to the company. This is common in SMEs where managers tend to be entrepreneurs or inventors rather than formally trained managers (Burns, 2007; Levy & Powell, 2005). This is something the Managing Director hopes to change. At the time of the interviews he was in a rebuilding and refocusing phase including getting additional senior management support.

In the other companies a more structured process was evident in decision-making. The Directors of DGE, SPL and WIC Limited hold discussions amongst themselves when key decisions need to be made. DGE Limited came across as the more democratic leader which could be because DGE Limited is not a family owned business. Both SPL and WIC Limited have retired Managing Directors who are now Chairmen and they appear to have a lot of influence in the decision-making process. In all cases, the Managing Directors admitted or indicated that they tend to exercise their position at times in the decision-making process.

#### **7.2.4 Performance and Use of Information**

SMEs tend to have a narrow focus or area of specialisation. This focus and specialisation is reflected in the products, markets, and customers as well as the operational processes needed to grow and compete successfully in the market (Cagliano, *et al.*, 2001). ABC Limited demonstrated these features in the face of change and striving for survival. The company had operated for years as two separate entities with the systems side of the organisation having the

manufacturing side as its main customer. Both entities had implemented various information systems to improve performance without much consideration for overall operational effectiveness. However, with the merging of both entities and renewed focus on the products and services they deliver, the company was able to refocus its operation and work on satisfying customer needs in their niche market.

All the cases demonstrated due diligence in maximizing their operational processes in order to achieve an effective performance and keep abreast of the competition. SPL Limited improved its operation by implementing a waste reduction system and a clean room; WIC Limited prides itself on its overall operation and its ability to produce high quality products made to client's specifications and DGE Limited boasts a well-integrated operation across its four operational areas to meet the needs of its customers. Whereas ABC Limited relies heavily on feedback from the sales team on improving the design of products for its customers.

ABC Limited has a Manufacturing Resource Planning (MRP) System to assist in managing its operation. The company also implemented a Sage accounting system to manage its finance. DGE Limited had a system of bespoke spreadsheets in Excel and uses Project Management software to manage its projects. For WIC and SPL Limited it was unclear what information systems were in use.

ABC Limited had no formal way of evaluating performance. Instead, performance was measured by how well each division met their objectives. Before the merger, these measures were production targets, quality checks passed or profits at the end of the financial year. After the merger, there was still no formal system in place but a crude financial assessment was undertaken. This included variance analysis of forecast against the actual budget. This assessment was also done in DGE and WIC Limited. Both DGE and WIC Limited have a formal performance appraisal system in place to evaluate staff

performance which is also linked to a reward scheme. SPL Limited appear to have a general bonus scheme which is payable to all staff based on the performance of the company.

The ability of SMEs to be effective and perform fully has been well documented (European Commission, 2012 and 2009; Cagliano *et al.*, 2001). Although they have contributed significantly to economies, the study revealed there are still areas for growth.

### **7.2.5 Identifying Value within the Company**

For all the cases, it became apparent that although they all took part in activities or associate an element of 'worth' on something, be it an activity or process, they did not use the term value. For ABC Limited, the company was initially committing resources into activities which did not add any real value to the company. This was realised once they gained a firmer understanding of their products, clients and market. It was also much more apparent in this case compared to others that value destroying activities had occurred. The example given was; after investing in two different systems for each entity they had to reinvest in a totally different system to integrate the two operations once the merger was completed.

DGE Limited takes great pride in their level of professionalism and their ability to offer innovative solutions to clients. While they are kept motivated by the level of feedback resulting in new contracts, the full recognition of the value added element, albeit noticed, is not evaluated as an indicator of value. Similarly with WIC Limited, the care taken in providing quality engineering services in order to meet the needs of client wasn't construed as a value added activity. SPL's efforts in ensuring that its entire staff were trained and encouraged to take more initiative within the company were also not regarded as value added activities. In analysing the issue, such pitfalls could be attributed to the lack of

appropriate business modelling within each company. According to Shafer *et al.*, (2005) a complete business model would identify the strategies, value creators, value networks and the means of capturing those value data. All the cases have a mission statement posted on their websites. In totality, their statement embodies the delivery of a high quality service/good to their customers. This came across in all the interviews. The evidence points to a lack of business modelling (Casadesus-Masanell and Ricart, 2009). While actions and activities were not tagged as value added or assigned some worth, they were implemented to add positive benefits.

The analysis of the value exercise from the case studies follows in *Section 7.4* prior to a review of value indicators arising from the literature.

### 7.3 Value Indicators from the Literature

The literature indicates that different researchers identify different ways of identifying value drivers within an organisation. Young and O'Byrne (2001; pp. 272-285) used the approach of dissecting the element of the EVA<sup>®</sup> performance model to identify the components of the drivers of value. Similarly, Epstein and Roy (2001) used actions within companies to develop a framework for value drivers based on social corporate responsibilities; Richards and Jones (2008) summarised data from other researchers on customer relationship management (CRM) to produce a mapping of value drivers based on those elements.

However, these value elements are noted in accounting terms when looking at organisational performance. While accounting terminologies are meant to be consistent to enable widespread application, inconsistencies may occur because the interpretation is subjective. An approach was taken to extract from the literature the resources within an organisation which are instrumental for the organisation to remain competitive and profitable. From these resources the value added element required for the organisation to deliver on its strategic objective could be determined. Table 7.2 presents a synopsis of the indicators of value which were established from reviewing the literature. Resources were identified from the existing literature in instances where authors associate a resource with value creation. A complete list is shown in Table 7.2.

**Table 7.2: Value Indicators from the Academic Literature and Value Creation in Alphabetical Order**

| <b>Value Indicator</b>                                | <b>Source</b>   | <b>Type of Resources</b> |
|---|---|--------------------------|
| Brand Image   | Itami, 1987; Marr & Chatzkel, 2004; Marr, 2005; Gereffi <i>et al.</i> , 2001  | Intangible               |
| Buildings   | Elliott & Elliott, 2010; Horngren, 2009   | Tangible                 |
| Capacity Utilisation                                  | Wernerfelt, 1984  | Intangible               |
| Cash  | Elliott & Elliott, 2010; Horngren, 2009   | Physical                 |
| Commercial Network                                    | Hall, 1992  | Intangible               |
| Company Reputation                                    | Hall, 1992  | Intangible               |
| Contracts   | Hall, 1992  | Intangible               |
| Copyrights  | Hall, 1992  | Intangible               |
| Corporate Culture                                     | Itami, 1987; Bontis & Fitz-enz, 2002; Marr & Chatzkel, 2004   | Intangible               |
| Customer Loyalty                                      | Marr, 2005; Wernerfelt, 1984  | Intangible               |
| Customer Satisfaction                                 | Ittner & Larcker, 1998; Marr & Chatzkel, 2004   | Intangible               |
| Customer Trust  | Itami, 1987   | Intangible               |
| Distribution Arrangements                             | Marr, 2005  | Intangible               |
| Employee Commitment                                   | Marr, 2005  | Intangible               |
| Employee Competency                                   | Marr, 2005; Bontis & Fitz-enz, 2002; Wernerfelt, 1984   | Intangible               |
| Employee Loyalty                                      | Marr, 2005; Bontis & Fitz-enz, 2002;  | Intangible               |
| Employee Motivation                                   | Bontis & Fitz-enz, 2002; Shukla, 2009   | Intangible               |
| Employee Skills                                       | Marr, 2005; Bontis & Fitz-enz, 2002   | Intangible               |
| External Relationship Building (Government/Community) | Shukla, 2009  | Intangible               |
| Financial Capital                                     | Marr, 2005  | Tangible                 |
| Goodwill  | Elliott & Elliott, 2010; Horngren, 2009   | Intangible               |
| Innovation  | Weissmeir <i>et al.</i> , 2011, Neganova & Neganova, 2011; Fernandes & Martins, 2011; Weerawardena & Mavondo, 2011; George <i>et al.</i> , 2012 | Intangible               |

| <b>Value Indicator</b>  | <b>Source</b>  | <b>Type of Resources</b> |
|-------------------------|--|--------------------------|
| Land                    | Marr, 2005   | Physical                 |
| Licencing Agreements    | Marr, 2005   | Intangible               |
| Machinery               | Marr, 2005; Wernerfelt, 1984   | Physical                 |
| Management Skills       | Bontis & Fitz-enz, 2002; Itami, 1987; Wernerfelt, 1984;  | Intangible               |
| Manufacturing Process   | Wernerfelt, 1984   | Intangible               |
| Network Capabilities    | Marr & Chatzkel, 2004  | Intangible               |
| New Markets             | Prahalad & Hamel, 1990; Shukla, 2009   | Intangible               |
| New Products            | Prahalad & Hamel, 1990; Gereffi <i>et al.</i> , 2001; Shukla, 2009                               | Physical                 |
| Partnering Arrangements | Marr, 2005   | Intangible               |
| Patents                 | Hall, 1992   | Intangible               |
| Personal Network        | Hall, 1992   | Intangible               |
| Product                 | Gereffi <i>et al.</i> , 2001   | Physical                 |
| Raw Materials           | Elliott & Elliott, 2010; Horngren, 2009  | Physical                 |
| Registered designs      | Hall, 1992   | Intangible               |
| Research & Development  | Shukla, 2009; Lin & Lin, 2006  | Intangible               |
| Software Application    | Marr & Chatzkel, 2004  | Intangible               |
| Stock                   | Elliott & Elliott, 2010; Horngren, 2009  | Physical                 |
| Technology              | Shukla, 2009; Gereffi <i>et al.</i> , 2001; Porter & Millar, 1991; Itami, 1987; Wernerfelt, 1984 | Intangible               |
| Trade Secrets           | Hall, 1992   | Intangible               |
| Trademarks              | Hall, 1992   | Intangible               |
| Training                | Bontis & Fitz-enz, 2002  | Intangible               |

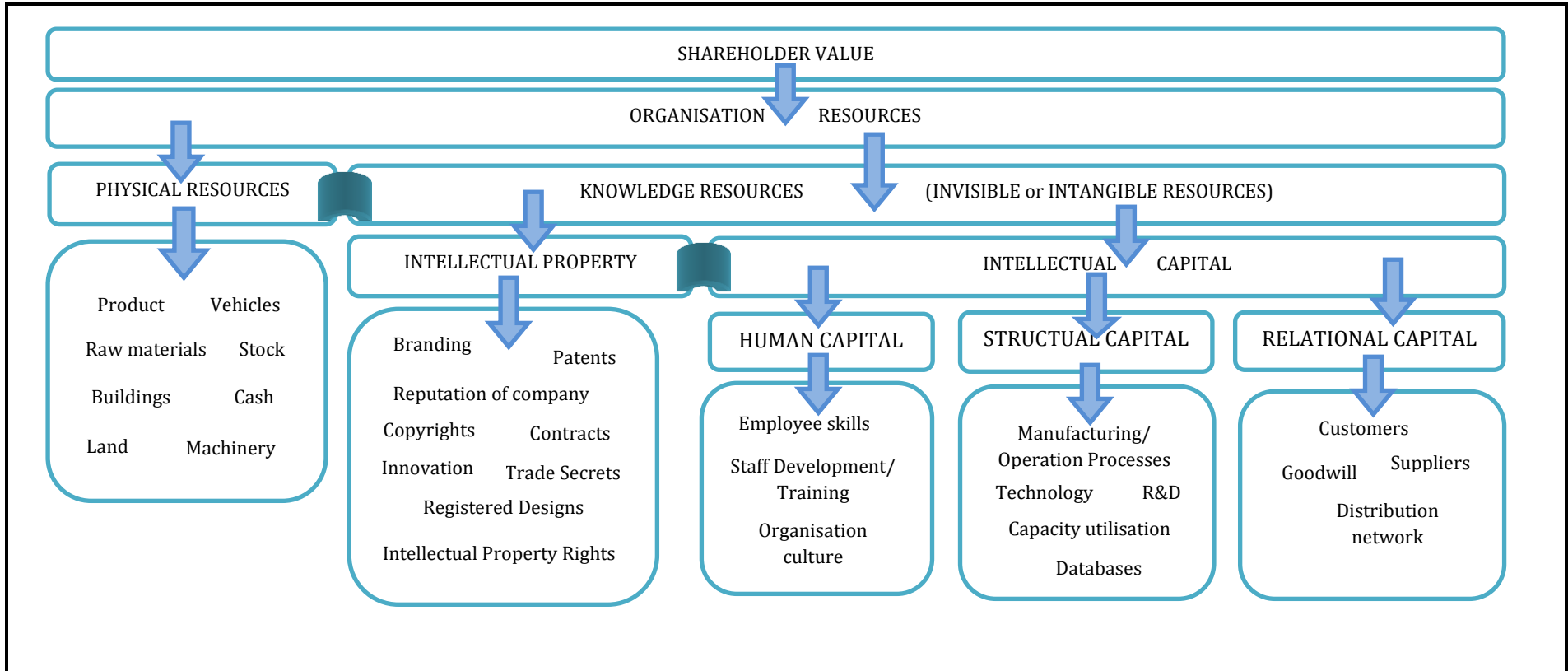
As the authors did not rate or rank the indicators of value identified in the literature, an alphabetical list is compiled for the purpose of this study.

Potentially, the list of value indicators could become quite exhaustive. However, the approach was taken to use common terminologies which would incorporate as much of the resources as possible and which could be identified from the case studies. This allowed for a move away from using traditional accounting terminologies at this early stage of the analysis. This was unlike what was found

in some of the literature where traditional accounting terms were used; especially in instances where value added elements were being measured. One such example was in the identification of a process and its value added element; for example, Young and O'Byrne (2001, pp. 272), defined the value element of some assets as return on net assets (RONA); which at face value would not necessarily convey to a non-financial individual the value elements within. Therefore general language was used to interpret the value and value drivers from the literature.

An integral part of identifying the value resources was their classification according to the kind of resources found within an organisation. This classification of resources stems from the work of Edith Penrose (Pitelis, 2002) on *The Growth of the Firm*, which formed the foundation of future work on organisational resources and their contribution. A diagram showing the relationship and how the utilisation of these resources translates into value drivers contributing to shareholder's wealth is illustrated in Figure 7.1.

**Figure 7.1: Value Chart – Value Indicators from the Literature**



The value creating capability within an organisation appears, from the literature, to be dependent on the resources it has at its disposal. As depicted in Figure 7.1, in order to identify the resources within an organisation, the researcher grouped the resources into categories;

- i. Physical/Tangible resources – which includes all material things which are owned by the organisation and used to enable the organisation to deliver its product or service.
- ii. Invisible or Intangible Resources – these are things which do not have a physical presence, hence cannot be touched but which are also used by the organisation to deliver its product or service.

This way of grouping the resources within a company is accepted within general business practices and traditional accounting principles; and is commonly reflected in research examining the resources within the organisation such as Marr *et al.* (2004); Hall, (1992). Whereas physical resources may be easily understood and identified, invisible or intangible resources may prove to be more of a challenge. The literature shows substantial work was undertaken by researchers who explored the invisible resources within an organisation and the impact they may have on the viability of the entity and its ability to remain competitive. These are broadly classified as studies which include:

- a. Customer relationship management (Cho and Puick, 2005; Kothandaraman and Wilson; 2001),
- b. Organisation culture (Marr and Chatzkel, 2004; Bontis and Fitz-enz, 2002; Itami, 1987),
- c. Human resources (Bontis and Fitz-enz, 2002; Itami, 1987 and Wernerfelt, 1984),
- d. Strategic management (O’Cass and Ngo, 2011; Lepak *et. al*, 2007),  
and

- e. Use of technology (Shukla, 2009; Gereffi *et al.*, 2001; Porter and Millar, 1991; Itami, 1987; Wernerfelt, 1984).

These were identified as having contributed to the quality of the product or services within the organisation hence impacting on the wealth created (destroyed) for the shareholder (Marr *et al.*, 2004; Hall, 1993; Prahalad and Hamel, 1990). Having acknowledged the value of intangible resources (Hall, 1992; Aaker, 1989; Wernerfelt, 1984) these were classified as “assets” and “skills” based on the nature and characteristics of the resource. Having undertaken a closer analysis of what resources an organisation owns, Hall (1992) recognised this would also include any intellectual property rights. Whereas skills amount to the collective aptitude of each employee within the organisation and although it defines the culture within the organisation, skills remain with the organisation for only as long as the employer retains an employee. Hence Hall’s (1992) classification of intangible resources as:

- i. Intellectual Property – that invisible resource which is owned by the organisation and can be legally protected.
- ii. Intellectual Capital – the skills of individual employees which collectively dictate the culture within the organisation but it is a resource the organisation cannot be sure it can retain.

Considering that one of the main aims of the research is to identify what the value drivers are within SMEs, it was concluded that the classification of intangible resources by Hall (1992) provides a reasonable way forward for undertaking such a task. However, it was felt that intellectual capital was too broad a concept and needed to be further divided. A breakdown of what constitutes intellectual capital further enhanced the analysis of the case study data. Hence intellectual capital was further subdivided into human capital, structural capital and relational capital as proposed by Bontis and Fitz-enz (2002). Within the context of this study, the fractions within intellectual capital are defined as:

- i. Human Capital – the skills and knowledge inherent within individuals and a product of their experience and education.
- ii. Structural Capital – the ability of the company to meet its market needs.
- iii. Relational Capital – the ability of the company to build strong and in depth relationships with its customers, loyal customers bring profitability to a business.

It was recognised that there is a marked distinction between physical and intangible resources, that they are inter-linked and must work in unison to create a successful business entity.

#### **7.4 Value Indicators from the Case Studies**

Case study interviews were assessed to ascertain what constitutes value to each individual within the management teams. This includes information gathered from the value indicator exercise (*Chapter 6, Section 6.3 – 6.6*). This information was mapped, analysed and interpreted to arrive at a conclusion on value indicators and how they can be used in measuring performance. Indicators were ranked according to the priority given by each participant from the respective companies. There were 17 pre-determined value indicators in total. The indicator viewed as having the highest priority was given a ranking of one with the numbers ascending to indicate the ones of lessening priority. To present an overall ranking of the value indicator for each company, the average rank assigned to each value indicator was ascertained. At the end of the exercise, the value indicators were reorganised to reflect the overall rank of each value indicator for the respective companies. The mapping of the value indicators for each participating company together with the overall ranking of the value indicators for each company is shown in Tables 7.3 – 7.8.

For ABC Limited, the value exercise was completed by the Managing Director only. This was because from previous interviews, it was evident that the wealth of knowledge lies with him. Although all the participants were informed that the value indicators presented on the flash cards were just representative of what may drive value within their company, only DGE Limited added extra indicators. In this instant, the ranks assigned to those value indicators were eliminated when combining the data to ascertain the overall value indicator for each company. Had it been included it would have skewed the outcome of the exercise (*Table 7.4*).

ABC Limited as well as DGE Limited made slight modifications to, at most 2 of, the indicators (*Chapter 6, Section 6.3.2.5 & 6.4.2.5* respectively). However, it was concluded that the slight change didn't alter the overall meaning of the value indicator. Instead it reflected how the respective managers viewed the indicator in respect to their company.

On completing the exercise for each company, a further mapping was undertaken to establish the overall value indicators of the participating companies. This was done for the purpose of triangulation and generalisation of the results. It illustrates what the value indicators would be for SMEs with similar profiles and characteristics as those in the case studies. This is shown in *Table 7.7*.


This exercise ascertained the leading value indicators for two purposes. First, for the cross reference with the financial reports if possible; and second, for identification of the value indicators for the development of a value metric for SMEs.

**Table 7.3: Case Study 1 – ABC Limited Value Indicators**

| <b>Rank</b> | <b>Value Indicator</b>                       |
|-------------|--|
| 1           | Advertising & Marketing Campaign             |
| 2           | New Products                                 |
| 3           | Increase Cash Flow                           |
| 4           | Acquisition of New Assets                    |
| 5           | Staff Training                               |
| 6           | Performance Linked Incentive Scheme          |
| 7           | More Effective Management of Working Capital |
| 8           | Offer New Shares                             |
| 9           | Acquire New Staff                            |
| 10          | Investment in Research & Development         |
| 11          | Reinvest Earnings in Business                |
| 12          | Improve Credit Rating/Increase Credit Limit  |
| 13          | Outsource Administrative Processes           |
| 14          | Waste Management                             |
| 15          | Reduce Company Spending                      |
| 16          | Implementation of Operation/Process System   |
| 17          | Implementation of Information System         |

**Table 7.4: Case Study 2 – DGE Limited Value Indicators**

| Value Indicators                             | Ranking Given |        |        |        | Average |
|--|---------------|--------|--------|--------|---------|
|  | DGE-R1        | DGE-R2 | DGE-R3 | DGE-R4 |         |
| Acquire New Staff                            | 11            | 6      | 7      | 5      | 7.25    |
| Acquisition of New Assets                    | 19            | 13     | 5      | 11     | 12      |
| Advertising & Marketing Campaign             | 20            | 17     | 15     | 13     | 16.25   |
| Implementation of Information System         | 8             | 11     | 12     | 9      | 10      |
| Implementation of Operation/Process System   | 7             | 10     | 9      | 8      | 8.5     |
| Improve Credit Rating/Increase Credit Limit  | 14            | 14     | 1      | 3      | 8       |
| Increase Cash Flow                           | 10            | 1      | 17     | 1      | 7.25    |
| Investment in Research & Development         | 6             | 8      | 4      | 7      | 6.25    |
| More Effective Management of Working Capital | 1             | 3      | 6      | 15     | 6.25    |
| New Products                                 | 5             | 4      | 3      | 6      | 4.5     |
| Offer New Shares                             | 18            | 5      | 2      | 2      | 6.75    |
| Outsource Administrative Processes           | 16            | 15     | 14     | 17     | 15.5    |
| Performance Linked Incentive Scheme          | 15            | 9      | 8      | 12     | 11      |
| Reduce Company Spending                      | 13            | 12     | 10     | 16     | 12.75   |
| Reinvest Earnings in Business                | 12            | 2      | 13     | 4      | 7.75    |
| Staff Training                               | 9             | 7      | 11     | 10     | 9.25    |
| Waste Management                             | 17            | 16     | 16     | 14     | 15.75   |
| Technology Innovation                        | 2             |        |        |        | 0.5     |
| Good Engineers                               | 3             |        |        |        | 0.75    |
| Operation Performance                        | 4             |        |        |        | 1       |

 Represents indicator added by Interviewee

| Overall Value Indicator for DGE Limited |  |
|---|--|
| Rank                                    | Value Indicator                              |
| -                                       | Technology innovation                        |
| -                                       | Operation Performance                        |
| -                                       | Good Engineers                               |
| 1                                       | New Products                                 |
| 2                                       | Investment in Research & Development         |
| 2                                       | More Effective Management of Working Capital |
| 4                                       | Offer New Shares                             |
| 5                                       | Acquire New Staff                            |
| 5                                       | Increase Cash Flow                           |
| 7                                       | Reinvest Earnings in Business                |
| 8                                       | Improve Credit Rating/Increase Credit Limit  |
| 9                                       | Implementation of Operation/Process System   |
| 10                                      | Staff Training                               |
| 11                                      | Implementation of Information System         |
| 12                                      | Performance Linked Incentive Scheme          |
| 13                                      | Acquisition of New Assets                    |
| 14                                      | Reduce Company Spending                      |
| 15                                      | Outsource Administrative Processes           |
| 16                                      | Waste Management                             |
| 17                                      | Advertising & Marketing Campaign             |

**Table 7.5: Case Study 3 – SPL Limited Value Indicators**

| Value Indicators                             | Ranking Given |        |        | Average |
|--|---------------|--------|--------|---------|
|  | SPL-R1        | SPL-R2 | SPL-R3 |         |
| Acquire New Staff                            | 12            | 15     | 16     | 14.3    |
| Acquisition of New Assets                    | 2             | 1      | 4      | 2.3     |
| Advertising & Marketing Campaign             | 1             | 2      | 9      | 4       |
| Implementation of Information System         | 5             | 9      | 11     | 8.3     |
| Implementation of Operation/Process System   | 6             | 8      | 8      | 7.3     |
| Improve Credit Rating/Increase Credit Limit  | 14            | 10     | 14     | 12.7    |
| Increase Cash Flow                           | 8             | 13     | 1      | 7.3     |
| Investment in Research & Development         | 13            | 4      | 10     | 9       |
| More Effective Management of Working Capital | 9             | 11     | 7      | 9       |
| New Products                                 | 11            | 3      | 12     | 8.7     |
| Offer New Shares                             | 17            | 16     | 17     | 16.7    |
| Outsource Administrative Processes           | 15            | 17     | 15     | 15.7    |
| Performance Linked Incentive Scheme          | 10            | 6      | 13     | 9.7     |
| Reduce Company Spending                      | 16            | 7      | 6      | 9.7     |
| Reinvest Earnings in Business                | 7             | 12     | 3      | 7.3     |
| Staff Training                               | 3             | 5      | 2      | 3.3     |
| Waste Management                             | 4             | 14     | 5      | 7.7     |

| Overall Value Indicator for SPL Limited |  |
|---|--|
| Rank                                    | Value Indicator                              |
| 1                                       | Acquisition of New Assets                    |
| 2                                       | Staff Training                               |
| 3                                       | Advertising & Marketing Campaign             |
| 4                                       | Implementation of Operation/Process System   |
| 4                                       | Increase Cash Flow                           |
| 4                                       | Reinvest Earnings in Business                |
| 7                                       | Waste Management                             |
| 8                                       | Implementation of Information System         |
| 9                                       | New Products                                 |
| 10                                      | Investment in Research & Development         |
| 10                                      | More Effective Management of Working Capital |
| 12                                      | Performance Linked Incentive Scheme          |
| 12                                      | Reduce Company Spending                      |
| 14                                      | Improve Credit Rating/Increase Credit Limit  |
| 15                                      | Acquire New Staff                            |
| 16                                      | Outsource Administrative Processes           |
| 17                                      | Offer New Shares                             |

**Table 7.6: Case Study 4 – WIC Limited Value Indicators**

| Value Indicators                             | Ranking Given |        |        | Average |
|--|---------------|--------|--------|---------|
|  | WIC-R1        | WIC-R2 | WIC-R3 |         |
| Acquire New Staff                            | 12            | 11     | 9      | 10.7    |
| Acquisition of New Assets                    | 5             | 2      | 2      | 3       |
| Advertising & Marketing Campaign             | 10            | 10     | 13     | 11      |
| Implementation of Information System         | 11            | 4      | 7      | 7.3     |
| Implementation of Operation/Process System   | 8             | 5      | 6      | 6.3     |
| Improve Credit Rating/Increase Credit Limit  | 14            | 12     | 14     | 13.3    |
| Increase Cash Flow                           | 6             | 14     | 5      | 8.3     |
| Investment in Research & Development         | 1             | 3      | 3      | 2.3     |
| More Effective Management of Working Capital | 16            | 8      | 16     | 13.3    |
| New Products                                 | 2             | 9      | 1      | 4       |
| Offer New Shares                             | 13            | 17     | 17     | 15.7    |
| Outsource Administrative Processes           | 17            | 15     | 15     | 15.7    |
| Performance Linked Incentive Scheme          | 9             | 6      | 10     | 8.3     |
| Reduce Company Spending                      | 15            | 13     | 12     | 13.3    |
| Reinvest Earnings in Business                | 7             | 7      | 8      | 7.3     |
| Staff Training                               | 3             | 1      | 4      | 2.7     |
| Waste Management                             | 4             | 16     | 11     | 10.3    |

| Overall Value Indicator for WIC Limited |  |
|---|--|
| Rank                                    | Value Indicator                              |
| 1                                       | Investment in Research & Development         |
| 2                                       | Staff Training                               |
| 3                                       | Acquisition of New Assets                    |
| 4                                       | New Products                                 |
| 5                                       | Implementation of Operation/Process System   |
| 6                                       | Implementation of Information System         |
| 6                                       | Reinvest Earnings in Business                |
| 8                                       | Increase Cash Flow                           |
| 8                                       | Performance Linked Incentive Scheme          |
| 10                                      | Waste Management                             |
| 11                                      | Acquire New Staff                            |
| 12                                      | Advertising & Marketing Campaign             |
| 13                                      | Improve Credit Rating/Increase Credit Limit  |
| 13                                      | More Effective Management of Working Capital |
| 13                                      | Reduce Company Spending                      |
| 16                                      | Offer New Shares                             |
| 16                                      | Outsource Administrative Processes           |

**Table 7.7: Overall Value Indicators of Participating Companies**

| Value Indicators                             | Ranking |     |     |     | Average |
|--|---------|-----|-----|-----|---------|
|  | ABC     | DGE | SPL | WIC |         |
| Acquire New Staff                            | 9       | 7   | 15  | 11  | 10.5    |
| Acquisition of New Assets                    | 4       | 14  | 1   | 3   | 5.5     |
| Advertising & Marketing Campaign             | 1       | 18  | 3   | 12  | 8.5     |
| Implementation of Information System         | 17      | 12  | 8   | 6   | 10.8    |
| Implementation of Operation/Process System   | 16      | 10  | 4   | 5   | 8.8     |
| Improve Credit Rating/Increase Credit Limit  | 12      | 9   | 14  | 13  | 12      |
| Increase Cash Flow                           | 3       | 7   | 4   | 8   | 5.5     |
| Investment in Research & Development         | 10      | 5   | 10  | 1   | 6.5     |
| More Effective Management of Working Capital | 7       | 5   | 10  | 13  | 8.8     |
| New Products                                 | 2       | 4   | 9   | 4   | 4.8     |
| Offer New Shares                             | 8       | 6   | 17  | 16  | 11.8    |
| Outsource Administrative Processes           | 13      | 16  | 16  | 16  | 15.3    |
| Performance Linked Incentive Scheme          | 6       | 13  | 12  | 8   | 9.8     |
| Reduce Company Spending                      | 15      | 15  | 12  | 13  | 13.8    |
| Reinvest Earnings in Business                | 11      | 8   | 4   | 6   | 7.3     |
| Staff Training                               | 5       | 11  | 2   | 2   | 5       |
| Waste Management                             | 14      | 17  | 7   | 10  | 12      |
| Technology Innovation                        |         | 1   |     |     | 0.3     |
| Good Engineers                               |         | 3   |     |     | 0.8     |
| Operation Performance                        |         | 2   |     |     | 0.5     |

 Represents indicator added by Interviewee

| Overall Value Indicator for Participating Companies |  |
|---|--|
| Rank  | Value Indicator                              |
| -   | Technology Innovation                        |
| -   | Operation Performance                        |
| -   | Good Engineers                               |
| 1   | New Products                                 |
| 2   | Staff Training                               |
| 3   | Acquisition of New Assets                    |
| 3   | Increase Cash Flow                           |
| 5   | Investment in Research & Development         |
| 6   | Reinvest Earnings in Business                |
| 7   | Advertising & Marketing Campaign             |
| 8   | Implementation of Operation/Process System   |
| 8   | More Effective Management of Working Capital |
| 10  | Performance Linked Incentive Scheme          |
| 11  | Acquire New Staff                            |
| 15  | Implementation of Information System         |
| 13  | Offer New Shares                             |
| 14  | Improve Credit Rating/Increase Credit Limit  |
| 14  | Waste Management                             |
| 16  | Reduce Company Spending                      |
| 17  | Outsource Administrative Processes           |

However in analysing the transcripts from the case studies, other resources were identified for each company which could also give an indication of value. These additional resources (*Table 7.8*) were not included in the value exercise by any of the participants although they were clearly inferred in the interviews. They are taken into consideration to present a complete analysis of the value indicators resulting from the interviews.

**Table 7.8: Indicators of Value Inferred by Participants during Interviews**

| Value Indicator       | Participating Company |     |     |     |
|-----------------------|-----------------------|-----|-----|-----|
|                       | ABC                   | DGE | SPL | WIC |
| Product               | ✓                     | ✓   | ✓   | ✓   |
| Customer Satisfaction | ✓                     | ✓   | ✓   | ✓   |
| Customer Loyalty      |                       | ✓   | ✓   | ✓   |
| Capacity Utilisation  | ✓                     | ✓   | ✓   | ✓   |
| Employee Loyalty      | ✓                     | ✓   | ✓   | ✓   |
| Company Name          |                       | ✓   | ✓   | ✓   |
| Registered Designs    | ✓                     | ✓   | ✓   | ✓   |
| Distribution Network  |                       |     | ✓   |     |
| New Markets           |                       | ✓   | ✓   |     |
| Innovation            | ✓                     | ✓   | ✓   | ✓   |
| Management Skills     | ✓                     | ✓   | ✓   | ✓   |
| Employee Competency   | ✓                     | ✓   | ✓   | ✓   |
| Copyrights            | ✓                     | ✓   | ✓   | ✓   |
| Patents               | ✓                     | ✓   | ✓   | ✓   |
| Brand                 |                       |     | ✓   | ✓   |
| Quality Management    | ✓                     | ✓   | ✓   | ✓   |

This was combined with the value indicators from the value exercise undertaken during the interviews and mapped against those identified from the literature. This exercise integrated the case study data with that from the literature eliminating duplicates (*Table 7.9*). It also demonstrated triangulation of this research with previous studies.

**Table 7.9: Mapping Value Indicators from Case Studies with that of the Literature**

| Case Study Indicators | Acquire New Staff | Acquisition of New Assets | Advertising & Marketing Campaign | Brand | Capacity Utilisation | Company Name | Copyrights | Customer Loyalty | Customer Satisfaction | Distribution Network | Employee Competency | Employee Loyalty | Good Engineers | Implementation of IS | Implementation of Operation/Process System | Improve Credit Rating/Increase Credit Limit | Increase Cash Flow | Innovation | Investment in R&D | Management Skills | More Effective Management of Working Capital | New Markets | New Products | Offer New Shares | Operation Performance | Outsource Administrative Processes | Patents | Performance Linked Incentive Scheme | Product | Quality Management | Reduce Company Spending | Registered Designs | Reinvest Earnings in Business | Staff Training | Technology Innovation | Waste Management |  |  |
|-----------------------|-------------------|---------------------------|----------------------------------|-------|----------------------|--------------|------------|------------------|-----------------------|----------------------|---------------------|------------------|----------------|----------------------|--|---|--------------------|------------|-------------------|-------------------|--|-------------|--------------|------------------|-----------------------|------------------------------------|---------|-------------------------------------|---------|--------------------|-------------------------|--------------------|-------------------------------|----------------|-----------------------|------------------|--|--|
| Literature Indicators |                   |                           |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |
| Brand Image           |                   |                           |                                  | x     |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |
| Buildings             |                   | x                         |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |
| Capacity Utilisation  |                   |                           |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |
| Cash                  |                   |                           |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   | x                  |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |
| Commercial Network    |                   |                           |                                  |       |                      |              |            | x                | x                     | x                    |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |
| Company Reputation    |                   |                           |                                  |       |                      | x            |            |                  |                       |                      |                     | x                |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |
| Contracts             |                   |                           |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |
| Copyrights            |                   |                           |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |
| Corporate Culture     | x                 |                           |                                  |       |                      | x            |            | x                | x                     | x                    | x                   | x                | x              |                      |  |   |                    |            |                   | x                 |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |
| Customer Loyalty      |                   |                           |                                  |       |                      |              |            | x                |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |
| Customer Satisfaction |                   |                           |                                  |       |                      |              |            | x                | x                     | x                    |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |

| Case Study Indicators          | Acquire New Staff | Acquisition of New Assets | Advertising & Marketing Campaign | Brand | Capacity Utilisation | Company Name | Copyrights | Customer Loyalty | Customer Satisfaction | Distribution Network | Employee Competency | Employee Loyalty | Good Engineers | Implementation of IS | Implementation of Operation/Process System | Improve Credit Rating/Increase Credit Limit | Increase Cash Flow | Innovation | Investment in R&D | Management Skills | More Effective Management of Working Capital | New Markets | New Products | Offer New Shares | Operation Performance | Outsource Administrative Processes | Patents | Performance Linked Incentive Scheme | Product | Quality Management | Reduce Company Spending | Registered Designs | Reinvest Earnings in Business | Staff Training | Technology Innovation | Waste Management |  |  |
|--------------------------------|-------------------|---------------------------|----------------------------------|-------|----------------------|--------------|------------|------------------|-----------------------|----------------------|---------------------|------------------|----------------|----------------------|--|---|--------------------|------------|-------------------|-------------------|--|-------------|--------------|------------------|-----------------------|------------------------------------|---------|-------------------------------------|---------|--------------------|-------------------------|--------------------|-------------------------------|----------------|-----------------------|------------------|--|--|
| Literature Indicators          |                   |                           |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |
| Customer Trust                 |                   |                           |                                  |       |                      |              |            | x                | x                     | x                    |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |
| Distribution Network           |                   |                           |                                  |       |                      |              |            | x                | x                     | x                    |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |
| Employee Commitment            |                   |                           |                                  |       |                      |              |            |                  |                       |                      |                     | x                |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |
| Employee Competency            | x                 |                           |                                  |       |                      |              |            |                  |                       |                      | x                   |                  | x              |                      |  |   |                    |            |                   | x                 |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |
| Employee Loyalty               |                   |                           |                                  |       |                      |              |            |                  |                       |                      |                     | x                |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |
| Employee Motivation            | x                 |                           |                                  |       |                      | x            |            |                  |                       |                      | x                   | x                | x              |                      |  |   |                    |            |                   | x                 |  |             |              |                  |                       |                                    | x       |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |
| Employee Skills                | x                 |                           |                                  |       |                      |              |            |                  |                       |                      | x                   |                  | x              |                      |  |   |                    |            |                   | x                 |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |
| External Relationship Building |                   |                           |                                  |       |                      |              |            | x                | x                     | x                    |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |
| Financial Capital              |                   |                           |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              | x                |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |
| Goodwill                       |                   |                           |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |
| Innovation                     |                   |                           |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |

| Literature Indicators   | Case Study Indicators |                           |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |  |  |
|-------------------------|-----------------------|---------------------------|----------------------------------|-------|----------------------|--------------|------------|------------------|-----------------------|----------------------|---------------------|------------------|----------------|----------------------|--|---|--------------------|------------|-------------------|-------------------|--|-------------|--------------|------------------|-----------------------|------------------------------------|---------|-------------------------------------|---------|--------------------|-------------------------|--------------------|-------------------------------|----------------|-----------------------|------------------|--|--|--|--|
|                         | Acquire New Staff     | Acquisition of New Assets | Advertising & Marketing Campaign | Brand | Capacity Utilisation | Company Name | Copyrights | Customer Loyalty | Customer Satisfaction | Distribution Network | Employee Competency | Employee Loyalty | Good Engineers | Implementation of IS | Implementation of Operation/Process System | Improve Credit Rating/Increase Credit Limit | Increase Cash Flow | Innovation | Investment in R&D | Management Skills | More Effective Management of Working Capital | New Markets | New Products | Offer New Shares | Operation Performance | Outsource Administrative Processes | Patents | Performance Linked Incentive Scheme | Product | Quality Management | Reduce Company Spending | Registered Designs | Reinvest Earnings in Business | Staff Training | Technology Innovation | Waste Management |  |  |  |  |
| Land                    |                       | x                         |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |  |  |
| Licencing Agreements    |                       |                           |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |  |  |
| Machinery               |                       | x                         |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |  |  |
| Management Skills       | x                     |                           |                                  |       |                      |              |            |                  |                       |                      | x                   | x                |                |                      |  |   |                    |            |                   | x                 |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |  |  |
| Manufacturing Process   |                       |                           |                                  |       | x                    |              |            |                  |                       |                      |                     |                  |                |                      | x  |   |                    |            |                   |                   |  |             |              |                  | x                     |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |  |  |
| Network Capabilities    |                       |                           |                                  |       |                      |              |            | x                | x                     | x                    |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |  |  |
| New Markets             |                       |                           |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |  |  |
| New Products            |                       |                           |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            | x                 |                   |  |             | x            |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |  |  |
| Partnering Arrangements |                       |                           |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |  |  |
| Patents                 |                       |                           |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |  |  |
| Personal Network        |                       |                           |                                  |       |                      |              |            | x                | x                     | x                    |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |  |  |
| Product                 |                       |                           |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |  |  |
| Raw Materials           |                       | x                         |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |  |  |  |  |

| Case Study Indicators  | Acquire New Staff | Acquisition of New Assets | Advertising & Marketing Campaign | Brand | Capacity Utilisation | Company Name | Copyrights | Customer Loyalty | Customer Satisfaction | Distribution Network | Employee Competency | Employee Loyalty | Good Engineers | Implementation of IS | Implementation of Operation/Process System | Improve Credit Rating/Increase Credit Limit | Increase Cash Flow | Innovation | Investment in R&D | Management Skills | More Effective Management of Working Capital | New Markets | New Products | Offer New Shares | Operation Performance | Outsource Administrative Processes | Patents | Performance Linked Incentive Scheme | Product | Quality Management | Reduce Company Spending | Registered Designs | Reinvest Earnings in Business | Staff Training | Technology Innovation | Waste Management |   |  |
|------------------------|-------------------|---------------------------|----------------------------------|-------|----------------------|--------------|------------|------------------|-----------------------|----------------------|---------------------|------------------|----------------|----------------------|--|---|--------------------|------------|-------------------|-------------------|--|-------------|--------------|------------------|-----------------------|------------------------------------|---------|-------------------------------------|---------|--------------------|-------------------------|--------------------|-------------------------------|----------------|-----------------------|------------------|---|--|
| Literature Indicators  |                   |                           |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |   |  |
| Registered Designs     |                   |                           |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |   |  |
| Research & Development |                   |                           |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            | x                 |                   |  |             | x            |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |   |  |
| Software Application   |                   |                           |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                | x                    |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |   |  |
| Stock                  |                   | x                         |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |   |  |
| Technology             |                   |                           |                                  |       | x                    |              |            |                  |                       |                      |                     |                  |                | x                    | x  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  | x |  |
| Trade Secrets          |                   |                           |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |   |  |
| Trademarks             |                   |                           |                                  |       |                      |              |            |                  |                       |                      |                     |                  |                |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |   |  |
| Training               | x                 |                           |                                  |       |                      |              |            |                  |                       |                      | x                   |                  | x              |                      |  |   |                    |            |                   |                   |  |             |              |                  |                       |                                    |         |                                     |         |                    |                         |                    |                               |                |                       |                  |   |  |

**Table 7.10: Result from the Mapping Value Indicators from Case Studies and the Literature**

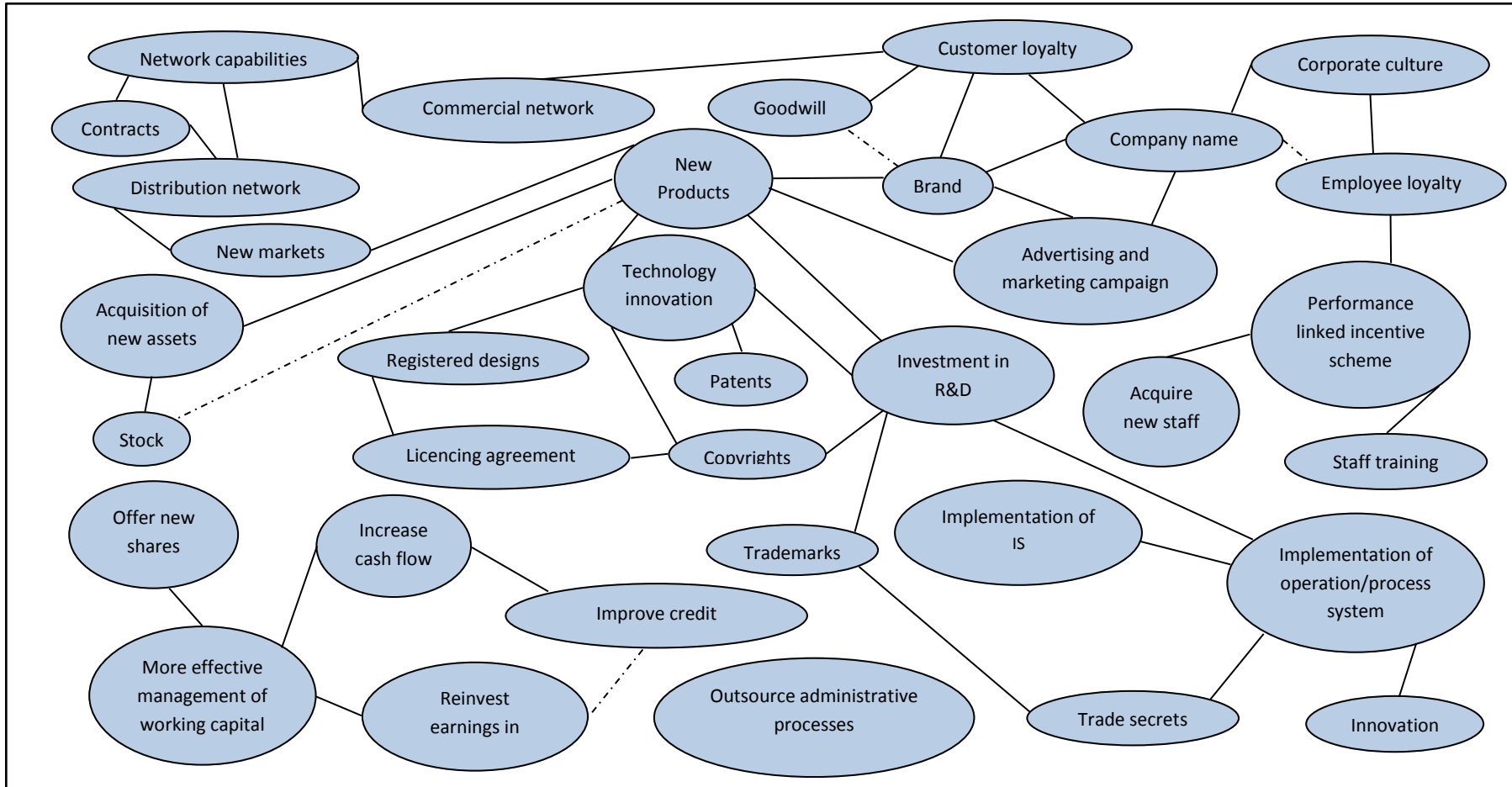
| <b>Combined Value Indicators from Mapping Exercise</b> |
|--|
| Acquire New Staff                                      |
| Acquisition of New Assets                              |
| Advertising & Marketing Campaign                       |
| Brand  |
| Commercial Network                                     |
| Company Name   |
| Contracts  |
| Copyrights   |
| Corporate Culture                                      |
| Customer Loyalty                                       |
| Distribution Network                                   |
| Employee Loyalty                                       |
| Goodwill   |
| Implementation of Information System                   |
| Implementation of Operation/Process System             |
| Improve Credit Rating/Increase Credit Limit            |
| Increase Cash Flow                                     |
| Innovation   |
| Investment in Research & Development                   |
| Licencing Agreements                                   |
| More Effective Management of Working Capital           |
| New Markets  |
| New Products   |
| Offer New Shares                                       |
| Outsource Administrative Processes                     |
| Patents  |
| Performance Linked Incentive Scheme                    |
| Registered Designs                                     |
| Reinvest Earnings in Business                          |
| Staff Training   |
| Technology Innovation                                  |
| Trade Secrets  |
| Trademarks   |

The mapping exercise was a complex process identifying the value indicators which the same in each case study. It also highlighted indicators which are interdependent. For example, the culture within an organisation is a summation of several indicators; company name, employee loyalty and corporate activities within and external to the organisation such as advertising and marketing campaign.

This is shown in the relationship diagram (*Figure 7.2*) below which illustrates the interdependency of value indicators. It highlights the broader view managers must take when making decisions. Managers must be cognizant of the impact their decisions have on wider aspects of the business. Hence a decision made on a particular value added activity may mean that resources and actions must be taken from elsewhere in order to add that value. Failure to do so may mean value is destroyed instead of created. This illustrates how value based management forces managers to consider the wider view when making decisions.

The value indicators were then assessed to determine if they can be measured and if so how (*Table 7.11*). This forms an integral part of the process because it indicates how these indicators impact on the accounting figures, for example on NOPAT. In some instances, the inter-relation between indicators was evident. How an indicator is eventually treated will be dependent on the company and the activity. For example, a company exploring new markets for its products may use an advertising agency to design brochures and may have several meetings networking with key stakeholders or other commercial clients. The cost incurred for these activities may be attributed to various elements of the operating expenses of the company. On the other hand, if the company was approached by another to market their products, then this becomes a revenue generating activity reflected by an increase in sales revenue albeit into a new market, without any promotional activity on their part.

**Figure 7.2: Value Indicator Relationship Diagram**



**Table 7.11: Indicators of Value and how they are or could be included in the accounting figures**

| <b>Value Indicators &amp; how they are or could be measured</b> |                           |   |   |
|---|---------------------------|---|---|
| <b>Value Indicators</b>   | <b>Can it be Measured</b> | <b>Is it Measured</b>                                       | <b>Indication of how it is or could be measured</b>   |
| Acquire New Staff   | Yes                       | Not always separated out                                    | Operating Expenses:<br>- Cost associated with recruitment of new staff.   |
| Acquisition of New Assets                                       | Yes                       | Yes   | Asset:<br>- Cost associated with the purchase or acquisition of such assets which are capitalised at the value of their cost at purchase. |
| Advertising & Marketing Campaign                                | Yes                       | Yes   | Operating Expenses:<br>- Cost associated with promoting the company and its products.   |
| Brand   | Yes                       | Sometimes, expenses may not be separated out from overheads | Operating Expenses:<br>- Cost associated with developing the brand.<br>- Some companies capitalise brands as intangible assets            |

| <b>Value Indicators &amp; how they are or could be measured</b> |                           |                       |  |
|---|---------------------------|-----------------------|--|
| <b>Value Indicators</b>   | <b>Can it be Measured</b> | <b>Is it Measured</b> | <b>Indication of how it is or could be measured</b>  |
| Commercial Network  | No                        | No                    | <p>Operating Expense:</p> <ul style="list-style-type: none"> <li>- Cost associated in building a network, example, travel and consultancy costs</li> <li>- Also has the potential to impact revenue; example, new contract or supply agreement.</li> </ul>   |
| Company Name  | Yes                       | No                    | <p>Operating Expense and Asset:</p> <ul style="list-style-type: none"> <li>- Likely not to impact the operating expenses unless there are some infringements or legal challenges.</li> <li>- Can be viewed as a long term non-financial asset especially with companies which use their name as a marketing ploy, for example Apple. Its contribution as a value indicator is best measured by other means such as increased sales.</li> </ul> |

| <b>Value Indicators &amp; how they are or could be measured</b> |                           |                       |   |
|---|---------------------------|-----------------------|---|
| <b>Value Indicators</b>   | <b>Can it be Measured</b> | <b>Is it Measured</b> | <b>Indication of how it is or could be measured</b>   |
| Contracts   | Yes                       | Yes                   | Operating Expenses & Revenue:<br>- This is dependent on the type of contract and any professional fees which may be incurred for it to be viewed as an expense or a contributor to revenue streams.         |
| Copyrights  | Yes                       | Yes                   | Both Operating Expense & Asset<br>- Initial expense may incur in protecting a copyright.<br>- Possible to impact positively on revenue streams.   |
| Corporate Culture   | No                        | No                    | Soft Benefit -Revenue Stream:<br>- This would normally relate to employee benefits, management style and leadership within the organisation and other factors contributing to its success or failure.       |
| Customer  | Yes                       | Partially             | Revenue Stream:<br>- Can be reflected in revenue figures.<br>- However, it also has a non-financial element, customer satisfaction - which is not easily quantifiable but which may also impact on revenue. |

| <b>Value Indicators &amp; how they are or could be measured</b> |                           |                       |  |
|---|---------------------------|-----------------------|--|
| <b>Value Indicators</b>   | <b>Can it be Measured</b> | <b>Is it Measured</b> | <b>Indication of how it is or could be measured</b>  |
| Distribution Network  | Yes                       | Yes                   | Operating Expense & Revenue Stream:<br>- The licence and contracts in place may incur a cost however such an arrangement has the potential to impact positively on the revenue stream.   |
| Employee Loyalty  | Partially                 | Partially             | Soft Benefit –Asset/Expense or Revenue Stream:<br>- This is complex and could relate to a number of things such as:<br>(a). contracts gained because of having the skills and technical expertise to do the work;<br>(b). savings from recruitment drive and additional training;<br>(c). or on the other hand, bonuses and incentives paid to long serving employees. |
| Goodwill  | Yes                       | Yes                   | Asset<br>- Normally recorded as an asset for a specific period after the acquisition/merger of a company.<br>- Impairment of goodwill is an expense  |

| <b>Value Indicators &amp; how they are or could be measured</b> |                           |   |  |
|---|---------------------------|---|--|
| <b>Value Indicators</b>   | <b>Can it be Measured</b> | <b>Is it Measured</b>                     | <b>Indication of how it is or could be measured</b>  |
| Implementation of Information System                            | Yes                       | Partially                                 | <p>Operating Expense/Asset &amp; Revenue Stream:</p> <ul style="list-style-type: none"> <li>- Expense - normally incurs initial cost of purchasing, implementation and training.</li> <li>- Asset - some companies capitalise IT Systems.</li> <li>- Long term benefits/loss may impact on revenue stream from the impact it has on the company. Example, improve efficiency or service delivery.</li> </ul> |
| Implementation of Operation/Process System                      | Yes                       | Partially – initial cost but not benefits | <p>Operating Expense &amp; Revenue Stream:</p> <ul style="list-style-type: none"> <li>- Normally incurs initial cost of purchasing, implementation, training or expert advice</li> <li>- Long term benefits/loss may impact on revenue stream from the impact it has on operations. Example impact on productivity, quality, waste management and efficiency of the operation.</li> </ul>                    |

| <b>Value Indicators &amp; how they are or could be measured</b> |                           |                       |   |
|---|---------------------------|-----------------------|---|
| <b>Value Indicators</b>   | <b>Can it be Measured</b> | <b>Is it Measured</b> | <b>Indication of how it is or could be measured</b>   |
| Improve Credit Rating/Increase Credit Limit                     | No                        | No                    | Soft Benefit -Revenue Stream:<br>- This would normally relate to additional finance injected into the business other than retained earnings.<br>- The measurable elements of this would be dependent on and captured in the means of realising financial capital. |
| Increase Cash Flow  | Yes                       | Yes                   | Asset:<br>- Increase the liquidity of the company. Difference between the total capital investment and the cost of running the company.   |
| Innovation  | No                        | No                    | Soft Benefit - Revenue Stream:<br>- Innovation is reflected by a number of things within a company. It is reflective of the ability of the management and staff to use technology and other resources to generate new ideas.                                      |

| <b>Value Indicators &amp; how they are or could be measured</b> |                           |                       |   |
|---|---------------------------|-----------------------|---|
| <b>Value Indicators</b>   | <b>Can it be Measured</b> | <b>Is it Measured</b> | <b>Indication of how it is or could be measured</b>   |
| Investment in Research & Development                            | Yes                       | Yes                   | <p>Operating Expenses, Revenue Stream &amp; Capitalised (?):</p> <ul style="list-style-type: none"> <li>- This is normally written off as an operating expense. Such investment is normally made with the hope of future returns from the investment.</li> <li>- Positive returns increase revenue.</li> <li>- Can be capitalised if strict criteria are met regarding prudence.</li> </ul> |
| Licencing Agreements  | Yes                       | Yes                   | <p>Both Operating Expense &amp; Asset</p> <ul style="list-style-type: none"> <li>- Initial expense may incur in protecting licencing agreements.</li> <li>- Possible to impact positively on revenue stream.</li> </ul>   |
| More Effective Management of Working Capital                    | No                        | No                    | <p>Soft Benefit - Revenue Stream:</p> <ul style="list-style-type: none"> <li>- Can be measured but is not reported in the financial statements</li> <li>- Can be examined monitoring the elements to derive profit.</li> </ul>  |

| <b>Value Indicators &amp; how they are or could be measured</b> |                           |                       |  |
|---|---------------------------|-----------------------|--|
| <b>Value Indicators</b>   | <b>Can it be Measured</b> | <b>Is it Measured</b> | <b>Indication of how it is or could be measured</b>  |
| New Markets   | No                        | No                    | Operating Expenses & Soft Benefit - Revenue Stream:<br>- Initial cost of developing the new market. May be part of integrated activities such as advertising, marketing, networking, R&D or new product development. How it is treated will be dependent on what this process entails.                                   |
| New Products  | Yes                       | Yes                   | Operating Expenses & Revenue Stream or Capitalised:<br>- This can also be incorporated into R&D activities, marketing and revenue.<br>- Product development may be capitalised under strict conditions.  |
| Offer New Shares  | Yes                       | Yes                   | Equity and Asset:<br>- This is also increasing the cash flow within the company. This will be dependent on what is termed or viewed as the market value of the company. The market value is the perceived value of each unit of shares in the company. Shares are part of equity in the statement of financial position. |

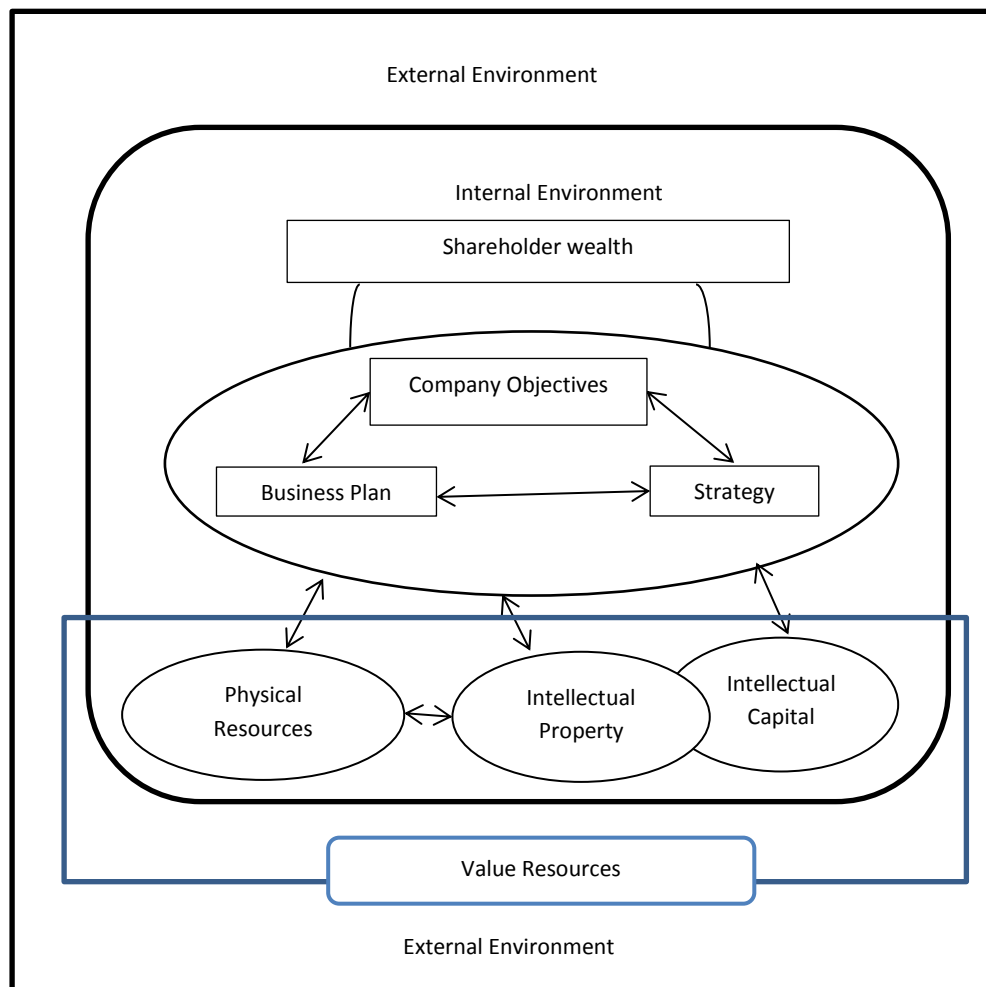
| <b>Value Indicators &amp; how they are or could be measured</b> |                           |                       |  |
|---|---------------------------|-----------------------|--|
| <b>Value Indicators</b>   | <b>Can it be Measured</b> | <b>Is it Measured</b> | <b>Indication of how it is or could be measured</b>  |
| Outsource Administrative Processes                              | Yes                       | Yes                   | Operating Expenses:<br>- This would generally relate to the cost associated with the normal operation of the business.   |
| Patents   | Yes                       | Yes                   | Both Operating Expense & Asset<br>- Initial expense may incur in protecting the patent.<br>- Possible to impact positively on revenue stream.  |
| Performance Linked Incentive Scheme                             | Yes                       | Yes                   | Operating Expenses:<br>- This would normally be dependent on the revenue generated by the company. It is however reflected in the operating cost as part of wages or staff benefits. Note: Some schemes relate to shares which the holder can later redeem for cash. |
| Registered Designs  | Yes                       | Yes                   | Both Operating Expense & Asset<br>- Initial expense may incur in protecting the design.<br>- Possible to impact positively on revenue stream.  |

| <b>Value Indicators &amp; how they are or could be measured</b> |                           |                       |   |
|---|---------------------------|-----------------------|---|
| <b>Value Indicators</b>   | <b>Can it be Measured</b> | <b>Is it Measured</b> | <b>Indication of how it is or could be measured</b>   |
| Reinvest Earnings in Business                                   | Yes                       | Yes                   | Asset:<br>- This is Retained Earnings and is the earnings which are generated from income producing activities in the firm and be kept back for use in the business.  |
| Staff Training  | Yes                       | Yes                   | Operating Expenses:<br>- This is normally written off against expenses as it is difficult to meet the definition of an asset (bring future benefit).  |
| Technology Innovation   | Yes                       | Yes                   | Operating Expenses & Revenue Stream or Capitalised<br>- This potentially could be similar to Innovation but is dependent on the type of company. This represents, for example, the development of new software applications. This is normally written off as an operating expense but can be capitalised under strict conditions. Such investment is normally made with the hope of future returns from the investment.<br>- Positive returns increase revenue. |

| <b>Value Indicators &amp; how they are or could be measured</b> |                           |                       |  |
|---|---------------------------|-----------------------|--|
| <b>Value Indicators</b>   | <b>Can it be Measured</b> | <b>Is it Measured</b> | <b>Indication of how it is or could be measured</b>  |
| Trade Secrets   | Yes                       | Yes                   | Both Operating Expense & Asset<br>- Initial expense may incur in protecting trade secrets.<br>- Possible to impact positively on revenue stream. |
| Trademarks  | Yes                       | Yes                   | Both Operating Expense & Asset<br>- Initial expense may incur in protecting trademarks.<br>- Possible to impact positively on revenue stream.    |

The term 'soft benefits' was used to describe intangible benefits which can be quite complex and for which it can be difficult to determine a monetary value. In cases such as this, careful consideration would be needed within each company in resolving such an issue and would be based on the undertaking of the company at that period. From the analysis of the value indicators, Figure 7.3 is a representation of a business planning process with consideration given to the value indicators identified for that company. It also shows the interaction with the environment and the value streams within a company.

**Figure 7.3: Interaction between Company and its Value Streams**



The analysis gives an illustration of the variables which need to be considered in quantifying value creation within a company. Figure 7.3 puts it into perspective and can be used as a framework for developing a value based company.

## **7.5 Growth & Value Creation within the Context of EVA®**

The next stage of the analysis examined how the qualitative data can be integrated to inform a quantitative assessment of growth and value creation within case study companies. The primary focus of this research is to determine the value drivers within SMEs and to explore growth and value creation in the context of the EVA® framework. Ehrbar (1998) describes the EVA® framework as a complete financial management system; because the EVA® framework also has two other features:

- i. A management system which guides managers to function effectively; communicating the decisions from management to the shop floor in a manner which is understood by all. In essence, the system teaches managers to behave as owners of the department for which they are responsible,
- ii. The system of management is supported by a compensation system to reward staff at all levels for their efforts (Ehrbar, 1998; Stern *et al.*, 1996)

From the analysis of the interviews, it was established that the companies investigated, all demonstrated evidence of these two features. The companies have a formal structure, management filter information down to the shop floor, they seek and implement ways of getting all employees involved in the operation of the company and all have implemented a performance and incentive scheme. This suggests that these companies have matured beyond the informal structure and total control by the owner manager as stated in studies such as Levy and Powell, (2005) and Storey, (1994).

The EVA<sup>®</sup> metric is stated as:

$$EVA = NOPAT - WACC * Capital$$

To calculate EVA<sup>®</sup>, a number of adjustments need to be made to transform accounting profit to economic profit (Stewart III, 1999). According to the literature, these adjustments vary according to the company (Costa, 2012; Worthington and West, 2001, Young, 1999). However, there was no indication of how to determine the value added variables and what adjustments would be needed to calculate EVA<sup>®</sup>. The outcome of the qualitative analysis shows what value indicators are and how they can be measured. Value added activities associated with these value indicators should inform the financial reports. Figure 7.3 can be used to identify and extract the value creation variables by strategising and business planning. These can then be used to inform the adjustments for NOPAT and to determine the capital cost invested in the company. The literature stated that some 5–19 EVA<sup>®</sup> adjustments would be needed (Costa, 2012; Worthington and West, 2001, Young, 1999). However, from this study the conclusion is that the number of adjustments cannot be broadly pre-determined. It would be dependent on the individual company and its activities at that point in time.

This closes the chapter on the qualitative analysis which also demonstrated the conversion of qualitative data to quantitative data to integrate the qualitative and quantitative analysis (*Chapter 8*).

## **7.6 Summary**

The analysis revealed that the issues and problems associated with EVA<sup>®</sup> continue to be challenging. Whilst there was a general discussion under the themes identified, there were overlaps and grey areas between each theme. The analysis showed that:

- Practitioners who were knowledgeable about EVA® comprehend its founding principles as it relates to financial theory.
- While the theory behind the EVA® framework is theoretically sound, there were still uncertainties around its validity, application and implementation.
- In applying EVA®, Practitioners tried to follow as much as could be determined from the Stern Stewart & Co. methodology on determining EVA®.
- The information content of EVA® is related to corporate strategy, corporate culture, management and the information collected and used within an organisation.
- 'Value' and 'value creation' are not terms used by management within the case studies. However all were found to engage in value enhancing activities.
- Data relevant for the analysis of performance using EVA® was not available or captured within the case studies.
- Value indicators within the case studies were found to align with those from the literature.
- The value indicators within a company are dependent on the activities of the company at that particular time.
- SMEs are found to be resourceful in overcoming barriers faced in managing and meeting their business objectives.
- Practitioners offered very little insight on the implementation of EVA® beyond the information made publicly available by Stern Stewart & Co.
- There was an awareness that the EVA® framework could possibly be applicable to SMEs as it appears to align well with the characteristics of SMEs.
- The management style, structure and cultural characteristics found in the case study companies suggest they are aligned to the theory on management within the EVA® framework.

- Decision-making was to be more a formal management activity in the case studies which are more structured.
- As EVA® is only ever applied in traded companies it is envisioned that it could prove problematic in determining the cost of capital and the systematic risk for non-traded companies.
- Performance measurement practices in the case study companies were centred on the monitoring of basic accounting measures such as sales, turnover or profit ratios.
- The information needed for a full EVA® analysis was lacking in the case studies.

The analysis of the qualitative data demonstrated the relationship between the activities within a company and how that could be translated to provide insight into overall performance. It also showed how management within SMEs could become more effective in strategising and developing a business model for their company.

## ***Chapter 8: FINDINGS from the FINANCIAL ANALYSIS***

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### 8.0 Introduction

#### 8.0.1 Methodology and Assumptions for EVA<sup>®</sup> Analysis

#### 8.0.2 Using CAPM

##### 8.0.2.1 Limitations to CAPM

### 8.1 ABC Limited

#### 8.1.1 Document Analysis

#### 8.1.2 EVA<sup>®</sup> Analysis

##### 8.1.2.1 Making Adjustments for NOPAT

##### 8.1.2.2 Making Adjustments for the Capital Invested

##### 8.1.2.3 Estimating the Cost of Equity ( $k_e$ )

##### 8.1.2.4 Estimating the Cost of Debt ( $k_d$ )

##### 8.1.2.5 Estimating WACC and EVA<sup>®</sup>

### 8.2 DGE Limited

#### 8.2.1 Document Analysis

#### 8.2.2 EVA<sup>®</sup> Analysis

##### 8.2.2.1 Making Adjustments for NOPAT

##### 8.2.2.2 Making Adjustments for the Capital Invested

##### 8.2.2.3 Estimating the Cost of Equity ( $k_e$ )

8.2.2.4 Estimating the Cost of Debt ( $k_d$ )

8.2.2.5 Estimating WACC and EVA<sup>®</sup>

### 8.3 SPL Limited

8.3.1 Document Analysis

8.3.2 EVA<sup>®</sup> Analysis

8.3.2.1 Making Adjustments for NOPAT

8.3.2.2 Making Adjustments for the Capital Invested

8.3.2.3 Estimating the Cost of Equity ( $k_e$ )

8.3.2.4 Estimating the Cost of Debt ( $k_d$ )

8.3.2.5 Estimating WACC and EVA<sup>®</sup>

### 8.4 WIC Limited

8.4.1 Document Analysis

8.4.2 EVA<sup>®</sup> Analysis

8.4.2.1 Making Adjustments for NOPAT

8.4.2.2 Making Adjustments for the Capital Invested

8.4.2.3 Estimating the Cost of Equity ( $k_e$ )

8.4.2.4 Estimating the Cost of Debt ( $k_d$ )

8.4.2.5 Estimating WACC and EVA<sup>®</sup>

### 8.5 Summary

## 8.0 Introduction

This stage in the analysis investigates the relevance of the EVA<sup>®</sup> financial model as a performance measuring tool for use in SMEs. The research aimed to explore this based on the theory put forward by EVA<sup>®</sup> proposers Stern Stewart & Co. that the primary financial objective of a company is to maximize the wealth of the shareholders. This they believe can only be achieved if the company exceeds the cost of capital investments made in the company. In measuring this performance, all the costs associated with the capital employed have to be taken into account. They also stated that for a company to maximize wealth, managers need to act like owners of the company. By doing so, managers will only make decisions which achieve the best outcomes for their division.

Griffiths (2004) found that Stern Stewart & Co.'s intent was for EVA<sup>®</sup> to be a compensation system which would drive employees from the top down to act in a way that maximises shareholders wealth. This is in line with Ehrbar (1998) who made the point that the EVA<sup>®</sup> performance measurement framework cannot be implemented on its own. The EVA<sup>®</sup> framework has within it a management, incentive and compensation system which rewards managers based on their performance (Stewart III, 1999). Hence when taken as a whole, Stern Stewart & Co. believes maximizing the overall wealth of the company can be achieved.

Historically, EVA<sup>®</sup> has been widely implemented in large companies. However, because of the intricacies of the need to apply EVA<sup>®</sup> at divisional levels and the requirement for managers to act like owners, its application in SMEs is being explored. The key to implementing EVA<sup>®</sup> is to be able to identify the value enhancing activities within each division or company. In *Chapter 7*, the process of assessing and identifying the value indicators and the value drivers of each case study was presented. Once a company identify its value drivers, then these activities can be monitored and measured within the company. This indicates that for each company they would need to collect data around these value

indicators. This would then inform the financial reporting process which would ultimately be used in analysing the performance of the company. Although value indicators were identified for each case study, this did not translate across in their financial reports. This is because their financial reports only presented what was considered to be necessary under standard accounting practices.

Using the data presented in the financial reports for each case study company EVA® analysis was undertaken. However, this could only be achieved based on the information which could be extracted from the reports (*Appendix 8*). A fundamental discovery from the case studies was that they did not collect or process the information required for a for a more complete EVA® analysis. Hence assumptions made to undertake EVA® analysis are set out in *Sections 8.0.1 to 8.0.2*.

### **8.0.1 Methodology and Assumptions for EVA® Analysis**

In reviewing the financial data collected for each company for the EVA® analysis it was recognised that the reports did not contain all the information required. From reviewing the contents of the reports, it was concluded that the lack of information was in part because SMEs are not required to file full company reports. It was also concluded from the interviews and the data in the reports that SMEs tend not to collect a wide spectrum of data. Attempts to obtain some of the missing information proved to be challenging because either the information was just not available to be shared, or the managers were not comfortable imparting potentially commercially sensitive information. This latter issue is a potential hindrance to further advancing SME research. Bahri *et al.* (2011) concluded that it is for this very reason that a consultant would need to work within a company for a period of time to build trust and gain access to sensitive information in order to implement EVA®. While EVA® was described by Stern Stewart & Co. as easy to understand and implement, Cagle *et al.* (2003) is of a different view.

In conducting EVA<sup>®</sup> analysis, some uniform assumptions were applied across all the companies. Firstly, although the value drivers within each company were established during the company interviews, this did not read across into the financial statements. Hence, the EVA<sup>®</sup> analysis was done based on the indicators of value arising from the literature which informs what adjustments are to be made in calculating EVA<sup>®</sup>.

### 8.0.2 Using CAPM

The Capital Asset Pricing Model (CAPM) is widely used in the analysis of various aspects of investments on the stock market. It was developed to explain the risk of securities trading in the market.

All four cases had equity capital as part of the capital invested in each financial year. Of the four, three; ABC Limited, DGE Limited and SPL Limited had some form of secure debt capital. These were mainly in the form of secured loans against a Director, overdraft facilities, and bank loans. All the companies admitted to having used some form of loans from Directors. Also, ABC Limited accessed finance from a company owned by a member of the Director's family.

For EVA<sup>®</sup> calculations, the WACC needed to be determined; that is the cost of equity and debt capital. In determining the cost of equity, the following variables needed to be determined:

$$k_e = r_f + \beta(r_m - r_f)$$

*where:*  $r_m$  - the historic return of the stock market;

$r_f$  - the risk free rate of return;

$\beta$  - the systematic risk (beta -  $\beta$ ); and

$(r_m - r_f)$  is the risk premium of the market asset over the risk free asset.

**Determining  $r_m$**

The stock market rate of return was determined using historic data extracted from Yahoo Finance (Yahoo, 2012) over a number of years (n) from 1980–2011. Hence the market growth rates which is expressed as a percentage was obtained by using the formula:

$$r_m = \sqrt[n]{\left(\frac{\text{Closing Price}}{\text{Opening Price}}\right)} - 1$$

The results for  $r_m$  generated for the period 2007–2011 is shown in Table 8.1

**Table 8.1: The Historic Return of the Stock Market**

| <i>Year</i> | <i>Closest Opening</i> | <i>Closest Closing</i> | <i>Root (n)</i> | <i><math>r_m</math> (%)</i> |
|-------------|------------------------|------------------------|-----------------|-----------------------------|
| <b>2007</b> | <i>31.01.1980</i>      | <i>02.01.2008</i>      | <b>28</b>       | <b>9.59</b>                 |
|             | <b>251.7</b>           | <b>3269.02</b>         |                 |                             |
| <b>2008</b> | <i>31.01.1980</i>      | <i>02.01.2009</i>      | <b>29</b>       | <b>7.89</b>                 |
|             | <b>251.7</b>           | <b>2275.33</b>         |                 |                             |
| <b>2009</b> | <i>31.01.1980</i>      | <i>04.01.2010</i>      | <b>30</b>       | <b>8.37</b>                 |
|             | <b>251.7</b>           | <b>2806.95</b>         |                 |                             |
| <b>2010</b> | <i>31.01.1980</i>      | <i>04.01.2011</i>      | <b>31</b>       | <b>8.46</b>                 |
|             | <b>251.7</b>           | <b>3119</b>            |                 |                             |
| <b>2011</b> | <i>31.01.1980</i>      | <i>03.01.2012</i>      | <b>32</b>       | <b>7.97</b>                 |
|             | <b>251.7</b>           | <b>2923.63</b>         |                 |                             |

### **Determining $r_f$**

The risk free rate of return ( $r_f$ ) is the rate of return on secure investments such as Treasury Bills, Bonds or Gilts. This was obtained for the period 2007–2011 and was extracted from the Statistical Interactive Database for interest and exchange rates data on the Bank of England website (Bank of England, 2012a). The data extracted and used is presented in Table 8.2 below and was for the end of year rate of discount for three monthly Treasury Bills.

**Table 8.2: The Risk Free Rate of Return**

| <b>Year Ending</b> | <b><math>r_f</math> (%)</b> |
|--------------------|-----------------------------|
| 31-Dec-07          | 5.24                        |
| 31-Dec-08          | 1.24                        |
| 31-Dec-09          | 0.49                        |
| 31-Dec-10          | 0.50                        |
| 31-Dec-11          | 0.24                        |

### **Determining $k_d$**

All the case study companies used in this research are non-traded companies which are privately owned. Three of the companies are family owned, ABC Limited, SPL Limited and WIC Limited whereas DGE Limited is owned and managed by a team of engineering professionals. ABC Limited, DGE Limited and WIC Limited were found to be financed by a combination of debt and equity capital. From the information gathered from the financial accounts a few assumptions were made in order to determine the cost of debt. These were:

- i. The majority of loans are secure debt in the form of short term loans and overdrafts;
- ii. There are no investments in securities; and

- iii. As there are only short term loans, all loan dealings are redeemable loans, the majority of which are payable at the end of the each financial year.

These assumptions were made because it was difficult to obtain additional information from the companies. This was mainly because of time constraints on the part of senior management within each company and concerns with disclosing data considered to be confidential. Also, from the interviews, while there were comments about the high lending rates from banks for small business loans, the companies indicated they had some arrangements with their respective banks. This includes access to large overdraft facilities. However, overall it was difficult to ascertain the information required on the rate of return for each individual debt. Hence the approach used for determining the cost of debt was deduced by using:

$$k_d = r_n(1 - T_n)$$

where:  $r_n$  is the interest rate in year  $n$

$T_n$  is the corporate tax rate in year  $n$

Again the annual interest rate in a year ( $r_n$ ) paid by SMEs on loans was obtained from data on the Bank of England website. This data was obtainable from two different archived Loan Pricing spread sheets (Bank of England, 2012b and 2012c) for the period 2007–2008 and 2009–2011. The data in the spread sheets represents general loan interest rates data from commercial banks to UK businesses (*Table 8.3*).

**Table 8.3: Annual Interest Rate used by Commercial Banks to SMEs**

| Year  | Interest Rates |      |
|-------|----------------|------|
|       | (a)            | (b)  |
| *2007 | 6.87           | 6.87 |
| *2008 | 6.04           | 6.04 |
| 2009  | 4.17           | 3.29 |
| 2010  | 4.29           | 3.30 |
| 2011  | 4.58           | 3.29 |

Based on the annual turnover for each case study, the appropriate interest rate from Table 8.3 was used in estimating the cost of capital.

### **The Corporate Tax Rate - $T_n$**

The corporate tax rate as published by Her Majesty's Revenue & Customs (HMRC, 2012) was used for WAC Limited for the year 2011 and for the period 2007–2011 for ABC Limited and SPL Limited as this information was missing from those reports. The corporate tax rate as compiled from HMRC is shown in Table 8.4.

**Table 8.4: UK Corporation Tax Rate 2007-2011**

| Year    | $T_n$ (%) |
|---------|-----------|
| 2006/7  | 20        |
| 2007/8  | 21        |
| 2009/9  | 21        |
| 2009/10 | 21        |
| 2010/11 | 20        |

The small profits tax rate was selected because this is applicable to companies reporting a profit of under £1,500,000. All the companies for which this data was used reported pre-tax profits of under £1,500,000.

DGE Limited included in their annual reports the corporate tax paid each year hence their data was used in their analysis. WIC Limited reported the corporate tax rate for the period 2007 – 2010 hence this data was also used in their analysis for the missing period.

### **Determining Beta**

All case study companies have shares distributed between the owner and the senior management teams. However, the information obtained during the interviews and presented in the reports was not sufficient for beta to be calculated for these companies. The companies all reported a constant value of £1 per share over the 5 year period investigated. Instead, by using the FTSE indices; FTSE 100 (Proxy Beta-1), FTSE 250 (Proxy Beta-2), FTSE All Share (Proxy Beta-3) and FTSE AIM (Proxy Beta-4), a proxy beta was determined for each year over the time frame for each company (*Table 8.5*). Attempts were made to select companies which operate in the same industry as the case study companies. This was a challenging task because on examining the Indices, a vast majority of the companies were from Banking and Investments and the Oil and Gas industry. This trend to use a mix of companies on the Indices was common throughout, even on the FTSE AIM. Hence a broader scope; that of selecting FTSE traded companies based on the clientele of the case study companies was included in the mix.

The data on the FTSE companies over the period 2007–2011 was extracted from Bloomberg. Sample copies of the data extracted are presented in *Appendix 9*. Four FTSE companies across each Index were selected over the time period for each of the companies studied. The average of the yearly betas were

determined and used as the proxy beta for each case study company. The FTSE companies and a brief description of each company are presented in *Appendix 10*.

**Table 8.5: Summary of Beta Values used in Calculations**

| Beta Values         | Years   |         |         |         |         |
|---------------------|---------|---------|---------|---------|---------|
|                     | 2006/07 | 2007/08 | 2008/09 | 2009/10 | 2010/11 |
| <b>ABC Limited:</b> |         |         |         |         |         |
| Proxy Beta-1        | 1.00    | 1.00    | 0.94    | 0.99    | 1.00    |
| Proxy Beta-2        | 1.01    | 0.82    | 0.86    | 0.86    | 0.97    |
| Proxy Beta-3        | 1.03    | 0.82    | 0.80    | 0.78    | 0.89    |
| Proxy Beta-4        | 0.57    | 0.52    | 0.34    | 0.61    | 0.66    |
| <b>DGE Limited</b>  |         |         |         |         |         |
| Proxy Beta-1        | 0.93    | 1.07    | 1.02    | 1.03    | 1.04    |
| Proxy Beta-2        | 0.90    | 0.88    | 0.96    | 1.01    | 1.02    |
| Proxy Beta-3        | 0.93    | 1.07    | 1.02    | 1.03    | 1.10    |
| Proxy Beta-4        | 0.92    | 0.99    | 0.79    | 0.82    | 1.18    |
| <b>SPL Limited</b>  |         |         |         |         |         |
| Proxy Beta-1        | 0.90    | 0.79    | 0.70    | 0.79    | 0.81    |
| Proxy Beta-2        | 0.89    | 0.81    | 0.80    | 0.88    | 1.01    |
| Proxy Beta-3        | 0.91    | 0.85    | 0.70    | 0.77    | 0.85    |
| Proxy Beta-4        | 0.65    | 0.54    | 0.46    | 0.56    | 0.66    |
| <b>WIC Limited</b>  |         |         |         |         |         |
| Proxy Beta-1        | 1.10    | 1.21    | 1.18    | 1.25    | 1.24    |
| Proxy Beta-2        | 0.84    | 0.66    | 0.81    | 0.92    | 1.04    |
| Proxy Beta-3        | 0.70    | 0.78    | 0.72    | 0.83    | 0.87    |
| Proxy Beta-4        | 0.68    | 0.74    | 0.68    | 0.83    | 0.98    |

### **WACC & EVA Calculations**

For all four companies, the weighted average cost of capital (WACC) was determined followed by the EVA® computation. For WACC, the amount of debt was determined from the data on loans, overdrafts and secured loans in the financial reports. Further details are presented from each of the case studies below.

WACC was determined using:

$$WACC = k_e \times \frac{E}{D + E} + k_d \times \frac{D}{D + E} (1 - T_n)$$

$K_e$ ,  $k_d$  and  $T_n$  are the cost of equity, cost of debt and the tax rate and were determined as described earlier.  $E$  is the total equity invested in the company and  $D$  the total debt invested. Both of these were determined from the financial reports and will be covered for each of the companies below.

The EVA<sup>®</sup> for each company was determined using:

$$EVA = NOPAT - (WACC \times Capital\ Invested)$$

During the analysis, a range of betas was used as a proxy for each company. Therefore, a range of WACC was calculated as it was for EVA<sup>®</sup>. This was done because the case study companies are non-traded and information was not readily available for the necessary analysis. Hence a range of values are intended to provide a wider insight into what a company's EVA<sup>®</sup> might be.

Finally, the value indicator exercise identified that the indicators of value mentioned by participants from each of the companies was not reflected in their financial reports. Hence, the adjustments made for each case were done mainly on standard adjustments cited in the literature on EVA<sup>®</sup>.

### 8.0.2.1 Limitations to CAPM

CAPM not only inherits shortcomings from the Markowitz mean-variation model on which it is based, but from assumptions made for its implementation in practice. These assumptions are:

1. Investors are all rational beings who are risk averse and act only to maximise their interest. This assumption implies a single time horizon for all investors,
2. All investors have homogeneous expectations. There is a perception that all opportunities are equal and all investors agree that mean and variances are the only systems of market analysis,
3. Perfect market conditions exist and there is no consideration for the impact of taxes, inflation and transaction costs or market restrictions,
4. There is unlimited access to money which is accessible to all investors. Hence they borrow and lend at a risk free rate of return,
5. Return on assets conform to a normal distribution,
6. The market is in a state of constant equilibrium and no one person's action can affect the price of a security,
7. The total number of assets and their quantities are fixed for a security on the market in a defined period, and
8. Assets or securities are all infinitely divisible and also perfectly liquid (ACCA, 2008; Fama and French, 2004).

These assumptions are however unrealistic as in the real world such activities like human behaviour, inflation and market behaviour cannot be pre-determined. That is, in theory there is no real way of predicting investor or market behaviour because they are not always rational. The term '*irrational exuberance*<sup>10</sup>' was used to describe the frivolous way in which those who work in the financial sector act at times without any specific cause or reason. Such behaviour has the effect of disturbing the equilibrium in the financial market at the time (Brooks, 2006). This idea of 'irrational exuberance' was explored by Shiller (2000) who identified two causes for such volatility. They were identified as factors which are viewed as triggers – the '*precipitating factors*'

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<sup>10</sup> Term used by Alan Greenspan in a speech to the American Enterprise Institute in 1996 in which he made the case that stock market investors tend to have a psychotic episode every few years which impacts on the financial market.

which are then followed by factors which accelerate dispersion in both directions – the '*amplifying mechanisms*' (Brooks, 2006; Shiller, 2000).

Shiller's (2000) work disputes the assumptions made in developing the CAPM model. Although investors are expected to be rational in their actions, his analysis of the market and the behaviour of those in the market suggest otherwise. Human behaviour is complex and can infiltrate the stock market which responds to social and psychological stimuli which are less than rational. The increasing popularity of the internet and the resulting change in behaviour some of which is addictive further complicates arguments of rational human and market behaviour.

This means there will be deviations away from the expected assumptions resulting in market anomalies from expected performance (Shiller, 2003) Also, CAPM relates to traded companies; that is systematic risk of these companies on the open market and the expected returns hence the use of proxies to equate the market performance of private companies.

## 8.1 ABC Limited

### 8.1.1 Document Analysis<sup>11</sup>

Prior to the change in management in ABC Limited in 2008, there appears to have been no management accounts, largely a consequence of not having adequate skills within the company at the time. However the new Managing Director has a financial background and began preparing some management accounts following his appointment in 2008. ABC Limited shared some of these reports including the forecast, cash flow and budgets for 2008. However, the data was sparse and there was little to be gained from including it in this analysis.

ABC Limited supplied financial reports for the end of financial years December 2007 – December 2011. The reports contained information on the company's Profit and Loss Accounts and Balance Sheets Together with the notes to the accounts. For the period when the company operated as two separate entities, an annual report was produced for each entity. From the reports, the strongest performing arm of the company was the System side which deals with the sales and distribution of products. A profit was reported for each year from 2007 – 2009, this was before the two entities merged. This was unlike the manufacturing side of the operation ABC Manufacturing Limited which operated at a loss of £90,972 in 2008. This loss increased by 78.75% in 2009. In line with statements made by the Managing Director; it was evident from the reports that ABC Systems Limited carried the two entities.

*ABC-R1: "...they were paid by Systems (ABC Systems Limited) because they had most of the money, so that's where they drew the salary and this kind of stuff."*

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<sup>11</sup> Calculations are undertaken in Excel hence figures are unrounded, resulting in minor differences compared to using the rounded figures presented in the tables. This is true for the calculations done in the Document Analysis for all the Cases.

On average, ABC Systems Limited carried a debt of £590,000 each year over the period 2007 – 2009 (*Table 8.7* in *Section 8.1.2*). Nonetheless ABC Limited returned increasing profits per year resulting in equity investment of 24-37% of the capital employed over the period. After the merger, ABC Limited acquired all the debts of ABC Manufacturing Limited hence it still carried forward a high level of debt into the ‘new’ business.

## **8.1.2 EVA® Analysis**

### **8.1.2.1 Making Adjustments for NOPAT**

ABC Limited included in some financial reports a schedule to the profit and loss account which provided extra information for the EVA® adjustments such as expenses incurred for staff training and research and development. The usual common EVA® adjustments were made (*Table 8.6*) as stated in the literature.

These were:

- i. To capitalise expenditures for promotional activities such as R&D and staff training.
- ii. To add back provisional expenses set aside to service bad debts, deferred taxes and depreciation to net profits.
- iii. Similarly allocations for goodwill are also capitalised.
- iv. To capitalise any other income receivables.
- v. Operating leases are also capitalised as they are normally excluded from the statement of the financial position of the company.
- vi. To deduct any taxes paid from profits.

**Table 8.6: Calculating NOPAT for ABC Limited**

| Year                                   | 2007           |                | 2008           |                | 2009           |                 | 2010           | 2011           |
|--|----------------|----------------|----------------|----------------|----------------|-----------------|----------------|----------------|
|  | ABC-S          | ABC-M          | ABC-S          | ABC-M          | ABC-S          | ABC-M           | ABC            | ABC            |
|  | <i>£'000</i>   |                |                |                |                |                 |                |                |
| <b>Operating Profit (Loss)</b>         | <b>161,992</b> | <b>57,191</b>  | <b>400,103</b> | <b>-90,972</b> | <b>321,305</b> | <b>-162,611</b> | <b>209,405</b> | <b>419,414</b> |
| <b>Adjustments</b>                     |                |                |                |                |                |                 |                |                |
| + Interest Receivable & Similar Income | 557            | 411            | 585            | 615            | 39             | 6               | 503            | 133            |
| + Goodwill (for the year)              | -              | -              | -              | -              | -              | -               | -              | -              |
| + Depreciation and loss on disposal    | 33,216         | 37,775         | 29,298         | 33,583         | 21,527         | 23,926          | 35,580         | 25,118         |
| + Research & Development               | -              | 46,559         | -              | -              | -              | -               | -              | -              |
| + Staff Training                       | 390            | 5,019          | -              | -              | -              | -               | -              | -              |
| + Operating Leases                     | 20,131         | 16,131         | 12,770         | 5,682          | 412            | -               | -              | -              |
| + Bad Debts Provisions                 | 1,551          | -              | 465            | -              | 2,044          | -               | 31,907         | 24,145         |
| + Deferred Taxes                       | 5,000          | -              | -              | -              | -              | -               | -              | -              |
| + Other Income (Grant)                 | 203            | -              | 1,141          |                | 1,562          | -               | -              | -              |
| <b>Net '+' adjustments</b>             | <b>61,048</b>  | <b>105,895</b> | <b>44,259</b>  | <b>39,880</b>  | <b>25,584</b>  | <b>23,932</b>   | <b>67,990</b>  | <b>49,396</b>  |
|  |                |                |                |                |                |                 |                |                |
| - Dividend Provisions                  |                |                |                |                |                |                 |                |                |
| - Taxation                             | 29,400         | 795            | 31,512         | -              | 2,657          | -               | 28,004         | 46,615         |
|  |                |                |                |                |                |                 |                |                |
| <b>Net '-' adjustments</b>             | <b>29,400</b>  | <b>795</b>     | <b>31,512</b>  | <b>0</b>       | <b>2,657</b>   | <b>0</b>        | <b>28,004</b>  | <b>46,615</b>  |
| <b>ADJUSTED NOPAT</b>                  | <b>193,640</b> | <b>162,291</b> | <b>412,850</b> | <b>-51,092</b> | <b>344,232</b> | <b>-138,679</b> | <b>249,391</b> | <b>422,195</b> |

### 8.1.2.2 Making Adjustments for the Capital Invested

In determining the capital invested in the company, the total debt and equity was determined from the book values presented in the annual reports. Ideally market value would be used but none of the securities were listed. Therefore the book value was taken as a proxy.

**Table 8.7: Determining the Total Capital Invested by ABC Limited**

| TOTAL ADJUSTED CAPITAL        | 2006/07        |                | 2007/08        |                | 2008/09        |               | 2009/10        | 2010/11          |
|-------------------------------|----------------|----------------|----------------|----------------|----------------|---------------|----------------|------------------|
|                               | ABC-S          | ABC-M          | ABC-S          | ABC-M          | ABC-S          | ABC-M         | ABC            | ABC              |
| Capital Employed              |                |                |                |                |                |               |                |                  |
| Debt                          | 451,737        | 24,481         | 587,914        | 16,723         | 533,024        | 37,618        | 590,266        | 716,173          |
| Equity                        | 141,956        | 317,676        | 277,793        | 211,469        | 315,914        | 15,337        | 364,304        | 467,886          |
| <b>Book Value of Capital</b>  | <b>593,693</b> | <b>342,157</b> | <b>865,707</b> | <b>228,192</b> | <b>848,938</b> | <b>52,955</b> | <b>954,570</b> | <b>1,184,059</b> |
| <b>Adjustments</b>            |                |                |                |                |                |               |                |                  |
| + Deferred Taxes              | 5,000          | -              | -              | -              | -              | -             | -              | -                |
|                               |                |                |                |                |                |               |                |                  |
| <b>Total Adjustments</b>      | <b>5,000</b>   | <b>0</b>       | <b>0</b>       | <b>0</b>       | <b>0</b>       | <b>0</b>      | <b>0</b>       | <b>0</b>         |
| <b>TOTAL CAPITAL INVESTED</b> | <b>598,693</b> | <b>342,157</b> | <b>865,707</b> | <b>228,192</b> | <b>848,938</b> | <b>52,955</b> | <b>954,570</b> | <b>1,184,059</b> |

In all instances, the total equity invested was taken as the value indicated as the Shareholder's Fund for each year. However, the debt capital was determined by reviewing the financial reports for transactions which could be representative of a means of securing financing for the company. The information used from the company reports was from the data provided in the notes to financial statement on Creditors. For ABC Limited, this means the sum of Receivables Finance, Associated Companies, Obligations under finance lease and hire purchase contracts, Director's current accounts and Accrued charges and provisions when applicable. The data from the annual reports showed that the entity ABC Systems Limited had a high average level of gearing of 69%. This was because all costs incurred by ABC Manufacturing were absorbed by ABC Systems as it was the more productive of the two entities. After the merger, the average gearing level was found to have reduced to 61%.

### **8.1.2.3 Estimating the Cost of Equity ( $k_e$ )**

ABC Limited is a manufacturing company which makes electronic safety devices. They also see themselves as a distributor for their product range as well as for some components from competitors which complement their products.

They have a diverse customer base ranging from the local authorities, care homes, schools and businesses. In order to determine the proxy betas, for ABC Limited, companies from the FTSE Indices were selected which are manufacturing companies, manufacturing companies of electrical components or companies which cater to a similar client base. For ABC Limited, a fair representation of companies across all market Indices were used for proxy betas. A brief description of the companies selected is presented in *Appendix 10.A*. The selected companies and betas for the period 2007-2011 are shown in Tables 8.8 to 8.11.

**Table 8.8: Proxy Betas using FTSE 100 Companies**

| <i>FTSE 100</i>             | <i>Years</i>   |                |                |                |                |
|-----------------------------|----------------|----------------|----------------|----------------|----------------|
|                             | <i>2006/07</i> | <i>2007/08</i> | <i>2008/09</i> | <i>2009/10</i> | <i>2010/11</i> |
| <i>Comparison Companies</i> | <i>Beta</i>    |                |                |                |                |
| <b>Wolseley PLC</b>         | 1.21           | 1.24           | 1.33           | 1.23           | 1.21           |
| <b>Smiths Group PLC</b>     | 0.93           | 0.89           | 0.80           | 0.90           | 0.91           |
| <b>BAE Systems PLC</b>      | 0.95           | 0.88           | 0.63           | 0.76           | 0.79           |
| <b>WPP PLC</b>              | 0.92           | 1.00           | 0.99           | 1.05           | 1.07           |
| <b><i>Proxy Beta-1</i></b>  | <b>1.00</b>    | <b>1.00</b>    | <b>0.94</b>    | <b>0.99</b>    | <b>1.00</b>    |

**Table 8.9: Proxy Betas using FTSE 250 Companies**

| <i>FTSE 250</i>                       | <i>Years</i>   |                |                |                |                |
|---------------------------------------|----------------|----------------|----------------|----------------|----------------|
|                                       | <i>2006/07</i> | <i>2007/08</i> | <i>2008/09</i> | <i>2009/10</i> | <i>2010/11</i> |
| <i>Comparison Companies</i>           | <i>Beta</i>    |                |                |                |                |
| <b>Darty Plc</b>                      | 1.18           | 1.05           | 1.08           | 0.86           | 1.11           |
| <b>Halma PLC</b>                      | 0.97           | 0.77           | 0.82           | 0.93           | 0.88           |
| <b>Electrocomponents PLC</b>          | 1.01           | 0.80           | 0.95           | 0.95           | 1.04           |
| <b>Ultra Electronics Holdings PLC</b> | 0.89           | 0.67           | 0.60           | 0.71           | 0.84           |
| <b><i>Proxy Beta-2</i></b>            | <b>1.01</b>    | <b>0.82</b>    | <b>0.86</b>    | <b>0.86</b>    | <b>0.97</b>    |

**Table 8.10: Proxy Betas using FTSE All-Share Companies**

| <i>FTSE All-Share</i>                 | <i>Years</i>   |                |                |                |                |
|---------------------------------------|----------------|----------------|----------------|----------------|----------------|
|                                       | <i>2006/07</i> | <i>2007/08</i> | <i>2008/09</i> | <i>2009/10</i> | <i>2010/11</i> |
| <i>Comparison Companies</i>           | <i>Beta</i>    |                |                |                |                |
| <b>Darty Plc</b>                      | 1.18           | 1.05           | 1.08           | 0.86           | 1.11           |
| <b>Wolfson Microelectronics PLC</b>   | 1.02           | 0.78           | 0.57           | 0.61           | 0.53           |
| <b>Electrocomponents PLC</b>          | 1.01           | -              | 0.95           | 0.95           | 1.04           |
| <b>Ultra Electronics Holdings PLC</b> | 0.89           | 0.67           | 0.60           | 0.71           | -              |
| <b>Halma PLC</b>                      | -              | 0.77           | -              | -              | 0.88           |
| <b><i>Proxy Beta-3</i></b>            | <b>1.03</b>    | <b>0.82</b>    | <b>0.80</b>    | <b>0.78</b>    | <b>0.89</b>    |

**Table 8.11: Proxy Betas using FTSE AIM Companies**

| <b>FTSE AIM</b>                           | <b>Years</b>   |                |                |                |                |
|---|----------------|----------------|----------------|----------------|----------------|
|   | <b>2006/07</b> | <b>2007/08</b> | <b>2008/09</b> | <b>2009/10</b> | <b>2010/11</b> |
| <b>Comparison Companies</b>               | <b>Beta</b>    |                |                |                |                |
| <b>James Halstead PLC</b>                 | 0.49           | 0.42           | 0.42           | 0.38           | 0.58           |
| <b>Songbird Estates PLC</b>               | 0.65           | 0.59           | 0.04           | 0.65           | 0.70           |
| <b>May Gurney Integrated Services PLC</b> | 0.40           | 0.44           | 0.45           | 0.64           | 0.67           |
| <b>Nanoco Group PLC</b>                   | -              | -              | 0.45           | 0.76           | 0.70           |
| <b>Aero Inventory PLC</b>                 | 0.72           | 0.64           | -              | -              | -              |
| <b>Proxy Beta-4</b>                       | <b>0.57</b>    | <b>0.52</b>    | <b>0.34</b>    | <b>0.61</b>    | <b>0.66</b>    |

FTSE 100, FTSE 250 and FTSE All-Share all returned proxy betas of between 0.78 and 1.03 over the five year period 2007–2011. For 2007, the FTSE 100, FTSE 250, FTSE All-Share and the FTSE 100 for 2008, all returned a beta value slightly greater than or equal to one. Should ABC Limited’s beta value fall within this range, then its share price would be more volatile<sup>12</sup> than the market. However, that maximum volatility was perceived to be very low at only 3%. However, for the FTSE AIM the proxy betas ranged from 0.34 to 0.66 indicating that the shares of ABC Limited would be more volatile than the market. Should ABC Limited decide to float on the stock market, because of its size and turnover, it is likely that it would be on the alternative market.

The cost of equity for ABC Limited was determined as shown in Table 8.12.

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<sup>12</sup> refers to the sensitivity relative to market conditions. A market which is volatile means that events in the market have changed and risks are perceived as higher.

**Table 8.12: Determining the cost of equity for ABC Limited**

| <i>Year</i> | <i>Entity</i> | <i>r<sub>f</sub></i> | <i>r<sub>m</sub></i> | <i>p-beta 1</i> | <i>p-beta 2</i> | <i>p-beta 3</i> | <i>p-beta 4</i> | <i>k<sub>e1</sub></i> | <i>k<sub>e2</sub></i> | <i>k<sub>e3</sub></i> | <i>k<sub>e4</sub></i> |
|-------------|---------------|----------------------|----------------------|-----------------|-----------------|-----------------|-----------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 2006/07     | <b>ABC-S</b>  | 5.24                 | 9.59                 | 1.00            | 1.01            | 1.03            | 0.57            | <b>9.60</b>           | <b>9.64</b>           | <b>9.70</b>           | <b>7.70</b>           |
|             | <b>ABC-M</b>  | 5.24                 | 9.59                 | 1.00            | 1.01            | 1.03            | 0.57            | <b>9.60</b>           | <b>9.64</b>           | <b>9.70</b>           | <b>7.70</b>           |
| 2007/08     | <b>ABC-S</b>  | 1.24                 | 7.89                 | 1.00            | 0.82            | 0.82            | 0.52            | <b>7.90</b>           | <b>6.71</b>           | <b>6.67</b>           | <b>4.71</b>           |
|             | <b>ABC-M</b>  | 1.24                 | 7.89                 | 1.00            | 0.82            | 0.82            | 0.52            | <b>7.90</b>           | <b>6.71</b>           | <b>6.67</b>           | <b>4.71</b>           |
| 2008/09     | <b>ABC-S</b>  | 0.49                 | 8.37                 | 0.94            | 0.86            | 0.80            | 0.34            | <b>7.88</b>           | <b>7.29</b>           | <b>6.80</b>           | <b>3.17</b>           |
|             | <b>ABC-M</b>  | 0.49                 | 8.37                 | 0.94            | 0.86            | 0.80            | 0.34            | <b>7.88</b>           | <b>7.29</b>           | <b>6.80</b>           | <b>3.17</b>           |
| 2009/10     | <b>ABC</b>    | 0.50                 | 8.46                 | 0.99            | 0.86            | 0.78            | 0.61            | <b>8.34</b>           | <b>7.36</b>           | <b>6.73</b>           | <b>5.33</b>           |
| 2010/11     | <b>ABC</b>    | 0.24                 | 7.97                 | 1.00            | 0.97            | 0.89            | 0.66            | <b>7.93</b>           | <b>7.71</b>           | <b>7.12</b>           | <b>5.36</b>           |

From the calculation, the cost of equity varied from 3.17% to 9.70% during the five year period from 2007-2011. This represents the relative rate to the market at which shareholders are expected to be compensated for investing in ABC Limited. However, it was noted that the lowest cost of equity also coincides with a more volatile share. The highest cost of debt occurred just prior to the global economic crisis. Again, the cost of equity was highest when the systematic market risk was highest and lowest when the share was less volatile than the market. Hence there was a high cost of equity when the risk was higher and a lower one when the market was more volatile than the shares of ABC Limited.

#### 8.1.2.4 Estimating the Cost of Debt ( $k_d$ )

In estimating the cost of debt for ABC Limited, the tax rate for each financial year was used as published by HMRC as this data was not included in the reports. The cost of debt was found to be highest when the systematic risk was at its highest. The cost of debt was relatively less than the cost of equity ranging from 2.61% to 5.50%.

**Table 8.13: The Cost of Debt for ABC Limited**

| Year    | Entity | Interest on debt | tax rate ( $T_n$ ) | $k_d$ |
|---------|--------|------------------|--------------------|-------|
| 2006/07 | ABC-S  | 6.87             | 0.20               | 5.50  |
|         | ABC-M  | 6.87             | 0.20               | 5.50  |
| 2007/08 | ABC-S  | 6.04             | 0.21               | 4.77  |
|         | ABC-M  | 6.04             | 0.21               | 4.77  |
| 2008/09 | ABC-S  | 3.29             | 0.21               | 2.60  |
|         | ABC-M  | 4.17             | 0.21               | 3.29  |
| 2009/10 | ABC    | 3.30             | 0.21               | 2.61  |
| 2010/11 | ABC    | 3.29             | 0.20               | 2.63  |

#### 8.1.2.5 Estimating WACC and EVA®

Having estimated the cost of equity and debt capital invested in ABC Limited, the WACC was then determined. Although it was stated that ABC Systems carried most of the responsibilities for ABC Manufacturing when both entities were in operation, ABC Limited carried the highest cost of capital in 2007 and again in 2008. From the analysis of the invested capital, the equity invested in ABC Limited was 12% over the cost of debt in both 2007 and 2008. Hence the overall cost of capital was higher when compared to other periods and with the entities before the merger.

**Table 8.14: Estimating WACC and Calculating EVA® for ABC Limited**

| CALCULATION OF EVA            | 2006/07        |                | 2007/08        |                | 2008/09        |                 | 2009/10        | 2010/11        |
|-------------------------------|----------------|----------------|----------------|----------------|----------------|-----------------|----------------|----------------|
|                               | ABC-S          | ABC-M          | ABC-S          | ABC-M          | ABC-S          | ABC-M           | ABC            | ABC            |
|                               | £'000          |                |                |                |                |                 |                |                |
| <b>NOPAT</b>                  | 193,640        | 162,291        | 412,850        | -51,092        | 344,232        | -138,679        | 249,391        | 422,195        |
| <b>Cost of Capital (WACC)</b> | %              |                |                |                |                |                 |                |                |
| Debt (Kd)                     | 5.50           | 5.50           | 4.77           | 4.77           | 2.60           | 3.29            | 2.61           | 2.63           |
| Equity (Ke1)                  | 9.60           | 9.60           | 7.90           | 7.90           | 7.88           | 7.88            | 8.34           | 7.93           |
| Equity (Ke2)                  | 9.64           | 9.64           | 6.71           | 6.71           | 7.29           | 7.29            | 7.36           | 7.71           |
| Equity (Ke3)                  | 9.70           | 9.70           | 6.67           | 6.67           | 6.80           | 6.73            | 6.73           | 7.12           |
| Equity (Ke4)                  | 7.70           | 7.70           | 4.71           | 4.71           | 3.17           | 3.17            | 5.33           | 5.36           |
| <b>WACC1</b>                  | <b>5.64</b>    | <b>9.23</b>    | <b>5.10</b>    | <b>7.60</b>    | <b>4.22</b>    | <b>4.13</b>     | <b>4.46</b>    | <b>4.41</b>    |
| <b>WACC2</b>                  | <b>5.65</b>    | <b>9.27</b>    | <b>4.71</b>    | <b>6.49</b>    | <b>4.00</b>    | <b>3.96</b>     | <b>4.08</b>    | <b>4.32</b>    |
| <b>WACC3</b>                  | <b>5.66</b>    | <b>9.32</b>    | <b>4.70</b>    | <b>6.46</b>    | <b>3.82</b>    | <b>3.80</b>     | <b>3.84</b>    | <b>4.09</b>    |
| <b>WACC4</b>                  | <b>5.19</b>    | <b>7.46</b>    | <b>4.07</b>    | <b>4.64</b>    | <b>2.47</b>    | <b>2.77</b>     | <b>3.31</b>    | <b>3.39</b>    |
| <b>Capital Invested</b>       | 598,693        | 342,157        | 865,707        | 228,192        | 848,938        | 52,955          | 954,570        | 1,184,059      |
| <b>EVA-1</b>                  | <b>159,867</b> | <b>130,715</b> | <b>368,733</b> | <b>-68,436</b> | <b>308,398</b> | <b>-140,866</b> | <b>206,856</b> | <b>370,029</b> |
| <b>EVA-2</b>                  | <b>159,805</b> | <b>130,577</b> | <b>372,056</b> | <b>-65,906</b> | <b>310,265</b> | <b>-140,776</b> | <b>210,407</b> | <b>371,023</b> |
| <b>EVA-3</b>                  | <b>159,727</b> | <b>130,404</b> | <b>372,149</b> | <b>-65,836</b> | <b>311,821</b> | <b>-140,690</b> | <b>212,727</b> | <b>373,824</b> |

The range of EVA<sup>®</sup> calculated showed that the company created value each year over the period investigated except for the entity ABC Manufacturing in 2008 and 2009. For the pre-merger period, when EVA<sup>®</sup> was positive, it was found that wealth was created at between 27% and 44% of the cost of the capital invested. However, for the latter two years (2008 & 2009) before the merger, ABC Manufacturing made losses of 30% and 266% of the cost of capital respectively. This indicated that trying to maintain ABC Manufacturing was becoming unsustainable. Post-merger, the overall performance of ABC Limited improved as EVA<sup>®</sup> increased from 22% to 32% of the cost of capital invested over the period 2010 and 2011 respectively.

## 8.2 DGE Limited

### 8.2.1 Document Analysis

DGE Limited presented annual reports with Profit and Loss Accounts, Balance Sheets, Trading and Profit and Loss Accounts as well as notes to the Financial Statements. The annual report of 2007 also had Cash Flow and Notes to Cash Flow Statement. From the interview with the Finance Director, it was stated that the company also has extensive management accounts; budgeting, forecasting and cash flow which are monitored and checked off against actual spent on a monthly basis.

*DGE-R1: "...basically we have a profit and loss, the actual for the month – the actual year to date. We have our budget, the forecast for the end of the year compared to the budget and we also have forecast for the next three years. These (the forecast) are a bit less important because they are far away. We have the previous month's forecast to compare with the actual as well as the budget. So this month it is a bit odd as it is the first month for the year so the previous month's forecast is also the budget. Usually they are different and we do compare the actual with the forecast for the previous months."*

However, there was no access to any of the management accounts and only a one page example was shown, which was deemed sensitive information and therefore not included in the thesis. The company also holds an integrated bespoke database system which aligns with the management of labour and procurement of materials and is integrated with the final information and reports generated.

## 8.2.2 EVA® Analysis

### 8.2.2.1 Making Adjustments for NOPAT

With the exception of 2007/08 in which they operated at a loss of £667,700, DGE Limited made a profit each year albeit a smaller one in 2010/11 relative to previous years. This could be attributed to initial investment in research and development when the company was acquired by the Managing Director in 2005. As with the previous case, standard adjustments were made to determine NOPAT for EVA® analysis. The data extracted from the reports are presented in Table 8.15.

**Table 8.15: Calculating NOPAT for DGE Limited**

| Year                                   | 2006/07           | 2007/08         | 2008/09        | 2009/10        | 2010/11        |
|--|-------------------|-----------------|----------------|----------------|----------------|
|  | <i>£thousands</i> |                 |                |                |                |
| <b>Operating Profit (Loss)</b>         | <b>334,063</b>    | <b>-667,700</b> | <b>99,010</b>  | <b>352,974</b> | <b>46,357</b>  |
| <b>Adjustments</b>                     |                   |                 |                |                |                |
| + Interest Receivable & Similar Income | 22,219            | 20,503          | 4,560          | 2,370          | 415            |
| + Goodwill (for the year)              | 19,710            | 19,710          | 19,710         | 19,710         | 6,569          |
| + Depreciation                         | 20,503            | 45,412          | 51,520         | 88,078         | 108,846        |
| + Research & Development written off   | 19,916            | 49,856          | 29,357         | 21,378         | 50,777         |
| + Operating Leases                     | 103,000           | 121,872         | 121,872        | 142,098        | 136,581        |
| + Deferred Taxes                       | 10,559            | 72,306          | 9,095          | 66,039         | 47,017         |
| + Other Income (Grant)                 | -                 | 173,785         | 53,748         | 41,990         | 24,197         |
| <b>Net '+' adjustments</b>             | <b>195,907</b>    | <b>503,444</b>  | <b>289,862</b> | <b>381,663</b> | <b>374,402</b> |
| - Dividend Provisions                  |                   |                 |                |                |                |
| - Taxation                             | 52,875            | 75,409          | 13,919         | 66,537         | -              |
| <b>Net '-' adjustments</b>             | <b>52,875</b>     | <b>75,409</b>   | <b>13,919</b>  | <b>66,537</b>  | <b>0</b>       |
| <b>ADJUSTED NOPAT (LOSS)</b>           | <b>477,095</b>    | <b>-239,665</b> | <b>374,953</b> | <b>668,100</b> | <b>420,759</b> |

The company reported an operating loss in 2008 of £667,700. Following the adjustments, it showed the loss was only £239,665. The data also showed that the company made a greater investment in Research and Development during that year than the previous and the latter two years. It could be concluded that the company had begun to realise the benefits of previous investments and had therefore invested more with an expectation for further success in the coming years.

### 8.2.2.2 Making Adjustments for the Capital Invested

DGE Limited's company reports were analysed to determine the total debt and equity injected in the company. The total debts were established from a sum of the creditors listed in the reports

**Table 8.16: Estimating the Capital Invested in DGE Limited**

| <b>TOTAL ADJUSTED CAPITAL</b> | <b>2006/07</b>    | <b>2007/08</b>   | <b>2008/09</b>   | <b>2009/10</b>   | <b>2010/11</b>   |
|-------------------------------|-------------------|------------------|------------------|------------------|------------------|
| <b>Capital Employed</b>       | <i>£thousands</i> |                  |                  |                  |                  |
| Debt                          | 1,161,003         | 746,130          | 1,433,053        | 1,952,003        | 2,434,131        |
| Equity                        | 883,357           | 391,707          | 512,627          | 774,090          | 834,573          |
| <b>Book Value of Capital</b>  | <b>2,044,360</b>  | <b>1,137,837</b> | <b>1,945,680</b> | <b>2,726,093</b> | <b>3,268,704</b> |
| <b>Adjustments</b>            |                   |                  |                  |                  |                  |
| + Deferred Taxes              | 10,559            | 61,747           | 9,095            | 66,039           | 47,017           |
| + Research & Development      | 19,916            | 49,856           | 29,357           | 21,378           | 50,777           |
| + Bad Debts provisions        |                   |                  |                  |                  |                  |
| <b>Total Adjustments</b>      | <b>30,475</b>     | <b>111,603</b>   | <b>38,452</b>    | <b>87,417</b>    | <b>97,794</b>    |
| <b>TOTAL CAPITAL INVESTED</b> | <b>2,074,835</b>  | <b>1,249,440</b> | <b>1,984,132</b> | <b>2,813,510</b> | <b>3,366,498</b> |

Those used were Bank loans and overdrafts including amounts due over one year, Finance leases and Trade creditors and where applicable Earn out creditor and Accruals and deferred income. For DGE Limited, Trade Creditors were

identified as clients who sometimes provide the initial outlay for the capital to be invested. The total equity invested was taken as the book value of the Shareholder Funds.

### **8.2.2.3 Estimating the Cost of Equity ( $k_e$ )**

DGE Limited is an engineering consultancy which operates in the oil and gas industry providing innovative solution to its clients. In order to determine the cost of equity, as DGE Limited is an untraded company, similar trading companies were selected to estimate its beta. Hence the companies selected to be used as proxies to DGE Limited operate within the same industry and were also reflective of their clientele. A list of the companies used with a brief description is presented in *Appendix 10.B*.

The selected companies across the FTSE 100, 250, All-Share and AIM, their respective betas for the period (2007 to 2011) and the resulting proxy betas are shown in Tables 8.17 to 8.20 below.

FTSE 100, FTSE 250, FTSE All-Share and FTSE Aim all return proxy betas of between 0.79 and 1.18 over the five year period 2007 – 2011. The trend in change in the systematic risk of the shares was similar in movement over the period. In examining the FTSE Indices, a fair majority of the companies across all four Indices were oil and gas or energy companies. Hence for that reason, it was concluded that the proxy betas across all Indices were a fair representation of the range of beta for DGE Limited.

**Table 8.17: Proxy Betas using FTSE 100 Companies**

| <i>FTSE 100</i>              | <i>Years</i>   |                |                |                |                |
|------------------------------|----------------|----------------|----------------|----------------|----------------|
|                              | <i>2006/07</i> | <i>2007/08</i> | <i>2008/09</i> | <i>2009/10</i> | <i>2010/11</i> |
| <i>Comparison Companies</i>  | <i>Beta</i>    |                |                |                |                |
| <b>BP PLC</b>                | 0.87           | 1.02           | 0.94           | 0.87           | 0.89           |
| <b>Royal Dutch Shell PLC</b> | 0.89           | 1.06           | 0.96           | 0.98           | 0.97           |
| <b>Tullow Oil PLC</b>        | 1.00           | 1.11           | 1.06           | 1.23           | 1.23           |
| <b>BG Group PLC</b>          | 0.97           | 1.08           | 1.12           | 1.04           | 1.06           |
| <b><i>Proxy Beta-1</i></b>   | <b>0.93</b>    | <b>1.07</b>    | <b>1.02</b>    | <b>1.03</b>    | <b>1.04</b>    |

**Table 8.18: Proxy Betas using FTSE 250 Companies**

| <i>FTSE 250</i>              | <i>Year</i>    |                |                |                |                |
|------------------------------|----------------|----------------|----------------|----------------|----------------|
|                              | <i>2006/07</i> | <i>2007/08</i> | <i>2008/09</i> | <i>2009/10</i> | <i>2010/11</i> |
| <i>Comparison Companies</i>  | <i>Beta</i>    |                |                |                |                |
| <b>Rotork PLC</b>            | 0.99           | 0.84           | 0.69           | 0.94           | 0.91           |
| <b>Meggitt PLC</b>           | 0.91           | 0.85           | 1.07           | 1.17           | -              |
| <b>JKX Oil &amp; Gas PLC</b> | 0.87           | 1.08           | 1.20           | 1.10           | -              |
| <b>WS Atkins PLC</b>         | 0.83           | 0.74           | 0.88           | 0.81           | 0.94           |
| <b>Exillon Energy PLC</b>    | -              | -              | -              | -              | 1.25           |
| <b>Salamander Energy PLC</b> | -              | -              | -              | -              | 0.96           |
| <b><i>Proxy Beta-2</i></b>   | <b>0.90</b>    | <b>0.88</b>    | <b>0.96</b>    | <b>1.01</b>    | <b>1.02</b>    |

**Table 8.19: Proxy Betas using FTSE All-Share Companies**

| <i>FTSE All-Share</i>        | <i>Years</i>   |                |                |                |                |
|------------------------------|----------------|----------------|----------------|----------------|----------------|
|                              | <i>2006/07</i> | <i>2007/08</i> | <i>2008/09</i> | <i>2009/10</i> | <i>2010/11</i> |
| <i>Comparison Companies</i>  | <i>Beta</i>    |                |                |                |                |
| <b>BP PLC</b>                | 0.87           | 1.02           | 0.94           | 0.87           | 1.00           |
| <b>Royal Dutch Shell PLC</b> | 0.89           | 1.06           | 0.96           | 0.98           | 1.00           |
| <b>Tullow Oil PLC</b>        | 1.00           | 1.11           | 1.06           | 1.23           | 1.21           |
| <b>BG Group PLC</b>          | 0.97           | 1.08           | 1.12           | 1.04           | 1.19           |
| <b><i>Proxy Beta-3</i></b>   | <b>0.93</b>    | <b>1.07</b>    | <b>1.02</b>    | <b>1.03</b>    | <b>1.10</b>    |

**Table 8.20: Proxy Betas using FTSE Aim Companies**

| FTSE AIM                    | Years       |             |             |             |             |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|
|                             | 2006/07     | 2007/08     | 2008/09     | 2009/10     | 2010/11     |
| <b>Comparison Companies</b> | <b>Beta</b> |             |             |             |             |
| Gulfsands Petroleum PLC     | -           | 0.87        | 0.65        | 0.88        | 0.85        |
| Bowleven PLC                | 0.84        | -           | 0.71        | 1.10        | 1.50        |
| Sterling Energy PLC         | 0.82        | 1.04        | 0.70        | 0.59        | -           |
| Max Petroleum PLC           | 1.20        | -           | -           | -           | 0.97        |
| Regal Petroleum PLC         | 0.80        | 1.01        | 1.09        | -           | -           |
| Rockhopper Exploration      | -           | -           | -           | 0.69        | 1.41        |
| Sibir Energy PLC            | -           | 1.05        | -           | -           | -           |
| <b>Proxy Beta-4</b>         | <b>0.92</b> | <b>0.99</b> | <b>0.79</b> | <b>0.82</b> | <b>1.18</b> |

The maximum volatility was perceived to be at a rate of 18%. Hence investors investing in DGE Limited would expect a return which is 18% more than the market. However, should the market be operating at the lower rate of 0.79, then investors in DGE Limited would make a loss of 79% of the market rate. Table 8.21 shows the resulting calculations in estimating the cost of equity using the range of proxy betas over the study period.

**Table 8.21: Determining the cost of equity for DGE Limited**

| Year    | $r_f$ | $r_m$ | p-beta 1 | p-beta 2 | p-beta 3 | p-beta 4 | $k_{e1}$ | $k_{e2}$ | $k_{e3}$ | $k_{e4}$ |
|---------|-------|-------|----------|----------|----------|----------|----------|----------|----------|----------|
| 2006/07 | 5.24  | 9.59  | 0.93     | 0.90     | 0.93     | 0.92     | 9.30     | 9.16     | 9.30     | 9.22     |
| 2007/08 | 1.24  | 7.89  | 1.07     | 0.88     | 1.07     | 0.99     | 8.34     | 7.07     | 8.34     | 7.84     |
| 2008/09 | 0.49  | 8.37  | 1.02     | 0.96     | 1.02     | 0.79     | 8.53     | 8.06     | 8.53     | 6.70     |
| 2009/10 | 0.50  | 8.46  | 1.03     | 1.01     | 1.03     | 0.82     | 8.70     | 8.50     | 8.70     | 6.99     |
| 2010/11 | 0.24  | 7.97  | 1.04     | 1.02     | 1.10     | 1.18     | 8.25     | 8.08     | 8.74     | 9.37     |

The cost of equity for DGE Limited ranged from 6.70% to 9.37%. When looking at the cost of equity over each year, the difference in cost between ranges of cost for 2007 was the lowest at a mere 0.14% compared to the following years. This could be attributed to the more stable market prior to the financial crisis of 2008.

#### 8.2.2.4 Estimating the Cost of Debt ( $k_d$ )

DGE Limited included in their annual reports the tax rate for each financial year 2007 – 2011. This was therefore used in calculating the cost of debt which was found to be at its highest in 2007 at 5.56%. In 2008 it fell to 4.23% before a drastic drop down to under 3% over the periods 2009 – 2011.

Compared to the cost of equity, the cost of debt was significantly lower over the problematic periods (2008–2011), indicating that investors in DGE Limited still expected a high rate of return regardless of the stability of the market. The table also shows it was significantly cheaper to finance the company with debt rather than equity capital especially after the financial crisis in 2008.

**Table 8.22: The Cost of Debt for DGE Limited**

| Year    | Interest on debt | tax rate ( $T_n$ ) | $k_d$ |
|---------|------------------|--------------------|-------|
| 2006/07 | 6.87             | 0.19               | 5.56  |
| 2007/08 | 6.04             | 0.30               | 4.23  |
| 2008/09 | 3.29             | 0.28               | 2.37  |
| 2009/10 | 3.30             | 0.21               | 2.61  |
| 2010/11 | 3.29             | 0.21               | 2.60  |

DGE Limited stated they were unaware of the cost of capital of the company but that the cost of debt at the time of the interview in 2010 was at 8%.

*DGE-R1: "Well I don't have a clue because we don't know; we haven't really asked the shareholders how much return they want. I know the cost of debt obviously. The cost of debt we have at the moment is around 8%."*

Although the debt capital increased each year from 1.3 times the equity invested in 2007 to 2.9 times in 2011, there was no significant decrease in the

cost of using equity investment. However, over the same period, the cost of debt decreased.

### 8.2.2.5 Estimating WACC and EVA®

Table 8.23 shows the range of WACC for DGE Limited and the eventual range of EVA® over the period 2007–2011.

**Table 8.23: Estimating WACC and Calculating EVA® for DGE Limited**

| <b>CALCULATION OF EVA</b> | <b>2006/07</b>   | <b>2007/08</b>  | <b>2008/09</b> | <b>2009/10</b> | <b>2010/11</b> |
|---------------------------|------------------|-----------------|----------------|----------------|----------------|
|                           | <i>£millions</i> |                 |                |                |                |
| <b>NOPAT</b>              | 477,095          | -239,665        | 374,953        | 668,100        | 420,759        |
| <b>Cost of Capital</b>    | <i>%</i>         |                 |                |                |                |
| Debt (Kd)                 | 5.56             | 4.23            | 2.37           | 2.61           | 2.60           |
| Equity (Ke1)              | 9.30             | 8.34            | 8.53           | 8.70           | 8.25           |
| Equity (Ke2)              | 9.16             | 7.07            | 8.06           | 8.50           | 8.08           |
| Equity (Ke3)              | 9.30             | 8.34            | 8.53           | 8.70           | 8.74           |
| Equity (Ke4)              | 9.22             | 7.84            | 6.70           | 6.99           | 9.37           |
| <b>WACC1</b>              | <b>6.58</b>      | <b>4.81</b>     | <b>3.50</b>    | <b>3.94</b>    | <b>3.64</b>    |
| <b>WACC2</b>              | <b>6.52</b>      | <b>4.38</b>     | <b>3.38</b>    | <b>3.89</b>    | <b>3.59</b>    |
| <b>WACC3</b>              | <b>6.58</b>      | <b>4.81</b>     | <b>3.50</b>    | <b>3.94</b>    | <b>3.76</b>    |
| <b>WACC4</b>              | <b>6.54</b>      | <b>4.64</b>     | <b>3.02</b>    | <b>3.46</b>    | <b>3.92</b>    |
| <b>Capital Invested</b>   | 2,074,835        | 1,249,440       | 1,984,132      | 2,813,510      | 3,366,498      |
| <b>EVA-1</b>              | <b>340,639</b>   | <b>-299,767</b> | <b>305,445</b> | <b>557,130</b> | <b>298,332</b> |
| <b>EVA-2</b>              | <b>341,907</b>   | <b>-294,335</b> | <b>307,916</b> | <b>558,719</b> | <b>299,826</b> |
| <b>EVA-3</b>              | <b>340,639</b>   | <b>-299,767</b> | <b>305,445</b> | <b>557,130</b> | <b>294,182</b> |
| <b>EVA-4</b>              | <b>341,322</b>   | <b>-297,623</b> | <b>315,022</b> | <b>570,798</b> | <b>288,705</b> |

Again, looking at the WACC, the highest cost of financing the company was experienced over the financial year 2006/07(6.52 to 6.58%). It then fell between 4.38 and 4.81% in 2008 before fluctuating at even lower rates; 3.02–3.94% over 2009 to 2011.

The EVA<sup>®</sup> analysis showed that the performance of the company was fairly consistent regardless of the market index used in estimating the market risk. DGE Limited was found to be making between 9% and 16% of the capital invested each year. However, it was found that the performance was not consistent as the overall performance of the company tended to decrease with increasing capital. The analysis also showed negative EVA<sup>®</sup> of 24% of the cost of capital invested over 2008. This however may not be all negative as the company is currently in a growth phase and has made major investments in R&D. They have also taken on new contracts over 2010/11 which have resulted in increasing debt capital. They hope to realise the benefits of this investment within the coming years. This is a potential issue with EVA<sup>®</sup>, which still tries to instil a performance metric on a single accounting period.

As indicated earlier, the company made a loss in 2008 which translates into a negative EVA<sup>®</sup>. The analysis showed that the company operated at a loss of 24% of the capital invested for that year. Comparatively, the percentage loss was more than the company made on invested capital over the period.

## **8.3 SPL Limited**

### **8.3.1 Document Analysis**

SPL Limited did not provide the financial reports as promised despite several attempts from the time of the interviews in January 2011 to October 2012. Therefore the reports for SPL Limited were obtained from Company House. The reports available only had abbreviated balance sheet and notes to financial statements. No other financial data was obtained hence the EVA<sup>®</sup> analysis was done using any information available.

### **8.3.2 EVA<sup>®</sup> Analysis**

#### **8.3.2.1 Making Adjustments for NOPAT**

To determine NOPAT, the balance on the Profit and Loss account was used to represent the retained profit for the company after all operational expenses have been deduced. To begin with, to establish the operating profit, the retained earnings were used. Taxes and deductions made and dividends paid were added back to establish the operating profit. However, there was no indication of the tax paid or any dividends paid to shareholders from the reports. Two other account balances, called up share capital and share premium, were added add to give the operating profit for each year. To determine NOPAT, the only adjustment possible from the data in the reports was adjustment for depreciation (*Table 8.24*).

**Table 8.24: Estimated NOPAT for SPL Limited**

| Year  | 2006/07           | 2007/08       | 2008/09        | 2009/10        | 2010/11        |
|---|-------------------|---------------|----------------|----------------|----------------|
|   | <i>£thousands</i> |               |                |                |                |
| <b>Balance on Profit &amp; Loss Account</b> | <b>4,149</b>      | <b>5,669</b>  | <b>52,067</b>  | <b>109,551</b> | <b>101,522</b> |
| + Interest                                  | -                 | -             | -              | -              | -              |
| + Dividend                                  | -                 | -             | -              | -              | -              |
| <b>Operating Profit</b>                     | <b>4,149</b>      | <b>5,669</b>  | <b>52,067</b>  | <b>109,551</b> | <b>101,522</b> |
| + Depreciation and disposals                | 134,533           | 87,311        | 76,166         | 173,106        | 120,818        |
| <b>ESTIMATED NOPAT</b>                      | <b>138,682</b>    | <b>92,980</b> | <b>128,233</b> | <b>282,657</b> | <b>222,340</b> |

### 8.3.2.2 Making Adjustments for the Capital Invested

Similarly, the reports were analysed to determine the book value of capital employed which was used as a proxy in determining the capital invested. The capital employed is the total debts and equity invested in the company. The total debt of the company was taken to be sum total of the secured creditors. The total equity was taken to be the value of the shareholders fund for each year. No adjustments were made to the book value of the capital invested because there was no record of the usual dividend and tax provisions in the reports.

**Table 8.25: Estimating the Total Capital Invested by SPL Limited**

| ESTIMATED CAPITAL             | 2006/07           | 2007/08        | 2008/09        | 2009/10        | 2010/11        |
|-------------------------------|-------------------|----------------|----------------|----------------|----------------|
| <b>Capital Employed</b>       | <i>£thousands</i> |                |                |                |                |
| Debt                          | 465,270           | 398,181        | 255,241        | 356,482        | 332,702        |
| Equity                        | 93,134            | 94,654         | 141,052        | 198,536        | 190,507        |
| <b>Book Value of Capital</b>  | <b>558,404</b>    | <b>492,835</b> | <b>396,293</b> | <b>555,018</b> | <b>523,209</b> |
| <b>Adjustments</b>            |                   |                |                |                |                |
|                               | -                 | -              | -              | -              | -              |
| <b>Total Adjustments</b>      | <b>0</b>          | <b>0</b>       | <b>0</b>       | <b>0</b>       | <b>0</b>       |
| <b>TOTAL CAPITAL INVESTED</b> | <b>558,404</b>    | <b>492,835</b> | <b>396,293</b> | <b>555,018</b> | <b>523,209</b> |

### 8.3.2.3 Estimating the Cost of Equity ( $k_e$ )

SPL Limited is a manufacturing company in the business of plastic moulding. To determine the cost of equity, its systematic risk was estimated by selecting companies in the manufacturing sector to use as proxy; although there were not many companies on the FTSE Indices operating within the plastic moulding industry. Hence, like the other cases, proxy companies were selected on a wider range based on the clientele of SPL Limited. A list of the companies selected is presented in *Appendix 10.C*.

The selected companies and the betas over the period of study are shown in Tables 8.26 to 8.29.

**Table 8.26: Proxy Betas using FTSE 100 Companies**

| FTSE 100                    | Years       |             |             |             |             |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|
|                             | 2006/07     | 2007/08     | 2008/09     | 2009/10     | 2010/11     |
| <b>Comparison Companies</b> | <b>Beta</b> |             |             |             |             |
| Reckitt Benckiser Group PLC | 0.82        | 0.71        | 0.57        | 0.79        | 0.82        |
| Rexam PLC                   | 1.09        | 0.94        | 0.90        | 0.77        | 0.78        |
| Shire PLC                   | 0.91        | 0.74        | 0.69        | 0.77        | 0.78        |
| Unilever PLC                | 0.78        | 0.78        | 0.63        | 0.84        | 0.84        |
| <b>Proxy Beta-1</b>         | <b>0.90</b> | <b>0.79</b> | <b>0.70</b> | <b>0.79</b> | <b>0.81</b> |

**Table 8.27: Proxy Betas using FTSE 250 Companies**

| FTSE 250                    | Years       |             |             |             |             |
|-----------------------------|-------------|-------------|-------------|-------------|-------------|
|                             | 2006/07     | 2007/08     | 2008/09     | 2009/10     | 2010/11     |
| <b>Comparison Companies</b> | <b>Beta</b> |             |             |             |             |
| Renishaw PLC                | 0.71        | 0.71        | 0.95        | 0.90        | 1.26        |
| Filtrona PLC                | 0.74        | 1.03        | 0.82        | 0.82        | 0.85        |
| BTG PLC                     | -           | 0.69        | 0.61        | 0.91        | 0.93        |
| Victrex PLC                 | 0.92        | 0.82        | 0.81        | 0.90        | 1.00        |
| Tomkins Ltd                 | 1.17        | -           | -           | -           | -           |
| <b>Proxy Beta-2</b>         | <b>0.89</b> | <b>0.81</b> | <b>0.80</b> | <b>0.88</b> | <b>1.01</b> |

**Table 8.28: Proxy Betas using FTSE All-Share Companies**

| <i>FTSE All-Share</i>              | <i>Years</i>       |                    |                    |                    |                    |
|------------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|                                    | <i>2006/07</i>     | <i>2007/08</i>     | <i>2008/09</i>     | <i>2009/10</i>     | <i>2010/11</i>     |
| <b><i>Comparison Companies</i></b> | <b><i>Beta</i></b> |                    |                    |                    |                    |
| <b>Oxford Biomedica PLC</b>        | <i>0.82</i>        | <i>0.85</i>        | <i>0.54</i>        | <i>0.45</i>        | <i>0.62</i>        |
| <b>BTG PLC</b>                     | <i>1.14</i>        | <i>0.69</i>        | <i>0.61</i>        | <i>0.91</i>        | <i>0.93</i>        |
| <b>Filtrona PLC</b>                | <i>0.74</i>        | <i>1.03</i>        | <i>0.82</i>        | <i>0.82</i>        | <i>0.85</i>        |
| <b>Victrex PLC</b>                 | <i>0.92</i>        | <i>0.82</i>        | <i>0.81</i>        | <i>0.90</i>        | <i>1.00</i>        |
| <b><i>Proxy Beta-3</i></b>         | <b><i>0.91</i></b> | <b><i>0.85</i></b> | <b><i>0.70</i></b> | <b><i>0.77</i></b> | <b><i>0.85</i></b> |

**Table 8.29: Proxy Betas using FTSE AIM Companies**

| <i>FTSE AIM</i>                            | <i>Years</i>       |                    |                    |                    |                    |
|--|--------------------|--------------------|--------------------|--------------------|--------------------|
|  | <i>2006/07</i>     | <i>2007/08</i>     | <i>2008/09</i>     | <i>2009/10</i>     | <i>2010/11</i>     |
| <b><i>Comparison Companies</i></b>         | <b><i>Beta</i></b> |                    |                    |                    |                    |
| <b>Hamworthy PLC</b>                       | <i>0.85</i>        | <i>0.61</i>        | <i>0.57</i>        | <i>0.58</i>        | <i>0.79</i>        |
| <b>Caretech Holdings PLC</b>               | <i>0.78</i>        | <i>0.50</i>        | <i>0.38</i>        | <i>0.59</i>        | <i>-</i>           |
| <b>MP Evans Group PLC</b>                  | <i>0.49</i>        | <i>0.61</i>        | <i>0.47</i>        | <i>0.67</i>        | <i>0.60</i>        |
| <b>James Halstead PLC</b>                  | <i>0.49</i>        | <i>0.42</i>        | <i>0.42</i>        | <i>0.38</i>        | <i>0.58</i>        |
| <b>Andor Technology PLC/United Kingdom</b> | <i>-</i>           | <i>-</i>           | <i>-</i>           | <i>-</i>           | <i>0.68</i>        |
| <b><i>Proxy Beta-4</i></b>                 | <b><i>0.65</i></b> | <b><i>0.54</i></b> | <b><i>0.46</i></b> | <b><i>0.56</i></b> | <b><i>0.66</i></b> |

Almost all the FTSE Indices return proxy betas of less than 1 indicating that the share of SPL Limited was less volatile than the market. The values range between 0.46 and 0.19 (with one at 1.01). The assessment showed that the systematic risk of SPL Limited was lower relative to the FTSE Index.

The estimated cost of equity for SPL Limited was found to be in the range of 9.18% to 4.12%. The highest expected return was reflected in 2007 prior to the financial crisis before falling between 4-5% over the period.

**Table 8.30: Determining the cost of equity for SPL Limited**

| <i>Year</i>    | <i>r<sub>f</sub></i> | <i>r<sub>m</sub></i> | <i>p-beta 1</i> | <i>p-beta 2</i> | <i>p-beta 3</i> | <i>p-beta 4</i> | <i>k<sub>e1</sub></i> | <i>k<sub>e2</sub></i> | <i>k<sub>e3</sub></i> | <i>k<sub>e4</sub></i> |
|----------------|----------------------|----------------------|-----------------|-----------------|-----------------|-----------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <b>2006/07</b> | 5.24                 | 9.59                 | 0.90            | 0.89            | 0.91            | 0.65            | 9.16                  | 9.09                  | 9.18                  | 8.08                  |
| <b>2007/08</b> | 1.24                 | 7.89                 | 0.79            | 0.81            | 0.85            | 0.54            | 6.51                  | 6.64                  | 6.87                  | 4.80                  |
| <b>2008/09</b> | 0.49                 | 8.37                 | 0.70            | 0.80            | 0.70            | 0.46            | 5.99                  | 6.78                  | 5.97                  | 4.12                  |
| <b>2009/10</b> | 0.50                 | 8.46                 | 0.79            | 0.88            | 0.77            | 0.56            | 6.81                  | 7.52                  | 6.63                  | 4.92                  |
| <b>2010/11</b> | 0.24                 | 7.97                 | 0.81            | 1.01            | 0.85            | 0.66            | 6.46                  | 8.04                  | 6.81                  | 5.36                  |

### **8.3.2.4 Estimating the Cost of Debt (*k<sub>d</sub>*)**

Information on the rate of tax paid by SPL Limited was not stated in its financial statements. Therefore the standard rates for SMEs as published by HMRC for each year was used (*Table 8.31*).

**Table 8.31: The Cost of Debt for SPL Limited**

| Year    | Interest on debt | Tax rate ( $T_n$ ) | $k_d$ |
|---------|------------------|--------------------|-------|
| 2006/07 | 6.87             | 0.20               | 5.50  |
| 2007/08 | 6.04             | 0.21               | 4.77  |
| 2008/09 | 3.29             | 0.21               | 2.60  |
| 2009/10 | 3.30             | 0.21               | 2.61  |
| 2010/11 | 3.29             | 0.20               | 2.63  |

The analysis showed SPL Limited borrowed at a high rate of 5.50% in 2007. However this later fell by 0.72% the following year and then decreased by an average of 2.16% each year until 2011. Indications are that it was significantly cheaper to finance the company using debt capital. The company reported in the interviews that they invested money back into the company hence they have a low level of gearing

*SPL-R2: "We are geared towards cash flow. That is our biggest thing. Have we got enough money basically? Gearing only really affects us when we want to borrow money from the bank because they go by gearing. But we are very cash orientated. So the money that we make is ploughed back into the business; improving machinery, buying robots and better technical ability; updating the clean rooms; basically updating our infrastructure."*

*SPL-R1: "We are fairly low gearing."*

However, indications are the company carries a high level of debt to equity ratio; 4.995 in 2007 reducing to 1.746 in 2011. Hence, on the contrary, SPL Limited was found to be highly geared.

### 8.3.2.5 Estimating WACC and EVA®

Table 8.32 shows the calculations reflecting the WACC and EVA® for SPL Limited for the period 2007 to 2011.

**Table 8.32: Estimating WACC and Calculating EVA® for SPL Limited**

| CALCULATION OF EVA      | 2006/07          | 2007/08       | 2008/09        | 2009/10        | 2010/11        |
|-------------------------|------------------|---------------|----------------|----------------|----------------|
|                         | <i>£millions</i> |               |                |                |                |
| <b>NOPAT</b>            | 138,682          | 92,980        | 128,233        | 282,657        | 222,340        |
| <b>Cost of Capital</b>  |                  |               |                |                |                |
| Debt (Kd)%              | 5.50             | 4.77          | 2.60           | 2.61           | 2.63           |
| Equity (Ke1)            | 9.16             | 6.51          | 5.99           | 6.81           | 6.46           |
| Equity (Ke2)            | 9.09             | 6.64          | 6.78           | 7.52           | 8.04           |
| Equity (Ke3)            | 9.18             | 6.87          | 5.97           | 6.63           | 6.81           |
| Equity (Ke4)            | 8.08             | 4.80          | 4.12           | 4.92           | 5.36           |
| <b>WACC1</b>            | 5.19             | 4.30          | 3.45           | 3.76           | 3.69           |
| <b>WACC2</b>            | 5.18             | 4.32          | 3.73           | 4.01           | 4.27           |
| <b>WACC3</b>            | 5.19             | 4.37          | 3.45           | 3.69           | 3.82           |
| <b>WACC4</b>            | 5.01             | 3.97          | 2.79           | 3.08           | 3.29           |
| <b>Capital Invested</b> | 558,404          | 492,835       | 396,293        | 555,018        | 523,209        |
| <b>EVA-1</b>            | <b>109,699</b>   | <b>71,810</b> | <b>114,547</b> | <b>261,801</b> | <b>203,030</b> |
| <b>EVA-2</b>            | <b>109,759</b>   | <b>71,685</b> | <b>113,435</b> | <b>260,379</b> | <b>200,014</b> |
| <b>EVA-3</b>            | <b>109,678</b>   | <b>71,464</b> | <b>114,575</b> | <b>262,157</b> | <b>202,368</b> |
| <b>EVA-4</b>            | <b>110,701</b>   | <b>73,431</b> | <b>117,187</b> | <b>265,553</b> | <b>205,127</b> |

The analysis showed SPL Limited had WACC for the period between 5.19% and 2.79% with the highest rate applying in 2007. Again the trend in the cost of capital was seen to fluctuate with the state of the economy at the time, falling by as much as 2.40% in 2009.

EVA® analysis for SPL Limited showed the company consistently created wealth over the period with a slight dip in 2008 which may be attributed to the economic down-turn. The performance of the company was shown to be

consistent regardless of the market risk. The analysis indicated that wealth was created at 15% to 47% of the capital invested.

## **8.4 WIC Limited**

### **8.4.1 Document Analysis**

The annual reports for WIC Limited consisted of the Profit and Loss Accounts, Balance Sheets, Notes to the Financial Statements and Auditor's Report. The Chartered Accountant's Report consisted of detailed Profit and Loss Accounts as well as the notes to these accounts. Additional information on staff training, bad debts, research and development and certification was picked up from these additional records for the EVA® analysis.

WIC Limited stated that they do forecasting and budgeting as part of their management accounts and shared a snapshot one pager. However, the information it contained was of little use in the financial analysis.

### **8.4.2 EVA® Analysis**

#### **8.4.2.1 Making Adjustments for NOPAT**

WIC Limited made a profit for each of the years over the period 2007 to 2011. However, the amounts made in 2008 to 2010 fluctuated between £68,770 and £75,009 before increasing to over £200,000 in 2011. This reflected the difficult times experienced during the economic down turn in 2008 and the challenges faced thereafter.

As with ABC and DGE Limited, the data extracted from the reports was for the standard adjustments in determining NOPAT for EVA® analysis as presented in Table 8.33.

**Table 8.33: Calculating NOPAT for WIC Limited**

| Year                                   | 2006/07           | 2007/08        | 2008/09        | 2009/10       | 2010/11        |
|--|-------------------|----------------|----------------|---------------|----------------|
|  | <i>£thousands</i> |                |                |               |                |
| <b>Operating Profit</b>                | <b>123,476</b>    | <b>66,770</b>  | <b>75,099</b>  | <b>68,481</b> | <b>238,579</b> |
| <b>Adjustments</b>                     |                   |                |                |               |                |
| + Interest Receivable & Similar Income | 1,842             | 9,354          | 3,903          | 204           | 103            |
| + Depreciation                         | 24,459            | 54,329         | 41,824         | 38,475        | 30,151         |
| + Research & Development               | -                 | 5,331          | 8,700          | 3,260         | 7,491          |
| + Quality Assurance Certification      | -                 | 1,465          | 1,540          | 865           | -              |
| + Employee Training                    |                   | 2,805          | 2,271          | 4,848         | -              |
| + Operating Leases                     | 45,053            | 54,053         | 49,000         | -             | -              |
| + Bad Debts Provision                  | -                 | 15,000         | 42,577         | 12,595        | 524            |
| + Deferred Taxes                       | -                 | -              | -              | -             | -              |
| + Other Operating Income               | 15,221            | 6,829          | 4,675          | 4,000         | 9,604          |
| <b>Net '+' adjustments</b>             | <b>86,575</b>     | <b>149,166</b> | <b>154,490</b> | <b>64,247</b> | <b>47,873</b>  |
|  |                   |                |                |               |                |
| - Dividend Provisions                  | 75,000            | 50,000         | 40,000         | 30,000        | 50,000         |
| - Taxation                             | 8,567             | 18,428         | 13,975         | 16,042        | 50,142         |
|  |                   |                |                |               |                |
| <b>Net '-' adjustments</b>             | <b>83,567</b>     | <b>68,428</b>  | <b>53,975</b>  | <b>46,042</b> | <b>100,142</b> |
| <b>ADJUSTED NOPAT</b>                  | <b>126,484</b>    | <b>147,508</b> | <b>175,614</b> | <b>86,686</b> | <b>186,310</b> |

Following adjustments, there was only a marginal change in NOPAT for 2007 and 2010. While the adjusted profit increased significantly by over £80,000 and £100,000 for 2008 and 2009 respectively. For 2011, there was a decrease in profit of just over £52,000. From the analysis, it appears that this trend could be attributed to more value enhancing activities occurring and being recorded in the accounts for 2008 to 2010.

#### **8.4.2.2 Making Adjustments for the Capital Invested**

Analysis of the data from the reports indicated that WIC Limited was found to be the only company which was fully funded by equity capital. Although the company did have a loan during the period of the study, this was in the form of a personal loan by the retiring Managing Director (now Chairman).

*WIC-R1: "The Company now is debt free. So we haven't had to worry about getting any funding from the bank except for what happened with – and we have been cash positive for quite a few years. But when we did the shares buy out the company we had to use its cash reserves to buy those shares. But in fact we didn't have sufficient cash reserves to do it, so the Chairman lent back. He loaned back the company about £150,000 but we managed to pay that off at a cash flow in about 18 months - so as of a few months ago; so at the moment - no debt"*

Table 8.34 below shows the equity invested in the company over the time period and the adjustments made to determine the true capital invested.

**Table 8.34: Estimating the Capital Invested in WIC Limited**

| <b>TOTAL ADJUSTED CAPITAL</b> | <b>2006/07</b>    | <b>2007/08</b> | <b>2008/09</b> | <b>2009/10</b> | <b>2010/11</b> |
|-------------------------------|-------------------|----------------|----------------|----------------|----------------|
| <b>Capital Employed</b>       | <i>£thousands</i> |                |                |                |                |
| Debt                          | 0                 | 0              | 0              | 0              | 0              |
| Equity                        | 459,821           | 467,010        | 492,037        | 213,010        | 351,550        |
| <b>Book Value of Capital</b>  | <b>459,821</b>    | <b>467,010</b> | <b>492,037</b> | <b>213,010</b> | <b>351,550</b> |
| <b>Adjustments</b>            |                   |                |                |                |                |
| + Deferred Taxes              | -                 | -              | -              | -              | -              |
| + Research & Development      | -                 | 5,331          | 8,700          | 3,260          | 7,491          |
| + Employee Training           |                   | 2,805          | 2,271          | 4,848          | -              |
| + Bad Debts                   | -                 | -              | 42,577         | -              | 524            |
|                               |                   |                |                |                |                |
| <b>Total Adjustments</b>      | <b>0</b>          | <b>8,136</b>   | <b>53,548</b>  | <b>8,108</b>   | <b>8,015</b>   |
| <b>TOTAL CAPITAL INVESTED</b> | <b>459,821</b>    | <b>475,146</b> | <b>545,585</b> | <b>221,118</b> | <b>359,565</b> |

The analysis showed that there was just a marginal change in the book value of capital to the estimated total capital invested. With the exception of 2009 when bad debts provision was over £42,000, other adjustments made were for minimal amounts.

#### **8.4.2.3 Estimating the Cost of Equity (*ke*)**

WIC Limited is a manufacturing company which makes safety and speciality storage equipment. The company has a vast array of clientele across various sectors but mainly in the oil and gas and medical sectors. In order to estimate the systematic risk of WIC Limited which is an untraded company, companies operating in the same sector or with a similar clientele were selected as proxies (*Tables 8.35 to 8.38*). A list of the companies and a brief description is shown in *Appendix 10.D*.

**Table 8.35: Proxy Betas using FTSE 100 Companies for WIC Limited**

| <i>FTSE 100</i>             | <i>Years</i>   |                |                |                |                |
|-----------------------------|----------------|----------------|----------------|----------------|----------------|
|                             | <i>2006/07</i> | <i>2007/08</i> | <i>2008/09</i> | <i>2009/10</i> | <i>2010/11</i> |
| <i>Comparison Companies</i> | <i>Beta</i>    |                |                |                |                |
| <b>AMEC PLC</b>             | 0.92           | 1.13           | 0.89           | 1.02           | 1.03           |
| <b>Cairn Energy PLC</b>     | 1.05           | 1.13           | 1.08           | 1.22           | 1.22           |
| <b>Rio Tinto PLC</b>        | 1.42           | 1.45           | 1.69           | 1.51           | 1.49           |
| <b>Tullow Oil PLC</b>       | 1.00           | 1.11           | 1.06           | 1.23           | 1.23           |
| <b><i>Proxy Beta-1</i></b>  | <b>1.10</b>    | <b>1.21</b>    | <b>1.18</b>    | <b>1.25</b>    | <b>1.24</b>    |

**Table 8.36: Proxy Betas using FTSE 250 Companies for WIC Limited**

| <i>FTSE 250</i>             | <i>Years</i>   |                |                |                |                |
|-----------------------------|----------------|----------------|----------------|----------------|----------------|
|                             | <i>2006/07</i> | <i>2007/08</i> | <i>2008/09</i> | <i>2009/10</i> | <i>2010/11</i> |
| <i>Comparison Companies</i> | <i>Beta</i>    |                |                |                |                |
| <b>Chemring Group PLC</b>   | 0.90           | 0.62           | 0.61           | 0.77           | 0.88           |
| <b>Bodycote PLC</b>         | 0.86           | 0.90           | 0.91           | 1.15           | 1.25           |
| <b>Filtrona PLC</b>         | 0.74           | 1.03           | 0.82           | 0.82           | 0.85           |
| <b>Spectris PLC</b>         | 0.87           | 0.08           | 0.91           | 0.93           | 1.18           |
| <b><i>Proxy Beta-2</i></b>  | <b>0.84</b>    | <b>0.66</b>    | <b>0.81</b>    | <b>0.92</b>    | <b>1.04</b>    |

**Table 8.37: Proxy Betas using FTSE All-Share Companies for WIC Limited**

| <i>FTSE All-Share</i>                   | <i>Years</i>   |                |                |                |                |
|---|----------------|----------------|----------------|----------------|----------------|
|   | <i>2006/07</i> | <i>2007/08</i> | <i>2008/09</i> | <i>2009/10</i> | <i>2010/11</i> |
| <i>Comparison Companies</i>             | <i>Beta</i>    |                |                |                |                |
| <b>Filtrona PLC</b>                     | 0.74           | 1.03           | 0.82           | 0.82           | 0.85           |
| <b>British Polythene Industries PLC</b> | 0.32           | 0.53           | 0.53           | 0.59           | 0.51           |
| <b>Chemring Group PLC</b>               | 0.89           | 0.62           | 0.61           | 0.77           | 0.88           |
| <b>Bodycote PLC</b>                     | 0.86           | 0.92           | 0.91           | 1.15           | 1.25           |
| <b><i>Proxy Beta-3</i></b>              | <b>0.70</b>    | <b>0.78</b>    | <b>0.72</b>    | <b>0.83</b>    | <b>0.87</b>    |

**Table 8.38: Proxy Betas using FTSE AIM Companies for WIC Limited**

| <i>FTSE AIM</i>                    | <i>Years</i>       |                    |                    |                    |                    |
|------------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|                                    | <i>2006/07</i>     | <i>2007/08</i>     | <i>2008/09</i>     | <i>2009/10</i>     | <i>2010/11</i>     |
| <b><i>Comparison Companies</i></b> | <b><i>Beta</i></b> |                    |                    |                    |                    |
| <b>James Halstead PLC</b>          | <i>0.49</i>        | <i>0.42</i>        | <i>0.42</i>        | <i>0.38</i>        | <i>0.58</i>        |
| <b>BowLeven PLC</b>                | <i>0.84</i>        | <i>-</i>           | <i>0.71</i>        | <i>1.10</i>        | <i>1.50</i>        |
| <b>Cape PLC</b>                    | <i>0.60</i>        | <i>-</i>           | <i>1.06</i>        | <i>0.96</i>        | <i>-</i>           |
| <b>Faroe Petroleum PLC</b>         | <i>-</i>           | <i>0.64</i>        | <i>0.51</i>        | <i>0.86</i>        | <i>0.99</i>        |
| <b>Regal Petroleum PLC</b>         | <i>0.80</i>        | <i>1.01</i>        | <i>-</i>           | <i>-</i>           | <i>-</i>           |
| <b>Gulfsands Petroleum PLC</b>     |                    | <i>0.87</i>        |                    |                    | <i>0.85</i>        |
| <b><i>Proxy Beta-4</i></b>         | <b><i>0.68</i></b> | <b><i>0.74</i></b> | <b><i>0.68</i></b> | <b><i>0.83</i></b> | <b><i>0.98</i></b> |

The systematic risk for WIC Limited using the FTSE 100 was shown to be more volatile than the market by between 10% and 25%. However, the systematic risk for WIC Limited using a wider spread of the market (FTSE 250, All-Share and AIM) indicated that the market was more volatile than WIC shares. This means that WIC Limited could lose as much as 92% of its value should movement on the market slide.

In determining the cost of equity, of all the case studies, WIC Limited returned the highest rate. This is because the company is purely financed by equity capital which is more expensive than debt capital. Hence, the company is fairly low risk as its only debt obligation is to its shareholders.

**Table 8.39: Determining the cost of equity for WIC Limited**

| <i>Year</i> | <i>r<sub>f</sub></i> | <i>r<sub>m</sub></i> | <i>p-beta 1</i> | <i>p-beta 2</i> | <i>p-beta 3</i> | <i>p-beta 4</i> | <i>k<sub>e1</sub></i> | <i>k<sub>e2</sub></i> | <i>k<sub>e3</sub></i> | <i>k<sub>e4</sub></i> |
|-------------|----------------------|----------------------|-----------------|-----------------|-----------------|-----------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 2006/07     | 5.24                 | 9.59                 | 1.10            | 0.84            | 0.70            | 0.68            | 10.01                 | 8.90                  | 8.30                  | 8.21                  |
| 2007/08     | 1.24                 | 7.89                 | 1.21            | 0.66            | 0.78            | 0.74            | 9.25                  | 5.61                  | 6.39                  | 6.13                  |
| 2008/09     | 0.49                 | 8.37                 | 1.18            | 0.81            | 0.72            | 0.68            | 9.79                  | 6.89                  | 6.14                  | 5.81                  |
| 2009/10     | 0.50                 | 8.46                 | 1.25            | 0.92            | 0.83            | 0.83            | 10.41                 | 7.80                  | 7.13                  | 7.07                  |
| 2010/11     | 0.24                 | 7.97                 | 1.24            | 1.04            | 0.87            | 0.98            | 9.84                  | 8.27                  | 6.98                  | 7.81                  |

The cost of equity was found to be as much as 10.84% for WIC Limited and as little as 5.61%. The highest returns were found to be expected by the shareholders when the share of WIC Limited was analysed relative to the FTSE 100 (up to 25%). However, because of the size and turnover of the company, should it enter the equity market, it is likely that it would be traded on AIM. The FTSE AIM showed the expected rate of return by shareholder to be within the range of 8.21% to 5.81% inclusive. Fluctuations were also noted in the expected rate of return post the 2008 financial crisis.

#### 8.4.2.4 Estimating the Cost of Debt ( $k_d$ )

The corporate tax rate at which WIC Limited paid tax each year was included in the financial reports. Should WIC Limited have used debt capital, Table 8.40 shows what would have been its estimate for the cost of debt capital.

**Table 8.40: The Cost of Debt for WIC Limited**

| <i>Year</i> | <i>Interest on debt</i> | <i>tax rate (T<sub>n</sub>)</i> | <i>k<sub>d</sub></i> |
|-------------|-------------------------|---------------------------------|----------------------|
| 2006/07     | 6.87                    | 0.20                            | 5.52                 |
| 2007/08     | 6.04                    | 0.20                            | 4.82                 |
| 2008/09     | 3.29                    | 0.21                            | 2.60                 |
| 2009/10     | 3.30                    | 0.42                            | 1.91                 |
| 2010/11     | 3.29                    | 0.20                            | 2.63                 |

### 8.4.2.5 Estimating WACC and EVA®

Table 8.41 shows the resulting calculations for the WACC and EVA® analysis for WIC Limited.

**Table 8.41: Estimating WACC and Calculating EVA® for WIC Limited**

| CALCULATION OF EVA      | 2006/07          | 2007/08        | 2008/09       | 2009/10       | 2010/11       |
|-------------------------|------------------|----------------|---------------|---------------|---------------|
|                         | <i>£millions</i> |                |               |               |               |
| <b>NOPAT</b>            | 126,484          | 147,508        | 175,614       | 86,686        | 186,310       |
| <b>Cost of Capital</b>  |                  |                |               |               |               |
| Debt (Kd)%              | 5.52             | 4.82           | 2.60          | 1.91          | 2.63          |
| Equity (Ke1)%           | 10.01            | 9.25           | 9.79          | 10.41         | 9.84          |
| Equity (Ke2)%           | 8.90             | 5.61           | 6.89          | 7.80          | 8.27          |
| Equity (Ke3)%           | 8.30             | 6.39           | 6.14          | 7.13          | 6.98          |
| Equity (Ke4)%           | 8.21             | 6.13           | 5.81          | 7.07          | 7.81          |
| <b>WACC1</b>            | <b>10.01</b>     | <b>9.25</b>    | <b>9.79</b>   | <b>10.41</b>  | <b>9.84</b>   |
| <b>WACC2</b>            | <b>8.90</b>      | <b>5.61</b>    | <b>6.89</b>   | <b>7.80</b>   | <b>8.27</b>   |
| <b>WACC3</b>            | <b>8.30</b>      | <b>6.39</b>    | <b>6.14</b>   | <b>7.13</b>   | <b>6.98</b>   |
| <b>WACC4</b>            | <b>8.21</b>      | <b>6.13</b>    | <b>5.81</b>   | <b>7.07</b>   | <b>7.81</b>   |
| <b>Capital Invested</b> | 459,821          | 475,146        | 545,585       | 221,118       | 359,565       |
| <b>EVA-1</b>            | <b>80,437</b>    | <b>83,952</b>  | <b>81,470</b> | <b>78,628</b> | <b>81,246</b> |
| <b>EVA-2</b>            | <b>85,538</b>    | <b>100,686</b> | <b>94,786</b> | <b>90,611</b> | <b>88,439</b> |
| <b>EVA-3</b>            | <b>88,338</b>    | <b>97,095</b>  | <b>98,228</b> | <b>93,721</b> | <b>94,388</b> |
| <b>EVA-4</b>            | <b>88,738</b>    | <b>98,317</b>  | <b>99,768</b> | <b>93,995</b> | <b>90,570</b> |

The analysis showed the range of WACC for WIC Limited was between 10.41% and 5.61% over the study period, depending on the method of assessment. Here  $WACC = k_e$ , as the company does not have any debt capital. The analysis indicated that, at the time of the economic crisis in 2008, the change in the WACC was lower relative to other years. Should debt financing have been used; it would have spread the cost of borrowing making it less expensive. Relative to the cost of debt financing, WIC Limited paid a much greater cost to finance the company. In addition, being a profit making organisation, value could have been added through the use of debt finance to lower tax bills, as debt interest is tax deductible.

As with the other companies, WIC Limited consistently produced a positive EVA<sup>®</sup> over the period, between 15%-43% of the cost of capital. However, compared to the other companies, the performance of WIC Limited over the period across the range of market indices used was the least consistent. The change in EVA<sup>®</sup> within each year was more dispersed than the other companies. This may be because the other companies were more aligned with the market because of the debt financing. Hence it may be deduced that using CAPM to determine the cost of capital may not have been the most appropriate measure for a non-traded equity financed company.

## 8.5 Summary

Despite the limitations in CAPM, the analysis showed it can be used to provide approximate information on private companies. However, to return the best estimate of the systematic risk of private companies, access to the data needed to determine this measure is necessary. Once the stated assumptions were made, the EVA<sup>®</sup> analysis for the cases was relatively easy to apply. From *Chapter 7* it was determined that the information content on value added elements within each case study could not be readily determined from just the data presented in the annual reports. However by applying the common EVA<sup>®</sup> adjustments from the literature, these provided an indication of the wealth creation (destroying) status of each of the case study companies.

Key findings from the EVA<sup>®</sup> analysis were:

- With the exception of DGE Limited which reported negative EVA<sup>®</sup> for the period 2008 only, the analysis indicated that all the companies engaged in wealth creation activities over the study period.
- The analysis also indicated that these companies were on average creating wealth at 13% to 25% of the capital invested.

However, this may be better, or less impressive, than shown because of an inefficient market and irrational human actions (Shiller, 2003) as well as errors introduced through the assumptions made for the analysis. A case in point: WIC Limited is funded only with equity financing hence it could be argued that it would have less exposure to market risk resulting from debt financing. While the deviation between EVAs<sup>®</sup> within each year was more than that of the other companies, there was no way of establishing the market risk estimated for either company. This was because the analysis sought to align the case study companies which are private non-traded companies to that of publicly traded companies. Although the problems with CAPM are widely recognised, the model is still accepted and widely used in determining systematic risk.

In conducting the EVA<sup>®</sup> analysis for the case study companies, the results provide information on:

- How well the company makes use of its invested capital
- Its performance relative to a traded company and a sense of its position in the market.
- The effect of investment decisions on the overall performance of the company
- The level of gearing of the company and how it positions itself over the business year.

However, more pointedly, the analysis showed EVA<sup>®</sup> could be applied in SMEs as was discovered by Bahri *et al.*, 2011. The challenge however lies in SMEs' capability in developing strategies and business models to capture the information required for applying the EVA<sup>®</sup> performance tool. The literature documents the challenges SMEs encounter on the human resources side of the business (Bahri *et al.*, 2011; Storey, 1994). The evidence from the cases indicated that managers within SMEs are now more attuned to delegating responsibilities and applying a more democratic style to management. For an EVA<sup>®</sup> style of management and measurement to work, they would need to

greatly advance their financial capabilities. That is however beside the point of whether the EVA® performance measurement tool can be implemented or adapted.

Notwithstanding, it must be noted that these findings are within limits. This is because of the problems and issues encountered in undertaking the EVA® analysis. The lack of data in the financial reports and unwillingness of companies to divulge confidential information means that errors could have been introduced. Such errors could arise from the adjustments made for NOPAT and capital invested and also from the assumptions in CAPM. Whilst the findings are indicative of the value added, further investigation with properly sourced access to confidential information would be needed to implement EVA® in practice in these organisations. This indicates a further drawback of EVA® in that it is supposed to be implemented using publicly sourced data, which is problematic, albeit not insurmountable, in the context of SMEs.

## ***Chapter 9: CONCLUSION and RECOMMENDATIONS***

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9.0 Introduction

9.1 Discussion

9.2 Recommendation

9.3 Contribution to Knowledge and Practice

9.3.1 Contribution to SMEs

9.4 Generalisability and Limitations

9.4.1 Reflection on the Process of the Research

9.5 Concluding Comments

## 9.0 Introduction

The aim of this study is to identify the value drivers within the EVA<sup>®</sup> framework and to determine if they can be applied within SMEs in order to determine growth and value created. This was explored using the theory on EVA<sup>®</sup> put forward by the proposers Stern Stewart & Co. who stated that EVA<sup>®</sup> is best applied at divisional levels; managers are made to have a sense of ownership and employees a sense of making a valuable contribution to the success of their division.

The following research questions were proposed:

1. How do managers determine the value drivers within a SME?
  - a. To what extent are value drivers considered when management within SMEs make investment decisions?
2. If value drivers are determined, how are these value drivers used?
  - a. How is value measured within the organisation?
  - b. Does this inform the strategic planning process within the business?
3. Can EVA<sup>®</sup> be used or adapted within SMEs?
  - a. What would be the variables and the value drivers in the EVA<sup>®</sup> model?
  - b. How are these variables and value drivers determined?
  - c. What other factors needs to be considered in modelling EVA<sup>®</sup> for SMEs?
4. How useful is the EVA<sup>®</sup> framework for SMEs?

Each of these is addressed, in turn, in the following section.

## 9.1 Discussion

1. How do managers determine the value drivers within a SME?
  - a. To what extent are value drivers considered when management within SMEs make investment decisions?

Value indicator describes a resource which can be modified in order to improve or maximize its expected output. Value drivers are those variables which create an impact, positive or negative, on the value of a company. In analysing the data obtained during this study, the term value and value drivers were not terms used within SMEs. However the literature points to value being created within SMEs through CSR (Buchanan, 2012; Hammann *et al.*, 2009; Korunka *et al.*, 2010; Sahin, *et al.*, 2009). This is manifested in management having an interest in employees' welfare as well as their motivation (Hammann *et al.*, 2009). The literature also points to SMEs as innovators hence creators of value (Koellinger, 2008).

Analysis of the research data found that these practices were also true for the case study companies. However, as pointed out earlier, these SMEs do not label these activities as value drivers. Hence it is fair to conclude that SMEs perceive any such activity as actions needed to achieve a specific end. This could range from training staff so that they become more effective in their post or creating a new product to increase revenue. Hence the extent to which value drivers are considered is based on the outcome intended.

All the case study companies were found to be engaged in value enhancing activities. The value exercise brought out the significance attached to activities within the companies. Although they did not consider their activities to be value enhancing prior to the value exercise, there was recognition of the benefits to be gained from each value indicator. This was expressed in the order and priority assigned to each of the value indicators during the value exercise. Although only one company add additional value indicators to the exercise, from

the interviews it was clear that they engaged in various types of value enhancing activities. Examples of some of the value enhancing activities identified were staff training, implementing waste management systems, designing new products and building a customer base. The value exercise also indicates that, each manager have a different perception of what drives value within the company. Using the same value indicators, the various senior management team were found to base the priority of value indicators based on their respective role within the company. Example, those in financial roles tend to place those indicators which are financial based greater priority.

However, by combining the results for each company, the result is an overall indicator of the value indicators for respective companies. The analysis shows that the value indicators in SMEs also aligned with those found in the literature on value indicators within companies. The key is therefore for managers to be able to identify over each period which indicators would ultimately determine the value drivers for the company. As illustrated in *Chapter 7, Section 7.3 & 7.4, Table 7.11*, these value drivers would then inform the variable for EVA<sup>®</sup> analysis for that period in time.

From the case studies, it was evident that managers make unconscious decisions on what would drive value within their respective companies.

2. If value drivers are determined, how are these value drivers used?
  - a. How is value measured within the organisation?

The literature showed that the concept of value is real within large businesses (Pitelis, 2009; Lin and Lin, 2006; Itami and Roehl, 1987). However, regarding SMEs, the overall concept of value as understood from the EVA<sup>®</sup> framework was not seen in the case study companies. For the companies studied, it was clear that they all undertook value based activities but did not attach the term value

or value added to what they do. This is indicated in their practices and reasons given which indicate engagement in value enhancing activities. This, Prestney (2012) and Hogg (2011) believe came from the entrepreneurial instinct to continually build things to create value.

However such terminology was not found to be in use nor was 'value drivers' used in expressing any financial variable. However it is recognised that some are inadvertently captured and recorded as part of normal accounting practices and ultimately inform the financial data. The case study companies also show that value measurement is not practiced within SMEs. Whereas they may assess the outcome of an investment, it is broadly looked at as accounting profit. The investigation also showed that strategic planning is not a feature within SMEs.

- b. Does this inform the strategic planning process within the business?

Although strategic planning is an essential part of the business process, the investigation found it was not a feature within the case study companies. It is during this process that a company identifies the value and value drivers, how they are created and captured (Shafer *et al.*, 2005; Porter, 1996 and 1991).

Hence, the conclusion is that value is not consciously determined, nor is it consciously measured in SMEs. It was also found that SMEs do not practice strategic planning for the business. However, it was clear that SMEs all unconsciously use value drivers and value added elements at some point in the planning and decision-making.

### 3. Can EVA® be used or adapted within SMEs?

The EVA® performance metric was not used by any of the case study companies. Neither was it revealed in the literature to be widely implemented in SMEs. Instead the EVA® performance metric was found to be used by large companies (Sullivan and Needy, 2000; Ehrbar, 1998; Stewart III, 1999; Stern *et al.*, 2001).

Only one company, DGE Limited, had heard of EVA®. However, in assessing the operations and management of the companies, they were found to have the basic structure profile which fits the EVA® management system. The theory on EVA® management system states that EVA® is best applied at a divisional level where the manager is given responsibilities and encouraged to act like the owner of the company (Ehrbar, 1998; Stewart III, 1999; Stern *et al.*, 2001). The organisation charts for the case study companies show (*Chapter 6*) that they all operate in divisions overseen by the management team. Each company has channels of communication with employees; meetings and or shared reports. In all the cases employees were encouraged to access training to improve their knowledge and competency in the job.

The next element of the EVA® framework, the compensation scheme, was also found to be a feature in the case study companies. DGE Limited was found to have the most elaborate scheme where employees are given incentives with share offers in new product innovation alongside bonuses. SPL Limited and WIC Limited also have formalised incentive and bonus schemes while such an award scheme was under consideration at ABC Limited.

Insights gained from this study put forward some reasons why managers of SMEs would have little interest in EVA® or value based measurement. The focus of the EVA® performance metric is on the return from investments for shareholders. In SMEs, the focus is different and is based on the vested interest of the owner of the company rather than shareholders. Hence the return, while there is some financial gain, there are also non-financial gains from that

investment. All the case study managers are passionate about their company and they are all clearly engaged in doing something they are passionate about and have been doing so consistently over the years. None of the companies could clearly state what return was expected from investing in the company. However, it could be clearly seen that there was satisfaction in owning their own company and having job security.

Nonetheless the analysis of the case study companies using the EVA<sup>®</sup> performance metric and common adjustments produced some reasonable results. They were considered to be reasonable because the annual EVAs<sup>®</sup> were on average 15% - 31% the cost of capital invested. Also, in the two instances where the companies (ABC Limited and DGE Limited) performed poorly relative to previous years, this showed up in the EVA<sup>®</sup> analysis. However, there is room to argue that the performance could have fluctuated either side of the spectrum (negative to positive) for each of the case study companies. This is because they did not collect or record the data needed for a more comprehensive EVA<sup>®</sup> analysis to be undertaken.

- a. What would be the variables and the value drivers in the EVA<sup>®</sup> model?

Literature on the EVA<sup>®</sup> framework and how it should be implemented makes EVA<sup>®</sup> seem a best match for use within SMEs. Although it has been described as easy to understand and implement (Young and O'Byrne, 2001; Stern *et al.*, 2001; Tully and Hadjian, 1993), the evidence shows this not be the case for SMEs. To begin with there are no general guidelines to identify what the value drivers should be for the EVA<sup>®</sup> model. This study proposed a process (*Figure 7.3*) which could be used by SMEs for that purpose. It would also enable decisions to be made on the adjustments required based on the value driver impact on NOPAT or invested capital. Prior to that, the company would need to have the human resources (Cagle *et al.*, 2003) and systems in place to capture and record the information needed for the formulation of EVA<sup>®</sup> (Hammann *et*

*al.*, 2009). The study indicated that the activities within a company at a particular point in time determine the value drivers. This information then needs to be processed and fed into the financial information within the company and then needs to be adjusted in calculating EVA®.

b. How are these variables and value drivers determined?

Within the EVA® performance metric, NOPAT is a vital part of the equation. Findings from the analysis of the literature and the data collected showed that the value drivers of EVA® are embodied within NOPAT as well as the capital invested. However, there is no real sense of what constitutes the value drivers for the EVA® model. From the analysis of the qualitative data it was shown where the indicators of value translate into the quantitative data (*Chapter 7, Section 7.4*) to inform the performance metric. That is, the value indicators which are resources employed to maximize the output of the company are captured in the accounting reporting process hence they translate into the value drivers. These are then expressed using accounting terminologies such as Sales, Operating Expenses, and Assets which are then taken into account in the EVA® performance metric. That is, they then inform the EVA® performance metric what is needed for adjustments for NOPAT and the capital invested. Ultimately, the adjustments made are dependent on the type of company and the value enhancing activities undertaken over a period. Hence there is no general ranking of value drivers which can be applied to every company. From the analysis undertaken in *Chapter 7*, it is clear that ranking of value drivers is unique to each and every company although amongst them there may be common value indicators.

An investigation of EVA®'s value drivers also revealed that not all value drivers can be converted into monetary terms. It also showed that, even though some may be quantifiable, the process of making them measurable in monetary terms could be potentially complex (*Table 7.11*). This complexity is as a result of the value added by intangible drivers which are not normally accounted for in

accounting practices. This indicates that the EVA<sup>®</sup> performance metric is likely only to account for the quantifiable measures of value. Hence it is limited in accounting for value which is added by intangible and complex value drivers within a company. This would be true for any company, whether large or small, implementing EVA<sup>®</sup>.

A key feature of the EVA<sup>®</sup> performance metric is that it, supposedly, takes into account all the costs incurred in financing the company – debt and equity. For larger companies, information on how they are financed is likely to be much more transparent than small companies. That is because, as seen with the case study companies as well as in the literature, bootstrap methods of financing are dominant features within SMEs. This presents other challenges for the application of EVA<sup>®</sup> in SMEs as it becomes increasingly difficult to ascertain the cost of debt capital ( $k_d$ ). Investment capital raised through bootstrap techniques such as loans from friends or families usually comes with personal guarantees rather than interest rates. For SMEs, unless the method of financing the company is through formal channels, because other methods of financing are perceived as having no cost, the true cost of debt capital is difficult to ascertain.

Similarly, with the cost of equity ( $k_e$ ) capital is perceived to be ‘free capital’ because they are investing their own money. That is, SMEs tend not to have any expectation of return on retained earnings invested in the company. For SMEs, the alternative of seeking debt financing through financial institutions is likely to be more costly, hence they forego that opportunity. They also tend not to take dividends payments so that the money can be reinvested in the company. Also, once that investment is tied up in the company, they lose the opportunity of investing elsewhere because they may not be able to readily withdraw should they wish to seek alternative investment outside the company. Also, although dividends are reinvested, and even though they may have a perception of some expected return, that expectation is not viewed as an opportunity cost. Nonetheless, to apply EVA<sup>®</sup>  $k_e$  must be accounted for and CAPM is widely accepted for this purpose.

- c. What other factors need to be considered in modelling EVA® for SMEs?

While challenges would be expected in identifying and valuing the value drivers, the greatest challenge would be in determining the cost of capital. As discussed earlier, because bootstrapping is sometimes used within SMEs, the cost of capital may be difficult to determine, as the rate of return is usually a promise or deed exchanged. Also, as discussed above, although CAPM is widely used in its determination, CAPM considers the systematic risks (beta- $\beta$ ) and returns for traded companies. It also assumes perfect market and investor behaviour (Fama and French, 1997 and 1991) which goes against the theory on behavioural finance (Shiller, 2003). This means in using CAPM to determine the proxy betas, the issues and problems inherent within CAPM would also be transferred in its application to a non-traded company. This is likely to be in addition to challenges in applying EVA® in any company.

The study also revealed that in order to implement EVA® the environment and culture within the company needs to be one that is conducive to learning, personal drive and motivation. Managers need to exhibit the characteristics of a firm and decisive leadership to be able to motivate employees in order to make and sustain a positive EVA®. They also need to be able to take strategic decisions on investments using business data rather than rely on gut feelings and experience.

Thirdly, the companies used for the case studies varied in their levels of sophistication and complexity. DGE Limited exhibited the most sophisticated characteristics followed by WIC Limited, SPL Limited and then ABC Limited. All the companies' Managing Directors have over 10 years' experience either managing their respective company or in leadership positions within public companies. They all used the knowledge and expertise gained in previous employment to establish and manage their businesses. DGE Limited also has the most highly educated management team and employees. They have the most

organised structure with dissemination of responsibilities beyond the management chain. They also have a well-designed incentive scheme intended to encourage employee's creativity and innovation. All of these factors would increase the acceptance and successful implementation of EVA®.

Fourthly, the financial capabilities of the SME are an important factor. With respect to the cases, SPL Limited has the weakest and DGE Limited's the strongest financial capabilities. All the companies prepare some management accounts and use the information to monitor the performance of the company. Although all had concerns around confidentiality of financial and commercial information, from all the information gathered, the companies were performing well. The availability of good quality management accounts to supplement published reports is fundamental for a successful implementation of EVA®.

Fifthly, the determination of WACC is problematic. CAPM expresses the relationship between the risk and the expected return of a security trading in the market. This means that CAPM is used for traded companies as it takes into consideration the exposure of the company's shares in the market. The case study companies are private non-traded companies hence market risk (beta –  $\beta$ ) could not be ascertained for these companies. Therefore in estimating  $k_e$ , the market risk was accounted for with the use of proxy betas (See *Chapter 8, Section 8.0.2*). Each company's share was valued at £1 for the entire life of the company to date. This makes it even more challenging in trying to estimate the  $\beta$  values for these companies without using a proxy. Further problems occur with the use of bootstrapping, as aforementioned. Consequently it is important for SMEs wishing to undertake EVA® to understand the concept of WACC and to have systems in place which capture and monitor estimated values.

In conclusion to research question 3 as a whole:

- SMEs already have the basic structure for the implementation of the EVA® framework.

- They would need to become more cognizant of their operation and practices in order to collect data relevant for the EVA<sup>®</sup> performance metric to be applied.
- SMEs need to have in-house capabilities to undertake EVA<sup>®</sup>.

However, should an SME choose to implement EVA<sup>®</sup> there needs to be some understanding of the purpose of implementing the framework. While in large companies EVA<sup>®</sup> is a comparative indicator of a company's performance in the market, it would be slightly different for SMEs. For SMEs it could be used:

- To aid management to run the company more efficiently and effectively by implementing a system which is recognisable by employees. Informal practices can align well with the EVA<sup>®</sup> management and compensation framework.
- A tool to periodically assess performance and the growth potential of the company.
- To inform decisions on transitioning from a private to a public traded company for its initial public offering (IPO).

#### 4. How useful is the EVA<sup>®</sup> framework for SMEs?

Although there has been some research on EVA<sup>®</sup> with SMEs (Bahri *et al.*, 2011; Hammann *et al.*, 2009; Roztockki and Needy, 1999), these were merely empirical studies which just investigated applying EVA<sup>®</sup> to SMEs. This study presented the opportunity for a more in-depth analysis in which the management, structure, resources, strategy and the concept of value within SMEs were considered.

The investigation revealed that knowledge of EVA<sup>®</sup> was relatively low within SMEs. Where there was some knowledge, the literature found much scepticism

about its stated benefits (Kim, 2006; Palliam, 2006; Chen and Dodd, 2001; Paulo, 2002; Garvey and Milbourn, 2000 and Biddle *et al.*, 1999).

Nonetheless the findings of this investigation suggest that EVA<sup>®</sup> can be useful to SMEs. Characteristics synonymous with SMEs include poor management, flat organisation structures with the owner-manager making all decisions and informal financial practices (Neely and Auken, 2010; Vos *et al.*, 2007; Smith and Smith, 2007; Aragón-Sánchez and Sánchez-Marín, 2005 and Levy and Powel, 2005). However, the investigation found that SMEs have evolved and they are already inadvertently practicing basic forms of the EVA<sup>®</sup> management and compensation framework. Hence implementing EVA<sup>®</sup> would give management a structured system to assist in managing the company in a more effective way. The EVA<sup>®</sup> framework requires the EVA<sup>®</sup> concept to be disseminated throughout the organisation with each employee made to feel like owners of the company (Ehrbar, 1998; Stewart III, 1999; Stern *et al.*, 2001). Although it was found that SMEs already have that family type feel and employees were found to be loyal, the implementation of EVA<sup>®</sup> would form the foundation needed. This has the potential to improve performance efficiency within the company.

Another area where the EVA<sup>®</sup> framework would be useful is in the management of the company finances. To implement the EVA<sup>®</sup> framework, management would need to undertake strategic planning for the business. This would mean a major change or investment into the business; this process would have to be repeated. Business planning would enable management to identify where value would be created and devise from the early stages, the resources needed and how the value added would be captured. This means management would become more cognizant of the finance state of the business. Ultimately, this could aid SMEs in ensuring that the limited capital available at their disposal is maximized. Improved financial practices means the company use of financial performance measures as well as other measures to assess the performance of the company. This also means that management would have the information to make informed decisions rather than rely on gut feelings (Ekanem, 2005).

The use of the EVA<sup>®</sup> framework could also be used by management to strategically plan and manage the growth of the company. Gathering the internal data needed for the EVA<sup>®</sup> performance analysis, a company can use the estimated EVA<sup>®</sup> in transitioning from a private to a public company for its IPO.

Hence, in looking at the primary research questions:

- A. What are the indicators and drivers of value within SMEs?
- B. In applying the EVA<sup>®</sup> framework to SMEs what can be deduced?

The investigation revealed that the value indicators are the resources which can be modified in order to improve or maximize the expected output of the company. In applying the EVA<sup>®</sup> framework to SMEs, it may be deduced that it is best suited as an information and structural tool for managing SMEs. While the performance metric has useful information content, because of the uncertainty in the degree of errors from using CAPM it could not be used in isolation without further investigation.

Within SMEs the focus was found to be on management of the company core operations. There is however room for improvement which potentially could offer many benefits to the company. Within SMEs, managers need to be aware of and take a wider view on management. This includes not just the management of operations within the company but also the management of the resources within the company. Although SMEs already exhibit some characteristics suited for the EVA<sup>®</sup> framework to be implemented, the study indicated that this would be a real challenge for SMEs. It would mean above all things, collecting more information, knowing what information to collect and having the expertise in-house to collect and manipulate this data. The study indicated that although EVA<sup>®</sup> could be adapted for use in SMEs, SMEs would need human resources, better management and information practices in order to adapt and implement EVA<sup>®</sup>. Hence, while they exhibit some elements of the EVA<sup>®</sup> management and compensation framework, they are not poised to adapt

or implement the EVA® performance metric. The EVA® framework would need to be implemented for the full benefits of EVA® to be realised (Abate *et al.*, 2002; Stewart III, 1999; Ehrbar, 1998).

The study found that although activities or actions were often undertaken with the intention to maximize outcome, value or value added were readily associated with such endeavours. Yet SMEs consistently explore ways of adding value. The study also showed that SMEs practice some element of value based management although they do so unconsciously. It also showed that the value drivers are dynamic and change according to events in the company at a particular moment in time. Hence value drivers must be reviewed with a change in focus of the company. They however do not collect sufficient or the right data to inform the financial data for EVA® analysis. Information collection and processing was still based on traditional accounting practices and not on financial or value based management.

## **9.2 Recommendations**

### *For Practice*

All is not lost, however. The literature shows that many companies have adopted value based management as an efficient and effective way to value and measure performance (Bacidore *et al.*, 1997; Myers, 1996; Brandenburger and Stuart-Jr., 1996). Staying above the competition by better managing its resources and recognising the activities and elements which add and create value can only be beneficial to a company. Porter (1991) recognised that such activities enhance the viability of the business. Whilst by their nature SMEs are suitable for adopting EVA®, indications are they are still not at the stage to advance in value based management. While they are challenged with access to capital (Slavec and Prodan, 2012; Neely and Auken, 2010; Carter and Auken, 2005), it is also recognised than early establishment of the core values and

stakeholder relationships are vital to success (Buchanan, 2012). The study shows that small business managers are supportive of change and moving towards an integrated management style. Nonetheless, some SMEs still fail and a deeper appreciation of vital resources could help businesses remain viable and competitive. From the case studies, the data also points out that SMEs still have some expectancy of assistance through various Government agencies.

A major recommendation is that elements of value based management could be built into a support programme for SMEs in order to receive financial and technical assistance. This could be a collaborative work between Government funding schemes for small businesses, the KTP scheme, banks and private consultants. . This could raise the bar and the performance of SMEs and provide widespread benefits to all the parties involved. The management and capabilities of key personnel within SMEs would gradually improve over time. It would also produce more viable SMEs which would bring further social and economic benefits to society.

#### *For Academic Study*

Further study could be conducted to determine how best to adopt the EVA® framework within SMEs. This work would need to include a strategy for its implementation together with any necessary adaptations to the EVA® performance metric.

There is also an opportunity to explore how best to determine the cost of capital and the market risk of SMEs use in-house. This would best be undertaken within a company which has gone through the strategic business planning process described (*Figure 7.3*) and which has implemented systems to collect the relevant data.

The findings on the evolution of SMEs also present the opportunity for more focused research on particular aspects such as devolution of power within SMEs as well as a wider context on value based management within SMEs.

### **9.3 Contribution to Knowledge and Practice**

The study made several contributions to knowledge and practice. First in the area of small business development, the study shows the advances made by SMEs since the work of Storey (1994 and 1992) and Smallbone (1995). The evidence points to SMEs becoming more structured and organised with management willing to release the reins of control over the company. Management is also no longer satisfied to be the source of all knowledge within the company. They have evolved in their leadership style to incentivise employees to learn new skills and become more involved in the company.

Another contribution was an addition to the theory on EVA<sup>®</sup>. The study clearly identified value indicators and illustrated a process of ranking of value indicators within a company. Armed with this knowledge, the value drivers for that company for the study also indicated how the value drives can be determined for the implementation of the EVA<sup>®</sup> performance metric. The findings here are two-fold, as a process (*Figure 7.3*) was proposed of how this could be implemented in practice; in particular for SMEs in the formative process of strategic planning. By taking a holistic approach, value creation can be and recognising by identifying, monitoring and measuring the value created through management and operational activities within the internal and external environment of the business.

This research also adds to theory by showing that EVA<sup>®</sup> is adaptable to SMEs and the benefits to be derived from the implementation of the EVA<sup>®</sup> framework. In applying the EVA<sup>®</sup> performance metric to SMEs, it also represents a contribution to practice.

Finally, a contribution has been made to knowledge and practice in the design and implementation of an integrated approach in applying mixed methods (Bazeley, 2002). The practicality of combining two different paradigms comes with many challenges, with the integration likely to occur in the discussion and final conclusions (Creswell, 2008; Johnson *et al.*, 2007; Bazeley, 2002). In this study, a demonstration of the seamless integration throughout with the transition of the qualitative data into the quantitative data is illustrated during the analysis. It also shows how the design of a mixed-method research can draw out information within the qualitative data to inform the quantitative. In practice, mixed-method research of this type was found to be few in number (Johnson *et al.*, 2007; Bazeley, 2002).

### **9.3.1 Contribution to SMEs**

While the study indicated that elements of value based measurement were practiced within SMEs, it was apparent that this was done unconsciously without management actually thinking of implementing a value based management system. This appears to be inherent within SMEs.

Hence the main contribution of this research to SMEs is a framework for the actual implementation of a value based management system. The proposed model to be used in undertaking this task is set out in Figure 7.3. By implementing this model, from the onset SMEs would be able to:

- i. Develop a comprehensive strategy for its operation
- ii. Clearly identify the resources at its disposal to achieve its overall objective.
- iii. Be able to make more informed decision on how to allocate its limited resources instead of applying bootstrap techniques.

- iv. Identify its value indicators and implement how ways to collect relevant data to monitor and measure the performance of this resource.
- v. Become more effective and efficient at managing the company.
- vi. Lays the foundation for collecting the data which would be needed to inform the EVA<sup>®</sup> performance measurement metric.

This is seen as a vital contribution to the development of SMEs. This would enable managers of SMEs to better manage the company and to become even better managers. It would also give them the confidence and assurance needed to relinquish the reins of the company to staff who are capable of taking on management responsibilities knowing that there are systems in place to facilitate this process of change.

#### **9.4 Generalisability and Limitations**

The method of collecting data was by case study using purposive sampling to ensure that, within the small sample size, all participants met the criteria outlined in *Chapter 5, Section 5.5.1*. By using case studies, triangulation of the data collected was achieved, as the evidence from both the interviews and financial reports were used to corroborate findings (Rowley, 2002).

The companies selected were from a wide spectrum ranging from family owned businesses to a firm privately owned by a group of professionals. As the analysis of the data collected was done by comparing and contrasting between cases and between the data from the literature, generalisation of the findings is also possible. That is, for any selection of SMEs from the general population exhibiting similar characteristics, size, structure, management style, culture and with similar financial data, similar results could be inferred (Polit and Beck, 2010; Firestone, 1993). The analysis also suggests that, SMEs in which the

management is more democratic would provide an environment which would be conducive for the implementation of the EVA<sup>®</sup> framework.

Also the ensuing discussion established the validity of the results as they showed the link between the findings and the research question. The reliability of the research was demonstrated throughout in the application of the same method of collecting and analysing the data.

The current study employs a mixed method research which have been criticised for not being a truly mixed approach. This is because the design of the mixed method focuses on the use of the components which are kept separate, either parallel or sequential (Creswell, 2008; Bazeley, 2002; Morse 1991). A further criticism is that the integration of the qualitative and the quantitative approach was only explained in the findings (Bryman, 2007). In this study, the analysis of the data illustrated the integration of the qualitative and quantitative analysis. It showed that the information content of the qualitative analysis informs the quantitative from the analysis into the findings. The research design illustrated how mixed method research could be strengthened; enhancing the reliability, generalisability and validity of the study.

#### **9.4.1 Reflection on the Process of the Research**

In reflecting on the process of the research, from identifying the research area, establishing the boundaries of the research, establishing the methodological framework to the process of analysis of the data; for the most part, the research was implemented as planned. However, in hindsight, it was felt there was room for improvement in gaining access to the companies which could have further resulted in more enriched data arising for the qualitative part of the study.

Upon drafting the research proposal and applying to the University, it was taken for granted that, in general, small businesses would be more receptive of the idea of working with University researchers. This perception was based on the

researchers' perspective that as a first world country in which the Government has invested quite heartily in joint programmes with Universities and SMEs, SMEs would be eager to engage in research. However, this was not the case. Eighty-five per cent of SMEs contacted declined citing time constraint. Many were very abrupt and dismissive of the idea. It took three and a half years to gain access to the companies which participated in the study. It was also difficult to re-engage with some of the companies once the initial data was collected.

Access to companies was found to be a common problem faced by researchers (Okumus *et al.*, 2006). Okumus *et al.* (2006) wrote about the importance of identifying and establishing a relationship with someone associated with companies so that they could act as 'gatekeepers' in negotiating access. In implementing the initial plan of gaining access through Park Royal Partnership and the London Development Agency, ideally time should have been spent in the early stages to build the gatekeeper relationship. As a consequence the alternative route which was essentially 'cold selecting' by search the internet and 'cold calling' was employed.

Unlike ABC Limited which signed up to participate in 2008 and for which a longitudinal study was possible, this was not the case with the other three companies. Had access been considered early in the process, then it would have been possible to employ a longitudinal study for all the cases. This could have added an extra dimension to the study, as having introduced the notion of 'value' to the case study companies, there could have been an opportunity to monitor any change the notion of value over time for each company.

## 9.5 Concluding Comments

Although there has been a shift in the way in which performance is measured in the modern financial world of value based measurement, the trend is yet to be seen in SMEs. Studies show that SMEs are still perched on the fringes of traditional measures and they utilise a few ratios (sales, profit and ROI) to evaluate performance (Perera and Baker, 2007). Performance measurement was more to be implemented as a result of some external stimuli than a strategic action in SMEs as they were found to be more concerned about survival than growth (Lynch and Wilson, 2009; O'Regan *et al.*, 2006; Perera and Baker, 2007). Hence it may be concluded that because of their approach, SMEs do not have the understanding or the capability to capture the information needed in order to use a value based performance measure.

The analysis, discussion and conclusions drawn imply that ultimately the feasibility and validity of the application of the EVA<sup>®</sup> framework increases with the sophistication of the SME: it is a challenging prospect, but not an impossible achievement.

## **APPENDICES**

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Appendix 1: Research Flyer

Appendix 2: Participant Information Sheet

Appendix 3: Sample Letter to Companies

Appendix 4: Consent Sheet

Appendix 5: Transcripts from Case Studies

Appendix 5.A: Case 1 – ABC Limited

Appendix 5.B: Case 2 – DGE Limited

Appendix 5.C: Case 3 – SPL Limited

Appendix 5.D: Case 4 – WIC Limited

Appendix 6: Sample Letter to Practitioners

Appendix 7: Transcripts of Practitioner Interviews

Appendix 8: Sample Company Reports

Appendix 9: Sample Bloomberg FTSE Data

Appendix 10: Description of Proxy Companies

Appendix 10.A: Proxy Companies for ABC Limited

Appendix 10.B: Proxy Companies for DGE Limited

Appendix 10.C: Proxy Companies for SPL Limited

Appendix 10.D: Proxy Companies for WIC Limited

## Appendix 1: Research Flyer

OXFORD BROOKES UNIVERSITY  
RESEARCH STUDENT PROJECT – BUSINESS SCHOOL

# EXCITING OPPORTUNITY

COMPANIES NEEDED FOR CASE STUDIES

**TOPIC: Value Drivers within SMEs: Growth and Value Creation within the Context of the Economic Value Added Framework**

**NEEDED:**

- 4 Small to Medium-size Companies – not industry specific
- Employs 10 – 249 employees
- Must not be an affiliate of a large company

**WHAT WILL BE REQUIRED**

- Interviews with 5 key management personnel such as Finance Officer, Managing Director and Operations Manager.
- Access to financial records and management accounts for the last 5 years.
- 1 – 4 weeks of non-continuous access to collect and process data.

**CONFIDENTIALITY:**

- Research will be conducted under the guidance, practices and principles of the University.
- Will sign non-disclosure agreement.

**BENEFITS:**

1. Application of EVA to guide the decision process in selecting projects competing for the same or limited resources.
2. Company will be able to identify the value added operations and can make informed decisions as to how to address operations which are not adding value and may impact negatively on the value of the company.
3. It will also limit the risk of investing in a potentially non viable project or operation.
4. Company will benefit from the application of a “new” system of evaluating projects and company performance.
5. As EVA is a diverse tool, it can also be used to review the economic worth of a project, department or the entire organisation periodically.
6. Your involvement would contribute to the development of economic theory on EVA which has the potential to contribute to business practice.
7. Can be used as a tool to enhance employee's performance.
8. Can be linked to incentive schemes and bonuses.

**TIME LINE:**

Access request: ASAP  
Data collecting: April – November 2011

**CONTACT:**

Name: Karen Dennis  
Email: kddennis@brookes.ac.uk  
Tel: 07xx xxx xxxx (M)

**PARTICIPANT INFORMATION SHEET**

**Study title**

Value Drivers within SMEs: Growth and Value Creation within the Context of the Economic Value Added® Framework.

**Invitation paragraph**

You are invited to participate in a research study that will form part of a PhD thesis. However, prior to making the decision to participate or not, it is important for you to understand why the research is being done and what it will involve. Please take some time to read the following information carefully.

**What is the purpose of the study?**

Economic Value Added (EVA®) is an evaluation tool which was developed by proprietors of a consulting firm called Stern Stewart and Company in the United States. The theory behind this model is based upon the long established principle of economic profit. The idea behind EVA® is to examine the operations of the company to identify the value each operation is adding to the operation. A positive EVA® indicates wealth creation, while a negative EVA® indicates wealth is being destroyed.

EVA® has three main elements:

- a performance measurement metric
- a management system
- and an incentive compensation scheme

However, for my studies I will be examining EVA® as a performance measure, hence I will be focusing on EVA® as a financial management system. The proprietors of EVA® claim its beauty is in its flexibility and its applicability within an organisation regardless of its industry, complexity or function. EVA® has been implemented in many large organisations in the USA; its adaptation taking place at a time when many were faced with hardships and a period of drastic change within the US economy.

The purpose of this study is to examine the applicability EVA® as a performance measure to evaluate the growth potential and measure the performance of medium-sized companies.

The study commenced in January 2007 and the expected completion time is expected within the 6 years allowed for part-time research degree at Oxford University. The collecting of data will be via case studies with interviews and the collection of historic financial data and is expected to commence in April 2011 and conclude around September 2011. Transcripts of all interviews will be made available.

**Why have I been invited to participate?**

[Your organisation was chosen for this study through your affiliation with the {Name of Business Park}. Two - three other companies will be selected to participate in the study

OR

You were randomly selected to take part in the study based on the work you have done on EVA<sup>®</sup>. Likewise, other EVA<sup>®</sup> experts will be contacted. The aim is to get at least 4-6 EVA<sup>®</sup> experts involved]

**Do I have to take part?**

The decision to take part in this study is entirely your choice. Your decision to take part is in no way obligatory and you are free to withdraw at any time without giving a reason.

**What will happen to me if I take part?**

[I would need access to review financial records, including management accounts for the last 5 years for the company. It will also be necessary to have interviews lasting an hour with individuals within the organisation who makes or influences financial decisions. Therefore the key persons targeted for interviews are the Chief Executive Officer, Finance Director, Management Accountant, Operations Director and the Strategy of Business Development Manager or the relevant persons who performs in similar capacities. It is envisioned the data collection period will take around 2-3 months (of non-continuous contact). During this process it is important to establish good working relations with the key individuals mentioned, in particular the Financial Director, as occasionally brief discussions may be required to clarify the information gathered.

OR

You will be asked to participate in a structured interview lasting 1.5 hours on the information content of EVA<sup>®</sup> and the application of EVA<sup>®</sup> in practice.]

**What are the possible benefits of taking part?**

You should outline any direct benefits for the individual and any other beneficial outcomes of the study, including furthering our understanding of the topic.

[The benefits to be derived from taking part in this exercise are:

1. To guide decision-making in selecting projects competing for limited resources;
2. To identify the value added operations and make informed decisions concerning non-value adding operations;
3. To limit the risk of investing in potentially non-viable projects;
5. To review the economic worth of a project, department or the entire organisation;
6. To enhance employees' performance through linking EVA to incentive schemes and bonuses.

OR

You will be contributing further to the building of the academic literature on EVA<sup>®</sup>]

**Will what I say in this study be kept confidential?**

Data collected will be stored in secured facilities on the university campus. The Lap-top and/or memory sticks used in this study are security code encrypted and all data will be returned to Oxford Brookes for safe storage on completion of the study. All information collected will be held in confidence and you have the option for [your company's/your] anonymity in the thesis and subsequent articles which will be published in academic journals. Hence pseudonyms maybe used to protect [the identity of your company/your

identity]. However, as the data generated must be retained in accordance with the University's policy on Academic Integrity, the data generated during the course of the research must be kept securely in paper or electronic form for a period of ten years after the completion of the project. It is also very important for you to be aware that any information held at Brookes can be subject to a Freedom of Information request and this includes data gathered for research purposes. Hence due to these legal limitations please be advised that information deemed as commercially sensitive should not be included in any data supplied. At all times the study will comply with the Data Protection Act in the UK.

**What should I do if I want to take part?**

As set out in the introductory letter, I will be contacting you via telephone or email shortly to get your reaction. Should you decide to take part in this study, you will be given this information form to keep and be asked to sign a consent form prior to commencement of the interview.

**What will happen to the results of the research study?**

The study is been undertaken as part of the requirements for a PhD in Business Studies. All the information gathered will be processed and analysed with the final report expected around December 2011, to coincide with the submission of my PhD thesis. All participating companies will be given a copy of this report. Copies of the thesis will be held within the University including the library and a copy will also be sent to the British Library. Articles will also be written for publication in relevant academic journals and papers maybe written and presented at conferences and seminars.

**Who is organising and funding the research?**

I am conducting this study as a self-funding part-time research student at Oxford Brookes University within the Department of Accounting, Governance and Information Management in the Business School.

**Who has reviewed the study?**

I will be conducting this study under the guidance, practices and principles of conducting academic research as set out by the code of ethics of; and have been approved by the University Research Ethics Committee, Oxford Brookes University.

**Contact for Further Information**

My supervisors are Dr Samantha Miles, Reader in Accounting and Finance and Steve Duhan, Department Head – Accounting Governance and Finance, both in the Business School and can be contacted respectively at [svmiles@brookes.ac.uk](mailto:svmiles@brookes.ac.uk) and [sduhan@brookes.ac.uk](mailto:sduhan@brookes.ac.uk). I, Karen Dennis, can also be contacted for further information at [kddennis@brookes.ac.uk](mailto:kddennis@brookes.ac.uk).

Should you have any concerns about the way in which the study will be conducted, you can contact the Chair of the University Research Ethics Committee on [ethics@brookes.ac.uk](mailto:ethics@brookes.ac.uk).

**Thank you**

Thank you for taking time to read about my work.

**Date:** \_\_\_\_\_

### Appendix 3: Sample Letter to Companies

**OXFORD  
BROOKES  
UNIVERSITY**

**Faculty of Business**

Wheatley Campus Wheatley Oxford OX33 1HX UK  
t. +44 (0)1865 485858 f. +44 (0)1865 485830  
www.brookes.ac.uk

[Date]

[Company Name]

Dear [Name],

**Re: Growth and Value Creation within SMEs**

I am undertaking a piece of research in which I am examining the way Economic Value Added (EVA®) could be adapted for use by small and medium-sized companies to examine growth and performance. This project is being undertaken as part of my PhD and is overseen by Dr Samantha Miles who is my Director of Studies and Stephen Duhan, Senior Lecturer in the Department of Accounting, Finance and Economics within the Business School at Oxford Brookes University.

For my work, I am using case studies to collect data from medium-sized companies; and would include short interviews with 5 key persons in the company and access to financial records (reports). I have identified your company as a possible participant for the research as initial investigation shows [Company] may fit within the framework for this study. I have included with this letter a research flyer and a participant information sheet which gives an overview of the research, what would be required and possible benefits to the company should you agree to participate.

I hope on reading the information provided you would find it interesting and, with the potential benefits for small businesses, agree to participate. Should you wish to find out more or wish to express your interest to participate you can do so by contacting me at [kddennis@brookes.ac.uk](mailto:kddennis@brookes.ac.uk) to make the necessary arrangements. Otherwise, I will follow-up in a few days for your response.

Thank you for taking the time to read about my work. I sincerely hope you will find it interesting and would like to participate.

Sincerely,

Karen Dennis, Dr. Samantha Miles and Stephen Duhan

**CONSENT FORM - COMPANY**

**Value Drivers within SMEs: Growth and Value Creation within the Context of the Economic Value Added® Framework.**

**Karen Dennis  
Research Student  
Business School, Oxford Brookes University, Wheatley Campus, OX33 1HX**

|    |  | Please initial box       |                          |
|----|--|--------------------------|--------------------------|
| 1. | I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions. | <input type="checkbox"/> |                          |
| 2. | I understand that [Company] participation is voluntary and that it is free to withdraw at any time, without giving reason.         | <input type="checkbox"/> |                          |
| 3. | The company agree to take part in the above study.   | <input type="checkbox"/> |                          |
|    |  | Please tick box          |                          |
|    |  | Yes                      | No                       |
| 4. | I agree to the interview being audio recorded  | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. | I agree to the use of anonymised quotes in publications  | <input type="checkbox"/> | <input type="checkbox"/> |

\_\_\_\_\_  
Name of Participant                      Date                      Signature

\_\_\_\_\_  
Name of Researcher                      Date                      Signature

## Appendix 5: Transcripts from Case Studies

### Appendix 5.A: Case 1 – ABC Limited



#### School of Business

Wheatley Campus Wheatley Oxford OX33 1HX UK  
t. +44 (0)1865 485858 f. +44 (0)1865 485830  
www.brookes.ac.uk

| Office Use Only |     |
|-----------------|-----|
| Case Code:      | CS2 |

#### ABC LIMITED – INITIAL INTERVIEWS

##### Interviewee – Managing Director (ABC-R1)

Question: Describe the organisational structure?

ABC-R1: There are about 40 employees, a mixture of part-time and fulltime staff. Most have been here for a long time for more than 20 years. The newest person apart from me has been here for 5 years. As a result very few fresh ideas come into the organisation. I have been here since February.

Question: What is your background?

ABC-R1: My background is in accounting. I previously worked with Hewlett Packard. My role was mainly financial; they operated slightly differently; people who look after balance sheet effectively and the business you are supporting, probably in terms of accounting and those who do the business side of things. My role was blurred between accounting and information analysis.

In terms of staffing the number of workers there maybe a 60% to 40% split where 60% is office staff and this includes the sales team. The remainder is shop floor.

I have got a document I have put together for my own analysis, of what I think the organisational structure should look like. I will get you a copy.

This structure is aimed at putting persons in more or less their functional group. Not everyone could be assigned to a group, so there is a section where I have put the "jack of all trades".

Question: Can you tell us a bit about the products?

ABC-R1: I meant (bring out some brochures) - We manufacture fire alarms control panels on site for commercial use. They range from fairly simple ones to complex ones. The one we manufacture represents 1/3 of our turnover. About 1/2 is stuff we buy in. Our ideal sale is the fire alarm system, so in a system there is the control panel, you break the glasses the sounder whatever, whatever....

Question: You don't install these systems?

ABC-R1: Well we do and we don't. Most of who we sell to, they are the installers, so we will sell to Smith Fire Alarm Installers, that kind of a thing. So in the balance about a 1/2 is what I would classed as services that could be us doing installation...work, that is we go around and check the system around once a quarter, once a year that kind of a stuff.

Question: That's installed?

ABC-R1: Not all the time. I mean some people say John Smith Fire Alarm System has a system in and it is an ABC Limited panel and they say they want someone in to come and look at it and may call, hello ABC Limited. It is not something we have seen in conflict with our customers, its something we have done if asked but never proactively sold service capability.

That's one of the challenge I see at the moment, in particularly having come from a the high street where certainly coming from [Previous Employer] and its customers where there is a balance somewhere but I think this is where it comes back to the production issues.

Lets assume we lose 1/2 our customers or 20% ...we double up ...so in my mind there is the 3; what we make, what we sell and the servicing side of things

Question: In terms of what you make, is there any automation in the system?

ABC-R1: There is a small amount, as most of it is manual....surface mount machine which puts in a printed circuit board, then puts in automatic from the production side that's really the amount of automation there is. Its still built and put in the bits in as we still do. There is some automation in our testing.

ABC-R1: That's one of the things I like when I came in. They test everything twice. It's a waste of money ...its just send it out send it out and if it fails just have a really good returns policy which is ideal ...cost savings coming up here instead of saving lives.

Question: Is there a large customer base?

ABC-R1: Yes. Probably in any one month, probably ...customers less than 4% of the total ..... so we have the London borough service customers so we do schools, most of these, sheltered homes that kind of thing...

Question: Within the three different parts of your business are there similar costs customers say within one part of the business say within manufacture?

ABC-R1: Yes. I know there are different margins between the three (operations)  
Yeah so there would be much. Having said that, profit margin would change slightly. So they class customers into generally those that have fire...installing fire alarm system so they get a higher percentage discount. As opposed to people who are sales they only give 20% discount to, historically there are standards. Some historical views, there are standard I don't quite understand.

Question: Are there different type of customers, service intensive etc.?

ABC-R1: Yeah, this is part of the logic in the different in terms of generally a fire alarm company generally knows the system...or in the case of this is my shopping, 20 of these 20 those 15 these and so on.

Question: In that case left after sales service?

ABC-R1: Or in this case before presales, whereas if they get an electrical contractor we will need to design the drawing for him; I need to design a fire alarm system, can you help? And someone who go, ok you need 3 in this room, you need 1 here, so with all of that here is what you need to buy. So that is why part of the discount is designed to say what use ...shopping list ...  
Having said that there are installers who do in instances where someone who has worked for a chap and says to the sales guy, hey I want to get into the fire alarm business can you help me? And ..skills shopping list can you help me. Most of, say 70 to 80% of our business is to the fire trade.

Question: Do you actively advertise?

ABC-R1: There is a trade show every year that we go to – yes. Yes, we advertise at trade shows.

Question: Do you have a long backlist of orders?

ABC-R1: This is actually an interesting dilemma that I sit with on the manufacturing side of things partly too efficient, partly because we are over staffed.... Its not bad but its not great. As soon as an order comes in.

Probably I should come back, there are tow legal entities here. ABC Manufacturing sells 100% to ABC Systems. It's a historic set up, its now changed since I bought it. Previously there were 2 shareholders (refer to sketch of how the organisation was before) so when I bought it, it was the easiest way to do it, ABC Limited Holding Limited – ABC-Systems and ABC-Manufacturing. So this is historic 100% sales that way. And it is still the same today. The ownership has changed, but as I said it is still 100% sales that really is, that was this company was created purely so we would have a vehicle to buy shares. There was no other reason, not for tax funding reason.

Question: How does this process works?

ABC-R1: Yes there are 2 legal entities and yes there are sales. Its bizarre.

It's a us and them, roughly ½ on each payroll.

The best example I can use is the lady who works for manufacturing, she is CIPS qualified and she drives a great bargain here (ABC Manufacturing) but does nothing for here (ABC Systems). She has £0.5M spent, £2M spend, she use her skills here to save the company some money, she got the skills to get on drive the manufacturing systems.....and she sits just there (In Manufacturing) to the point of service to the .... I think that struggle of having worked in an HP where , ..and the company which actually pays your salary.

I think part of that was that they were paid by ABC Systems because they had most of the money, so that's where they drew the salary and this kind of stuff. I find it quite ...in meetings - what can you do for us!. So they are there sitting there saying we are here. I am Systems what are you doing Manufacturing. You should surely be taking this kind of a view it says

Question: In practice, then in ABC Systems is it that ABC-RetME1 ran one company, or did they do it jointly?

ABC-R1: They both did it jointly. ABC-RetMD1 is a guy who is a technical director who is in manufacturing, he is the leading shareholder.

Question: Do you have an organisational diagram?

ABC-R1: Yes

I don't understand why it was run. Like start, to look at certain things and create yourself a whole lot of problem. Marginal margin in selling to a customer their pricing is such that it says you have to cover all our costing, so by the time it gets to , yeah. This only came to me a few pieces we were trying to sell. So here (pointing at diagram), tell me what your buy price is? It was some document box. We just couldn't sell them. So what's your buy price? By the time we were putting it out, something like 300% mark-up on basically a metal box. So it was just a case of, this is a ...metal box (searching for brochure), but that didn't really register to anyone. So it was something we started to look at and say, one.....but also from an operational point of view is that ....work or the company. It that bizarre, small size, nothing is even made worse....

Question: So in terms of the accounting, now that you have the Holding company do you do professionally group accounts? I don't suppose your professional group accounts are out yet?

ABC-R1: No they haven't. We have drawn something for the end of September, no, no the end of September, the end of June. Yeah we will try and do something because the fiscal year is January to December. So we are going to do something just for the six months. I don't...whether we are....

Question: So the accounts in the past?

ABC-R1: Simple; I know the ownership is different but even with a simple consolidation and eliminate say this is what is being around, the company does, what the entity does I should say. It doesn't reflect the true sales.

*(Interviewer: Yes the profit here could reflect anything, transfer price)*

ABC-R1: Yes basically

And so if you didn't do the group accounts, it would be us and them...

*Interviewer: Yeah, you would have some technical issues.*

This is quite common. It reflects the ...on a different aspect the cultural..

ABC-R1: Yes, as I said at our first meeting it was us, this sounds grand ...did both, did not say ...was paid by them so (14:52), ...trying to see myself as both as I got interested in both camps. Part of this is as well been inhere I think (15:08)..the same thing over. Is almost been ...it hasn't been left alone

Yeah it is interesting, some people do, some jobs ...its really simple, it's really simple to sell. There are others which yes, it is ...I did it more as a ... They did them last year

*(Searching for file on PC)*

ABC-R1: So this is (15:45)...very much, various divisions, that's separate across both. There that's their turnover goings,...basically to cover all those....turnover...it was just my view, yes ...this is a guessing game. My view is time, sales, the true sales interaction, the customer interaction was here ...whether you get it from the turnover ...but also it still comes back to the ideal system, the ideal sales is everything that we (17:00).....and the...looking at ...each section needs its own business development, marketing .....my initial thought on all of this is there is £3M worth of stuff that we buy in to be looked at by ...and you kind of look at it that way typical support function and the accreditation which in our industry is becoming....(17:39) ...and whether there is there is 2 or create 3 companies or one there is .....

Question: Makes perfect sense. How long do you think this would take?

ABC-R1: I am hoping to be able to start on the first of January for no other reason...

Question: that's because it's the year end?).

ABC-R1: Yeah, for that simple reason; I think the other is so I have this idea for a while I just came out and say it today but equally no amount of change takes a long time if it ever change here. It changes too much at HP, nothing here, it will be a massive change for a lot of people and to a certain extent I have started that. We think more about what can you do, just don't think you are a victim of; what's the saying - what happens. If you have someone who could sell, so manufacturing capability, so starting that, yeah. And that is why I say change is ..rate only and 2/3 weeks later, they would be saying, and if it did take a long time, then you do start to get the benefit of it, that's the idea. The same on the service side say we have always been doing and selling. So that says there are certain things...(abrupt end)

Question: It adds to your manufacturing?

ABC-R1: Apparently sitting and we have failed to; so I don't know, we hold a reasonable line of stock as well; so that a deliberate we hold them at selling point, cause I am not sure?

Question: Is it similar with services?

ABC-R1: Services, we have 4 guys who do servicing. They suffer from season. They suffer from schools who want all in 6 weeks so; say you want to say I haven't quite worked out probably just about right; in case of a second, can we get away if we probably cant grow each year...(abrupt end).

Question: Are they salaried?

ABC-R1: All sales guys are commissioned based as well.

Question: A 100% commission?

ABC-R1: No, its probably something like 80/20.

Question: (80 commission?)

ABC-R1: No, 80 salary. It might be a bit less might be 75/25. Its quite high commission, quite high salary.

Question: And is everybody else in the company salaried? They are not paid by the hour?

ABC-R1: Yes some, some; actual people, yeah long term. But there is one that gets paid by the hour.

Question: Generally speaking in terms of your cost do you have an idea what it is?

ABC-R1: Yeah, We make about 33 gross margin. But I am not sure I technically agree with some of the cost that sits in overheads. No service engineer's time sits in overheads, there is no allocation that would say, one of those things that you could sit and say, oh I can do that. I have left it because it's a simple, you start go and changing it, it's a case of...(abrupt end)

Question: Earlier when you mentioned that you started brining it within the company, what have you done already?

ABC-R1: Couple of things, one I have actually needed to start doing this with sales, was actually just ... trailing off (Sam: Ok,). So I have budgeted for this year, and excuse me again I perpetuate bad habits because I have only done it with this company. It purely was to pay everything, where the money was going to come from, my focus was on.. ...(abrupt end)

Question: So in your budget was it cash ...or was it line by line?

ABC-R1: Yeah it was a bit high level in one way. I did actually have to do an actual sheet, that was this year. So I did that, and it was fairly high level because there hasn't been too much intelligence around. I have done a small amount, rent is flat, insurance is flat, yeah everything. It hasn't got that.....too hard, taken out salaries

there is a very small spending overheads that we buying in. And so I have just don't that as roughly everything will happen using everything that is on there.

Yeah so there are variance analysis, its nothing more, paid insurance upfront ..

Question: So you are doing the variance analysis monthly then?

ABC-R1: Yeah, I do a quick I have only start to actually do variance on my cash flow now so I will do it on the P&L. The only thing I have spent time build an analysis tool which is (Sam: Customer profitability?). Yeah, so it is my customer ...breaking it down. Customer, what area are we, what area staff, different, for example in our control panels; which one of those are they buying...which one of those they are buying more of rather than saying, because its pretty much a view of ...trying to build that up. And again it's something that sits there and much as its there, the fact that their is no one with those skills to do those, to develop .....(abrupt end)

Question: Do you keep any cost on the cost of manufacture?

ABC-R1: They do.

Question: Is that not kept on any system?

ABC-R1: Yes, they do have a system that they actually have...

Question: That's overheads, variable costs?

ABC-R1: Yes that would be effectively this is the cost. I think the thing they probably skilled in how long does it take....well that one will take because it's that simple. But I think its one of these things that people look at accounting where a lot of it is actually quite simple and you just say what to be; how could it be that hard.

Question: Do you adsorb overhead then to put it...

ABC-R1: The sales is predominantly done on the accounts stock control, effectively the System side of things. Its really really in simple terms someone has a shopping list give to the guys. When it comes in that's all that has to happen., punch in the order and they guy in the stores gets the order and yeah and checks the order.

Question: What about the manufacturing side?

ABC-R1: On the manufacturing side they have a software, fairly simply (23:45)....so it can track what they got. My understanding is effectively the sales company ...jobs with the guys on stages..., the guys Lakeview is ...called Scaler, hard to use it was one of these things, Scaler. It was probably one of I....more into the SAP of this type of business ....

They are in the process of moving those service. Some elements of it works ok.  
The other thing is a ....

## Transcript 2

### Interviewee – Managing Director: ABC-R1

Question: How are financial decisions made?

ABC-R1: Historically there has not been one. It has always been a matter of can we afford it. Is this thing going to cost £5000.00, we have got to know, or if not maybe put it on hire purchase; that kind of thing.

Question: How do you measure the performance of the company?

ABC-R1: No, and again it was slightly hard, in terms of your previous question of what is the process of making financial decision, it means I am in the process of change. I have not got anything formal in place that's says if we were to spend £1000 the process we would go through this process to make get certainty that we make a return on this. In the future that is something I wish to change. At least if there was something that says here is the problem and here is how we are going to fix it and it is worth saving. Then coming back to your question of how we measure performance, there is nothing really. They do look at turnover around every month. Should be around £400K

Question: Do you have any idea of what is done to achieve that?

ABC-R1: This is the thing, it is almost a false measure, an inaccurate measure and the reason why I say that is (then demonstrate something on the PC) This is just a tracking thing that I had built for myself. As I say, they have in their mind they need to do £500K, and they didn't do.

Question: From what side of the business this is?

ABC-R1: This is from the sales side. And it hit me last month in June where they did £60K to £70K shortfall, and I said this is all bad. This magical £400K, but look at last month we did nearly £300, we increase 6%, so is it that 100 is never the right number. We knew it's a big deal coming or something is going to happen, so yeah its kind of we need to hit £400K.....if it is good. ...nothing happens. No. There is no real forecast. The only real forecast that really exists is the target for the sales guys.

Question: So everything is based on their targets then?

ABC-R1: Yes.

Question: It goes back to what you said previously about manufacturing and then sell it back to the sales side.

ABC-R1: Yeah, effectively get it all out. So there really aren't targets. As I have said from the sales guys point of view it is what their commission is based on, so there isn't a formal forecast. Again I think its, .....

Its nothing more, yeah and its interesting because when I challenge people ...the sports club that I play at. Yeah that's easy because you know...but then I go back...HP ...forecast from selling to people who sell the printer in

..... and equally there isn't any skills ...and we will sit down and say ...

I think there isn't , because its business to business, there is a certain amount that you can advertise ...systems on impulse its not like an high street ... that's not the type of sales we are in today.

It is different from that point of view, saying I want a job, I need, I think its in more as I say its not so much as demand generated

#### **Interviewee – Technical Director (ABC-R2)**

Question: Can you please tell me what your role and responsibilities are within ABC Limited?

ABC-R2: Well I am the Technical Director so I am responsible for the technical aspects of the products that we manufacture and sell so I look after production and I oversee the development, design and day to day running of the manufacturing side of the company.

Question: How long have you been in this role?

ABC-R2: I have been doing this for; I think it is about 15 years. Prior to being Technical Director I was the Service Manager; so for about 8 years I was dealing with service instillation projects on the other side of the company.

Question: In your role as Technical Director, how do you go about making financial decisions say to invest in something to improve production?

ABC-R2: Well generally speaking we are obviously interested in the efficiency and keeping cost down and that sort of thing and part of what I do would be sort of to keep an eye on things with the market place so it might be to get magazines and journals, go to exhibitions and things and then you might see something on offer there which looks interesting for our company. So if we want to do a new kind of

soldering process or something, there is always a pressure on to reduce the cost with manufacturing, so we are often looking around for, if we have a problem or something is happening in production where it's difficult to achieve our end result for some reason, it takes too long or; we might be able to look for solutions so that will start off and then, the main one we had is where we had to change for conventional assembly to service mount assembly and we knew this new technology was coming along and so a lot of time spent just looking into, just reading journals, looking on the internet. So once we decide to buy something to improve a process then we would literally put management, we would have our regular management meeting usually monthly and at the meeting we would propose clearly we need this particular piece of equipment whatever it is and what the likely cost would be and the amount of time, accreditation at that time we may not depending, and then we would be seeking some form of approval from the Directors the owners of the company as to whether; a, they can afford to spend that sort of money; b , whether they think it's worth doing. So we would put forward a case like write a report saying we think we need this and it is going to have these benefits and make some judgement on that.

Question: How about the implementation of that new system? Saying this system has been approved and implemented, how was it implemented; were there resistance to change?

ABC-R2: Well it is a difficult question because it depends on what it is that we are doing. Some things they are quite happy because the change might be an improvement which helps their job. Other times they might see the improvement as a potential threat because it is reducing labour so there is not so much work, so there can be a slight problem. So in the process of looking at whether we want this thing we would maybe discuss it with the rest of the people who would be affected and see what their take might be on how they feel about it, are they prepared to take up the new technology, are they prepared to be trained to use it – that sort of thing. So we tend to talk to them – staff. We do have a sort of regular monthly staff meetings as well where we talk about what we are doing and what's happening, are we looking at new process or something we will tell them about it.

Question: Do you normally get feedback from staff?

ABC-R2: Yes we do get some feedback?

Question: Do you get ideas from staff in terms of improvements in the way they work?

ABC-R2: Yes sometimes they come up with improvements. We are quite responsive to the staff. If they come up and say I am having a problem in trying to do this task; then

we would look at how it can be improved, how can we reduce that problem; so if there is a problem fitting up screws we might decide to rivet it instead or something. Those are things that we have done, or they might have a problem with a tool they are using, it might be pinching their hand or something we might have to find a different tool or a different way of doing it. Like riveting, we were riveting with hand pliers then we found that production was becoming more increased and the matter was because it was hurting their hands so we bought air powered riveting guns which reduces the stress on them.

Question: Looking back when you started with ABC Limited, how the production system was then, could you identify benefits that have been achieved since the implementation of the Surface Mount machine?

ABC-R2: Well that was surely one of the biggest changes. It's been many things. When we first started the work it was very labour intensive, so we were assembling units which were taking time and effort.

Question: Was everything done by hand (i.e. manually)?

ABC-R2: Yes. The PCP Assembly and the control panel assembly were two separate entities. The PCP assembly was very much hand based and required quite a high level of skill; so we had to find people who were prepared to sit and put very delicate components onto a circuit board; and were very cost skilled work, and also quite tedious work because there are thousands of components and they are doing the same thing. So we used to have a problem keeping staff, or it seems to be that some people were quite happy to do that and were very good at it, and other people tried and didn't like it and couldn't cope or couldn't concentrate and made lots of mistakes so there was a high level of errors in assembly, that sort of thing. So the cost was high because the time it took to load the boards and the solder quality was poor because they were hand soldering and joints, and so the pressure on them to obviously produce, to try and keep production going and the cost was too high so we weren't competitive in the market place. So investing in the Surface mount, which was quite a long and painful process, because we had to continue the production at the same time as switching to the new.

With the Surface Mount machine it involves having to redesign all the products to have the new kind of circuit board, so the existing products had through holes assembly, and we obviously had to continue supply and manufacture the old products at the same time as we try to introduce the new products. So there was a big process of sourcing the equipment, redesigning the circuit boards, learning about all the new components, there was also the PCP Design software to be

updated on the new components and everything else. We have to find the new components and decide whether they are suitable for the task. So it's quite a big process in engineering to say, a bit of research to discover all about these different things, and then we have to design a new product basically. The Surface Mount panels conforms differently to the through hole ones in many ways.

Question: In terms of its performance was it better than the previous system?

ABC-R2: There were improvements in certain areas; we had problems in other areas. So over the transition period really we were running the old system and the new system so the cost to the company was very high during that time. We had extra cost involved in buying this equipment and all the redesign work and in running the two processes, so we actually got contractors in as well to keep our productions flowing and so we probably weren't particularly profitable for that time in making the transition.

Question: Do you remember when that was?

ABC-R2: I suppose around 1999. Well it took us about 3 years probably to get all our products transferred over. We are still producing a few old boards even now.

Question: That is because you still have systems out there?

ABC-R5: 11:10.....but also some products that are very small quantity, and the cost of upgrading them to the new technology so we still continue to make them. Some parts, some items are not suitable for Surface Mount technology; if its power relay you can't get Surface Mounts parts to fit to perform the function so you have to continue a certain amount of mixed technology where you have the old stuff and the new stuff together. The Surface Mount products still have some through hole parts. But obviously the benefits have been the repeatability and the reduction in the cost of labour.

Question: I was told that you are part of the R&D team, how do you get the information that feeds into R&D?

A lot of it comes through either customer feedback; the salesman speaking to customers and customers say ah well, we would like these new ideas or we wanted to buy a system that do a particular task or whatever so a certain amount of reflection would come back through the sales team, some would come back also from going to trade exhibitions and see what the competition is doing and also we look on the Internet on competitors website and things to see what they are doing and what's interesting and obviously technical support phone calls, people

ringing up with their problems and you think well, if only we did something differently we might truly improve; trade journals, magazines, fire industry magazines in which people write articles about the new trends and suppliers we have work in conjunction with suppliers Apolo, Hatachi (13:39) and people, so we are produce new products, so they come to us saying we have this new product will you support us on your equipment. So that would lead to some possible change; and to keep up to date with market trend.

Question: Are you the key designer for new systems?

ABC-R2: Yes I would tend to be the sort of overall co-ordinator of it; so I have several engineers who work under me with ABC-E2 who does mostly PCP layouts and schematics drawing, ABC-E1 who does the software writing and we have another guy who works from home who is a software engineer, so they will write the software or carry out the design under the guidance of myself and I will be specifying the requirements. And I would gather the requirements from the sales meetings, from the rest, the suppliers and others things and I would write the specifications and offer it to sales to say whether the specification, do they think they are wrong and they would check it and say yes we agree or no we want extra things or less things and they would say what the target price might be and all that sort of thing. And we would take that all into account and come up with a proposal and then they approve the proposal then off we go designing.

Question: How is that new product introduced into the market?

ABC-R2: That comes back to the sales force really. They would create brochures and ...and things. They would go and approach their customers and introduce them to the idea of the new product, or they might put out adverts in the trade magazines, they might put something on the Internet; we have a website where information is displayed. I think that in the Fire Alarm industry it usually tends to be the salesman that has the most impact on introduction to new customer.

Question: So a lot of responsibility is put on the sales team, in terms of generating new customers and seeing to the sale of the products?

ABC-R2: Yes

Question: I was told that ABC Limited is really 2 separate entities, the production side and the sales side, how do you make the decision as to how much to produce on the manufacturing side?

ABC-R2: Well it's based on historic history really because you normally get a feel for how much of a particular product is required every month. But when it's a new product it

is quite difficult because you have no history to run from. But generally because what happens is we tend to have a set of set range of equipment and the new ones tend to be sort of an upgrade of an old one, so you can usually base it on the idea that we were making so many of this before, then new one should be of a similar amount and so we start off on that basis, and stock control we tend to set levels of how many would re-buy I think. So if you think you need 100 boxes a month, and you know there is a lead time for buying the box, if it takes 10 days, you need to make sure you have enough stock for 10 days when you reopen. So we have an NRP system which the levels and quantities of everything is set into and that will automatically reorder as production is used. Now our system here is based on the idea that when a customer purchase their order, the order comes through to manufacturing pretty much straight away and we would produce the item within a few days and we constantly produce the small amounts every day to replenish the stock. So we keep a small stock level for most things we make and that is constantly been replaced every time a customer order something. In the past we used to say, well we think we need 150 of an item in a month so we would make the 150 and then put them all on and that's it and then they would say ah, but we need the other item. And then we would have to say we will make the other item but maybe we didn't have the parts because we had used them all in the other one. So the office used to be more chaotic then, and although it is more economic to make bigger batches, it was difficult to match production with demand. And actually what happened we visited a competitor and he showed us a system where he was responding and basically building to customer's orders and we copied that system.

Question: And how has that system worked?

ABC-R2: It has been effective.

Question: Is there an element of servicing (with reference to the Sales side)?

ABC-R2: The sales from ABC Limited have a servicing, a team of service engineers basically and they provide a backup to the customer. So they will, because in the fire alarm system when they are installing, they require to be regularly maintained by qualified engineers. So 6 months or every year they might go and do a complete test, clean the system, change parts or whatever. And so we do have engineers that provide that service.

Question: From what I understand that service isn't really marketed as a service provided by ABC Limited, but is done more on a request from customers?

ABC-R2: More or less, it has always been low keyed because a lot of our customers are in the service organisation/business and so we don't want to be openly appearing to be competing with our own customers. Once we are, traditionally in the past we provide a commissioning service, so if we supply a complex fire system and we install and it require someone to come along and set it all up to make sure it is working correctly and so we offer a commissioning service and because we have those added engineers we thought it would be good for them to make extra money by doing service contracts because some customers seems to install the system and run away. And then the user still requires other service and if it is a special system, it's better for them to use ABC Limited because we understand our products better. So we would tend to service those sorts of jobs and then we have a relationship with local authorities. Once in Harrow, we used to have a lot of work with Harrow and then we have local work here. So we do work closely, we have had engineers looking after their systems at some local bases. So we have kept low key, we have a sort of range of customers, so in saying the salesmen, if they are dealing with the local authority or you know the housing associations or something they would like to have the engineers who comes from the manufacturers to do the servicing. So that is something we have always provided.

Question: Do you think there is much potential for expanding that service?

ABC-R2: Well there could be, but then you do get into the sticky problem of competing with your own customers, so, most of our customers would be people who do service contracts and we have local customers who, ah, don't like the idea of competing against their supplier. So they might tend to buy their panel from other supplier; so there is a bit of a conflict there.

Question: I was informed that there are sometimes extra capacities in production. Do you foresee any changes in that?

ABC-R2: Well certain things are linked to demand and it's a difficult thing to keep a balance we have been through a process of eliminating, streamlining the work by having Surface Mount and other things and some products we were making which are not been made anymore so that can leave you with too many hands around the place and we try and redeploy them in different areas or we have had some natural wastage through people moved away or left. So that is something constantly monitoring really. It's a problem comes up because you find no works; someone sitting (23:15) on their hands with no work to do. Recently there has been a new Director, he just joined the company and we have taken on an extra worker because we have lost somebody who was in assembly and we took on another person, the previous person was part-time, the new person is full-time and then it

is highlighted that there isn't sufficient work for them all the time. The Director has analysed this and decided that even with increased sales there wouldn't be enough work for them so we are pressed to find a solution. That's a problem.

Question: Do you outsource any of your production?

ABC-R2: Not currently, no.

Question: And you don't do subcontracting for other manufacturers?

ABC-R2: No, that's something we have been thinking about but it wouldn't be easy for us to cope with, because we have to compete with our own demands.

Question: From the Sales side of ABC Limited, because you have worked there before, how do you find that experience verses working in the Manufacturing side? Because of your change in role, the reason why I am curious is because from what I understand, ABC Manufacturing sells everything they produce to the ABC Systems and then ABC Systems has to sell all those products, so I was just wondering how you see yourself in your role. Do you see yourself as just manufacturing or just an overall ABC Limited Limited?

ABC-R2: It's a sort of historical situation, it was originally ABC Limited there was no ABC Manufacturing it was just ABC Limited and they were buying the control panel from a company who were in [Location] and this company in [Location] went out; went into liquidation because they have failed to redevelop the product because they were becoming out of date or something, and so ABC Limited lost their supplier and they decided at that time; well they lost their supplier and some people from that supplier set up their own little company to continue supplying ABC Limited with panels and so ABC Limited tried to sort of support them and then that didn't work out financially so then ABC Limited bought them and that became ABC Manufacturing. So it was a separate company and they ran it from [Location] for a couple of years I think, but they had difficulties in managing it because of the distance and because people they wasn't necessarily doing what they wanted them to do that sort of thing. So they decided to bring the manufacturing company up. We were in [Location 2] in those days, and so, that was just before I joined the company I was moved the (26:40) Manufacturing up from [Location]. I think they lay off most of the staff there and they kept a few key members on and they relocated them up here.

Question: That was a massive move for a small company? Relocating of staff, well I guess they did that because of the expertise?

ABC-R2: Well there was only really 2 people relocated and they recruited new people locally because people who were assembling circuit board and things didn't want to move from Brighton to Slough so they stayed in Slough. I think they lost one of the

design engineers and they also, because (27:25) it was before my time I don't really know all the full details but I do know (27:40). There were 2 guys who are working here who came from the previous set up. The main guy he was like, he does exactly what I do now. Steve he was called. He ran manufacturing and he designed the products. The products in those days were relatively simpler, cruder but that's what he did but it was a very small scale operation there were only a few employees and all their circuit board and things were assembled by home workers. The home workers were co-ordinated by his mother. She was in Brighton, they used to have worker before because the mainstream PCP assembly and all this hand placing and the fact that to have someone in the factory doing it was quite expensive. They used to pay people pin money to have people assemble PCPs at home. That was a very unreliable source of production. But we use outworkers for many years before we went into Surface Mount. We designed the product, we designed some new products and ah, it became too sophisticated for outworkers to do and that became a problem so we had to start doing them in-house.

After I visited a competitor who used just-in-time system, we introduce a flow solder machine. It was a bit more reliable and faster soldering so then the boards has to be assembled in-house as they had to go through the machine; the automated process of bringing them the manufacturing in-house away from home workers.

Question: How would you describe your manufacturing cost? Do you find that you are able to manage within budget, the new system do you now find you are able to manage within the confines of your budget, or do you find that you are overspending in some areas?

ABC-R2: Well it's something that its difficult to get an angle on that one because I am given very little financial information about the company. My job is to minimize the cost but I don't necessarily know what all the cost is. I can know the cost of components that we buy and so we can make decisions about whether we buy or not to buy or what to design if we design something and it got expensive parts and all that sort of thing. Obviously the Director takes the financial decisions about can I afford to pay for these things or not. And for some years we may not have invested in some equipment because we could not afford it so we have to carry on with our existing system. Then they come to realise a thing that is, manufacturing didn't make a profit for many years. They ran it as a, saying well it's a service they providing because of a unique product. ABC System was profitable but the manufacturing was never profitable. But with all the new production systems we have changed

that round a bit and manufacturing is more profitable but with more control over what we are doing; and its still a sort of a grey area.

Question: In the long term, I recall ABC-R5 was saying that they are going to implement a new system, Test Shell, how do you see that impacting on the development of ABC System?

ABC-R2: Well it should give us some more reliable testing, in the sense of recording of data because it can capture lots of data from the test situation.

*(He did a demonstration for me.)*

We have an (32:02)..... testing system already, an older systems so they will be becoming out of date and we got a programme, the Test Shell supposed to be a faster way of bringing up the programme for test and it's a sort of network systems linked together; records into a database the results of the test so we should be able to get better visibility of the processes and whether we have repeated problems on the production line. We have very few problems that we are aware of, but there are still problems that need sorted out.

Question: I notice that you give technical support to customers, is there anyone else besides yourself who does this?

ABC-R2: Yes, well ABC-E6, nobody else does technical support; he is on holiday this week, so I am just covering the phone calls. I don't normally do technical support. For many years I did technical support as well as everything else and it just became too much and so they had ABC-E6 join the company to give technical support to customers. It's quite a busy position, you get lots of calls.

Question: Yes, I was listening to you on the telephone and it does seem you have to recall each and every unit, design details. It is quite a task. How do you recall all that; because it seems to have to recall particular design and models?

ABC-R2: Well I do have the distinctive advantage in that I design them all in the first place. And obviously we have evolved over 25 years; we tend to get questions about the latest models. The old ones of course are long gone, so I could keep on. Its pretty easy for me, it's harder for ABC-E6 because he doesn't necessarily know so he may have to come through to me and say I have got a customer with this problem what do we do. What's the answer because he doesn't know, ill assist him with that and hopefully he will remember over time.

Question: What about staff training for your team, do you have a systematic process of identifying staff training needs to improve knowledge of efficiency in a particular area?

ABC-R2: We could probably be doing better in that area. We do have difficulty with that because some of the training isn't available for what we do. Obviously it's very specific consistent training organisations; so we have to create our own training. So training tends to be either, if it's a new person, they will work with an experienced person who will show them like vocational training. We would get some specialist training from manufacturers, suppliers; for the Surface Mount Machinery we got training next week because the guy who operates the machine has problems adjusting the feeders on the machine.

Question: So someone coming from the machine supplier will be coming to do the training?

ABC-R2: Yes. He is coming on the 12<sup>th</sup> to train the feeder maintenance and keeping the machine running because the machine have issues with the feeders and it goes out of alignment and it doesn't place the part properly. And that's a quite delicate tricky work to adjust. We were having some problems with the efficiency of the running of the machine, and so we have identified that some training was needed. So they are coming to do some training. And I have got to attend the training so that I can be a backup because ABC-E7 might not remember or might struggle with something and might not understand what they are trying to teach. So if I learn as well then I might help him by remembering. Perhaps, obviously we will write notes at the time, but also in the training because the training is provided by those people it's not formalised. They have not really written out anything, the engineer just comes and shows you a few things and I comment and ask question say why is this happening, why is that happening we get more information perhaps. So I would ask him an insight as to what the problems were because we had a big issue where the machine kept going wrong and our operator was blaming the machine and the manufacturers came to repair the machine and they say there is nothing wrong with the machine its your setup, you have not done this properly, you are not doing the feeders properly. And so there was a bit of a conflict between the two , and they came several times and then they said they are not coming anymore its not us its you. You are not running the machine properly so this is where the training comes from. We haven't really had training before.

Question: Is that because it is highly specialised?

ABC-R2: Yes, and the problem we have had before is that we had the training individually when we had the machine was that there was something wrong with the machine and the guy who was doing the training because he was the engineer he spent most of his time fixing the machine and not training and so the training didn't really, wasn't satisfactory. So I want to make sure that we get the right training and we

understand what we need to understand to keep the machine going because if the machine doesn't go nothing is made.

Question: Can you say where you see ABC Limited in the next 5 to 10 years?

ABC-R2: ABC Limited has great potential. One of the things we are doing at the moment we are in a big project where we are developing a completely new control panel system and we are putting it forward for third party approval which is something which has become a legal requirement because of the Construction Products Directive. The government has adopted this directive to say well products manufactured and installed in buildings must be approved. And so up till now we self approve say we design this panel we think its approve it complies with EN54 for fire alarm panels. But in the future that is not going to be sufficient now. There has to be another body that puts the stamp on. It's a very expensive process to have the approval because they take the product and run it through lots of test, all those expensive things and eventually it goes through the process and satisfies their requirements and you get your approval. But the approval opens up great potential for us to consider export ... so if we get the approval we can open up big markets that we currently can't supply because we don't have approval. So we could supply the Middle East, supply the Far East, we can supply Europe, Germany, France and these kinds of things. So there is the potential for expansion for exporting abroad so we go through this big and painful process it can be good times for us if we manage to manage and market it well

### **Interviewee - Stock Controller (ABC-R3)**

Question: Can you please tell me about what you do?

ABC-R3: I look after the stock control systems part of the company.

That is the main thing I am interested in, in particular the manufacturing systems.

I am from the distribution side of the company and the Information system used in this side is Lakeview.

It was really down sort of to a manual basis, just simply by the fact that they themselves were at a time where we were sort of looking for it. We were already using a similar system and software house seems to be developing it. They simply cold called, came and demonstrated it to me. I was impressed with what I saw and I then showed ....., she was also impressed with what she saw. They gave us a good price, cheaper than the product we were using.

Question: How did you find its implementation within the company?

ABC-R3: Well like anything, it wasn't too bad. It was quite easy. We did it on a sort of train the trainer basis. I did the set up myself with the help of their trainers. Most of the data, stock codes and all the accounting codes etc were moved over so we didn't have to start from scratch and as such it wasn't too bad from that respect. It wasn't as bad as it could have been. Most of the users, people who were using the old system obviously struggled a bit. I think everyone agreed after a few months that it was much, much easier to use.

Question: Can you say anything of its impact?

ABC-R3: Well that's a difficult one to justify but it streamlined processes. That system now, the greatest thing about it is that it is very visual so there are lots of ways where we can add constant reminders. So it saves a lot of paperwork and running around to everybody, you can see what is going on. It gives correct access to everybody. They can see what is going on with the invoices and the accounting. Now the little things like the lady that does the sort of chasing up of accounts see from the invoice whether the items on the invoice have been returned because there is a nice visual. Its little things like that that makes life easier and makes the processes much simpler, much straight forward, been able to drill down straight. So from the invoice you can look at the return sheet and see if it is has arrived back here and see at what stage it's been and see whether or not the credit note is been raised. That's just from that point of view and everything else from the purchasing also you can drill easily, see why I have purchased it specifically for our stock or for lots of little bit that just makes it easier.

Question: Do they use it in the distribution?

ABC-R3: They do use it but only just the lady who does the purchasing. They only have one customer of course which is us. We sort of treat them like just another supplier with respect of purchasing; sort of directly linked to them. Simply they receive a purchase order from us to built things, the same way that we order products from the other suppliers.

Question: You are using 2 different applications?

ABC-R3: Before we implemented Lakeview they had already gone down the path of software. It's a shame, its ok, it's the same building.

Question: Is there a marketing strategy?

ABC-R3: We don't really have a marketing policy until very recently; the old directors' sees all budgets; put an advert in a magazine whereas ABC-R1 he is different.

So we are trying to build up that side of things; and do mail shooting. We now have as a start a sort of database to start with. We rely on the sales reps to put; they have to send them out do that, the list that they produce it should pick up. But I don't get involved in the sales peoples roles, I allow them, if they see the price list, so general they just tick the box but also >> do occasionally ... It's a bit bitty at the moment, but as I say we are trying, this is a process that we are building on at the moment to build up. We are trying to work on brand and brand placing, forms and all the same identity and the same colours, that is major, that is my little project that is going on at the moment.

Question: Are there a lot of changes?

ABC-R3: A lot of changes.

Question: When did you start working here?

ABC-R3: When I first started here my role was down in the warehouse packing in the office and I have done that for most of the time and then I do a supervisory role which I still really have. Obviously I have quite a good knowledge of the products themselves; I also catalogue them because I create the price list. I have base knowledge of all the products that we stock and supply so I can answer processing orders if they come in. I have a sort of supervisory role out there as well with the service team, I also do the production manuals to...sales sheet that we send out; liaising with the artwork company to create adverts and I spoke to ABC-R1 about it; its an easy bit of investment suite software; has the PC to run it, training; then yes as I say that would save quite a bit; especially with things like newsletters because they have created a template which they use. So if I had the template, its easy to cut and paste the text, the photographs in where you need them.

Question: Can you comment on the application of Lakeview as you have been here before the implementation of that system?

ABC-R3: When I first started here, we take the sales order using the telephone and a piece of paper; wrote down what the customer want on a piece of paper, we then gave that piece of paper to a lady that sat downstairs who had a typewriter who typed the order on paper. The top copy was the invoice that went to the customer, the middle copy was our copy, and the bottom copy went to the stores which was the delivery note which we used to pick and pack. She then took that piece of paper and types the details of invoice onto the accounting computer system and then

sends the amounts in. So you can imagine that was very labour intensive. So the turnover reflected that and the amount of orders we can get in. By now general order turnover, receiving the order from the customer and dispatching it takes about one week. Today you have to be able to get the order out in a day because that is what is expected within; certainly from our company; generally within our trade market, next day delivery. So going from when I first started here; processing order to get it packed as now, it a lot, accessing order, seems ready to for downstairs to prepare the picking note, the packing note as well.

Question: Do you use your own drivers?

ABC-R3: No we don't use our own drivers. We use courier, they come every day. The guys do the picking, they pile it all up. So you know initially we probably sent out six or seven parcels a day and today we are sending between sixty and still two people in store picking and packing. Even when I first started here I was the second person who was picking. That's got to work out economically still only paying for two people to pick and pack, instead of sending out 10 parcels we are sending out sixty, that is how the computer system works. But from the old system, Escala, because Lakeview works so easily and so visual it enables us to process orders much, much more.

Question: Question: In terms of financial benefits of the system, how has that been?

ABC-R3: Yes, its used to process more orders because you can do them still in any computer system there is still a human and we still have to process the order, but more visual enable them to access. With Escala, Dawn and them will tell you ..close down the order processing programme and open up the stock programme to get to the stock, but with Lakeview its just double clicking, out comes the stock and another double clicking and it tells you who you owe the product if it is over sold you can get a list of all the sales orders that are due and a list of outstanding purchase order so you can also quickly see when the product is due, so on one screen you can have someone on the phone and immediately tell the customer when some more stock due in. Just as one example in the old system we wouldn't be able to do that. We would have to call the guy back and say we will have to investigate the stock and call you back. So phone call, time and efficiency.

Question: In terms of future IS implementation, do you envision any changes soon?

ABC-R3: The only thing we, at the moment we use .....but that's what, given remote access to our field sales reps who are on the road .....so we are building on the Lakeview

system. They themselves, the software house are obviously are continuing enhancing it and adding new modules to it, like working on a new module with monitoring performance of your supplier and yourselves. So they are working on a module that will make it easy to produce reports for the quality; show how quality going to keep our show. At the moment it's in manual; so just little things like that we will always look at. It is very difficult, the only way we monitor our suppliers is if they deliver something to us then, literally the guys downstairs fill out a form, they deal with it and once it's been filed and we go in it and get that folder and look through it and see what went wrong. As I say, this is a very small company; we deal with things like that we just have to do; and have people who can do and they do. It makes the job interesting.

Question: How do you see ABC Limited progressing into the future?

ABC-R3: In our efficiency, sick leaves, performance monitoring, that and marketing strategy, branding, placing everything; that is it hopefully so maybe sales people we got to get them on the road, get them knocking on more doors. See we don't even do email marketing; apart from in the paper; and that again we have to write to everybody on that list and ask for their email address and hopefully we can start basing the sales reps with email addresses and once we have got that we can start loading the software; Evosoft. All these things we literally only just start to look at since ABC-R1 come on board; the existing director; we have to sell them the fact that we have to be emailing, bothering people than to be using pieces of paper. And things have changed, trying to change; I admit we are a little bit still but that's the companies, yes we are, it's nice, gradual, its going to continue to go in the same upward trend. Again the product development side of things as well it's always moving on. Fire alarm systems seems quite short lived, within 5 years something that works even 5 years ago becomes obsolete because the components that they use becomes outdated, they are always trying to find bigger processors to put on the circuit boards. Then you have to go back to the drawing board and redraw the whole circuit board. So it goes on and on.

**Interviewee – Purchasing Manager (ABC-R4)**

Question: Can you please describe your role and responsibility?

ABC-R4: My job title is Purchasing Manager and Production Control Supervisor.

Question: How long have you been working with the company?

ABC-R4: I have been with the company 10 years and probably 8 in this job spec.

Question: When you first started what was your job function?

ABC-R4: I came in as a production admin support.

Question: Describe how you have seen the company developed over these past few years?

ABC-R4: The Company is very much seen as two companies, the Sales division and the Manufacturing division. The Manufacturing division invested strongly and that was mainly driven by ABC-R2

Question: What is ABC-R2's position?

ABC-R4: He is the Technical Director

We have formalised ourselves much more. We introduced a MRP System.

Question: Is that system already introduced?

ABC-R4: Yes.

Question: When was this system introduced?

ABC-R4: It was introduced in 2004. As far as production planning and efficiency, that was one of the things that made its difference. So I would say the introduction of SMT (Surface Mount Technology) and the MRP are big influences and the third biggest is the exercise that ABC-R5 did with a lean tap on saying where is our wastage a bit of a time and motion exercise and in moving testing procedures and processes to reduce down

Question: Does that include any documentation?

ABC-R4: Yes, documentation methodology and improvements on software, distinctive software. There was a simple stock management system in place but it lacked real time dimension, there was a semi-automated manual manufacturing system in place for rotisserie hold assembly. But the introduction of the surface mount ...to change taking an hour and a half to below a few minutes.

Question: How did the other members of staff respond to the change?

ABC-R4: ABC-R2 is the driver of the SMT. There is always a level of resistance at the beginning. The challenge is to show them the benefits and the truth is, if you went out there tomorrow and we are going... they would all freak out and leave tomorrow. Usually you just have to remind them of the resistance in the past and how when they thought things were lovely the way they were and we show them a new way, it will be exactly the same way in three months time..... .The truth is of

course if it doesn't work, then we review it and say ok, we thought it would be amazing, it needs a little refining, change is ok too.

Question: And so far it has worked?

ABC-R4: Oh yes.

Question: Do you know how the decision was made to invest in this technology?

ABC-R4: With my purchasing hat on, we obviously would have gone out in the market to search the market for what is available and understood to the best of our ability what our needs were. Then we chose the equipment that we felt was most appropriate, and then negotiated. However, we did not have; it was not driven by strong factual. This is what is costing us now. By investing this amount of money, ..targets ..But we knew in our hearts that what we were doing was the right way to go now, that we have to make improvements and the best. We have done SWOT Analysis more recently on making decision with this tool to assist us.

Question: In terms of what?

ABC-R4: In terms of production, in terms of deciding what to invest in a new Surface Mount Machine.

Question: How do you find its application?

ABC-R4: It focuses the mind on our strengths and weaknesses and it clarifies but it's a rough tool, a starting point and we carry it far enough to a defining level and see. There is certainly room for improvement.

Question: So in terms of the decision to invest or not to invest?

ABC-R4: Ultimately the management makes the decision. ABC-R2 and I would put the proposal to them, what we believe, think. And ultimately we decide, in those days with ABC-RMD1 and ABC-RMD2, we decided whether or not they felt that the monies we should dispense are defensible.

Question: Who is responsible for identifying what is needed?

ABC-R4: Well ABC-R2 in fairness is the, eh, on the SMT, he is the technical, ABC-R2 would identify. ABC-R5 has identified in the past the upgrade of the computer software. That was out of necessity really DOS was going so we were kind of forced down that road. Again I would say that it's probably not very well formulated. We don't examine ourselves possibly enough to see what the changes are and we find ourselves in situations where we simply now needed to.

In this industry, we know the competition and the update that needs doing. It's based on intuition and feelings rather than ...

ABC-R4: I don't get involved in anything that isn't from manufacturing

In the manufacturing, it takes 16wks, 18wks, 32 wks components while our order book so I can't live on a days notice when I have got a 16 weeks, so I have to go on stocks.

The day to day component things are worked on.

Question: Is there a stock level?

ABC-R4: The computer manages all of that. Then with the suppliers, years ago possibly I did a review of the supplier's base, and as result of that I have consolidated the supplier's base too and have able to build bigger portfolio with them, therefore have stronger negotiating power, reduce carriage cost, invoicing time. You are not being important to people because you only buy £400 worth of goods from them in a year even though it....

Question: How do you hope to address that?

ABC-R4: When we introduce a new system, the training to be honest for the people on it we had some problems with the software where it was all over, so it took less time but I believe if you talk to anyone they would say the system is simple to work so long as it is working.

Question: How do you measure financial performance?

ABC-R4: I don't have any facts and figures that can say that we were looking at and to say listen, this is what it used to cost us then, this is what it is costing us now. We used to have 6 fulltime, now we have 3 fulltime post we now have 1 ¼. Ok we gained over capacity and while out turnover have gone from (8:36). Now we aim for a hunch, we are not quite there at the moment. We can do a hundred with less people.

Question: In terms of efficiency and wastage, how has that been?

ABC-R4: Most of the waste would have been in time. I have set up their benches now so everything is close to them, take so much and the fact that they are using SMT technology. We have looked at the processes to strictly implement it on the principles.

Question: Have you been able to do that?

ABC-R4: Absolutely! We are very positive despite it been a harder time than we have been used to, to new energy for us to achieve. For my role as the central person that has to do with the production control side of things. We don't overlap (ABC-R2) as he is technical. We do work as a team. He knows what he needs, and then it is up for me to do the best I can on getting him what he wants as economically as possible. As a purchasing person I don't think I do enough research for, you know; have we looked at this. It's a non area it's not doing enough of ...

Manufacturing would like sale to become rivals, in most cases that is not what we have experienced and ABC-R2 has been left to work out what is it we will design. That is an area of frustration you know between the 2 directors and ABC-R2, a small unofficial sales thing that wasn't based on what they think the market, the customer wants. We are pushing manufacturing design.

Question: How do the sales guys sell the products?

ABC-R4: Probably you need to ask those guys that question more. They do on occasions come to us and say hey listen what do you think. If they come with a customer request and say I have one customer who would like, you can't design something from one excited customer. It would be unfair to say that sales has never asked us for something and we don't give them; that we give them things that they didn't ask for. That's my kind of feeling on manufacturing...that's how it is right now. So we are their supplier, so when I say that they do this from we know what's happening in sales, for that to be a stronger influence.

Question: Is there anyone who is responsible for R&D?

ABC-R4: ABC-R2's team is like three people, two software and one hardware; but they are primarily a vision of what ...

For my part CIPS (Chartered Institute of Professional Supplies), I initiated, say visual to fight your own corner. ABC-RMD1 has been encouraging, they supported ,..... internally it has provided equipment and processes ..

#### **Interviewee - Quality Engineer (ABC-R5)**

Question: What is your role within the organisation?

ABC-R5: Well I am ...Engineer due to look after ....testing customer ....look after quality as well.

Question: How long have you been in this role?

ABC-R5: About 7 years now, more than 7 years now.

Question: How have you found your role changing over this period of time since you started?

ABC-R5: Well I have improved company production more than 40% .....

Question: How about changes within the way you work? What are some of the changes you have seen happening compared to when you started?

ABC-R5: Well different ways of working in production..... Working smarter instead of harder. So they are more relaxed than when I came ...as you know there is resistance whenever you make changes.

So they are physically doing more production without any hard work, so they are more than like it now. And where the company is concerned we used to hire contractor during holiday ....and for last 2 years we didn't hire anyone.

Question: Were you able to meet production targets?

ABC-R5: ...plus sometimes we have spare capacity because we don't have any work.

Question: Can you identify what has caused this change?

ABC-R5: ....used to working in an efficient way, ok and I have changes in layout, production layout so wherever they use tools on their tables ...it is not exactly lean because we have 2 floors, upstairs and downstairs so we do Surface Mount downstairs then those come up, then we do PCP upstairs and then go back downstairs for final assembly and final test. So it's not clearly very.....100% ....some sort of obstacles in production ....so I removed all this obstructions.

Question: Tell me about any improvements in processes such as the implementation of any automated systems etc?

ABC-R5: Yes we do that.... We used to do PC bolt by hand but we

We do test PCPs, we used to test by hand so it used to take more times so now we have more organised test ..... so they can do other things .

When she comes upstairs and enters all the data into the database system Mansoft. We use software called Mansoft, so she enters all the data in there. So its already a waste of time to come up and put in all this data. Still it could be mistakes made easily because too many figures ..... and when she does manual testing, easy to miss.. in the event...so when ..... complete stop into automatic testing and I am working on that at the moment. So everything will be tested by computer and every single .....and ..... will be checked against the ....so the next support ....she has to scan all...samples. So when she .... All samples all the ..... will go. I.....through the database so information ..... for future so in case

you need to test ....so she doesn't need to come up ....and all this operation will have automatically by computer...

Question: So it tests and record information at the same time?

ABC-R5: Yes, so it improves ..... it happens sometimes not very often ...so it is a case now ...

Say for example in the old system when you test something, and say for instance it has ....what do you do then, do you go back? Is it discarded as a waste?

We try to rectify the ...because our ...are not cheap. They are not like the China ones....they are expensive. So we try to rectify this problem. No ....because we have a specific product so we know our product so if anything comes to our final....so we rectify this problem and test it again. But it its, say take too much time so again there is a difference, how much time it needs to work on it and is it worth the time, no, discard. If it worth it ok. So we have to make decision.

Question: So under the system as it was before, I was very manual a lot of ups and down ... person doing manual testing?

ABC-R5: Yes, exactly like that

So now it's a bit semi automated where some of the test is done via machine but an individual has to come up, and log in the results.

Question: That is what is happening now?

ABC-R5: Yes.

Question: So you want to move away from that and implement a new system which would be more advanced to do everything, that is testing and recording of the data in a database as it does the testing?

ABC-R5: Yes.

Question: How did you identify that new system? What are some of the process you have gone through which caused you to make the decision that that is that system needed?

ABC-R5: The new system is called Test Shell. Well we introduce the.....software. well there are not plenty, like hundreds of software available in the market, its few. I would say 10 – 15 – 25 companies ...National instruments, Data Translation and Test Shell Aerospace those sort of company. They are, they supply test software ...and develop a checklist-what we need. So what we need, cost – which one would cost more, which one will fist our purpose, which one will be .....quickly, and which one we can handle easily, easy to learn because that sort of thing takes time to understand because it's a complete new software. It's a complete new

technology and we didn't have any one here before. So now we .....So its not something you can learn in 2 days, so we need to see which one we can adopt easily, which one fits our purpose, so they

So finally we found a company.....so we approach them and we ask them to show us their system

Question: Did they came here?

ABC-R5: Yes they came here. So we approach different companies but none seems to be getting .... But these guys, they gave us 3 days. Because they said to us, they were saying we can .....we can test your thing and we can draw your panel in 2 days, 2 – 3 days. Ok basic one which is if you want to write computer software basically it takes time. But there are plenty of products, different combination. All these system have a specific part. Ok we say we give them a specific requirement, we have a specific requirement.....have a major requirement. So these ...in 2 days and they came back and do more and then its ok we take and ok its fine, then someone came and we check prices and everything,.....customer service...and other commissioning stuff .....and we check how in fact ..... So in fact it is not very good ,..... So in fact it has not giving good margins at the moment

Question: In terms of the money invest and the returns?

ABC-R5: Yes ....but it could be better if ...on someone. But company policy, we don't have that sort of policy within the organisation.....so we don't have that sort of policy .....

Having said that we are looking forward to ...product ....so probably we will have some...from there. The first new project is the ...project ...we wont be able to test that product on the old system.....

Its some sort of an investment more than an immediate return.

Question: So even though you said the payback is not going to be large initially, do you think it would make a huge dent in terms of the profit that the company makes say on a quarterly, monthly basis?

ABC-R5: ...point. I have been asking this question from my bosses as well, they didn't answer me back.....payback in terms of quality fine, payback in terms of monitoring returns, fine; ....it will save some time fine, ....only way we san say it seems better in money wise if we make someone redundant or if..... sales can say it is not easy to .....from 100 to 150% no its not easy. It takes time....can ...your company ...rather than if you have 2 – 4 sales person ...no it does not work this way because we have specific market for fire industry.....it not a consumer market ... So again I will say we can say straight away ...money, but in terms of quality

yes. ...in terms of ...in terms of launching this new product yes. The other thing probably ...is because we have an R&D department.

Question: Who are the members in the R&D department?

ABC-R5: ABC-R2, ABC-E1, ABC-E2 and ABC-E3.

Back to this new system, what are some of the benefits/advantages?

ABC-R5: There are some advantages from it because it was behind the whole idea to buy this product as well because we do software testing .... Because software testing gives options, it will do this, do that, you can do this, isolate this zone ....do this do that, so you have plenty of option. It takes however time to test this ....so .....so we can use ...so we have other ...positions. So in this way...as well. Because normally if you test...it will take 1 month ....., so if software engineering makes any changes you have to again make...because as you know software...is connected to each other ...so these test exercises again and again .....then we have to check again. So when we use this software testing .....so whenever you make changes, just run test. So it ....

Question: This new system Test Shell, does it have to be modified to suite your products requirements?

ABC-R5: Is it a bespoke system or is it like a commercial system?

ABC-R5: How do you mean?

Question: Was the company that you are buying the software from, did they have to go back and develop a specific system?

ABC-R5: No, it is available. It is not customised for us.

Question: It was not customised for you?

ABC-R5: Well we had to ask for small changes but nothing major. They did make some changes for us but nothing major. It is available.

Question: In terms of the decision to invest in this new system, how was that made and relayed to convince the senior management team?

ABC-R5: Well management wasn't very pleased for that. It was hard to convince management especially when it cost about £20,000.00. ....we are paying £20,000 for this software. I can't say if it is a very clever decision or not. I was not very convinced either that we spent £20,000 on only one software. But we didn't have any other choice. There was another choice from National Instruments, there software was for £5,000 but, there is a big but, because training, in terms of training they charge about £6,000 for training. So in their training was not included

in theirs. So again 5 + 6, £11,000. Then, it is not easy to write software in National Instrument. It takes long time. So at the end of the day it was costing us same money. And the other companies they couldn't ...so they were the only one besides National Instrument can do....but then again ....more time than this because we have plenty of products combination. So we have to write software for every single one so it will take ages.

Question: So for this new one, every time you develop a new product you have to add to the software?

ABC-R5: Yes, so we did enough work to make the decision..... How it would benefit to us and ....but still I would say we spend that much money into next year. So we can save this money for 1 more year. But our question was will it be too late .... The product will be launched next year. So if we don't buy this year it will get time to learn understand so we decided to use....as well. So that is why we decide buy it now. So we can use in final test as well, so the final decision was made to buy it now..... So now we will use every ...this. We use in the test department, final test. So again it will not give us payback straight away ...£50grand, it will cost you about £30 - £40 grand .....and other things. So you will not see and we will not see straight payback but we did need these things.

Question: When is the time scale for the implementation of this new system?

ABC-R5: ...that vendor who supplied the software to us had some problems ....so there is a little bit trouble with this software so there .... Because when we were buying we ...I found many problems in the ...we didn't pay, we pay them the half. So....I find many bugs, plenty of bugs so we had to keep going back to them sorting out these things so last week they have sorted out every single thing, but still there are issues outstanding but they are not stopping me to go .... So but they will stop me to do test department test. So that is why....at the beginning ...but we are really looking forward to it and we will soon but its hard to give the exact ...time but definitely I will install by next ...some software. I have done about 20 -40 .... products. I already have that .....here. So definitely I will install this one. We already have...already this hardware ...ready for installation. So definitely we are install by next week end of next week. Then we have to again ....have to write software again and again ...

Question: So the semi-automated, when I say semi-automated I mean the one with the manual input, so that one will be phasing out now?

ABC-R5: Yes but we will still have both option.

Question: So are you still using both now?

ABC-R5: We will keep this one...in case you know computer ...so what we do ...ok so again we will be able to go back ...so it will not stop our production ...because it's a new system it's ....not rely 100%. So we....as well. So there will be two switches manual or automatic, so its...choice.

Question: Ok so going back to the manual system now can you remember when that system was implemented?

ABC-R5: ...they have been working on that since ages. When they make their changes as well they...so we do improve ...continuously in our company. That's why we are surviving here. Yes, because if you see especially in the ...side they are not ...the ups and down. But only we are surviving because of our quality and I would say it is because of our staff as well. Our staff they are very conscious about quality and they are sincere and I must say they are very sincere. So they think about company because, we are lucky in that sense and we are lucky in that we always have very good staff. So and our commitment planning is great as well. There could be a lot of things to improve we .... And as ...we have new ...I think you met him. He is a young guy; he has some good ideas for the company. So it will go far with his ideas so we are looking forward to ...to make a big company, you know we are a small company but it will take time. So ....continuous improvement, we always do that, there is always room for improvement...

Question: Going back to the management side of thing, in your role do you have a strategic plan by which you operate. 24:24

ABC-R5: We do have discussions. We have different meetings. We have production meetings, we have team meetings, we have sales meetings, we have ...so we discuss all these things in there. We don't think that Oh! This should be done and just do it. No; whatever we need to do we just write it down, so when we do production meeting, that is between myself, ABC-E5, ABC-R2, ABC-R4 and ABC-R1; so we discuss there. So we say this is it here, shall we do it? What is the advantage of it, what is the disadvantage of it, how is the company going to benefit out of this; those sort of things. We discuss, if we say ok, that's fine ok, we do it. Then action will be assigned to someone ...then we go back again after 2 weeks in the same meeting then we check what has been done, what has not been done and why it has not been done. So we have checks on that, and we don't do it like you just do it now. We discuss, we make a plan and then we attack. We work like.....

Question: From what I understand speaking with ABC-R1, the company is like 2 2 arms, there is the manufacturing side and the sales side and all the products from the manufacturing goes to the sales side. In terms of knowing the amount to produce from the manufacturing side, how is that determined? Do you get feedback from the sales team regarding how much to produce?

ABC-R5: No we make for requirement. We don't stock too much, so whatever they need they give us order everyday. They send us order by email or by Manusoft. So ABC-R4 and ABC-E5, they work with the company. ABC-R4 is actually the Purchasing Manager but she looks after some aspects of production as well. So and ABC-E5 she is her assistant, so between these...they do their job. So we actually work on delegate system. So they give us requirement as to what they need and we make.

Question: And they quality checks that are done, do you have a log where you record systems that have failed especially those which had gone out and we returned by customers?

ABC-R5: Yes. Let me explain you how that works. First of all if ..some sort of flow chart for everything, every single product. First of all in Surface Mount department, in Surface Mount department ....technician he check quality and I check it as well. I do random check. So he check his quality and I check his work as well. When they come up the stairs, in PCP building, I am talking about now...work before they send out then I will explain you how we realise failure. When they come up the stairs, PCP is a major department where...PCP because ...the Surface Mount Department they cannot ...every single thing. Some components are through hole and some components are surface mount. So they put through hole from downstairs then we have an automatic machine its called AOI (Automatic Optical Inspection) so ..just ..your eye there is checked every single component. So whatever id fitted there, and what is supposed to be fitted there. So if you have test completion, so if we already have 10 of this machine there is the software, ok job ...ok here should be box, here should be ...ok so she ...ok fine, something is wrong she ..and tell us. Ok this thing is off and she checks all the joints, solder joints everything. So it is sort of your visual check. ....after that, 2 inspection is been done, now 3 inspection so it comes to the test department. Test department will do reduce inspection and then functionally inspection. When functional inspection we test all the ....100%, no many companies do that, we do 100%. All of them....very well and sometimes we cant find anything wrong .... But still we do check every single ...with 100% function test. When I say 100% function test whatever this is suppose to do in a situation in different condition, every single condition, ...fire – check,... check for circuit, check this check that so we check

100% by automatic check. So if it pass from there it can't go wrong. Real quality test. Ok then this, it goes to .....then it will go back to the final test where we do ..test to make sure the.....so that is why we do fire test....so that's why we are making a new system so we test everything ...so we test there, whatever goes out is 100%. Last time when I reviewed my customer test ....and comes back from customer it was less than 5% ..oh..0.5%, less than 0.5% and.....we have to give then benefit of doubt, the customer because to keep good relations. So these things...are included as well.. so if we say directly product failure because of quality problems, very low. Maybe point zero something ..... it used to be before I come here failure was very high. It was more that 2/3%. There are other factors as well because ...very good machines ...so it is not only me, .....we improve our machine, we improve our equipment, we have more checks now, we have more control now than it used to be before. So that is why the improvement on quality. We used to have only 1 year warranty for....now we do 3 years because we ..... coming back from customers, they are coming back in less than 3 months ...6 months. Why 6 months because we sell to supplier as well. So we sell to them, they sit on their shelf, so they sell to their customer. So that is why sometimes they come after 6 months.... So what we found our...only fail during instalment ...when actually test engineer ...and why they fail, they don't fail because of something wrong with our panels; when they did something wrong with our panels, they apply wrong voltages, they apply incorrect wiring ...that sort of failure we normally find out. Once its....ones its running then no problem. So that is why, you know, I suggest you .....good protection for our customer ...3 years warranty so ...and I give them all the straight line figures so they accepted that ...

Question: Do you supervise any staff?

ABC-R5: Yes I do. ....not directly. I mean what I did, if they do something wrong I can challenge them... and I am allowed to..them as well, but it depends on what sort of things happen. So sometimes yes I do supervise

Question: What about identifying training needs for staff, do you play any part in that?

ABC-R5: Yes,..... Software....and whatever training required we discuss in meting and ....so I find ...struggling with trying to understand machine and then I discuss with ABC-R2 and determine yes, its ok we will send him ...yes so we all train, ABC-R2 myself and .... Because when manufacturing decision comes and we make together. We first discussed de don't take on personal opinion. So we discussed and as ....so he require a lot of training .....so I train him on the product but...training from outside then yes, we discuss and we send ...

Question: So in terms of the 2 departments do you get feedback from the sales team of any say requirements or any improvements or any new product their customers would be interested in purchasing. Do you get feedback which feeds into the whole ...R&D or information that the R&D guys could use to say develop new products.

ABC-R5: There is a ...weakness here because I have this discussing with ABC-R1 recently; I have this discussion with Peter Saunders one of our ex-directors, he believes on that that we need feedback from sales so they ...so when they went to visit our customers, they write a report every month and we circulate to every person .....not every single production staff will come ...so then we find out from there what to produce .....because it's a customer .....customer requirement but no, we are not 100% on that. We need to improve this area and we are working on it. But ABC-R1 he believes that sales feedback is not 100% right for new product we need to find out from other sources. He doesn't know yet what the sources will be. But according to him, I raised those questions with him and said no I don't believe in that. Sales feedback will lead us to manufacture new product. Ok, yes we can use feedback but not 100% so we need to look at, and we are looking at that. But we need to improve this section and we need to improve and we need to improve sales and R&D compilation as well. I have already discussed these things.

Question: How about excess capacity that, have you guys had any discussions on how to address that.

ABC-R5: Yes next meeting, it had decided, definitely next week. So I am supposed to spend some time with ABC-R4 today; because I believe in figure and facts I don't believe in oh, why you selling, why you not selling, no I believe on figures. These are all my figures; I have that much confidence in them. I can bring this figure in that time. I need 36 hours per week to cover that much production and to cover that many orders, why do I have 72 hours? So I always work on figures and facts. So that is what we are going to do today. It is planned already and we wouldn't be discussing this thing before but we coming to make a decision. So we are looking in there already because we send out some samples outside, it is the wide loop...its been assembled at .... Some link for us, so we are working at maybe weekend bring it back in-house so we need to buy some machinery for that. So we need to look in there, what will it cost; this machinery, and how much time we will spend on that, so how much time we can put aside for that. If we still have excess capacity then we can look at doing something else but apart from that I need to check my figures and facts, how much extra capacity I have right now rather than just go banging use that, use that, use that. So it doesn't work. You need to consider your peak times as well, your sickness time, holidays cover. So you need to consider all

these things because someone has 20 days holiday or 17 days holidays so you don't have to hire contractor, they are already planned because we would have to train them and by the time you train them the holiday is over. And you have to pay a lot of money to them. So we need to resolve these things. So it was already decide that the next meeting we need to make some sort of decision.

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| Case Code:             |  |

**INTERVIEW QUESTIONS  
ROUND 2**

FORM CODE: MD1

**A. COMPANY BACKGROUND**

Name of Company: **ABC Limited**

Location: **Greater London**

**Job Title: Managing Director (ABC-R1)**

Looks after the day to day running of the company including the financials.

Owner managed?                      Yes                       No

Number of employees: **36**

Turnover: \_\_\_\_\_

**B. ORGANISATION CULTURE**

1. Have there been any changes in the organisation since my last visit (products, processes, systems, key staff and structure)?

ABC-R1: Yes, there have been a lot of changes since your last visit in 2008.

Products – Probably when you were here we were in the process of developing for the first time an approved panel because of the changes in rules and regulations. Basically it says that all the “units” (term used to represent the class of product to maintain confidentiality) that we make have to be approved by a third part, independently tested to the standard. There was a lot of grey around it – do we need it, can we get around it? We took the conscious decision that said – we don’t want all our competitors to have approved products, so we needed to be just on a parallel with them. Also I didn’t want us to be in a position where we were not meeting the necessary regulatory standards - after all, it’s a life saving device at the end of the day. So a lot of work went into that. And that finally got approved about 12 months ago. So a lot of development went into that.

And that is to say this is the first time the company has ever had a product independently approved.

- i. Would that approval allow you to enter the European Market?

ABC-R1: Yes, that was one of the things; any export. That would be one of the first things; someone would come up to you and ask "Is your panel approved?" If the answer is no, its "No thanks" and they are on to the next company. So yes, it was for export. Having said that; we haven't done anything from an export perspective as yet. Part of that was that last year we actually went to Dubai. We had some contacts there that actually looked promising. I happened to go to an exhibition there and saw all our UK competitors and actually realised we weren't a serious panel manufacturer. It was disheartening in a way that you think that – all this effort was put into getting an approved panel for export so we can now conquer the world. But they (the competitors) had a range of panels. There are different approvals. The approval we have is for Europe, and there is a UL approval which is predominantly for the US and all our competitors have both. The control panels work – and they are detector dependent. So there are different detector manufacturers. Ours work with one detector, theirs work with 3 or 4. It took a trip to Dubai to work that out. And then they had things like; they had printers that had internet connectivity to the panel, they link to building management systems. And I just realised we are not there! We are miles away. So it was quite disheartening to a certain extent. But actually it was very good. Because we came back with - we are not there and we will never get there – therefore let's not try and compete in that space but be really clear as to what our strengths are. One of the things we then did was – most of our business, 60% is distribution and we historically distributed one of our competitors' (name omitted for confidentiality reasons) products (panels). And they make the best – we now accept that they make the best panels. They are a lot more expensive. We got to the point where we said, you know what, they have a lot of cool features, they do a lot of things – we will never get there – that's fine. If this is a range of the functionality (gave an animated illustration of a line), you have the cheap stuff down here and we don't want to play in that market. There are some really good stuff, amazing stuff but we pay for it up here. We sit comfortably in the middle. And I think there was a perception of – we believe that you can have the most technologically advanced panel at the cheapest price - if that could be achieved in any market; that would be good. But no one has ever done it. And you

suddenly think, what makes us think that ABC Limited is now going to conquer that. I have got huge intellectual property here and I am going to pump out millions of them over there (indicating the cheap end of the line). No one has ever done it. So that was the good thing that came out of it. It was the confidence to come back and say, this is where we sit in the market and therefore it helped us come up with a clearer product strategy in terms of, where are we. We can't be the cheapest; we never will be so let's give up on that. We won't be the most technologically advanced – let's give up on that. Our niche is here so let's get a lot better at it.

a. What changed and why?

ABC-R1: **Organisation:** Probably as part of all that is almost since you were – you may recall we had 2 companies. So at the end of 2009 we then merged the companies into one. It was originally tax driven because we lost certain tax benefits having 2 companies under one ownership. It was also organisationally driven in terms of there was a two company feel and it created a lot of animosity between people and silly things like who owns the stock; example if something worth £50 is returned there is always an some disagreement as to which company owns it. From my perspective, it's all the same money. I know legally, I have to count it separately (as there were two accounts) – but when I look at it. I am adding the two numbers together. So we did that and that has been great. We deliberately got rid of the two names. You are either in R&D or you are in production. You are in a department. In all of that, probably from around the time in the manufacturing side of things we lost £350,000 to probably the middle of last year. Roughly from the start of 2008 to the middle of last year we lost £350,000.

b. Was that because of the merge?

ABC-R1: No; as a company, we lost that much money. It was a combination of we took people on who perhaps we should not have taken on. We lost a large contract. And we then got to the point of factoring approval costs. To get a panel approved its £60,000. And then we probably need £40,000 per year as a run rate to get these products approved. To the one me got approved last year, we are making a change to it, that's going to be £20,000. We want to change another panel, that's another £20,000 – and the more you think of further changes, more money is needed. Whereas, I was under the impression that, once you have had approval; having paid that volume of

cash – that’s it. However, it has to be a run rate number. So it is things like that coming in there. So we, at the start of 2010, we had this honest discussion as owners and directors - to close it all down. When you are shipping £15,000 a month in cash in losses; it not well for the company. We haven’t got that much money to prop up. We actually just said; should we close it? And someone just said “Oh, I will buy it off you!”. We then had some soul searching and we sat down as Directors and said, “Even though it’s a pain, its a small part of our business. Actually, if someone comes and said, “What do you do?” Well the first thing is “We manufacture”; because it is a nice thing to be able to say other than “Oh, we get a whole bunch of those things and stick them in a box and sell them”. If anyone would be interest in it for that long I would be amazed! Whereas, if you say, “We manufacture” – the follow-on would likely be “Well, what does that mean?” Well, that from concept – from RMark sitting out there thinking, well this one should do this or could do that - to the guys out there punching the code to the physically making it. And that’s a nice thing to be able to say. And we got to a point where we say, well if it means that we don’t make as much money because we funding this thing call manufacturing well, that’s ok, we are happy - because to us it’s worth something. As accountants we have to say its worth £30,000 a year or it’s just it’s worth it. As long as it’s not losing £350,000 and its just breaking even, then we are happy with that. So that’s where we got to. So we then took some very tough decisions; we made a number of people redundant which had never really happened before. From the manufacturing side we made 4 people redundant which is kind of unheard of. But when we are losing that kind of money we had to change. The other thing is that some of our decision-making process we weren’t running it good – for the manufacturing operations. When things go bad then you step back and look at everything. Then you realise that actually the manufacturing company never truly – if you look back at the accounting adjustments they made – and realise that stock went up over a period of time – because we then write off a lot of stock that we didn’t need. You kind of go backwards and say – it’s best to break even. In the best economic times that we have known ever – it broke even. You throw in a recession, you throw in taking on people that we couldn’t afford, losing a big contract – it became the perfect storm, almost. Any one of those things happened, you could deal with. They all came together, and we couldn’t deal with it. So we took some very tough decisions. So ABC-R4 and a few of the production guys were made redundant.

So we put in ABC-R5 as the production manager. He was the testing and quality manager. And so we did it to save cost; but actually having him in have made a massive difference. He has a bit of technical understanding; he knows what that widget is – it's now transformed, now break even in the manufacturing division. So having gone from a lot of loss, it's now breaking even. And some of that is just taking out; cut, cut, cut, cut. Part of it is actually the new panel that we have. It was well received; the fact that it's approved is a good thing. But part of it is just the production side run properly - because we weren't buying far enough in advance. We had a phone call - our main product - the ABCWidget which is goes into our main – probably about 60% of our sales we couldn't get for six weeks. That was the only time, when I got that phone call – I actually thought I was going to lose the company. Fine, it's not a big number in the overall ABC Limited number, but then if people who come to us to buy panels buy everything else that it stocks in – and its “Oh, I haven't got that”. They are going to go to someone else. It's not, Oh it's a slightly better price, it's I am going. We then found out that we could get them quicker but it's at a cost – we are going to have to pay for it! And some of the things we end up having to do as well – while we were losing money – because we paid 3 times the normal price. So there were lots of those things and we were getting to a point where we didn't have stock of our own products on the shelves. There was one particular product, we had 3 different varieties you could buy and it is the bulk of our sales. And when our sales team were asked by customers, “Can I have this one”, it was a no – then “How about that version”, it was I can't do that one either, “Can I have that version”, it was a sorry I don't have that one either. And the customer walked out. And I had no particular issue with the guy walking because I was glad he did a actually asked the 3<sup>rd</sup> question because I would have probably walked out after the 2<sup>nd</sup> one if it was me. And suddenly it was all becoming, “Sorry, we haven't got any of those in stock”. And they were bog standard things. Have you got any of those no, or it was it is looking like they will be in tomorrow, and when it was tomorrow it was tomorrow evening and then it still had to be packed and therefore a day gets added or 2 days gets added and so it just became a mess. And, we have probably been running 12 months, and we have a full shelf. We sit there again and we have full stock, that's cash in there but it's almost, I want that, because the amount of time I have heard the guys saying “I'm sorry, I haven't got one of those” – I just think I don't want to give

them an opportunity for them to say that again. And its a lot clearer for them to say, these ones we have in stock, these ones, it a week. And again the message back is to be confident and comfortable in saying it's a week because we sell 3 of these a year, so it's a unique product. One of the few people who sell it, they can't expect it to be on the shelf, they can't expect it to be on the shelf for anyone else. The other thing we did was to rationalise products. We went through and said – and it was actually quite interesting because they (the employees) actually began to talk to each other. So ABC-R5 from production point of view spoke to ABC-R4 who does our buying about external things and in theory would buy the ABC Manufacturing products. He said these things are a pain to have on the shelves, we don't sell enough of them, and they are confusing. And ABC-R5 goes, well we are paid to build, and that's a whole team of stocks – and both found aggravation and no benefit. And so there were a number of things we got to the point of – let's just stop! We go through the set that we make £3 a year out of it. It was a case of, if one customer wants this product, we were now willing to say, yes we can do this for you as a special but it will cost £500. And I think a lot of it was actually bringing some commercial reality to it. Understanding this is how a manufacturing unit works, we simply have to make money. One worker actually said to me when we were making the redundancies, "Ah, it's all different because we never expected it (Manufacturing) to make money. It was a stop and think moment because it's not like it's a lost leader. It was like the whole company was a lost leader because it doesn't drag enough other products through. Can it just break even or make a small profit to replenish all its kit? Yes, possibility because we can sell the benefits elsewhere. So that was an interesting moment.

The other thing that we did that has made a huge difference in the company is that we change from – we had different accounting systems and different manufacturing systems - so we implemented a full Sage system last year. Because it all became one company – we actually had a financials for the sales company, a financials for the manufacturing company and then a manufacturing piece of software. And that was one of those things, when you start to dig and understand there were lots of gaps missing in terms of simple checking of purchase orders and pricing. There were lots and lots of gap there, so we changed that and started implementation July last year. So we still not 100% on the manufacturing side but its miles ahead of where we were to the point where, for the first time in ABC's history a couple of

months ago, we have actually generated a full accurate bill of materials. And that was a bit scary, because when you actually started analysis, it was like – oh, we only made that much money on that. And again, it was because they didn't factor labour in as a cost of production. That was never understood. So having the ABC-R5 in there (the Production Manager) he is able to challenge and say, ok, I have gone through all of this hassle, it takes a lot of time. If we change this widget, let's not use that, it can then save a lot of time here. So having have all our products cost accurately, it is quite good because you then sit down and say we have to go through another product rationalisation because we just don't make any money. We have one product, it actually sells for £70 and as an entire company we make £3 gross profit. So therefore I have to pay the sales guy commission for selling it. There is a lot of effort that goes into making it for £3, because actually it doesn't take long – it take 2 to 5 minutes longer to make one, but we have lost money on that product. And that does not factor in any returns or warranty. That's only if everything goes well, it comes through the door, it's made to time and cost and it is boxed. I make £3 for that effort. And that's the good thing now – so what are we going to do? The sales guy can up the price or I can buy someone else's in and resell his. That's one of my options now. There is now that understanding of this is where we make our money – this is where we don't make our money.

Everything has changed, it's almost – it was still a bit of a hobby. I would like to think we have grown up a little bit. And in terms of actually make financial decisions – probably the best example was we do a special. So you would come in and say I need this and it needs to be blue etc and we say yes and then under price it!

c. Is this because you felt you need the job?

ABC-R1: No, because you couldn't pay for it. But we hadn't asked you. The best example we had was, there was some flats in London where we knew the cheapest flat went for £2M. There aren't really poor people who live there, and they needed a specialised in the reception/common area. We spent a month building it and we madly undercharged. When I asked ABC-R2 why did you price it like that? His response was, they probably didn't want to pay much! My thoughts were that the residents who live there, it probably was their 5<sup>th</sup> home – their London crash pad. ABC-R2 response, well I honestly

thought they wouldn't else I wouldn't have priced it this way. And that's actually the whole company – they won't pay!

d. Is that the initial assumption they all make?

ABC-R1: Yes, that they won't pay. And that goes back to our product decision where we think we have to offer them absolutely everything for the cheapest price. I genuinely don't know how to explain it. Another example was we were looking for a piece of software for our service department and a guy came and he sat down and he said. Just to let you know now, I am at the top end of the market and we are at a premium, we are the best and our prices reflect that. And it did, but it was a really good product. And I said, can understand that, it's not right for us. And part of the problem was that it required a minimum of 10 engineers and we only have 4, so it didn't fit from that perspective as well. But it's because he has the confidence to say this is where I fit in the market. And as you say, rather than going in and say it is going to cost you this much and then go well I can give you a 2% discount knowing that it would still be within the right ball park. But we didn't know if this guy was prepared to spend £20,000 and we charged him only £2,000. Was he prepared to spend £10,000, was he prepared to spend £8,000? At least if we had said it's going to cost you £10,000 and he said I can only afford £9,000 we could do a deal. Two thousand pounds was only for the materials really. So it was not a bad thing where it was actually about making the right decision for the company and not what you think the customer wants. And it starts to unravel. Why did we do this, we put in rivets, packet rivets; why do we do that - and ah, it's again its pain easy. Well someone once said they didn't like putting up these panels with screws, they preferred rivets so we decided to put rivets in them. What happened if we stopped? Most people won't worry about it – so we just stopped. As much as it has been quite hard going through a recession, it's been the best time to have started in this company.

e. Why is that?

ABC-R1: It gives us a chance to pause and reflect on what is happening and make the necessary changes. And the numbers as well, they allow us to do it. People knew redundancies were coming, so they accepted the redundancy. It's not like I (the new Managing Director) just arrived and decided to get rid of everyone. Turn the news on and well, you all know what is happening. So it wasn't a shock to everyone. But we looked and say, why didn't we do this, why didn't we do that. And every penny started to count. And then you

realise there was a lot of time and effort went into doing a lot of things. It's probably to a certain extent, everything has changed. Even now - as we are starting a new panel, we are revamping some of our existing range and in the past it would be ABC-R2 – he would go, here you go, I have built you this panel, so and sell it. And the sales guys would go – phew, well I can't actually because it is not good enough. So we have changed that. Bizarrely, in designing a panel we wouldn't listen to the guy who takes all the technical calls, the guys in our service department, the guys who actually interact with our customers/installers – what's their feedback? And the sales guys as well. So we now actually have the panels been designed by a committee. It is now designed by a committee because on the range we have, someone said, can we have a big button which does this. Oh, all right then, do it – done. Because it makes my life easier; the guy who is installing, he has quite big thick fingers so why can't we make it so much bigger, a few centimetres it would make like so much easier. Ok, all right then – let us do that. Before, those questions were never asked or input was never received. Therefore it was never factored in. And almost, a first attempt is a variation of the last one (shown prototype of new product and the old one – discussion eliminated 36:00). We went and actually talk to the guys on the production floor and the best one we got was – we were buying a specific type of cable in. And the supplier came to us and said your prices are going to go up a lot for this, this and this; and we said, we can't afford that. He said, well you realise we are putting these clips on because I have to put the 4 cables and clip them all together, so this cost £1. I am going to charge you £1 for doing that. We then went back to the guys in production and say, these clips – and they say, we hate them. We cut them all off. So we spend £4000 per year for no reason.

[Back to the new design] So it was really good to know, he came out with cardboard cut out for the first time. And the sales guys say they weren't sure; can you do something like this? Then he came back with another and the sales guys looked at it and say, I can sell that one. And then we had some different ideas around its physical appearance and got a few made up. Then again, we take them around to customers to get some views – what do they want. And they were surprised because I sit there and say you have to save money. That's all they hear from me. But if we need to spend a few hundred pounds or a few thousands on prototype then we will do it because we will get it right. I don't want anything to come as an

afterthought. So I think that has been the challenge and the other thing is that I set them a budget. I say you must build this thing for this amount of money. And I am not going to say its all labour and no parts – it got to be built for this amount of money. How it is done, I don't care – it's this amount of money and every cost should be taken into account. And it helps with why we lost money. We would go for the unique, or the – oh that's special for us or - it was almost the more unique it is the better it must be. Its bog standard thing is we can't charge a premium therefore we want to be able to buy it from 15 people – everyone to be using it. But this guy, his product is bespoke. Good! He charges for that. And that is the thing; we would pay for bespoke things that we couldn't charge on. A lot of things we got because we thought it would be good. And to the point where the processor which runs this cost us £4, the one that would run that is £0.74 (indicating prototypes). But then the process is this comes in a family so if we run out of this one, it sit on the same footprint so they came on the same holes. The cutting might need to change but we need the tools which says you are not using processor A but now processor B. Here are the things that need to change.

f. Is it that it has now become more adaptable?

ABC-R1: Yes, because that was the thing. We were the only ones who buy then in the UK kind of thing. The supplier suddenly decides to double his price. And then we can' turn around and go to the customers. So I think there is a massive learning curve as to what do we do. Because it has just gone on and there have never been a need to actually, partly the desire if the view is that we are ever going to lose money. We were not expected to make a profit and labour is a sunk cost. If things become a bit more efficient and labour is factor in as a cost – some things remain labour intensive, it's just a factor within the industry. And with those things it didn't matter if it takes extra time – as long as it's now included in the cost. And they are given a budget to play with. And it has been real good because we are getting the best out. There are now ideas of how things could be done and actually the way they are coming up with the power supply now is amazing. Now if they do, this instead of that – it will save £20 already. So more ideas are coming forwards to improve the product, production time and efficiency, more effective way of doing things, alternative materials and this is reflected in the cost.

I have recruited another guy I used to work with back in my job. He started back in 2009; he came in as a Director/owner as well. I had that in my mind from your first visit because I think I needed it because everything came across my desk. But part of it was actually someone to sit and talk to.

g. Is he also from a Finance background?

ABC-R1: Yes, I approached him not long after I started here. It took some time to tell everyone I was bringing in a new person. And again it was the perception that he is not an engineer, and haven't got years of experience within this industry, so he is not going to be any good. And actually, those are good things to have but I need someone who actually understands a business. So it has been good having him because it's then two of us. Certain things I need back up but also some of the things I was thinking of doing I get to discuss and get an opinion on. So I may be thinking of doing something, discuss it and come to realise now is not the time or have you thought about this. So it's good to have someone on there just to bounce views off. The other thing is to actually challenge me. Because it is almost the old company, an old way of working – that if the boss said it then it must be right. I could say, let do this – let us stop selling things, etc – and they would say; great idea Managing Director. As long as the Managing Director said it – let us do it! But now I have someone who will question my decision. And another thing is that we have tried; and we are getting there, is to create a Management Team. We have asked 2 guys who are our UK sales manager and our service manager to actually step up and be our senior managers. But then still have a management team. Part of the challenge actually is it becomes a big management team because we need everyone there. For a small company we need big management because we need R&D, we need Production, we need Sales, we need Marketing and actually out Technical Support and Service Manager. So actually we have a management team of 8 in this company and you actually can't get away with less. And that is why we actually pull those 2 guys out to actually try and help us; a smaller group of people to actually drive the company.

h. What has been the impact?

ABC-R1: The changes in the organisation of the two companies have been good because they all say they work for ABC Limited.

- i. Can this be linked back to the performance of the company, if so how has this been done?
- j. Have there been any added skills to the workforce?
  - i. If so, what are they and how has that impacted on the company?
- k. How have employees reacted to the changes?

ABC-R1: I think now people have accepted there are going to be change; people know the way whether they like it or not. Where there has been no or very little change there have been now: its big changes. And I would like to think, because we had spoken to them about a lot of the changes – we got them involved to share their views and input. This includes better or more efficient ways of doing things in the assembly process. So I think people have reacted. A lot of people here didn't like change. I think the biggest thing was to say guys this is what we are doing, we are making these changes, and this is the reason why we are doing it – what are your views. And they actually responded quite well. They are coming out of their shells now and saying, well, if you are doing it this way have you thought about this? No, that is a very good idea actually. And I think because in the past, in certain parts of the company they were – the management style was, you are the worker and I will tell you what to do. Whereas, if we just say, I value your opinion tell me what you think. I think people have responded and have actually been - we give them more information, financial information about the company. I am not going to sit here and say, I earn this much and you earn that much. It was interested talking to them and even to the service manager and say the service department's annual contribution to the company is about £400,000. Here is a guy who had worked for the company for 18 years and he had no perception of what that was before. So we try to do an annual update of; this is where we are and this is what we are doing; and include high level numbers because most are really scared of numbers. And I get conscious as well as someone who loves looking at and analysing them. I don't want to be sitting here are saying, here is something interesting, here is something else interesting etc because I find it interesting and I need it.

We have around 33-35 employees now.

We have made 6 redundant in total but then we have taken on a couple of others. We have taken on 2 new posts; one was a software developer (the other the new Director). He is a younger developer than we ever had before.

So therefore bringing in newer ways of working and in comparison to the other guys is fairly good at communicating. He could sit and talk to anyone about what he is doing and then turn and speak to his colleagues in 1s and 0s. And he can do it both quite comfortably.

The new Director is the Commercial Director. His role is not as yet fully defined. He initially came in and managed the service department. He has now turned that over to the service manager because he is now stepping up more into this role more. Really we both do everything. Apart from saying we should - we haven't got defined areas. Partly I think this was because of the hassle with manufacturing – I started to look at it and then it the more time I spend sitting and explaining things to him, the more questions he asked. We ended up brainstorming – so often we do things together for no other reason than we spend more time.

- I. Do you think it's still so because you are still in the developing phase of the company and there are still issues to resolve?

ABC-R1: Yes. I think it's that because it's a development role. Both of us are here as Directors it not – trying to review – we are not in the reviewing. Everything is still pretty much evolving. There is still another 12 – 18 months to go.

- m. Is there a new organisational chart?

ABC-R1: Yes. [*To be emailed*]

In sales the guys, their commission was based on turnover. We change that to gross margin at the start of 2010. And that we believe have had a positive impact. It is actually really hard to tell because when we move systems our gross margins changed. Not only in the figures but also in the reports which we ran and what gets picked up and what didn't get picked up and so we need to wait a few more months and then we can see how it's performing. But actually the guys understand it better. And that's where a lot of our time and effort goes in actually understanding what do we make; looking at the margins of individual products and therefore looking at the profitability of deals as well.

## **C. FINANCIAL INFORMATION & DECISION-MAKING**

2. Do you now have management accounts for the company?

ABC-R1: I actually do the accounts because it's easier. We actually have a requirement from our bank to do management accounting for them as part of the borrowing recognisance we have with them. We don't do any – I did it a couple of times then I realise it was all for me – I so reports with typed notes and all sort of stuff. But then it's me who is going to look at it, so it sits on my computer and I write little notes on it. There is no need for a formal presentation; if you like because it's me who is doing it – and my accounting background – I understand why I am doing it and I understand what I am looking at. So that's our normal management accounts

- a. What is been captured and how often does this occurs?
- b. What models are used and what are they used for?

ABC-R1: Having 2 Directors who are accounts, we have a ton of data. We analyse lots of things.

We do a forecast at the start of the year, but that's more of a plan of how much turnover do we need to make to pay everything and to cover our costs. It's not an awful lot – as in our forecasting is what did we do last year, what do we know is going to change from an overhead perspective. We don't really have a lot of overheads, If you look at our figures and take out rent, rates, electricity – all the things that you need to look at – there isn't a lot of discretionary spend if you like. Therefore it is not a lot of full process that needs to go into that. We have a certain amount of money we need to spend on marketing. If we double it or half it; it's not plenty money in the whole scheme of things. And part of it is how much money extra we are making. So our management accounts are mainly from a sales margin perspective rather than our overheads. Because our overheads they are fixed to a certain extent. Rents are fixed for a long period. We were able to negotiate a better deal on our insurance. Salaries obviously make a big difference and they are looked at. From doing a huge P&L, there is not a huge value back into the business because most of our overhead are fixed. The value is where we are selling, what are we selling and what big deals can we bring in, what margins we can make on it

- c. How is the information used? – (request monthly reports to demonstrate)
- d. What has been the impact of using management accounting?

ABC-R1: We then have lots of day tracker sheets for the guys, the sales commission. We have a master spread sheet which has everything – of every product we have ever sold - a rolling inventory probably for 3 years;

which is just a big pivot table which sits on top of that. And that probably drives a lot of our decisions because it has as much information as we need to make those decisions. It has customer information, the region they are in down to the Post Code, the product itself, the month. So there could be a lot more information – actually I had a lot more information in there but it actually never drives any different decision. It was always back at a higher level. Never really needed to drive down into it.

So we use the data to check to see how the sales guys are doing against their commission for example. So there is the commission target. And there is our financial target which is just a lower number because we know all the guys are not going to hit 100%. Therefore this is almost the number we need to be hitting for - to a certain extent to pay all our overheads and meet our debt obligations.

e. Do you know what that sales margin figure is to meet those objectives?

ABC-R1: Yes we do. We have a rough idea of what we need it to be. I think it's around £85,000/£90,000 on our sales margin we need to be hitting. We won't get that every month because our sales are seasonal. So one month we will do £120,000 and one month we could do £70,000. So that's what we look on.

I collected some of your earlier forecasting during my first visit. It would be good to get some actual reports to make some comparison as I could use the reports from the previous year.

Yes, that would be two completely different things. And that still happens and actually I was explaining this to our bankers at the start of the year because we had drafter 2010 accounts and they were completely confused. I am actually waiting for 2011 to finish as this would be the first time since I am at ABC Limited that there will be truly comparable years. Because, you go back to 2010 was a clean year, 2008 the company changed ownership and that of course caused confusion. In 2009 we combined the companies to a certain extent. They had individual P&L but the Balance Sheets were combined. In 2010 it combined the P&L. So it's very hard to go back and compare reports which pre dates 2008 with any of the forecasting. This causes all sorts of problems particularly looking at 2010. If you look at the sales company which is the main trading company

the profits go from £300,000 to £200,000 to £100,000. And you may think this is actually all bad, you are driving the company down, and you are killing the company. When, no, actually it's an improvement because what you need to do in 2009 is to go and add the loss from the manufacturing into that number. When you are talking to some guy who is saying it doesn't fit in my model, it can't do that. It gets very hard. You have to remember lots of things to make sense of it. I tried to combine the reports pre 2008, and I get confused. I struggle as an accountant and the person who understands this business; I struggle to make sense of the numbers. And that's not brilliant because if I don't then none of you (as in me and the banks) are going to because I understand all the nuisances that had gone on behind that. But I think fundamentally it is going in the right direction. But it's hard to – in the traditional way of looking at the finances and say your profit was this and it is now that. And then you throw in on top of that the funding that's there; and also it got hard as well in terms of we are in a recession and so its, does that represents a 10% decline, is it 20% that should have impacted. And so I am waiting on 2011 accounts because 2010, that's what it looks like. It was a combine company, one P&L, one Balance Sheet and 2011 it will be the same.

3. Are any performance appraisal methods used in the company at present (NPV, IRR, ROI, etc)?
  - a. If so, how are they used?
  - b. If any discounting models are used, how do you determine the discounting factor used in the models?
  - c. What information is captured?
  - d. What has been the impact?
  - e. Are results monitored or evaluated?

ABC-R1: No we don't. I am just thinking back to a situation where we had a detailed – and no it wasn't detailed – it was when we took the decision to; we had 2 distinct range of panels and we got to the point because of the approvals and say let's just create one. And that was just our general thoughts but then we stated to We then just started to and then we started talking to customers and then said no, there is a difference we should keep then separate it we could do it. We then look and say, could we afford it, can we make a return from it? So it was a simple exercise, almost a back of a cigarette packet sort of thing – where we say, to do this it would be 6 months worth of development, it would cost about £20,00 to get it approved.

We now only see this many, it should last 5 – 6 years then what that equals? Its £4. Then the cost of making a new one is £4 or £5 each – yes, it is worth doing. That was about the extent of the financial appraisal that went into making that decision. We then did look at it in a little bit more than that was pretty much it. Part of it is because it's still a lot of development. Actually there has not been a lot of investment, and that's something that we are acutely aware of. There hasn't been a lot of investment in the company. So there hasn't been a great need (performance appraisals). So in a sense it is not a true investment anyway because we pay the R&D guys anyway whether they did project A verses project B and its partially ales driven. So there hasn't been a true need for an investment. I supposed it we were honest we haven't really invested in anything.

Having said there wasn't any investment, I was thinking back to actually the decision when we decided to change our accounting system to Sage, I suppose it was to a certain extent there. We always look at the numbers because it was a simple point of we needed to make the change because ultimately we want a web presence. We want our customers to come on and order by the web. The software that we had wasn't any good for that. They had an interface and when we said, could you give me some reference to someone we could talk to. And it was always the same one. And I was not going to invest a lot of money in a technology that no-one understands. So that was part of the reason to move to Sage. The other was, by the time we had a look at all the different systems we were supporting, using and running compared to Sage, the annual support over a 3 year period would have paid for the new software. So we made the decision, we need to change; we need to because we were not happy with what we had. The financial benefit was – it makes the decision easier to make. If the maintenance was the same, we still would have made the decision. It got to the point where we could just about justify it on the financials. We had big business reasons why we wanted to do it – better business reasons I should say – why we wanted to do it.

The old system basically facilitated a true supplier customer relationship between the two entities. They had different systems and they didn't interface nor communicate with each other. This would have been fine if that was the case – but we are the same company. And actually, in implementing Sage – back to the organisational change – it would have a

big impact as well because in terms of the location of products as well because; example, we will sell spare keys. But we had them in two physical locations, one was the manufacturing location and one was the sales location. And that came a bit hard, and when you multiply that out to all the other products in general it became a little more complicated. So it was; where the right place for the keys to be located. So when the guys in stores sell a key they have to go to the production side and grab one. But it is better because they know where they are – it is probably better explained with another product, example a widget (name withheld) we may sell a raw widget to a customer because he broke it I, but when it is a warranty, when the production guy knows all the widget they have in the company is here in this box. Well you can nick come of mine from here if you want. So there were a few things like that but it was all good coming together as one company.

f. So you are just pumping back money earned into the company?

ABC-R1: No. We are just about only breaking even because we have been funding a loss. So you combine the companies from a cash perspective at best we have probably broken even over the last couple of years and that's also because of how the company is funded. When I bought the company there were loan notes given by the previous owners. So that's where any, effectively – they way I run the accounts is again, it probably causes confusion – in the management accounts I include the funding costs in my P&L even though its technically not correct. But I need to be able to look at it and know that I will need to generate £15,000/£20,000 per month to repay the debt. So therefore I want it on my P&L.

g. Do you have to repay that debt?

ABC-R1: Yes it has to be repaid. So its interest monthly to them and then capital is repaid every 6<sup>th</sup> month. So it is where, at this point a recession, massive lost and a debt is just pretty much what we have made have either funded the lost or funded the debt. Which, you kind of get to the point where – is that good, is that bad – I still get paid my salary so I am not any worst off. We are paying down our loan. The company wasn't in as good a position as I thought it was when I bought it. And that's where things like funding a huge loss – and a lot of the decisions – like they took a lot of people on. I started at the end of February, bought it at the end of April – and a lot of those decisions, I was here when they took the decision but I was ignorant to the

fact of what they were doing. It was like, we are going to do this; we all think it was a good idea. But now I realise they were wrong decisions to have taken at the time.

4. How is the company funded?
  - a. What is the level of gearing (Is it D/E or D/ (E+D)?
  - b. How was the funding decision made?
  - c. Are there any barriers to financing of the company? Example access to funds etc.
  - d. What types of debt do you have?

ABC-R1: It is funded effectively by overdraft and that is historic. That was in existence before I bought the company.

It comes back to the point of investment decisions; we haven't got any money to invest. So things like Sage, we are changing the servers (they are 7 years old, it keeps falling over) – it is if we don't change, we then can't sell. So these decisions are born out of necessity as opposed to trying to generate new business. So it is not like let's invest in another Surface Mount machine because if we do that we could achieve that - we don't need any staff. And that was one of the challenges and partly where we have got to with the export as well. Talking to a few people we are told we need this, this and this – and you also need £60,000 - £100,000 to go and do it. So we haven't got £60,000 - £100,000. So we are not even at – is it worth spending; we haven't got it. So we are not going to make that decision; we can't make that decision. And because we are probably at our full borrowing capacity; its isn't that I haven't got a proposal I could put to the bank that says probably I want to go export, I think my return would be this. We are just not at those positions yet.

So in terms of excess barriers, the bank is happy to lend us money but we extended it to borrow some more money to buy the company when I bought it and we probably run close to it all the time; it has been tight. The size of the overdraft varies; it ranges from probably £400,000 to £600,000 depending on where we are at any one point in time.

It is now 3 years since I bought the company and it may look like we are doing quite badly. But if you look at the interest we have paid on the loans, money I have put in and the capital we have repaid. It has got to £800,000

in that time, in what have been paid out; it is not that we don't generate cash. Yes we do, but it is going into servicing our debt obligations.

e. Do you know the cost of the debt?

ABC-R1: We actually get quite a good rate, it's not many points above base because we changed it all when I bought the company and the banks were still giving amazingly good deals. So we are 1.5 points above base (base is currently 0.5%). The problem is the size of the debt. It is an inhibitor in terms of, there is no money.

5. How many shareholders are there?

ABC-R1: There are 3 shareholders.

a. What percentage of shares is owned by each?

ABC-R1: It is in the ratio of 60:25:15 between us.

b. Are dividends paid, how is this determined?

ABC-R1: We (I and the other Director) pay ourselves by dividends but is a form of tax planning. In terms of true dividends, none have been paid.

c. What level of returns do shareholders expect?

ABC-R1: I suppose in my mind I would think by now it would be making a better return. Part of that is; it is hard to differentiate what a recession, what case the recession, what is me starting and what is a lot of bad things which have happened. Yes, I think we would all be honest in saying that we want some level of return; but actually surviving is far more important. So therefore the fact that we still draw salaries, we are being paid, our mortgages are being paid, we don't struggle; well, that's fine. We are paying the previous owners, we are paying our debts. When we see the number of people that have gone bust on us; the level of expectation is just to keep going, keep surviving.

d. Would you consider the company to be low, medium or high risk?

ABC-R1: I would like to think low risk and the reason I say that is because – and I know we owe the bank a lot of money; but from the conversations I have had with them they are quite happy with what we are doing. And again we have had customers who the bank have come in and say that's it; you owe me X amount, its repayable within the next 14 days. We got to a point

where cash became very tight at the beginning of the year just because it does; and they (the bank) had said if we need more money just let them know. We have never had the message coming back saying; your £400,000 I would like to reduce it to £350,000. And the other thing is the big amount going out' which is the loan note; goes to my wife's parents. Two thirds (2/3) of loan notes payments goes to them. So I think if things really got tough, there are conversations that would need to be had. At least her Mom still works here doing the accounts so she knows how tough it is and so words up the other guys - saying, guys you may not get paid one month, this is where we are. Contractually, they can make the demands, and I could lose everything; but it is unlikely to happen. So in that respects I say its low risk. The other thing is we are aware of what we need to make the company work – and again; having had a number of companies going bust on us. You get to read the Director or Administrator rights of report – you see the mistakes some make, some are just amazingly bad luck – and we try to learn from their experiences. I would like to think that we are running a tight ship and we all understand what they risks are and manage them all accordingly. We don't have any one company that owes us – probably in a debt book of £850,000; the highest individual debtor is probably £40,000. So he can go, and we would still be fine. If our top 10 goes on the same day, then that would be a cause for concern. So I would like to think the risk is low.

6. Do you know what the cost of capital for the company is?
  - a. Have you ever calculated this?
  - b. What would you use this information for?
  - c. Do you actively manage the cost of capital, for example refinancing to get better rates?

ABC-R1: In terms of – as in the total interest we are paying, yes – a couple of times. [How it is worked out to be emailed to me]. It is a mix of financial flows and legal flows - there is the holding company that has the loan notes and; this is not the legally floes of how it should end up in the accounts, it's just that it's easier thing to do. So the monthly interests' just for the load notes are paid out of ABC Systems directly to the loan note holder. So that's where that sits in the management accounts. The capital is paid out of the holding company. Then also it has to pay interest to HMRC that it has to withhold. That's a requirement. And of course there is the bank as well and interest payments to the bank. So when you asked, its yes I do it; it is just

complicated. These loans have very low rates – base plus a few points above (to be provided via email). What we are trying to do is to make our accounts easier. Like you probably have done; people read our accounts and come to the wrong conclusion.

We haven't used the cost of capital information for anything. Partly because there isn't; there hasn't been the need to. The loan rates are fixed; they are amazingly good rate of interest.

#### **D. IDENTIFYING VALUE WITHIN THE COMPANY**

7. What do you consider drives value within your business?
  - a. Do you collect data on these drivers?
  - b. If so what data and how are they measured?
  - c. What do you use this information for?

ABC-R1: The actions and the decisions taken have been in a certain sense because of necessity. For the last couple of years it has been about sorting; pulling out the bad, putting in processes in place' we don't just go build a panel because it is interesting – it is now building what the market demands and that we can sell and it fits with who we are. People have panels that will link into a building management system, that's all well and good – and we have talked about that but that's when you are out there competing with big multinational companies and that isn't our customer base. If for whatever reason we want to move the company and for whatever we think going after these kinds of customers is the best thing to do; well that's a different kind of decision that we can make. The point is, this is where we are and this is the kind of customers that we genuinely deal with. So if we can't provide something but can make something by selling our competitor's own, we do not see it as a failure because that is not what we do and as long as we make something out of providing it.

Part of the reason why we never close down manufacturing was because we didn't know how to unravel it. We thought it was worth something but how much is it worth to our customers. We did a customer satisfaction survey in summer last year. And one of the direct questions – the first question asked was how do you perceive ABC Limited? Do you see us as a distributor or a manufacturer; and the response was 50:50 when manufacturing is 30% of our business. And it was scary when 50% of our

customers saw us as a manufacturer and we don't see it as a main part of our business. In terms of our majority shareholders the guy in our service department makes more money for the company than manufacturing does; which is wrong as a manufacturer. When you look at our competitors and see how much money they make; it is wrong in saying we are a manufacturer because we don't make much money from our intellectual property. It is hard to understand what the perceived value of that is. By the time we had made a decision on it (the manufacturing), we had made a number of changes and we were starting to see improvements. On the financial side of things I will give it a few more months and see how things go. We are breaking even so we are thinking we have made the right decision all along.

***(Exercise: Flash Cards with value drivers identified from initial interview. As Interviewee to rank in order of most important to least. At the end, ask for reasons and justification for the ranked value drivers.***

***NB: Provide blank to accommodate any additional value drivers identified by Interviewee.)***

*Outcome:*

*No new value drivers were added. The flash card with value driver "NEW PRODUCTS" was modified to include "SERVICES" and to indicate that new products meant ABC Limited developing their own as well as selling 3<sup>rd</sup> party products.*

ABC-R1 Comments during the exercise:

IMPLEMENTATION OF OPERATION/PROCESS SYSTEMS: I would agree almost 3 years ago that would be it. It was we can always improve but are we going to make much. We have made a massive step change; yes we can always tinker around the edges. Today it's not. I would say it was number 17 or not applicable.

NEW PRODUCTS: I would say modify this one because we not only talking about products that we manufacture. We are talking about increasing the products we can offer from a distribution because in the past it was very much about ABCWidgets; but actually it's also about what else can we do. It's about promoting other products.

On the ranking: It roughly runs that way; left to right horizontally with most important first, but also vertically; therefore numbered 1, 2, 3...horizontally and A, B, C... vertically.

We now have new catalogues (Given copies – Improved, with photograph of products grouped by family of equipment, including those only distributed by ABC Limited).

Result

|   |  |  |                                     |                             |
|---|--|--|-------------------------------------|-----------------------------|
| 1<br>Advertising & Marketing Campaign<br>A    | 2<br>New Products/Services<br>Own & 2 <sup>nd</sup> party<br>A | 3<br>Increase Cash Flow<br>A                               | 4<br>Acquisition of New Assets<br>A |                             |
| 5<br>Staff Training<br>B                      | 6<br>Performance Linked Incentive Schemes<br>B                 | 7<br>More Effective Management of Working Capital<br>B     | 8<br>Offer New Shares<br>B          | 9<br>Acquire New Staff<br>B |
| 10<br>Investment in R&D<br>C                  | 11<br>Reinvest Earnings in Business<br>C                       | 12<br>Improve Credit Rating/<br>Increase Credit Limit<br>C |                                     |                             |
| 13<br>Outsource Administrative Processes<br>D | 14<br>Waste Management<br>D                                    |  |                                     |                             |
| 15<br>Reduce Company Spending<br>E            | 16<br>Implementation of Operation/Process Systems<br>E         | 17<br>Implementation of IS<br>E                            |                                     |                             |

d. Does this exercise change the way you think about your business?

ABC-R1: I did actually have to think about it. It was hard because I actually think some of these; well not hard but it is nice to think 3 years ago these were the things (Row E) which would have been in Row A; they are helping but not important. Then again I probably would have put R&D higher but it is good to think about it. We are at the point now where Marketing & Advertising of our products and services are what we are putting together to actually grow the business and to add value back in. In my mind we have now got to a point where down here (Row D) we have eliminated waste and costs and short of something radical, I'm not going to make much of a difference by changing things. Whereas, these kinds of things (Row A) this is where we need to make the most value change. These in here (Rows B, C, D) would be the supporting; yes we need staff to be able to step up and actually getting more involved in the company. This is something that we are looking at even for a couple of other people to step up. Do we give them shares; different incentives? The value is going to come from growth as; whereas before so many things needed to be fixed. I am not going to say things don't need fixing.

It was a good exercise

**NB:** Request company annual reports for last 5 years and monthly reports/analysis and management accounts.

### **C. THOUGHTS on EVA and EXPECTATIONS from PARTICIPATING IN THE STUDY**

8. Have you heard of EVA?

a. What are your thoughts on EVA?

9. What are your expectations from participating in this study?

You have a snapshot of the company 3 years ago and a snapshot of it now. I know that wasn't the original plan but it would be good to see what comes out.

Looking at those cards was most interesting. Three years ago I would have taken the 3 at the bottom (Row E) and put at the top and everything else I will deal with tomorrow. For me it is how do we invest for growth? You would like to think that the economy is going to recover, things would become more stable; the company would be in a position where it has the funds to spare. It's how do we invest that? Or even taking the hard view that actually, this is not spare money. If I throw all that up in the air, what would be

another way of doing it? How to judge? It is the understanding of how do we drive more value into this company.

Appendix 5.B: Case 2 – DGE Limited



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|                 |     |
|-----------------|-----|
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| Case Code:      | CS2 |

INTERVIEW QUESTIONS with RESPONSE – DGE-R1

FORM CODE: MD1

A. COMPANY BACKGROUND

Name of Company: DGE Limited

Location: South East England

Year Established: DGE Limited established in 2005. History dates back to 1979 from another company

Job Title: Finance & Administration Director (DGE-R1)

Description of Role: The day job of the role is obviously to keep the finance records up to date and compliance with tax and accounting - Company House rules and regulations. From the administrative point of view, keeping the support of the company running in terms of IT facilities and all the HR systems as well. My other job is to think of the future in terms of how we meet the financial challenges because our business is very variable in terms of revenue and we could meet some high growth times and some disappointments at some other years. So all that needs to be balanced so that we don't fail.

Owner managed? Yes  No

Number of employees: 50 including those at the other facility Turnover: £7.5M EOY  
2010-2011

Background: The history of the company dates back to 1979 when a group of engineers formed a consulting firm. There have been many different owners since the parent company in 1979. It was later incorporated into an engineering company and later in 2005 there was a management buy. DGE Limited was created from this by the present owner and Managing Director of the company. A few of the old staff from the early beginnings in 1979 are still here with DGE Limited. The company has another arm which focuses on research and development in renewable energy. It has a main office and assembly plant.

The company employees are made up of support staff, engineers who do designing and also participate sometimes in the assembly. They also do inspecting and provides off shore support. The activity of the company can be described as 'cradle to grave' where we design our products and do the manufacturing. Most of it is outsourced but we still do the supply chain management, the quality management, final assembly and test before shipping to client. Most engineers participate in most of those activities. There are inspectors however who do most of the inspection, those who do final assembly and some who does off shore support.

Turnover for 2009-2010 financial years was just over £8M and £5M the previous year so we are in a growth pattern.

1. What is the nature of your business?

a. Principal activity?

DGE-R1: The principal activity is the engineering and manufacturing of oil and gas equipment. Company operates in the oil and gas industry. Also have arm which focuses on R&D in another energy sector.

b. Main products/services

DGE-R1: The main product for which the company is famous for is its DGE-Widget. It is a quite critical piece of equipment which is used in the industry. The usual design life of this product is 25-30 years. We do refurbishing and provide technical support after installation. We also do monitoring systems. All the systems and component parts are included in the contract and we ensure that these are maintained. This is all negotiated as part of the initial contract, usually for frame period of 5 years and renegotiated at end of period as necessary.

c. Markets

DGE-R1: The Company has a lot of jobs in the UK, West coast of Africa, Angola and Nigeria (quite active in the oil and gas areas).

The company is at the end of the R&D phase for the renewable energy business. The intention is to start producing electricity by the end of next year if investment is obtained this year. Laboratory testing will be completed this year and testing of prototype in a river. The expectation is that it will spill off into a business which will take on a life of its own. Until now, the core business of the company has been supporting the new R&D arm. The

company have applied to TSB for funding for the prototype. They also had received a grant from Carbon Trust for the testing.

With the prototype, the company hopes to attract further funding from investors and Government to take the product to commercialisation.

2. Do you have an organizational chart of the company structure? May I have a copy please?
  - a. If not can you please describe the hierarchy, or chain of command operating at present?

DGE-R1: A copy of the organisational chart was produced. It doesn't show everything. It shows mainly the functional roles hence doesn't reflect the total number of employees. The overlay to this is that we have different projects and each project will have its own team; project manager, lead engineer designers - a lot of persons work for several projects. Only if it is a large project will there be dedicated teams.

- b. Has this changed in the past five years?

DGE-R1: This has been the way the company has been operating since its establishment in 2005 but the process dates back to the parent company back in 1979.

We have four directors, plus we have some key people as well in each function. So we tend to try and get a consensus type of decision-making and this is achieved sometimes when there is a bit of thrust between directors. So there are a lot of discussions not only between directors but managers - commercial managers, project managers.

The board of directors are also executive directors. We don't have non-executive directors.

3. Who is on the Board of Directors?
  - a. What are their management roles/responsibilities?

DGE-R1: We have a board of directors. We usually meet twice per year to discuss higher level consideration of the company – the market, the operations, how we may change or continue to steer the business.

4. Are all key management decisions decided at Board level or are responsibilities and decision-making devolved?
5. If owner managed, does the owner influence the outcome of decisions taken at Board meetings?

DGE-R1: Directors are also members of the board. Decisions are made collaboratively, via meetings and overall consensus.

## **B. FINANCIAL INFORMATION & DECISION-MAKING**

6. Do you now have management accounts for the company?
  - a. What is been captured and how often does this occurs?

DGE-R1: I have here the latest ones which I must stress is confidential. This is just an example. There is nothing different about it. Basically we have a profit and loss, the actual for the month – the actual year to date. We have our budget, the forecast for the end of the year compared to the budget and we also have forecast for the next three years. These (the forecast) are a bit less important because they are far away. We have the previous month's forecast to compare with the actual as well as the budget. So this month it is a bit odd as it is the first month for the year so the previous month's forecast is also the budget. Usually they are different and we do compare the actual with the forecast for the previous months.

- b. What models are used and what are they used for?

DGE-R1: Profit and loss accounts, Cash flow and Budget statements and ratios

- c. How is the information used? – (request monthly reports to demonstrate)

DGE-R1: We do reforecast every month because it is quite crucial for us. We are in a very volatile environment of client and sometimes delayed projects. And so by the time we make our budgets six months later; the budget is a bit irrelevant. It's just what we plan for the year. Usually when I prepare the management accounts I send it through to the other directors for comments.

- d. What has been the impact of using management accounting?

DGE-R1: The important information to make decisions is the forecast

At the end of this year we didn't have redundancies but we let people go. Some people wanted to go so we didn't make the effort to try and keep them. It happens automatically, sometimes people leave. If we were very busy we would try to keep them on board. Now, that was just one or two months ago and we are the opposite, we are probably in the situation where we need to recruit. So it is very volatile.

Is that because of what is happening in the UK market or overseas? Its a global market. It is all driven by the large oil companies. And they are chaotic at planning themselves. Now we can see the work is there and you can see they like you....but you can never be sure when it is going to happen. And sometimes there are surprises as well - they change their minds as well. Or sometimes they ring you and they want you to do a large job. It is that volatile, it is very tricky to plan for resources. Hence the reason why we have to look at the budget on a regular basis. So behind this (the profit and loss accounts) there is a lot of data there – the departmental cost, operating expenses, the balance sheet and we follow-up with some ratios here.

You can see here in 2009-10 we grew – we had a £4M contract that ended up been a £7M contract in the end. We took a £750,000 loan and change our bank in order to service that quarter. So our gearing went up, but now it is slowly going down.

Basically as I prepare this management accounts, every month I send an email through to the other Directors and the commercial manager who helps me prepare this with the comments on the months. Usually something to do with why numbers are in a way or another, try to pinpoint causes into relation through milestones in projects and things like that so we can relate through operational activity. We also have (which I haven't given you) a cash flow format as well. It shows us how well our clients are paying us

7. Are any performance appraisal methods used in the company at present (NPV, IRR, ROI, etc)?
  - a. If so, how are they used?
  - b. If any discounting models are used, how do you determine the discounting factor used in the models?
  - c. What information is captured?
  - d. What has been the impact?
  - e. Are results monitored or evaluated?

DGE-R1: Basically we compare with the budget we have for the project in terms of growth margin and we try to, if its lower, we try to find out what was the difference. And sometimes we find change it...it may not be perfectly acceptable, sometimes if something went wrong, we have to do it twice – we just try to identify and try to keep it less or lower for the future.

We have targets for growth margins so we also have to monitor our database, (bespoke spreadsheet), our cost especially the bits where we outsource. If we talk about the connectors, we basically outsource things like the raw materials which are the forgings, the machine – and those are the things that change in cost depending on volume we put through them and the time – it depends on how busy they are. So we have that information in the database and we make a judgement on the price we would like to charge to achieve the growth margin. Then the client may come and say, this is too expensive so we will gradually reduce but we will try to recuperate somewhere else so basically we try to keep our margins as much as possible and make it acceptable for the client. If the client perceives it is too expensive they may go somewhere else and we don't get it at all.

f. Is there a base margin you try to operate at?

DGE-R1: If you look at our indicators here (copy of profit and loss) growth margin for instance, we have been varying from 33, 40 & 31. We had said that the minimum we would like is 34 so that we can invest in other areas that need more, but we aim at 40% if we can. And that viability also has to do with a mix of projects we have during the year. Sometimes it is not necessarily if we perform well or not so well. It is the type of projects that we have. Some of the projects we have to accept a lower growth margin because sometimes we have lots of items which are passing through your books which are not really – we are not making them we are buying them through to the client so there is a lower margin.

What I talk about are commercial systems which are based on growth margin. Things like NPV and IRR, things like return on investment we have in the management accounts but it is just for information basically. We don't tend to use NPV or IRR that much apart from business development illustrations. We show to the clients if they use our equipment how much NPV or extra NPV or higher IRR they will have in their project. Because they are..., because we don't think our product is cheaper but our product will save a lot of cost,

collateral cost of, you know, things which are really expensive. So we would therefore good to use those things to go straight to them.

g. So that speaks to the quality of your product then?

DGE-R1: That's another, quite a basic when it comes to our value drivers and are quite basic thing for our company. Our competitors are million dollar companies they are like (interviewee named a few – names omitted to maintain confidentiality) and they have fast factories and what they want is through put. In our case, the only reason why we survive is because we have fine niches where usually it is because it is too difficult and they don't want to bother doing things and we, so we always try to tackle the difficult bits or the awkward bits where we have to (29:16)....which they don't like. So that is why we thrive, so that is why we are capable of competing with them.

On the other side, on the renewable side what I would say is that NPV and IRR is very useful, again for clients to show how their projects would be economic in terms of if you put a our technology in a river using feed-in tariffs or whatever the mechanisms are available for it we can demonstrate how viable the project could be. So it is the same sort of thing for clients to use them.

Do you think you will be able to deploy anything soon that your clients would be able to benefit from – and I guess that will be in hydro because of what I already knows about your operation? The intention is to get something to generate electricity by the end of next year supported by the feed-in tariffs. Because the good thing about the feed-in tariffs is that you have a 20 years guarantee cash flow and for the project that is really good.

8. How is the company funded?

a. What is the level of gearing (Is it D/E or D/ (E+D)?)

DGE-R1: As shown previously (from the P&L accounts previously), the level of gearing we have is high but it is coming down. For this sector I would say the level of gearing we have is normal. As I said, we deal with a lot of volatility so we need to have extra and head room to deal with it.

b. So you will need to have access to excess investment (cash)?

DGE-R1: Yes.

c. Does the company reinvest earnings?

DGE-R1: Yes again that comes back to us been a small company and owned by the shareholder/manager type of company. If we had a large company, for example The Big Company (name anonymised) for example, their company invest a lot in R&D and most of the larger companies would perhaps not invest as much as they do but again what they do is quite focused on what they think they are good at. So in a way they put a straight jacket on their engineer so that can only do what they think they are good at and they want them to do that thing. From our point of view, we don't care. The only thing is we are mechanical engineers. If we as mechanical engineers can solve a problem simply, we don't have to relate to our past experience. And it is that flexibility that gives small companies in general much more creativity and innovation because we allow people to do whatever they think is the best thing. On the other hand as well, not only do we allow then but we invest money in it. I think if you compare the level of our activity through what we invest so far in the renewable energy thing; no large company would do that. The shareholders would just not allow it. And the large companies are good because they control risks not because they innovate. And the small company, the only way to survive is to innovate – with a lot of risk management but there is a lot of risk in everything.

d. How was the funding decision made?

e. Are there any barriers to financing of the company? Example access to funds etc.

f. What types of debt do you have?

DGE-R1: As you can see from our accounts we have an audit recently so we should be publishing our accounts in a months' time. And you can see from there (the P&L) we had a large loan £750K, plus we had a small loan before which we continue to pay and service. We got a little bit more from another source – unsecured loan and we have finance leases for assets we had to buy for our asset finance for the manufacturing. So in terms of timing, well, it's a good time. As a small company we do enjoy a little more support from that side. It could be better, the banking crisis doesn't help but on the other hand we can't complain.

In our case, I think (probably I may say the wrong thing here) it is because we are special in a way because oil and gas is viewed as something quite secure

in the crisis. We don't usually relate to recession because the oil companies made their decision long term. They do not stop their project because the oil prices are down. So therefore, in a way, more money went to us than before because the other sectors are quite depressed. And on top of that the government also created some guarantee mechanisms for the loans which made the banks a little more inclined to do it. So we had our loan

g. Do you know the cost of the debt?

DGE-R1: The cost of debt we have at the moment is around 8%.

9. How many shareholders are there?

a. What percentage of shares is owned by each?

DGE-R1: The Managing Director owns 100% of the company. He had issued tax efficient EMI options, in 2006 and then a second offer in 2008. So most of the staff has options and the management have larger percentages.

b. Are dividends paid, how is this determined?

DGE-R1: We paid dividends in the first year, then a little bit in the 2<sup>nd</sup> year. We haven't paid dividends since then. We have been reinvesting. We had one loss in 2007-8 which was a result of one major client having problems with their production facility so the level of work dropped drastically suddenly. The same year we were investing heavily on product development and on the DGE-RE System for the renewable energy. So it all ... in the same year. And then after that we have been reinvesting.

c. What level of returns do shareholders expect?

DGE-R1: Yes there is an agreed, but I would say that the view is a bit like what a venture capitalist would look at it, it's just that we don't have a venture capitalist breathing down our necks. But we have to, ourselves, breathe down our own necks. Basically we are a small company. We are good in our market but it is a difficult market. But if you manage to call attention to yourself then you can have very large returns, in terms of selling the company or joining a larger group. So at some point the intention is to have a larger trade partner perhaps because it is quite risky. And it's difficult for a small company, at some point

there is going to be growth constraints if we don't consolidate with someone else. But that has to be carefully structured.

d. Is that something you are carefully monitoring? Yes

DGE-R1: So it's not the usual large company thing where we have to return more than 15%. It comes back to larger companies, straight jacket – shareholders wants dividends every year or something, it is a completely different mindset.

e. Would you consider the company to be low, medium or high risk?

DGE-R1: If I were on the street and you ask me to invest in this company, I would say we are high risk because we are a small company. But on the other hand, again I think it is a bit misleading to just categorise - we need to define a bit better what it is - because if you consider that you have a good market, good management team, good team, we could say it's really medium risk. The good thing about this company is that it now suddenly from 2005, which we had only one client and one product we have expanded to many clients and many products and we even have things like the renewable energy and some other technologies as well. We are now branching out in insulation of pipelines which we already have one project (Some explanation – remove because commercially sensitive). All that is benefiting from 30 years history in the market. So it's not a start up, it's not a med professor in Oxford that suddenly dream up this wonderful technology and then just try to make it happen. There is years and years of experience. But recently the company has been able to expand by itself. So it's a good opportunity and with that respect I would say its medium risk.

I can see your point, especially because of the sector you are in and the volatility. Is this because you seem to be operating in more of a guaranteed market?

It's guaranteed if you keep your reputation and you do a good job. It's not overcharging in your job, delivering - and it's quite hard work. But the good thing as I said, it's not a, it doesn't have an immediate correlation with recession – economic cycles. Sometimes there is an economic boom and then the oil and gas is not really moving that much. Sometimes everybody is in recession and sometimes there are many projects.

10. Do you know what the cost of capital for the company is?

- a. Have you ever calculated this?

DGE-R1: Well I don't have a clue because we don't know; we haven't really asked the shareholders how much return they want. I know the cost of debt obviously. The cost of debt we have at the moment is around 8%.

- b. Did you get that large loan at any special rate?

DGE-R1: No, there are no special rates. It's the same rate as any loan. (Special rates cannot be done here because of the European Union unless it is done on a European wide basis).

- c. What would you use this information for?
- d. Do you actively manage the cost of capital, for example refinancing to get better rates?

### **C. IDENTIFYING VALUE WITHIN THE COMPANY**

- 11. What do you consider drives value within your business?

DGE-R1: We have talked about this. It is technology innovation, operation performance (thinking) - those are the main drivers I think. We get projects because we are so into technology innovation is definitely the key thing. I suppose that is why we have also been very, sort of optimistic about the renewable energy technology for instance. We solve a problem well and so we are sort of quite comfortable to go ahead with it. So you see we want to go for it, we are quite confident in a way because we have this culture of solving problems for clients. So drilling down from that aspect is access to good engineers.

DGE-R1: Sometimes engineers are quite reserved people, but we do stick to each other. As I said, we have people here who come from the late 70s who like to work with the group; and the atmosphere of consensus decision-making and discussion and openness helps a lot. People put a lot of value into going to work every day and not having to listen to nonsense and being forced to do things which they don't like.

- a. Do you have a head count of the number of people who are here from the 70s?

DGE-R1: Probably I think it is – at least 3 people and possibly another 2 or 3 from the 80s. We have one who just retired and he has been with the company for all of his working life.

b. Do you collect data on these drivers?

DGE-R1: Its client feedback which is, funny enough it is part of the ISO 9001 requirement. It is quite natural that we do that without considering ISO 9001 because if we don't talk to the client we don't get the jobs. It is our client feedback, visiting the client, offering solutions after been presented with problems to solve. You basically know what the client is asking, and you know you can apply this solution as well.

c. If so what data and how are the drivers measured?

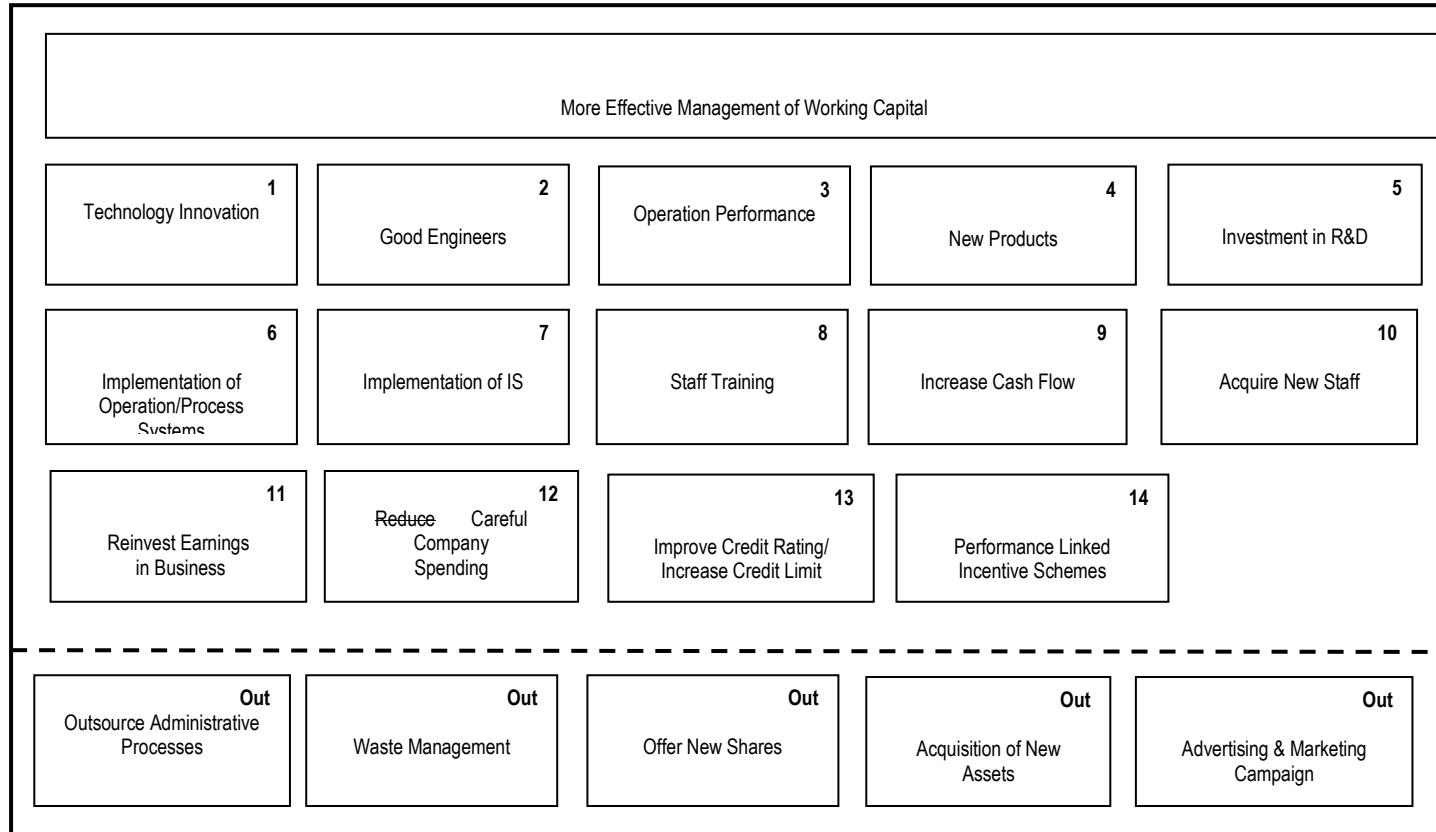
d. What do you use this information for?

***(Exercise: Flash Cards with value drivers identified from initial interview. As Interviewee to rank in order of most important to least. At the end, ask for reasons and justification for the ranked value drivers.***

***NB: Provide blanks to accommodate any additional value drivers identified by Interviewee.)***

*Completed exercise: The interviewee added 3 value drivers to the list – Technology Innovation, Operation Performance & Good Engineers. He then proceeded to order the value drivers in order of priority as numbered below. Those not numbered were not believed to be a value driver for DGE Limited.*

Outcome: DGE-R1 Value Exercise



Comments by DGE-R1 during Exercise:

Effective management of working capital: I don't see that as a value driver, but on the other hand if you do that it kills the whole thing. So it is one of those things that you almost take it for granted. But when you don't have it then the work won't go well. It's not a value driver, it more of a sort of requirement for any company really. It's an entry level requirement – any company will suffer if they don't have this because at some point – we do have problems sometimes because clients don't pay you. Sometimes you don't invoice as effective as you should be invoicing or your milestones you need to reach them earlier. So it's a sort of day job kind of thing - not a value driver.

Implementation of operation/process systems: This is very important because it reflects on the operation performance.

Implementation of Information systems: This year we did significant changes in our database; that sort of make improvements to our project and management system.

Reduce company spending: I would like to change this from reducing to careful company spending. Reducing as such as bad and sometimes what happen with large companies; example if company on the stock market say the reduce 10% of their overheads everybody gets happy. But in a way, the way they do it is very bad. It just slashes 10% across all departments including engineering which they should be increasing

Outsource administrative process: NOT A VALUE DRIVER - We do outsource our IT for instance, but is not essential in a way. We are a small company so outsourcing is too expensive, in a way. It's only if there is a special situation.

Performance linked incentive schemes: People are not necessarily driven by it but they like it.

Advertising and marketing campaign: NOT A VALUE DRIVER - We have reduced advertising but it is not what brings jobs to us.

Waste management: NOT A VALUE DRIVER - We don't have a lot of waste

e. Does this exercise change the way you think about the business?

DGE-R1: I am not dismissing the activity. The only thing is, what I am saying is we would have to do a lot more. We would have to drill down each of them (the

value drivers identified). Like you would have to be a consultancy to DGE Limited, you would have to spend a whole week with lots of different people, with lots of brainstorming and then try and see if there is something we have been consistently missing. Then you would have to look at our decisions – certain points – and then try to find where, what have we missed, what we didn't consider which are key points. Again, I am not dismissing the activity; I am saying that it's not enough.

**NB:** Request company annual reports for last 5 years and monthly reports/analysis and management accounts. [Reports from 2005-06 to 2009-10 sent by email. 20010-11 report will be send pending auditing. P&L also received with first month budgeting and forecasting]

## **E. STAFF TRAINING AND DEVELOPMENT**

12. Can you describe how development issues are address within the company?
- a. Is it incumbent on you or the management team to raise issues associated with product development (R&D) or operational improvements?
  - b. Is it expected that staff should express training needs or is this taken into consideration when any changes are implemented?

DGE-R1: We haven't done a lot of training over the last 2 years although essential training we always do. We wish we could do more training. It's more an economic constraint and also time – we are very busy. In a way, we are doing a lot of on the job training. We are providing a lot of challenging opportunities for people, especially the young engineers.

Is it done by shadowing senior staff: Yes, it's younger shadowing the senior engineers and getting more and more challenging activities to do. Those young engineers, the training they are having here is 100 times better than what they would get in a large company. After 3 or 4 years they get chartered and they really go through everything.

- c. So you support the young engineers to get chartered?

DGE-R1: Yes, we are members of Institute of Mechanical Engineers (IMechE) also members of Institute of Marine Engineering, Science and Technology (IMarEST) as well. So all our young engineers go through a mentoring programme to become chartered.

## **D. THOUGHTS on EVA<sup>®</sup> and EXPECTATIONS from PARTICIPATING IN THE STUDY**

13. Have you heard of EVA<sup>®</sup>?

a. What are your thoughts on EVA<sup>®</sup>?

DGE-R1: We will never use EVA<sup>®</sup>. I think EVA<sup>®</sup> is a very interesting academic study because you can - and it's going back to more than 10 years ago when I did my MBA – and as I remember, you reconcile the accounts through a cash flow model. So you can have a discounted cash flow and then come back to the same number from the accounts. And that's really interesting. And that's the aspect I really like about EVA<sup>®</sup>.

b. What are your experiences of EVA<sup>®</sup>?

DGE-R1: What I really dislike about EVA<sup>®</sup> is using it as a bonus scheme for people. From a financial point of view, you basically – and I live that during my life in a previous company - that sometimes you have to pay bonus when you don't have profits – and that's crazy! So actually, in a small company that's impossible, you will go bankrupt. We had the situation where we literally had a loss and the company had to pay bonus and we had to get the money – a loan from the bank to pay the bonus. It doesn't make sense! Because of the complicated arrangement of bonus banking and the sort of long term aspect of it. So it may look clever but it's not so clever because you basically have to have profit and the cash related to that profit in order to pay bonuses.

Our bonus scheme is very simple. We pay bonus if we get more than £200,000 net profit after tax. And we pay up to 100% - actually 150%. So basically most people have 10% of their salary as bonus and out of that 10% they get a percentage. Example, (pointing to example of bonus plan) this person will get 70% of 10% of their salary as a bonus - which it depends on the net profit at the end of the year – which is declared in the audited accounts. So it's very simple - people can check it.

That's another thing with EVA<sup>®</sup>, it's a bit complicated. So there is no way people would feel completely comfortable in making sure it's true. Accountants can do a lot with the accounts as well – but at least it is already declared that whatever you do in the accounts, whatever is left – it will be a bonus.

c. Is your bonus scheme aligned with a performance appraisal scheme?

DGE-R1: No, we have an appraisal performance scheme as an HR system which is not linked to bonus or salary – not linked at all. It is only there as a formal communication method between the leader and the employees. We want to facilitate the formal communication because we may want to use the performance appraisals for redundancies decisions or even - this process will be in people's minds for when they award merit rises and all that – eventually. But at that moment, no decision is made out of that meeting. That's what we thought would be more productive.

And the bonus model is to do with the performance of the company, not individual performance. Basically, individual performance is what drives it. So it's a slightly socialist one but on the other hand it is a bit pragmatic because – ideally we could have individual performance but then you would really need an overhead structure – you need something extremely well done (having run individual performance schemes in large companies before) in order not to backfire otherwise people will complain. And if you don't have the strong elements through your systems, it doesn't work.

14. What are your expectations from participating in this study?

DGE-R1: I am interested in finding out what the end result will be. Definitely, we would be more than welcome to see if you could spot any major problem. If you ask me how you would evaluate DGE's financial performance – I would say it is not very good – not very good at all when you look at it on paper. But if you consider what we have achieved from a market point of view – so I think we are on the course to grow very well now because we have the systems, we have the – I wouldn't say we have all the people – because we could never have a large pool of people - but we have the products and the engineering capability and the reputation now.

a. You have achieved a lot since 2005?

DGE-R1: We did but - Actually the expectation for now is that we should be already a £20M company – it didn't work that fast. But I think we have achieved a lot which hopefully will be reflected in the numbers in the next three years. I will be very curious to see if there is anything else you can spot.

## INTERVIEW QUESTIONS with RESPONSE – DGE-R2

FORM CODE: CDD2

Name of Company: DGE Limited  
England

Location: South East

**Job Title: Corporate Development Director (DGE-R2)**

### A. COMPANY BACKGROUND

1. Describe the role and responsibilities of your job function?

DGE-R2: My role is the Corporate Development Director. I am jointly responsible for sales as well as product development. The reason that we combine those two aspects under one area is so that any new products or things that we research are directly applicable to our client's needs or problems.

- a. Is this because you are likely to have a first-hand view of client requirements?

DGE-R2: Our normal product is a custom engineered solution. So normally what I would do is that I would take a client's issues or the client requirements and I translate them into some sort of solution using our product or using a variation of our technology and then we come up with the initial concept designs and once the client accepts the concepts and our proposals, they are handed over to the Engineering team for complete development.

- b. Is it that a new idea for product development comes from the customer?

DGE-R2: It is often driven from the customer's issues, yes.

2. How would you describe the organizational structure of the company?

DGE-R2: The Company is organised into basically 4 main teams. So we have an Operations area. Operations included Engineering, Procurement, Fabrication and after Sales Support and it is the kind of the engine of the whole company. The Corporate Development Team which I head up provides sales and product development for winning new projects in order to feed those projects into the Operations team. We have an independent Commercial team which is headed by DGE-R1 and the Commercial Team is responsible for contracts,

accounting, costs controls and budgets. Then we have DGE-R3 who is the Managing Director and his role is twofold, obviously to make sure that we have the finance and direction required for the core business and he also works closely with our Corporate Development team to determine if new products should be placed into a new company or if they should be part of the existing company. For example our [specific operation] business is an example of one which was placed in a new company.

- a. Comment on its effectiveness in terms of dissemination of information and the impact on making:

- i. Management & strategic decisions

DGE-R2: First of all strategic decisions are made primarily made between the four Directors DGE-R3, DGE-R1, DGE-R4 and myself. So in that respect we have a very close knit relationship and a lot of management and strategic decisions are kind of made in informal discussions but then we will formalise it by having a board meeting or having some sort of meeting that we do minute. So in that respect it is very effective at responding quickly to client's needs; it's very effective at changing quickly – changing direction. Where it is not really effective is where all of us are not really up to speed in how each areas of the business is performing, so sometimes it takes a little bit of time for one area of the business to explain to the other what has happened so that we can make a better decision.

- ii. Financial decisions.

DGE-R2: The financial decisions are primarily made by DGE-R3 and DGE-R1 directly whereas DGE-R4 and I, R4, that is, Operations and I Corporate Development – we advise more on what work is coming in the future and in forecasting of future business.

I would say what s kind of interesting about DGE Limited is that, since you first knew us we have shifted from having £5M of turnover in 2008 to almost having £16M of turnover this year and next year we will have over £23M of turnover. So the company have shifted if you will, from been an entrepreneurial sort of company, very dynamic and kind of run very loose and we are transitioning now to a much more formal business structure which will obviously help the company protect itself as it gets bigger for making financial decisions.

iii. You mention DGE Board, is it a subsidiary of another company?

DGE-R2: No, there is no parent company. Often in Europe we are used to having a board and then we have a management team, but in our case board is the management team. In the future we would like to be successful enough to have somebody else run it for us. We will get there eventually. So in this process the board is the management team, they are one and the same. It is our intention because the four of us as partners we consider ourselves good entrepreneurs but we are not very good at running day by day by day process. And so we know how to get things started, we are a very creative team but we easily get bored doing the same thing. So what is our intention is, is once the company grows to a successful size which for us could be around £30M turnover we would intend to hire a management team who is much more effective at running a day to day operation. But for now, the board is the management team.

iv. What is the size of the company now?

DGE-R2: The size of the company at the moment I think is about 65 employees in total.

- b. How involved are the management team in these process?
- c. Has the hierarchy or chain of command changed in the past 5 years

DGE-R2: Yes it has. The current owner DGE-R3 bought the company in 2005. At the time that he purchased the company, the organisation for Operations and the Commercial department and himself was already in place. It was in 2007 basically he hired myself and we created the Corporate Development team. So that part of the organisation is the big change from last year.

3. At what point do you become involved in a project and what would your main focus for input?

DGE-R2: My team is generally involved in the beginning of a project. We identify target customers who might be interested in using our products. We go to understand - we meet with them to understand what their problems are or the requirements for their specific project and then we tailor a solution for own project. And so I am involved in the winning of the project work. Once the project work is converted into a contract, it is handed over to our Operations team but our Corporate Development team still maintains a technical

supervisory role. And the reason we do that is any promise that I make to our customers I am responsible for making sure that our Operations team actually deliver it.

- a. So in theory the project would move from one team to the next?

DGE-R2: Yes, that movement of direction is always from Corporate Development into Operations and even inside of Operations it moves through that organisation in a series of steps. Inside of Operations it moves from Engineering to Procurement, from Procurement to Fabrication and then from Fabrication to Field Services. The reason that I am always involved to make sure we keep our promises is we don't; sometimes in other companies, you might have a sales team that puts in a project at a very low price and a very tight schedule solely for the purpose of winning the project. I am not allowed to do that because I have direct accountability to the client during the project execution. So if I make a promise that the company can't deliver, then it comes back to me directly. So that is how we keep that from running out of control.

- b. Do you gather any data on customer satisfaction?

DGE-R2: Yes we do. We regularly have meeting with the customer after the completion of the project in order to collect their feedback. Most customer feedback in our business is informal in the sense that the client will brief us during the lessons learnt meeting and explain to us where they are happy or unhappy about. And then sometimes, but it's very rare - sometimes we will also get a letter of recommendation from a customer. We rarely get letters of recommendation in our business because of the fact that major Sector companies have to have their letters approved by their legal department. It is quite a long process, so most of the feedback we get that is valuable is actually direct through lessons learnt.

- c. Have you been able to take anything you have learnt from one project and apply to another?

DGE-R2: Yes, in fact almost every project – I order to achieve this growth rate of going from £5M to hopefully now to £16M to £25M, we literally had to learn on every project and bring that forward on to the next one.

4. Are all key management decisions decided at Board level or are responsibilities and decision-making devolved?

DGE-R2: At the board level all strategic management decisions are made. So the direction of the company, who we are as an organisation, our identity and which geographic markets we wish to enter into – those type of decisions. Also what technology we would want to invest in are made at board level. Once those decisions are made, in terms of sales targets, meeting with customers, proposing plans – those are down at the department level. So the department has the ability within the constraints of the strategy to offer what the customer requires. And then any lead position level – so we have - underneath the operation manager for example we have an engineering manager, we have facilities manager, we have offshore site supervisor. Those personnel are responsible then for allocation of resources. So they will always advise up the chain what their resources are that they require.

5. Does the owner/manager influence the outcome of decisions taken at Board meetings?

DGE-R2: I would say because of the nature of who – this really have to do with who the manager is as an individual and DGE-R3 actually compared to other Managing Directors has very little influence on the decisions. He is very much a democratic type of person and he takes strongly advice from myself and DGE-R1 and DGE-R4. He formalises the decision, but frequently the decision would be made among all four of us. There is probably only one or two times that I recall in the company history where DGE-R3 pulled rank and said he is making his executive decision which he always have the right to do because he is 100% shareholder. He has the right to do that at times. The reason that he is very democratic in that respect is by empowering each of us; we also then take ownership and responsibility for the company. And that really prevents him from having us disagree with his strategy and then not implementing it properly (I am sure you studies agency theory and things like that). So this is where it solves the agency problem by having everyone a part of the decision. Then they can't claim that they don't like it.

## **B. FINANCIAL INFORMATION & DECISION-MAKING**

6. Are you involved in the processing of financial information?

DGE-R2: We all have access to the financial information. DGE-R1 provides all of the management team - Directors – a monthly set of financial records. So we have that running throughout the entire month. We also have every month an operations meeting.

a. If yes, what is your involvement?

DGE-R2: So my involvement in the financial information is primarily forecasting the revenue. So I provide the input to a part of DGE-R1's team that is only involved in forecasting the revenue. We forecast the revenue on a month by month basis throughout the entire year. And so we have three levels of forecast, we have a forecast that is the long term forecast for as far into the future as we can see. Our current forecast runs to 2020. We then have a medium level forecast which is – we forecast for that specific financial year and that is the basis of our budget. And then every month we have an operations meeting where we really forecast for the next month and that is for cash flow management. So I am involved in those revenue forecasts.

b. What models are used and what are they used for?

DGE-R2: The models that are used for the revenue forecast is what we call a bottom-up approach. So we forecast based on specific clients and specific projects and the known requirements of those projects. If we do not know what the budget contains we don't forecast it. So we maintain a prospect list and those are all the un-forecasted projects and then we have our forecast register and those are forecasted projects. Also, one of the things that is very unique is that our forecasting method is very conservative in the sense that you will often have some companies that they make a proposal, and then they will assign to that proposal a percentage a probability of the project actually going; and then the probability of them winning a project. And so statistically the go times the get is your factored value. We use a digital system; we assign to the project either 100% probability that we have it or a 0% that we don't have it. And we only assign 100% probability when we have very strong indication from the customer that we are going to be awarded the project. Otherwise we give it a zero.

c. How is the information used?

DGE-R2: Obviously we are using it to track our progress versus our budget. Quarterly we will assemble to make any decisions if we have to adjust to the budget as to cutting cost because we are not going to make the budget or by significantly adjusting increasing resources because we are going to go beyond the target intended.

So most of the time we have been at the budget or slightly below it – we are rarely surprised.

d. Would you attribute that to the systems you have in place?

DGE-R2: I think that's one part of it. The other part of it is that our market is far bigger than the organisation. And when you have a market that has sufficient opportunity you can always say I am going to win all of these possible opportunities. But in fact you are only going to win the opportunities that the organisation has capacity to pursue. So really what governs the fact that we keep hitting our budget almost exactly is that there are more projects out there for us than we can ever physically win because we don't have a big enough sales force to win them all. So that helps us control the rate at which the organisation evolves, because if the organisation grows too fast it will grow out of control. And as a small organisation, the only thing that we have to convince customers to keep coming back to us is our reputation. So as a small company if we mess up one project we are pretty out of business. But as a big company, if you mess up one project you still have your reputation.

7. Are any performance appraisal methods used in the company at present (NPV, IRR, ROI, etc)?

a. If so, how are they used?

DGE-R2: DGE-R1 obviously explains how we use it; we use NPV evaluations for our Research and Development projects. So in an effort to rank our preferred opportunities for R&D I put together a little NPV analysis.

b. If any discounting models are used, how do you determine the discounting factor used in the models?

DGE-R2: No, the discounting factors are advised to me by DGE-R1.

8. How is the company funded?

a. What is the level of gearing (Is it D/E or D/ (E+D)?)

DGE-R2: The Company is primarily funded by projects that we win and the revenue/profits that are generated from that. At a secondary level we do have a level of debt which I believe is something on the order of £750K. The reason that we have a very small amount of debt relative to the turnover is that is because DGE Limited as an organisation doesn't have a large number of assets. We are basically what would be known in our business as a virtual manufacturer. So we do our own detailed design but then when it comes to physically making pieces we subcontract the different steps of that process. And all that we do then is a final assembly and a final test. So all of the assets in our assembly and test facility, most of them are rented and most of them have no resale value so they are not fixed assets. That's very much the way, say for example a car company runs; a car company doesn't have a lot of assets

- b. How was the funding decision made?

DGE-R2: The current funding of the company is basically a nature of how the company has evolved organically. And that's really the best thing that I can do for investment for the company is to keep winning projects. That is by far the best way and the cheapest way to raise money. But whenever we do; we have been trying to seek investment; and when we do seek investment. Most of the decisions are made between DGE-R1 and DGE-R3; but if it is a significant impact on the whole business then all four of us would get together to discuss it.

- c. Would investment be sought just for the R&D side of the operations?

DGE-R2: Well yes; initially we were seeking investment for the renewables R&D side, but more recently, because of the rapid growth in the subsea hardware business, we have also been seeking some investment for the working capital that would be required for that.

- d. Are there any barriers to financing of the company? Example access to funds etc.

DGE-R2: There are actually. One of the obvious barriers is the current financial crisis. So the banks are reluctant to loan money to companies that don't have full collateral. And to be perfectly honest, DGE-R3 also himself does not want to put his house or any of our houses as collateral. So we impose our own barrier; which is; we will not put any personal collateral up for financing. But the other thing which is an interesting barrier to getting some financing is because of the nature of the way we work. And when we work for a client, frequently we will be given a multiple 2 years frame agreement. For example on a project for XY in [continent] we were given a 10 year agreement from 2008 to 2018. But inside of that agreement, the client at different times will order pieces of equipment. We know that he will order all of the equipment, we just don't know exactly when or the time because the project frequently shift. And a lot of time banks have a difficult time financing companies with that kind of contract because they perceive that as a risk. They don't know if a customer is going to give you the extra order or not. So that is actually a barrier to finance. A lot of times what that means is that we need an investor or a financier who have some knowledge of the [sector] business because the sector business is a different business.

- e. Have you manage to work around that barrier?

DGE-R2: It is sometimes very frustrating the way that we work around but we do work around those barriers and, as I said the way that we do that is we keep trying to win progressively larger and larger projects and build it up organically as we would call it.

- f. What types of debt do you have?
- g. Do you know the cost of the debt?

DGE-R2: Best covered by person in charge of finance – DGE-R1.

- 9. How many shareholders are there?
  - a. What percentage of shares is owned by each?

DGE-R2: In the two companies – so DGE Limited there is one shareholder and that is DGE-R3 who is 100% founder/owner. What DGE-R3 does is, for every new company that DGE Limited wishes to create, he divides the shareholding between the 4 Directors or whoever is appropriate for inventing that company. So for example in [specific operation] the shareholding is divided where DGE-R1 has 15% shareholding and DGE-R4 and myself has 5% and DGE-R3 has the remainder. And the reason that he does that is that the ultimate idea is that each one would become a champion of the new business. Or if anyone in the company invested a new business then they would become champion of that.

- b. Is that motivating for you as Directors?

DGE-R2: Yes, it is trying to simulate an innovative environment. Ultimately if DGE Limited achieves its financial goal, what we would like to see ourselves as is as a creator of new technologies. And ultimately our product, instead of been each business would actually be the business itself.

- c. Does staff below the management team get a chance to own a part of the business?

DGE-R2: Yes in fact on a recent research and development business where we are currently investigating the idea of setting up a new business for [omitted as commercially sensitive]. One of the inventors of that technology is in the research and development team and he was offered a shareholding equal to myself in the company. So we are still working on negotiating. As an employee of the company he was offered 25% of that business – and that is for literally coming up with a good idea. The other thing that we do as a company, we are a profit sharing company so all the employees – we have a fixed profit scale and provided that we are within that range – the nominal target is £800K a profit, and if we are between £200 and £1.2M, the employees will also get a bonus. And the way that we do that is if we hit the target value they will get 100% of their bonus which is 10% of their annual salary and as we go over that there is a linear multiplier that can go up to 150% of their bonus so they can get 1 and a half times 10% of their salary. And if it goes under £200K they still would get a quarter of the target bonus. So everyone has a stake in the success of the company.

- d. Are dividends paid, how is this determined?

DGE-R2: No dividends were paid

- e. What level of returns do shareholders expect?  
f. Would you consider the company to be low, medium or high risk?

DGE-R2: I suppose if I have the money to invest in the company I would still consider it a medium to high risk business. My primary reason for that is, the business itself is a relatively small company compared to its competition. So our major competitors, we have four of them, all of them are very large. They have turnovers of \$3.5bn to \$5bn dollars. The 5th place company is a \$300M company so we are 6th place. So we are very small relative to our competition. So in that respect, as long as we keep our competition friendly we can continue to prosper.

The other reason I would consider it a medium to high risk is when the company was acquired in 2005, in 2006 it made a £600K loss and the cash flow repercussions of that are still felt in the company. If we have a month where a major client is late with an invoice we get a bit nervous because it can affect the cash flow.

So for those two reasons I would consider it a medium to high risk. I would consider what makes it a lower risk is the way it is managed. It is managed very conservatively.

10. Do you know what the cost of capital for the company is?  
a. Have you ever calculated this?  
b. What would you use this information for?

DGE-R2: Again for the finance person – DGE-R1.

### **C. IDENTIFYING VALUE WITHIN THE COMPANY**

11. What do you consider drives value within your business?  
a. Do you collect data on these drivers?  
b. If so what data and how are the drivers measured?  
c. What do you use this information for?

DGE-R2: I would say the main value driver within DGE Limited is our ability to provide customer service. All of the customers that we work with come back to us because of the fact that we are able to customise a solution to their problem; but because they also feel that they are treated very well. And we have all the traceability and management systems of a very large company but we still know our customers one to one as a people.

The second value driver in the business is our speed of response. In our business, people who do what we do normally would require a three years to deliver it and we can normally deliver things within a year. So there are certain constraints based on the fabrication times but at the end of the day it is really the speed of the response that is the value driver.

d. Why are you able to deliver within 1 year versus the normal 3 years?

DGE-R2: Because we focus on owning one part of the system whereas our customers try to deliver a total system and we focus only on [name] part of the system. Again by being more specialised in that area relative to other [service] groups and bigger companies we can do things faster. And also because our management systems are geared specifically to our business, it allows them to perform optimally. Whereas in another company where they might be delivering all parts of the system, their management systems are not necessarily perfectly geared to each piece of the system so what ends up happening is much more piece suffers.

e. What about what you have said previously about feedback?

DGE-R2: Yes, we do collect the data on customer service feedback. We also collect data on our delivery times; we are constantly looking for ways to improve and enhance that. In fact we have gotten to a level now where some customers are actually saying they would rather have it cheaper even if it took a little longer. So we are constantly monitoring.

[Request for a snapshot of the feedback collected – DGE-R2 obliged and will send via email]

***(Exercise: Flash Cards with value drivers identified from initial interview. As Interviewee to rank in order of most important to least. At the end, ask for reasons and justification for the ranked value drivers).***

Outcome of DGE-R2 value exercise

|  |   |   |                                  |
|--|---|---|----------------------------------|
| 1<br>Increase Cash Flow                      | 2<br>Reinvest Earnings<br>in Business                   | 3<br>More Effective<br>Management of Working<br>Capital | 4<br>New Products                |
| 5<br>Offer New Shares                        | 6<br>Acquire New Staff                                  | 7<br>Staff Training                                     | 8<br>Investment in R&D           |
| 9<br>Performance Linked<br>Incentive Schemes | 10<br>Implementation of<br>Operation/Process<br>Systems | 11<br>Implementation of IS                              | 12<br>Reduce Company<br>Spending |
| 13<br>Acquisition of New<br>Assets           | 14<br>Improve Credit Rating/<br>Increase Credit Limit   | 15<br>Outsource Administrative<br>Processes             | 16<br>Waste Management           |
| 17<br>Advertising & Marketing<br>Campaign    |   |   |                                  |

#### DGE-R2's Explanation:

Because of where we are as a business, so I relate these things also to the fact that we have certain things. So for DGE Limited, in order to create the most value driver as a business first and foremost we need to increase the cash flow because for us the cash flow is the life blood of everything else. All the other processes would take more time to implement but this is the thing that would increase the value of the company fastest. So increasing cash flow – related to that is reinvesting earnings in the business. We do 100% reinvestment of earnings in the businesses, so those two are hand in hand. And then obviously associated with that is more effective management of the working capital. It doesn't help to increase the cash flow if you are not getting more out of every pound that you are reinvesting. So that has to come with it. As a company just for where we are then what we would do with that increased capital is – when the company was found in 2005 it had one client and one product. The way that we have been able to increase our sales is to demonstrate to clients different product solutions. So we still have two products which are concepts which clients are interested in and the clients don't buy our products until we are qualified. So those new products need to be qualified and tested in order to gain the sales potential from them. Then once we have increase and improve the cash flow, it becomes a healthier looking business and becomes more attractive to investors. In order to grow the company to the size that R3 requires which is to almost a doubling of its current size, I believe we need to offer new shares to an investor in order to attract a little bit of capital injection to take the business in expanding geographically. And part of the geographic expansion would also, and even internally our company historically is very UK centric and as the sector declines in [specific location] we need to have more international focus. So we do need to bring in new staffs that bring in more experience from that part of the world. Related to that is then the staff training to make the transfer of knowledge. And then what needs to be associated with that is some investment in research and development because our product range is still – although it is focused – it is still relatively limited offering whereas our customers want us to take more of a turnkey up approach. So that by itself – those 8 things would set up the business to continue on a high growth trajectory with sales. Then obviously we are asking a lot of the employees so the performance linked incentive scheme remains in place – which we already have – but it is still vital for a, what is effectively a change management process. Every time we keep growing it's basically change management. And then the implementation of the operation and process systems, those have to keep up to speed with the company as it grows in size and complexity so that they are still efficient. And then obviously related to that is the IS system itself. We currently have an access database which is our IS system which is a custom made database we have programmed ourselves,

so we may need to go to a more professional system. So all those things would create high growth but invariably with high growth you also get a creep in the cost of the company, so then we need to also manage the company spending because certainly what you want to do is you want to grow the business but you don't want to have to grow the number of people required to deliver it at the same rate. Then we start to get to the end and acquisition of new assets is then a viable approach if we have the capital and the investors, we could actually start to buy other companies and we could create a more complete offering to our customers as a total system. Then I rank low improve credit rating and increasing the credit limit. Most of this doesn't have to do with the bank credit rating per say but more have a lot to do with our client approval rating. So I would say because we do relatively little finance from banks it is not as important. Outsourcing administrative processes – that could be a good way to reduce cost, but a lot of the administrative processes at the moment, our administrators have intimate knowledge of the projects too. So there is a lot of knowledge that they possess that you can't just outsource. Waste management, we are relatively an efficient company, we ourselves do really have a lot of waste but as we grow it will become more significant but currently it is not very significant. And advertising and marketing, although it is important to have the right image, at the end of the day it is still the actual performance that drives the company. Most people in our business don't buy our products based on a brochure or our website – it is much more about reputation and references from other customers. So we focus more on that.

#### **D. STAFF TRAINING AND DEVELOPMENT**

12. Can you describe how development issues are address within the company?
  - a. Is it incumbent on you or the management team to raise issues associated with product development (R&D) or operational improvements?
  - b. Is it expected that staff should express training needs or is this taken into consideration when any changes are implemented?

DGE-R2: Basically the staff training and development is actually planned in conjunction with employees. So everybody in the company, including the Directors all have personal evaluations that we do. Those evaluations are not primarily based on review of salary but actually based on personal development. So as a result of those evaluations, we then decide specific training that an employee would like to participate in that also matches the direction of the company. And if an employee wants to move into a different area of the company because they want different corporate direction then we try to give them that opportunity. But most of the training within the company either

occurs from our own lessons learnt presentations to one another and mixing people up and putting them into different projects for work experience. But sometimes we will also – especially when it is learning a new piece of software or learning something about safety that really requires a new perspective we will hire an external training companies.

c. How effective do you find rotating people in different project groups?

DGE-R2: We really do and in fact because we engineer and fabricate and do [sector] services we always require members on those teams to work in different areas. So for example more than half of our engineering team have also worked [sector] on our projects and the reason we do that is we have found that nothing helps an engineer sharpen their mind better than seeing their own problem that they created and having to solve it. And also we bring the [sector] team into the engineering, so they will sit in the office and they will run a project so they can understand how things work. And I would say that that is probably the most valuable thing that we do.

## **E. THOUGHTS on EVA<sup>®</sup> and EXPECTATIONS from PARTICIPATING IN THE STUDY**

13. Have you heard of EVA<sup>®</sup>?

- a. What are your thoughts on EVA<sup>®</sup>?
- b. What are your experiences of EVA<sup>®</sup>?

DGE-R2: I have heard of EVA<sup>®</sup>. I think in principle, I guess I should say my understanding of EVA<sup>®</sup> is of course basically recognising whether or not an action or a decision that you have made is creating value in the company or destroying value. That is increasing the market value of the business or decreasing it in one sense. What I like about EVA<sup>®</sup> is, I do find it is a very helpful way to make fact based decisions if you can capture the facts in your model and make that model give you a snapshot of what the company looks like. You can then see decision that add value don't add value. One of the things that is very difficult with EVA<sup>®</sup> though is – a lot of decisions – it is very difficult to actually quantify the value. So for example I can easily calculate how many projects I have, I can easily calculate the cost that I have and get the current value of the company. But one of the key decisions we want to make should we open a [location] office or not – well again we can identify a list of target projects there and possible added value but some of the added value is simply the fact that you are in a more lucrative market and so there is

a component of goodwill value that you have added to the company especially when you are looking forward to selling it one day. For example right now in [location] there is a very huge [specifics] going on there and a lot of people are trying to work there and do business. And literally just having an office there will add value to the company even though you won't add any business to the company because it will take a while to get started. So sometimes the EVA<sup>®</sup> model is almost too mechanical and that makes it difficult. So there is a little bit of gut feeling - my experience with EVA<sup>®</sup> was primarily in a previous engineering company called [name] which was owned by a company called [name], they tried to use EVA<sup>®</sup> to create a bonus scheme. And it was probably mis-implementation of the model but here were circumstances where you could actually end up paying the staff a bonus when the company have actually made a loss. And obviously they had to immediately stop the EVA<sup>®</sup> bonus scheme because that is just not financially viable. I find that EVA<sup>®</sup> does a good job of giving you an idea of the company value but it is relatively poor in helping people to understand the cash flow. And the cash flow is what makes a business live or die.

- c. Was the EVA<sup>®</sup> implementation done by Stern Stewart consultants?

DGE-R2: Yes it was.

- d. One of the things I would be keen to hear about is an instance where a company tried to implement EVA<sup>®</sup> on their own after having read the literature on its implementation.

DGE-R2: It is something that kind of surprises me and it completely goes against what I learnt in my MBA that in fact the way that DGE-R1 and DGE-R3 value the company is actually on a profit multiplier. They look at the net profit and then they simply say the value of the company is 10times net profit. And that kind of rule of thumb actually exists quite a lot. Actually we even had companies like [consultancy firms] advising us on the same sort of approach, so I think that a – obviously one of the difficulties in valuing private companies is how to do it. But I would say in some respect EVA<sup>®</sup> could easily be miss applied. So it could be a great thing in theory but maybe not in practice. And it certainly would be a difficult thing to do regularly, every month we could easily make a profit and loss, a balance sheet and a cash flow statement than to do an EVA<sup>®</sup> calculation.

14. What are your expectations from participating in this study?

DGE-R2: (A copy of the final thesis) For myself what I am most curious about is because of having done the MBA, I guess as an individual you are always looking for some sort of validation that maybe what you are doing is right or not right in the eyes of a completely objective observer. So from your point of view I would love to obviously see in your thesis what your opinions are of how companies are performing. Also, we don't often in a day to day circumstance get the opportunity to exchange or benchmark ourselves against other companies. So again it's a great opportunity to see how other companies stack up. I guess that is really where my expectation is – to see how a stranger sees our business rather than to be always consumed by how I see it.

## INTERVIEW QUESTIONS with RESPONSE – DGE-R3

FORM CODE: MD3

### A. COMPANY BACKGROUND

Name of Company: DGE Limited  
England

Location: South East

**Job Title: Managing Director (DGE-R3)**

Turnover: \_\_\_\_\_

### B. MANAGEMENT STRUCTURE

10. What is the nature of your business?

- a. Principal activity?
- b. Main products/services

DGE-R3: This is DGE Limited and the Widgets in question are typical for underwater oil and gas industry use. The connections being made are between hollow pipes which may carry oil or gas or a mixture of both or sometimes other fluids that's typically injection of methanol for example which is injected into oil wells to stop hydrates forming. But also connectors that are very small diameter, they carry hydraulic fluids for control purposes; electrical connections for power and electrical connectors for signals for the instrumentation signals coming back. So what they have in common and what is of the essence of what we do is that these connectors are designed to be installed without using divers; so we are in the diver-less subsea connection business. So the connectors per say, typically the electrical or hydraulic ones, we buy in, they are specialised stainless steel gismos that other companies specialise in. What our particular added value is, is understanding in great detail the sequence of events that has to take place for a robotic subsea mini submarine which is called ROV (remotely operated vehicles), which are little power packs with thrusters on them which can manoeuvre themselves under water on the end of an umbilical cable attached to lights and cameras. So a man sits in a cabin on a boat with television screens in front of him. It is very reminiscence of what you see in films of space exploration or even in the nuclear industry where quite complex manipulations of equipment are carried out remotely using robotic arms. Now there is another branch of the industry that specialises in the design and build and operation of these robotic ROVs and

our task is to provide highly reliable, extremely robust connectors which functionally are no different from how they would look like in a pipeline or whatever – in the dry on land – but whose characteristics enable them to be assembled and connected and disconnected and be retrieved to the surface if they are damaged using ROVs. So we have to know intimately the functional side of the issue of flow paths - of oil and gas flow paths and current practice for pipe works and so on and so forth. But also in great detail the strengths and limitations and operating envelopes of the ROVs that will install it.

c. Have you had to acquire ROVs for the company?

DGE-R3: The contracting situation would normally be – almost universally would be - where we are a mechanical engineering hardware company that designs and builds the connectors. The next step in the process when we deliver our stuff, we might deliver it to a fabrication company that is building a big structure to go subsea and typically one side of our equipment will sit on the structure. We might deliver the other side of the connector to somebody else who might be typically an installation contractor who is going to put the pipeline in. And one of the interesting nuances that rise immediately is that we, by definition, are sitting on the interface, not just between two sides of a flow path, but between totally different parts of the supply chain that the oil companies try to liaise with. And interface management is an enormously important discipline in – I'm sure it is in any industry – in mechanical engineering and in the aerospace sort of industry but I am sure it certainly is in oil and gas – subsea. It is just an interesting facet of the characteristics of our business. We are physically designing and manufacturing the interface – the physical interface, so all the issues that you get with interface management of getting things on site at the same time, that they physically engage with each other, one isn't round and the other square - all of these things are of the essence to what we do. When we have supplied our kit, and been paid for it probably (possibly - or certainly some of it - there might be a retention of some sort) the installation contractor would be in the hot seat at that stage and – something about 25% of our revenues – comes from the supply of personnel who would be present on site as expert advisors on our piece of equipment which ultimately is the connection that has been made. So we witness an act on the client's behalf – not as line supervisors – we don't have executive responsibilities for it but we are relied upon for instructions and advice in a very pragmatic way where the client will also have somebody on the vessel. The people in charge of the

vessel – the owners and operators - are the installation contractors. But if for example we gave a piece of advice on which way something should be fixed or whether the weather is too bad or how to lift something and either the installation contractor or the client chose to over-rule us and it all went wrong, then it would be their fault for not taking our advice. And likewise, although our liability is defined contractually, we would be very damaged reputationally if something went wrong and we hadn't advised against it. So it is quite an exposed position and a very important one because our field guys provide continuity – you may think there's a learning curve amongst the contractors - but the turnover of personnel throughout the business is so intense that they will always need specialist advice on specialist equipment even though they have done it a hundred times before because their people keep changing and the present vessel may be a different vessel to the last one and so on and so forth. And so our scope of services is design, manufacture and assembly & test which follow the actual fabrication and then installation supervision.

- d. Do your guys participate in integration testing prior to assembly for submergence?

DGE-R3: The answer to that is yes but I would just back-up a little bit. This is not a prepared speech so I know I have left a few gaps in what I have just said which is relevant to what you are asking. First of all we are what you might call an outsourcing manufacturer. We don't own any fabrication facilities at all and there are all sorts of strengths and weaknesses to do with that. The most interesting strength is that it gives us enormous throughput flexibility and we can double and treble our annual workload in both directions without it being necessarily fatal. And we have done so on several occasions and as it happens we are doing so at this moment. We are in the process of the early stages of an enormous order which is clearly very good news, but it brings with it its own problems. But because it doesn't mean that we suddenly have to get three times the work product through our own facilities for manufacturing it is relatively easy, we just place them on subcontracts. And over the years we have learnt how to manage this extraordinarily high level of quality that is necessary. For subsea components, but like in – not so much aerospace but in real space issues – if we sell a £200K piece of equipment and it goes wrong it may cost £5M to take it out and put a new one in – it is like the NASA washer saga, but not quite that geared. But there is still an enormous gearing between the installation cost and the capital cost of our

equipment, which is why the need for reliability. One of the things we learnt is that if you are subcontracting the manufacture of something that is that sensitive, is that you don't allow a subcontractor to sub-subcontract. So in other words, if we have something fabricated – like a steel frame work of some sort or if we have a forging machined - we don't allow our subcontractor to buy the forging and we don't allow the machining shop to sub-subcontract out the exotic coatings we normally have, duplex stainless steel weld overlays and things of this sort put on. We actually manage every single one of those contracts. That means taking great commercial risk. The reason people bundle multi-tier contract together is because of the fashionable belief – and this is particularly rampant in the oil industry; quite frankly I think it is complete nonsense – but the belief that you can subcontract risk onto people and save yourself money. Whereas the fact is that once you introduce unknowns into anyone's contract you pay more by definition – you pay the insurance premium. So although conventionally it is believed that there is a commercial penalty in managing every stage of the process itself rather than having your contract chain look after, the quality impact is horrendous. So we place the orders with the forgemasters we use almost entirely in [location], the only place in the western world where they still do forging to any acceptable quality. We then take delivery of the forgings and we have them delivered into our own premises, because of course we need to have somewhere to keep them. We then issue them to the machine shops who are on contract to us to do the machining - typically taking a big block of steel and turning it into a flange, and we have the gaskets manufactured which are our own proprietary design – very complex things; and as I said, the coatings, the weld overlays; these sort of things – again are orders placed directly by us and inspected by us. So we have a very significant onshore inspection team who witness every step in the supply chain, but it is all outsourced. And we only actually get involved with the physical materials (other than storing forgings until the machine shop needs them) when it comes to assembly. Now it is a convention of our business that everything that we supply has to be tested, and typically that's a pressure test. We have pressure test cells in our test and assembly premises. So apart from this office here in Woking we have got a large industrial premise which for historical reasons is on the [Place]. It is in [Location]; at the moment we are actually just moving as we speak to a bigger place in [Location] which is a suburb of [Area]. The shed we are moving into which a brand new industrial building is around; just to put it into context, I think it is 22,000 sq. ft. and about 10% of that is office space. We have

travelling overhead cranes and that sort of thing, we have pressure test booths – so anything that we supply has already been tested. But you are quite right; there are two other kinds of testing in our quality plan which is pretty universal to our business. One is before you have a generic product it has to be qualified, and this means you have to build one at your own expense – a full blown model - and it is subjected to a very rigorous series of tests, way beyond what you would apply in production to any one item that you make. So it would include fatigue testing for example where you would bend the thing thousands of times to prove that it doesn't crack. Pressure testing with pulsating pressures and quite possibly at different temperatures, corrosion tests - all sort of stuff. So the qualification testing which applies to a whole generic group of designs that comes thereafter, is a prerequisite to selling any type of equipment in our business. And that is one of our barriers to entry because we have to fund those ourselves. The most recent series of equipment that we have been able to successfully sell we actually received some Government support for that process from the [Lending Authority], without that we couldn't have done it.

The second series of tests, the ones – other than the production tests, the qualification test – are the ones that you alluded to - where when our stuff is integrated into a bigger piece of equipment; typically at a larger facilities supplier's workshop, it will then be what is called a systems integration test just to make sure that everything works properly together onshore. And that typically will be done – actually you could have a situation where that company is supplying 15 identical assemblies, they would do an integrated test on the first one. And I think it would be a moot point whether that one went on to be supplied or whether it is a sacrificial one that is been tested to death depending on the equipment. So yes, testing, testing, testing; and that's as I say that's characteristic to my knowledge certainly not just in the subsea business but the offshore business generally and any business in aerospace and presumably other things as well that I may not have insight into.

So as a company we have 30 odd people here in this office and we have a large testing assembly premises in [Place], and a group of people who float in and out of DGE Limited to our subcontractors doing craft inspection to a group of people who supervise the installation work offshore and there are some of our staff who work both onshore and offshore. And indeed we have several engineers and designer draftsmen from the office who have the necessary

safety certificates for example to do those tasks as well. We encourage our office staff to acquire the survival qualifications and safety certification and things that permit them to follow our own product through the manufacturing and assembly because that is where we get the feedback loop of experience from going out there from our own people. I know I have gone on a bit but that is basically how we work.

e. Markets

DGE-R3: Our markets are where the subsea oil and gas business is – which are the northern North Sea, Southern North Sea West Africa and the Mediterranean Sea. Generally speaking they still use divers in the UK - the Norwegians wouldn't dream of it because they are really safety conscious and logical. In more recent times West Africa which means Nigeria, Angola, primarily Nigeria; and the biggest project that we have done which is 99% finished is for [Company 1/Location]. We were actually supplying [Company 2], one of the major subsea [Type of Company] companies which wasn't able to produce the very specialised stuff that we do which is tailor made to suit the need.

Looking to the future, there are other markets that we could supply but we are too far away from which are West Australia (very active at the moment), there have been some deep water subsea off the East coast of India, typically very large companies take that on. We are supplying in a small way to the east coast of the United States for use of our equipment on liquid natural gas import and export terminals – was import, becoming export now for [Process 1]. Where else have we supplied to? – the Mediterranean. There is increasing activity down towards the eastern end of the Mediterranean and I think in the future we will see that market grow, but the big one for now is West Africa outside the North Sea – and the North sea have got a lot of life left in it. Then we will see the possibility of getting involved in the subsea developments in the Northern Seas – there is a large field called [Name of Field] which is offshore in the [Name of Sea] and we have some very unique equipment - very large diameter Widgets which may well find its way into that if we are successful; but again we have to somehow manage to get the qualification testing funded.

f. Is that a new product?

DGE-R3: It is just a very large version of what we do now. I shouldn't say just, it is quite different and nobody else has anything remotely like it.

- g. So it's a scaled version of what you now do?

DGE-R3: Yes, it is a very big connector; a 42 inch diameter Widget.

Once again, it is not the connector that is the issue; it is how you get it there. It would sit in the middle of a pipeline and comes off a barge and the pipe goes down a ramp to get it safely to the sea bed. And if you put a connector in the middle of it so that you can take it apart again at some future date, it has got to be able to go down a ramp. And the competition would only be able to produce one that is maybe 5 or 8 meters diameter whereas we can produce one that is less than 2 meters diameter so it physically fits. So it's that simple; it got to be smaller and lighter than the competition's.

So that is typical of what we do. It's a boutique specialising in subsea [operation] challenges that can't easily be made by the mass produced catalogue items by the big manufacturers.

11. How would you describe the organizational structure of the company?

- a. Comment on its effectiveness in terms of dissemination of information and the impact on making:
  - i. Management & strategic decisions
  - ii. Financial decisions.
- b. How involved are the management team in these process?
- c. Has the hierarchy or chain of command changed in the past 5 years

DGE-R3: Bear in mind that we are somewhere within the borders between a small and a medium size company, so it is still pretty coherent although we are on two sites as I just said. I would say our organisational structure; it is probably quite traditional for a mechanical engineering design and assembly outfit. It has its outsourced characteristics which isn't unique but is done primarily for historical reasons because we were a consultancy and there is still very strong cultural references back to the days when we were pure consultancy. We got into manufacture because we designed something and then the client turned around and said: well can you build it for us; which was quite a painful

experience back in the early 90s for those involved. So it is a consultancy that had supply chain capability grafted on to it, and there is still little fond memories of that effort; the emphasis on customer service – for example, which you probably wouldn't be able to sustain in a company whose value drivers were production efficiency. And there is this almost but not quite hand-crafted bespoke solutions mentality; certainly the way some of the senior engineering staff think.

d. Is it because you have that expertise as consultants?

DGE-R3: Yes, so they get very involved in trying to understand what the client's problems are. Whereas our competitors get very involved in selling more – “its green, it weighs 25 tonnes, do you want it, how many do you want?” We come at it from the other direction – “what's your problem, we have got something here that we can adapt – if we do this-that-and-the-other with it and we take that bit from something else we will wind up with something that will do the job for you”. So that's part of the culture. The management structure as I say is very conventional and straightforward, you are welcome to have an organisational chart with the 4 Directors (Interviewer stated she already have a copy of the organisational chart).

So at the moment the team has various roles; they are the Director of Finance & Admin DGE-R1 which is a conventional role, and the Operations Director DGE-R4 which would be similar I think in many ways to other companies. But because of the history of the company, he was the original founder of the business in 1979 – believe it or not – and when we did our management buyout in 2005, what was bought out was a business unit in a subsea engineering company that I was running but it was a consultancy – pure consultancy and it had been specialising in pipelines. And it bought what it thought was a subsea engineering business which had been a consultancy, but by then was becoming a manufacturer. And this presence within a pure consultancy of what appeared to be a conventional manufacturing business in some ways, but nobody could quite work out what it was. The management was in [Location] and then later in the [Location] as the consultancy that we were part of was bought by a [type of company] company. The American and Dutch accountants involved were used to consultancy and couldn't understand what on earth this manufacturing business was doing in the middle of their empire. They just couldn't get their heads around it; the

rhythms of business were completely different, the margins were completely different from consulting, the financial structure was totally different; and so we did a management buyout. And I deliberately decided as the owner to change the management structure as little as possible because of the “Law of Unintended Consequences” and creating chaos downstream of these grandiose decisions for years afterwards; and we were quite busy at the time which was another thing. We have a situation where the Operations Director is basically running the business for all intents and purposes with the financial guy, with myself certainly, supporting and helping him but also probably more than you might expect to be involved in growing the business is the 4th Director - whom you probably never met – he’s a [Nationality] chap called DGE-R2. He is our Corporate Development Director. So I have been busy getting our [Special Sector Project] offshoot going and that is probably  $\frac{3}{4}$  of my time. And he has been busy; having been helping with the [Sector] Business earlier on when that was the development thing, he now also helps with product qualification; but he has been building a thermal insulation business which is one of the big challenges of deep waters subsea – keeping the product warm. And we have broken through; we have a major project here for [Company 3] going through the office. It is for manufacturing an extraordinary advanced [type of device] for their subsea field which is called [Name of Device]. And we now have a best-in-class [kind of product] which got enormous potential. So I introduce that theme directly right at the beginning because it runs through this business like a stick of rock; so we have to innovate and develop to survive really, through the medium to long term and we have some exciting things going on. But we will come back to that later I think. So that’s the Board of Directors.

12. Who is on the Board of Directors?

a. What are their management roles/responsibilities?

13. Are all key management decisions decided at Board level or are responsibilities and decision-making devolved?

DGE-R3: I think it goes without saying with question 4 that we are extensively devolved.

But we have board meetings and we do take very high level decisions at the board level; but we are quite close as 4 individuals.

14. If owner managed, does the owner influence the outcome of decisions taken at management board meetings?

DGE-R3: Yes, it is owner managed. Yes but only to a limited extent to the question of my influencing outcomes as the Owner but it is not because of the shareholder agreement or the Article of Association, it is because I am older and greyer than the rest of them and very polite! But also I am acutely aware of the downside of telling people what to do, because you then become responsible for that. And I strongly believe – somewhere I have got to say it – but I believe passionately that you should not buy a dog and bark yourself. So I let people get on with it because a). It works better, and b) I have got my hands full with what I am doing already without inheriting everybody else's job as well.

### C. FINANCIAL INFORMATION & DECISION-MAKING

15. Are you involved in the processing or analysis of financial information?
- If yes, what is your involvement?
  - What models are used and what are they used for?
  - How is the information used? – (request monthly reports to demonstrate)

DGE-R3: I am not involved in the processing or analysis of financial information DGE-R1 should fill you in on that.

16. Are any capital investment performance appraisal methods used in the company at present (NPV, IRR, ROI, etc)?
- If so, how are they used?
  - If any discounting models are used, how do you determine the discounting factor used in the models?
  - What information is captured?
  - What has been the impact?
  - Are results monitored or evaluated?

DGE-R3: As DGE-R1 was saying, he does include in the monthly numbers the usual ratios for our benefit. And DGE-R2 in particular who also has an outstanding MBA, he is very interested to see that. DGE-R4 and myself are probably less attuned to modifying and/or shaping our executive actions on the basis of it. The message is usually so simple from our accounts that the overheads are too high or over-runs or too much engineering has been done – these sorts of things – these are very straight forward messages. Those are things we try to understand from the numbers and you don't normally need this sort of corporate data when you are that close to the business. But we do it; and they are certainly used as DGE-R1 may have indicated in our discussions with our

clients typically as a means of communicating to them the benefits of different pieces of equipment and how they are installed. It is very, very characteristic of our business that for a small extra capital cost which as I say is almost lost in the noise when you look at the installation cost, that it can have a very significant benefit through life in the maintenance costs. If it means that you would only need a very small boat for 40 years to do your maintenance instead of some enormous \$600K a day thing, and the difference can be that significant from something that cost a couple of hundred thousand dollars now. And if you are trying to have that conversation, certainly with the procurement department where they are only interested in their Christmas bonus, you've got to have a very compelling case. I am afraid it is that venal. And the rest of the clients you don't even bother talking to because of the way they are run; very big ones in particular. We tend to get more traction with the smaller businesses where you are talking to somebody whose own pocket is influenced by through life benefits rather than just getting people to discount things by six and two thirds per cent instead of six and a half per cent when they are threatened. So we tend to deal with – well more aware clients.

17. How is the company funded?

- a. What is the level of gearing (Is it Debt/Equity or Debt/ (Equity+Debt)?
- b. How was the funding decision made?
- c. Are there any barriers to financing of the company? Example access to funds etc.
- d. What types of debt do you have?
- e. Do you know the cost of the debt?

DGE-R3: You probably know that DGE Limited is an 'earn-out' and is very dependent on bank lending. (Answers to this section from DGE-R1).

18. How many shareholders are there?

- a. For significant shareholders, what percentage of shares is owned by each?
- b. Are dividends paid, how is this determined?
- c. What level of returns do shareholders expect?
- d. Would you consider the company to be low, medium or high risk?

DGE-R3: At the moment there is one which is me, but that's really not the point. When we acquired the business, we instituted an EMI scheme – Enterprise Management Incentive. And we had a second round of that more recently to capture some of the people we newly hired in that process. And what that

means is that – and I am not an expert on this I tend to forget these things very quickly – but as far as I can recall the point of the EMI scheme is that you can give people options without an immediate impact on income tax at the time the option is granted. And I think there is an exemption from capital gains tax as well for the individual when they sell them. They are very tax efficient for the individual. (Refer to DGE-R1 for details).

So options equivalent to 35% of the equity were issued with the EMI scheme and the vesting date has passed, certainly for the first tranche. But as far as I know nobody has actually subscribed and the options are still unexercised. So in other words, as things stand, if the business is sold then those options will probably be exercised – in fact it's a two stage thing, It happens simultaneously, you subscribe the pre-determined strike price and take ownership and then you immediately sell it again at the higher price. And roughly speaking of the 35% of options its 25% for the other Directors and 10% to the staff. So that's the ownership.

19. Do you know what the cost of capital for the company is?
- a. Have you ever calculated this?
  - b. What would you use this information for?
  - c. Do you actively manage the cost of capital, for example refinancing to get better rates?

DGE-R3: That's for DGE-R1 – but as you know we are privately held and we do things that interest us, in a way.

#### **D. IDENTIFYING VALUE WITHIN THE COMPANY**

20. What do you consider drives value within your business?
- a. Do you collect data on these drivers?
  - b. If so what data and how are the drivers measured?
  - c. What do you use this information for?

DGE-R3: I have kind of alluded to a lot of it. We can only sell anything to anybody who wants it – I don't want to sound negative but let me start with barriers to our success, in a way it is easier. In the oil and gas business, there is an acute awareness on the client side of the benefits of dealing with major companies. And, I suppose in a way it is cultural – but companies like Shell and Exxon, BP, Total are much more comfortable when they dealing with companies such

as Halliburton, the Wood Group, Aker. Massive, massive companies with huge balance sheets and they can sell for gazillions – sue I mean for gazillions as and when they want to. As a group of individuals I don't think any of them would admit or realise that they were litigation-conscious, it is just the culture of the business. And it gives them all sorts of issues when a tiny little company like us occupies a position of significant importance to them because of the relevance of the product. And so in general we either are successful with repeat orders because they already trust you which is all very well. But personnel change, companies change hands – even big ones and you have to start all over again. Or where they don't have an option, and they feel that they are over a barrel and the last thing open to them is to buy what they need from a small company like DGE Limited without any competing bid which would normally be thought to be a terrible thing. But by large, if you go back, most of the things that we are selling, we sold because we were the only game in town. Now we are in the process of, at the front end of, over £40m of work for [New Contract] – which is very confidential – as a very good case in point. But of course [the New Contract Company] has Partners you don't tend to think of – you hear that this is a [Owner of Field], that another one's a [New Contract] or [another Competitor] field and you think they are working by themselves and its almost probably never the case apart from the very small fields that any one company owns the whole thing because that again is part of their risk mitigation strategy, they don't want to own the whole thing. They would be Operators on some and minority shareholders on others. It may not even be the case that it is the majority shareholder which is the Operator. The Operator benefits from being the Operator and all that stuff about being in a Partnership of like-minded friendly companies counts for nothing when the Operator of a multi-billion dollar field development has to account for its stewardship of the ownership group's funds. The Partners pick every last cent apart and challenge every decision.

So when [New Contract] accept that we are supplying their connectors and bear in mind something like 20% on the UK indigenous oil comes through our connectors. And so there is an implication when they place an order with us, we have to be in business for another 30 years otherwise they could be in all sorts of trouble; because that's the life of the field. You can see the seriousness with which sole sourcing our equipment from a company which is privately owned by a geriatric and his mates – I can actually understand the situation they are in; and these are people who are salaried men who have

got to account for their decisions to their boss and likewise about five layers up before you even get to the grown-ups. And then get that decision agreed by a committee of the real owners who may be all the major oil companies in the World. And that is a big ask – but it happens. And it happens because we are able to offer a product that they can't get anywhere else because we actually - as I said - we listen to their issues and understand their processes technically and then come up with a bespoke offering that is an adaptation of something that is fully qualified and that's where the de-risking comes from. But the major manufacturers have got computer-controlled machines churning out huge standard [name of Device] preventers like there is no tomorrow. The last thing they want is an insignificant little £30M order when they have \$25-\$30-\$40-\$50 billion dollars work to get out the door. It is quite remarkable, in the way that we can do business. But that is the way the oil industry does have room because of the advance of the technical frontiers continuously for companies like DGE Limited. But you do have to be quite light on your feet. Our marketing is very much to do with personal relationships between the decision makers and these oil companies and it's a lot of touch, taste and smell involved as well as having a really excellent product. And one must refresh continuously through feedback of experience. So I don't know if I am getting it across but it's quite a dancing act. And it is our ability to continue doing that that advances the company.

- d. For initial negotiations with large companies, so they request information about the structure of the company and its forecast for the future in order to make a decision?

DGE-R3: Yes they do. Bear in mind that this is – I shouldn't say binary – but we are talking about very few clients – we only recently got our second customer a couple years ago – broke the glass ceiling.

- e. Second customer?

DGE-R3: I am exaggerating slightly, but until 2 or 3 years ago, something like 85% of our revenue came from [new Contract]. Which goes back to how we acquired the business; no one wanted the business because of the client concentration risk. And I guess otherwise we would have never otherwise got control of the business - we behaved in a very un-business like way if you like, apparently, by the Client–Concentration risk we took.

And the only mitigation I could offer is we knew so much about it that we could see that it could be done. The interesting thing is that it was an extremely close-run thing, because (and this isn't [Name of Company], this is one [Name of Company] project – Location] actually – several little sub-projects but it is all [Location], as it is known). And it is all serviced by a lone tanker out in the Atlantic, captive tanker which all the oil goes into and it is processed on board the tanker then offloaded onto another tanker. And what happened was that during the early years, 2005-2006-2007 the business was rolling on – and could have carried on for many more years - this tanker started to get into more and more maintenance problems, and eventually they had to decide whether we try and patch it up or do we carry on doing our annual field extension work? and they had to decide to patch it up as a first priority. That incidentally was one of the consequences of [Name of Company] well documented disaster at [Name of City], one of the lessons learnt from an onshore explosion in a refinery where people in a portacabin were killed. You can well imagine why, because they worked for another part of the establishment; they were just visiting to be taught PowerPoint or something, so there weren't aware of the emergency procedures. So one of the things that became tabooed in [name of Company] was temporary accommodation and to get the both annual maintenance and to get the annual field extension done on the vessel in question [Location], they had to put temporary accommodation on the vessel and that was suddenly tabooed. So our work load more or less vanished overnight for three years and that would have been the end of the adventure where it not for the fact that we had this vision of broadening the product range which the previous owners wouldn't invest in. We got the support from the [Lending Agency] and we were making enough money at the time to be able to support the other part of it – the matching money. So we had a qualified product just as this happened. And we were able to, through a mixture of hard work and good luck to find a client who had an insolvable problem who just needed one of our new gismos and we got back into business immediately. And that then gave us a track record which we then sold to [Name of Client and Location] and kick the business off again. And what's happening now is that [name of Company] new tanker has been ordered as they eventually gave up this silly game of trying to patch the vessel up, it was just fatigue problems I think. And that new tanker will be on station in a couple of years' time. So now we will play catch up if you like for the work we didn't do for those intermediate years, and now, it's almost like a major field development starting up all over again but we are the incumbents. So we

are just being conducted into it without any marketing at all. It's a major upturn in our work; it is like a trebling of our workload over the next year. But the very first thing we did, at our request, we didn't even wait to be asked was to go and tell them how we were going to cope with it. And as it happens we were moving premises, which they think we are doing for them but we are doing it because the roof was falling in and we needed more space and we got a break clause in the lease. So it was an opportunity we had already grabbed; we hadn't actually signed the lease or given our notice at the time this meeting took place but we volunteered a strategy for how we would cope. We were able to mention, invoke as I mentioned earlier, the fact that its outsourced and that the - all we needed to do was to qualify a few more vendors which we are currently doing, taking on a few people – which we are doing, it takes time of course. We have made the first good steps last week and they have subsequently asked for a lot of information about our finances. We have got a commitment from the bank to increase our credit loan when we get the orders (with [Bank 1] - we had to change bank a year ago; we had been with [Bank 2]). As it happens, we are just now in the – I think there is 1 more critical meeting to go but we have been able to satisfy everyone so far. We have for example almost been invited to modify our payment structure because. Because they can see that it is not front end loaded enough in terms of the cash flow which is what we would have had to ask for anyway.

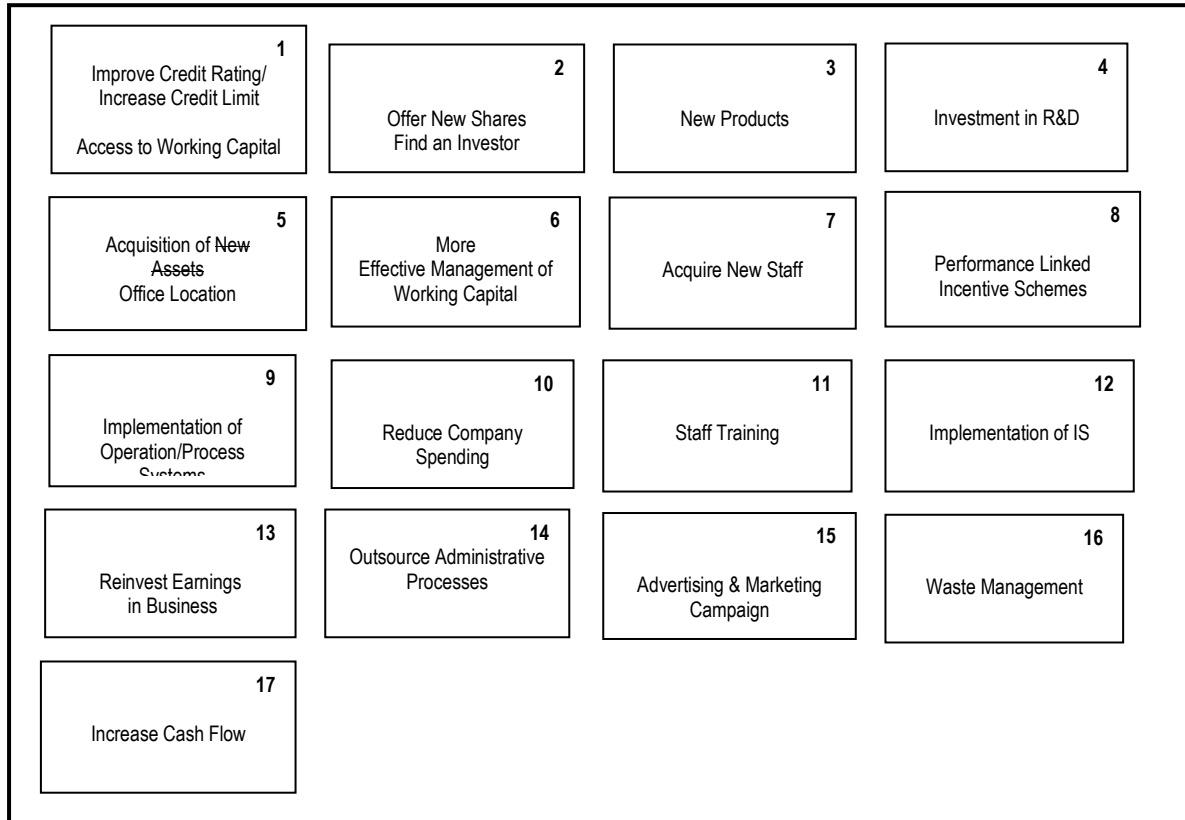
When you get outside to the bigger third party clients; [Client Name] is a case in point, we have another problem that it is normal in the industry to give performance guarantees and the normal issue is that you can only do that when you have certain amount of money deposited as collateral. And in our case we would have to borrow that, but you can't borrow like that these days because the banks don't lend to people who need money. So the financial position the banks put everybody in is quite a significant issue with us. We can sometimes get insurance products that replace Performance Bonds, putting the premium on the bill. We have done a certain amount of that and the other is accepting retentions by the client which has been done, and of course that impacts the cash flow but at least it is something you know about and we manoeuvre around it to a certain extent. And then the other is just basically saying to the client, unless you improve our cash flow profile we can't take the job. And if it is in a position where, as we say, we are the only solution then they will be a bit more inclined to do that. I am saying this partly

to make the point of how significant DGE-R1 is to the operation and it is not an introspective role at all being the Finance Director of this business.

But in terms of driving value the really fundamental thing which I try to allude to, the really fundamental thing is the continued ability to read the industry's upcoming needs and to try and be in a position, ahead of the game, with a qualified superior technical solution. And that we have certainly achieved for this installation product. For how long that can go on as the company grows, is a good question but that is our modus operandi within the current sort of business culture. I think we would have to be a lot bigger before we could start competing in the "pile it high and sell it cheap" market.

***(Exercise: Flash Cards with value drivers identified from initial interview. As Interviewee to rank in order of most important to least. At the end, ask for reasons and justification for the ranked value drivers).***

Outcome of DGE-R3 value exercise:



DGE-R3 explanation of actions:

Well those two are immediately extremely relevant: Investment in R&D and New Products, these could be the same. Increase Credit Limit. It is not so much Assets but Office Locations. It is a very simple thing. Huge market for us in the Gulf of Mexico hence the need for a Houston office. I am very tempted to put this right at the top and just write on it Access to Working Capital and that is in a very amateur way but more Effective Management of it. That has got a place as I say in insurance products and the like. That to me sounds more like a consequence than a driver (Increase Cash Flow). Offer New Shares means find an Investor which we are actively trying to do. I'll put that right up front biggest problem now is money because we have cracked some of these very important things, quite whether they go 1-2-3 or 3-2-1. Reduce Company Spending obviously has a place, Reinvest Earnings in Business that's what we do. Ok that will be my first cut.

#### **E. STAFF TRAINING AND DEVELOPMENT**

21. Can you describe how development issues are address within the company?
- a. Is it incumbent on you or other members of the management team to raise issues associated with product development (R&D) or operational improvements?
  - b. Is it expected that staff should express training needs or is this taken into consideration when any changes are implemented?

DGE-R3: The actual staff training in the conventional way, we do some, we have the budget for it but it is not a big deal here because the most important thing is for our technical staff to get familiar with this very, very specialised niche we are in, in the oil and gas industry. The discipline skills they need are mechanical engineering and we recruit typically people who maybe worked for [A Company] for example down the road in [Name of Street]. We generally speaking don't hire oil and gas professionals because generally speaking they are very expensive. And it is such a specialised business that really the only way that's successful is to get well qualified good mechanical engineers on board and then over a couple years they will learn from the offshore team the things that matter. And then I will emphasise the need for product development. I did ask DGE-R4 how to characterise that and what he said doesn't surprise me at all. I think we can point to the probability that we spend something like 5% of our revenue on R&D which is significantly more than manufacturing industry on average. Where R&D finishes and business

development starts is a very fuzzy line but the guy who does our business development is not on sales but there is no point having salesmen in a business like this. What sells our stuff is the technical appropriateness.

## **F. THOUGHTS on EVA<sup>®</sup> and EXPECTATIONS from PARTICIPATING IN THE STUDY**

22. Have you heard of EVA<sup>®</sup>?

- a. What are your thoughts on EVA<sup>®</sup>?
- b. What are your experiences of EVA<sup>®</sup>?

DGE-R3: I don't have a great deal to say, you know where we stand on EVA<sup>®</sup>. We experienced it under the final days of [Parent Company] who owned ACQ-1 who we were a part of. I think the second year it was in operation, ACQ-1 found itself in a position where it had EVA<sup>®</sup> obligations to pay out beyond the available profits. DGE-R1 is the person to talk to. He has this extremely interesting set of views on the interaction of the two different ways of characterising a business, the "Accounting" and the "Cash Flow" ways – and he sees the attraction of EVA<sup>®</sup> in trying to reconcile the two. But the downside is this sort of thing where the value being added to the company is quite significant and there is no cash to pay the bonus outcome. That's what happened and I think there are a number of reasons why; I can think of two without being at all familiar with the situation. One is that ACQ-1 itself was divided between 5 or 6 global offices and the EVA<sup>®</sup> was applied centrally and globally. Some of the offices were profitable and some of them weren't. So the unprofitable offices were in a terrible state and they had to pay EVA<sup>®</sup> bonuses. So that was kind of really pretty straightforward damn foolishness and maybe the EVA<sup>®</sup> scheme was inappropriately structured. And that maybe because it was inherited it from this big construction company which was a very coherent one office almost family operation in Holland – tribal operation where everybody knows everybody else, very introspective, secretive, intensely aggressive organisation where I can see EVA<sup>®</sup> been absolutely brilliant. But then they started buying companies and just planted it on them without actually considering the difference in both structures. So my very limited experience of it, it was problematic - but as a group, influenced by DGE-R1 who may have a view. We can see the benefit of it and the underlying merit of trying to recognise linking the workers' benefit with the shareholders' benefit. But that particular way it was done was not successful.

23. What are your expectations from participating in this study?

## INTERVIEW QUESTIONS with RESPONSE – DGE-R4

FORM CODE: OD3

### A. COMPANY BACKGROUND

Name of Company: DGE Limited  
England

Location: London: South East

**Job Title: Operations Director (DGE-R4)**

### B. MANAGEMENT STRUCTURE

1. Describe the role and responsibilities of your job function?

DGE-R4: I guess I have a number of individual reports. Primarily the production procurement group report to me. They are responsible for purchasing, manufacture and delivery of product to the client. So that side of the business reports to me. And engineering comes under my responsibility and QA – quality assurance. I think conventionally QA would normally go straight to the MD but in our organisation it comes to me so I essentially have production engineering and quality assurance.

2. How would you describe the organizational structure of the company?

DGE-R4: You have a copy of our organisational chart. I don't think there is anything special or particularly unique. It is pretty traditional. We will be changing it shortly because that organisation works fine for the level of turnover and revenue and activities that we have at the moment. But the next 12 months or so that will increase quite dramatically, so we actually need to change the organisation. The change have not yet been agreed or communicated to any of the staff so probably it is a little bit delicate. 0:00 And the individual project managers also I am responsible for, so I guess notionally the commercial performance of individual projects would also come back to me.

3. So the performance evaluation system that you have which I understand is more in terms of staff development, does that come back to you?

DGE-R4: No, we are talking here in terms of projects, in terms of profit and loss. Well there are the three criteria on which areas of a project is judged on which is first of all profit - are we making any money doing it because if we are not there is not much point doing it. It has to be on time, that's much for grant, the business schedule is probably the second key driver and obviously the quality has to be good which with all our equipment is consigned to the sea floor for 25 years so

any faults in anything that we make, which in effect the cost is quite dramatic on the client. So the quality is very important; we live in an industry that preaches health and safety.

But the industry had been good on a whole; it's just that when things do happen, they tend to be quite dramatic.

Yes, but I think we have done great of course. But I think – we are digressing a little of course – but I think with HSC, with the safety in particular there is an awful lot of it which is done by road vehicles because there is no requirement to do it. And if you think about safety more positively, a safe operation is one which is well planned, well executed and well managed. The safety is almost a bi-product to doing the other 3 things right; but most of the accident occurs because one of the other 3 factors. People focus on safety as a thing they are supposed to do when in fact they would have a better safer operation if it was better planned, better managed, better executed and it would probably cost them less. So that's the project execution and therefore the resource sits on parts of what I look after.

Back to the structure – I suppose as a small company; well we have a structure, people do pretty much know what their roles are within that structure because people can have more than one role because we have to appear to the outside world exactly the same as our competitors would look like. And keep in mind many of our competitors are billion pounds plus international corporate entities, we have to give the client the same feel as they are dealing with an operation which is able to give them the same level of service. So 3:50..with people what box they can fill...particularly if ...project managers they are usually part of the engineering team or 4:11 as well.

- a. Comment on its effectiveness in terms of dissemination of information and the impact on making:
  - i. Management & strategic decisions
  - ii. Financial decisions.
  
- b. How involved are the management team in these process?

DGE-R4: This you will probably find very interesting of course because you will find the answer you get from DGE-R3 totally different from me. Most of the financial decisions and strategic decisions are really taken mainly by DGE-R3 and DGE-R1. I make a particular effort not to get too closely involved in finance. But at a senior level we do run a monthly report system where we get very detailed cost

report of both valuations so we can see how each project is performing. And we get numbers from DGE-R1 and forward forecast each month so we can see how the company is performing, what the gross margins are, what the overhead costs are, and what the variations from the budget are. So that's how the absolute information is reviewed monthly. We have very informal board meetings but I think the message is, it is looked at.

So the core information is disseminated certainly to the senior management team that is DGE-R3, DGE-R1, DGE-R2 and myself and tend not to go much lower than that. But we do a quarterly presentation to all the staff. There is a bonus scheme which depends on the profit where there is a genuine profit; if there is no profit then there is no bonus; its therefore not one of those artificial bonuses which is based on individual performances, it work very well where everyone gets a cut basically. Every quarter DGE-R3 does a presentation to all the staff which says this is what the financial performance is; this is what the forecast is for the end of the year and if there are highlights in projects, these are the highlights, HSC. So that's done every quarter and that's done right across the company. So that works OK.

- c. Has the hierarchy or chain of command changed in the past 5 years?

DGE-R4: Structurally not really – we swapped our chief engineer out – that's a separate matter but there was a guy who was chief engineer who is now principal engineer, he wanted to do engineering. He just didn't like the responsibility. So we had to make that swap but that happened all very quickly. So the basic structure has not changed but it will change in the near future because our annual turnover is going to grow by a factor of 2 or 3 in the next 2 or 3 years so the organisation will have to change to deal with that. Most of the expansion will actually be in our assembly facility rather than in the head office.

4. At what point do you become involved in a project and what would your main focus for input?  
*(Note description of role)*
5. Are all key management decisions decided at Board level or are responsibilities and decision-making devolved?  
  
*(Answered in Q 2ab above) Decisions are made at board level.*
6. Does the owner/manager influence the outcome of decisions taken at management board meetings?

DGE-R4: Oh yes.

- a. You and DGE-R3 are the only ones to give a definite yes. Is DGE-R3 style of management more of a collaborative approach so each feels involved in the process?

DGE-R4: All 4 of us are very different because no doubt we all have quite different perceptions of our roles. But basically everything I do is related to creating deliverables we currently do and to – it's pretty much what we do in [information removed – commercially sensitive] is pretty much up to me. But in terms of any changes to the company; obviously we will have suggestions but the final decision sits with DGE-R3. I wouldn't do anything, anything significant without consulting with him first. Because DGE-R2 is more involved with the new development – it is quite a different role anyways – although it is really one of the projects that we have; that's his dual function so its sort of his day job is corporate development and the way we have it structured that included R&D and new product development. So his is rather unusual.

### C. FINANCIAL INFORMATION & DECISION-MAKING

7. Are you involved in the processing or analysis of financial information?
  - a. If yes, what is your involvement?
  - b. What models are used and what are they used for?
  - c. How is the information used? – (request monthly reports to demonstrate)

DGE-R4: No (See Q 2ab above)

8. Are any capital investment performance appraisal methods used in the company at present (NPV, IRR, ROI, etc)?
  - a. If so, how are they used?
  - b. If any discounting models are used, how do you determine the discounting factor used in the models?

DGE-R4: That's DGE-R1

9. How is the company funded?
  - a. What is the level of gearing (Is it Debt/Equity or Debt/ (Equity+Debt)?
  - b. How was the funding decision made?
  - c. Are there any barriers to financing of the company? Example access to funds etc.
  - d. What types of debt do you have?
  - e. Do you know the cost of the debt?

DGE-R4: That's DGE-R1

- f. I understand Finance is DGE-R1's role but I wanted to get a view from the rest of the management team.

DGE-R4: I think the only issue is how financing affects the corporate operation – the operation part of the business that I look after. It's really – I guess it would be the same for many companies, I'm sure it is just a general issue, it's a question of the relationship with your suppliers because particularly if you are after stuff in a hurry which happens from time to time. So the ability to finance projects is a difficulty for all small companies. It's a real pain in the backside because on average the banks are a lot more cautious than they used to be. So when we find ourselves where we are now where we actually need to grow quite rapidly it is quite difficult to find a way of funding that rate of growth.

- g. Have you thought about some innovative ways of creating working capital, new investors?

DGE-R4: Yes, that is actually what DGE-R3 and DGE-R1 would look after. But I just made the observation, it does affect the operations it is really the working capital you got and if you are trying to grow. It can consume a lot of working capital. We are about to get an order from BP and the raw material cost alone is going to be somewhere in the region of 3 million. Now we will have to acquire that raw material, bring it into stock be it 12 or 18 months until we have added any value to that to get to sell it back to BP with added value. So that's a lot of cash to find. So to finance the day to day operations I still try to keep out of it.

- 10. How many shareholders are there?
  - a. For significant shareholders what percentage of shares is owned by each?
  - b. Are dividends paid, how is this determined?
  - c. What level of returns do shareholders expect?
  - d. Would you consider the company to be low, medium or high risk?

DGE-R4: Nothing that DGE-R3 could or DGE-R1 couldn't tell you with more accuracy.

- 11. Do you know what the cost of capital for the company is?
  - a. Have you ever calculated this?
  - b. What would you use this information for?

DGE-R4: That's DGE-R1

#### **D. IDENTIFYING VALUE WITHIN THE COMPANY**

- 12. What do you consider drives value within your business?

- a. Do you collect data on these drivers?
- b. If so what data and how are the drivers measured?
- c. What do you use this information for?

DGE-R4: By value do you mean the value of the shareholders money?

- d. What is it from your understanding creates value within DGE Limited.

DGE-R4: Well ultimately value has to be measured by return to the shareholders I guess.

That's why its computed in business it's to make a return to shareholders. Then the question of how do you do that? As I was saying to you before, that for us the key thing we have to achieve – we have to deliver on time, we have to deliver a high quality and we have to do that safely. I have no doubt that everybody makes that same sort of statement. But for us for example if we are late with a piece of equipment which is supposed to be installed, a bit of equipment might cost £100K or something but the vessel that is going to install it is costing the client £5000 or £6000 a day. So we don't have to be very late before it begins to have enormous consequences. So as I said, I know it is something everybody says but one of the reasons why we get so much repeat business is that we deliver when we say we will. I think another element of that is avoiding surprise, so if there is something going wrong, we have to be upfront and tell people straight away because that gives them the opportunity to reschedule the vessel or change the work programme for the vessel. The one thing nobody can manage is surprise so we have to make sure there are no surprises in everything that we do.

The quality - if one of our [Widgets] leaks, [Client] dumps 30 thousand barrels down [Location], it will be noticed! So the quality is absolutely critical. The price of failure is huge. As I have said the safety of the business we are in - that's the criteria that are set on us by [Client] if you don't meet their safety standards then in theory you cease to work for them.

- e. In terms of risk, do you think DGE Limited is a high risk company?

DGE-R4: I would say right now it would be a really big opportunity for the right sort of investor because we are looking at a growth in order book both in our connector business – it is going to grow, say double next year and double again the year after and that's for things that we already see. And then unless we screw up, there is a whole new business is going to spin out of this growth which is in our retooling operations - it's a whole new business strain that is going to come out of there. That's work we are already on with. Then we have the insulation

business which is a brand new product – it is the only insulation system that would give 24hrs cool-down time for subsea seals. We are 2/3<sup>rd</sup> the way through our first project with that so all the learning curve, they have been gone through and that stuff is now going out into the field. So that's yet another area that will grow. There seems to be a depression – so somebody tells me but it doesn't apply to everyone I guess. You can't get resources, you can't get people – it is really, really very busy.

So I would have thought it would be a pretty – should be a very attractive proposition but that's for somebody in the right market because the potential to grow is huge. The only limitation is capital – the growth of capital. So somebody with a bit more working capital can make a killing. And technically it is no riskier than anybody else in the oil and gas, we all carry the same risk if you get all the legal, the failure, the resource can be quite dramatic. But it is the same for every company in the business. So we actually got very good at keeping control of risks because we have not had any sort of significant failure under water. We have never had an investigable accident. So we want to think that we do our business quite professionally.

## **E. STAFF TRAINING AND DEVELOPMENT**

13. Can you describe how development issues are address within the company?
  - a. Is it incumbent on you or other members of the management team to raise issues associated with product development (R&D) or operational improvements?
  - b. Is it expected that staff should express training needs or is this taken into consideration when any changes are implemented?

DGE-R4: With a small company of course – you know how much people – so there is a fairly personable 24:39 We have had a whole string of temporary receptionist. Now temporary receptionists are quite interesting people, because they have often got all sorts of backgrounds one of which you might have met – which is DGE-E1 – well she started as a temporary receptionist and we spotted that she had a degree in something so we got her up and put her into A Project [Name replaced as it is commercially sensitive]. And two other girls, one of them we moved through as a patent taker/office manager, she came here as a receptionist and one of the girls who run the stock control system also turned up as a temporary receptionist but who turn out to have a PA background in a very big companies and she is really quite talented. So we are actually quite good at realising what peoples' ability might be. So that's sort of personal, and

then we do run a form of appraisal system and so every year we look at people and look at what training that they might benefit from or we might benefit from. So we run a, sort of review the training – the training itself is very helpful because it focus on what suits or what's required for an individual. There is formal training that we do that we have to do by statue – crane operation ...and then we .... So it's fairly well managed here, there is a formal process as well as the informal process.

There is a lot of on the job training. We run a graduate training scheme which we put people through with the appropriate degree. We have a scheme which is accredited by the IMechE and the IMarEST and we put them through a 4 years training. Once they come out of the other end of it, they should by theory have enough experience to then become chartered but that's for engineers. That works pretty well and again it's a little unusual I think in that we do everything from our concept design, layout through to the theoretical engineering through to put people on boats offshore to go and do real work in a certainly wild environment. So graduates can go right through from concept through to the workshop, around the supply chain, do some QA some procurement and do some ....and they can also go offshore – which other parties don't have that spread of activity that ....other engineering house where you sit in engineering. So it is a good background for you ..... and having a formal training scheme on it means generally we will keep them for at least 4yrs; so after the first year there ..... but each year you have a build-up of confidence and experience and around this time they can make a useful contribution. And when you run a formal scheme you know they have to stay with you until the end of that scheme.

c. Is there a condition on them they have to stay for a period after completing?

DGE-R4: No, but I don't think that's actually enforceable under restraint of trade legislation. You can't actually from changing their employer

## **F. THOUGHTS on EVA<sup>®</sup> and EXPECTATIONS from PARTICIPATING IN THE STUDY**

14. Have you heard of EVA<sup>®</sup>?

- a. What are your thoughts on EVA<sup>®</sup>?
- b. What are your experiences of EVA<sup>®</sup>?

DGE-R4: I don't know if DGE-R3 or DGE-R1 explained but we do run a bonus scheme that's purely on net profits so that's fairly simple

I suppose this is not related to this or this particular topic but the way we generate value with the products we make is again, it is not unique but I think we have it quite well developed in that we looked at what makes the product that we obviously got raw material fabrication, welding, cladding processes, special coating processes and what we have done is divided that product up into those particular specialisations. Then we go to the supply chain and we will buy that particular skill. So for raw material forging is concerned we check out to a very quality control technical specification. We will buy in the raw material and then we will free issue that raw material to the machine shop - we will contract out the machining to that machine shop, but we will own the forging and then we will free issue the forging. So we take the responsibility for the technical quality of the material that is been used. We then supply that to the machine shop, the machine shop will do what they can do well which is to machine things. Then we will effectively buy it off them as a machine part and we will move to the next step in the supply chain whether that is welding, cladding or coating. And all there in our supply chain to do is for them to do the things they do well. So what we are asking now our supply chain to do is to do the thing they do well. So while we are asking them to do multiple tasks we don't allow them to do subcontracting to process; each process is a direct contract with DGE Limited; the whole chain of subcontractors. And what that does is a). it creates risks obviously because if the machine is cutting into the forging and you find there is a flaw in the middle of the forging then we lose the value that's built into that material. But on the other hand it means that we have very good control of the supply process. So if it is like now when we are faced with a very big change in volume of equipment that we have to manufacture we can change that volume relatively easy because we have 2 or 3 already approve vendors within the supply chain. So each of them is seeing a relatively small volume of growth but for us at the end of the chain it is a big change. So it makes the change of volume manageable; of course it makes the quality better because each company is only doing what it is actually very good at. We are not asking it to do any project management or deal with whatever, we deal with all that – we deal with the project management. And it also spreads the risks because of course if one of these vendors were to be late or have trouble in one way or the other you have another 2 that is also producing product.

- c. Would they all be used to the quality standards that you adhere to?

DGE-R4: Oh yes! So having multiple routes through the supply chain you reduce the risk to produce on schedule which is a big thing for us without having to compromise quality because each individual company is doing its own thing. And then we bring everything into our assembly facility and we do the final assembly and factory acceptance testing and release to the client that goes directly to their own people under their own supervision. To model it - it have proven to work very well. It allows us to cope with big relatively short revenue changes because our overheads to deal with that doesn't change very much because we are leveraging the machine shops by not having to have machines and keeping fed. We are able to do it that way through practical experience because we did a job, the very first thing we started to make – we didn't have a machine show, we weren't a manufacturer – we contracted it out a manufacturer. We finished up with about 8 people with this place – there were expeditors and planners, QA people because they were just making a big deal on it. We say if we are going to have that many people in the place to supervise it, then we might as well supervise our own supply chain. The wage bill is the same to me. And we also learn a valuable lesson on subcontracting because the way we were dealing with it had a bigger parent. One of the pieces of material that they were producing was actually to be supplied by the bigger parent and the bigger parent just wasn't supplying on time. They were late and there was nothing that could be done. And because this company was doing the machining for us, they said well, it is our parent company and they aren't in our chain and there is a boat waiting to go and do an off shore installation.

d. Is that where everything could start escalated in terms of cost?

DGE-R4: Yes. So we sort of lean to develop that model for running the business. So effectively we are adding value to the product all the way down the supply chain. The risk of that value sits with us until we can deliver it. So if you get any scrap or whatever damage to it whatever it is, but over the years it had proved that our losses through performance is during the manufacturing process. They are not that high, but the assurance of been able to deliver on time and the quality on time is worth a lot to us in terms of reputation and it is that which generates the repeat business and the growth that we are looking at now.

e. Would you attribute some of the success of the new company to the fact that you all came in with years of experience in the industry?

DGE-R4: Well to be fair you see, the company isn't that new

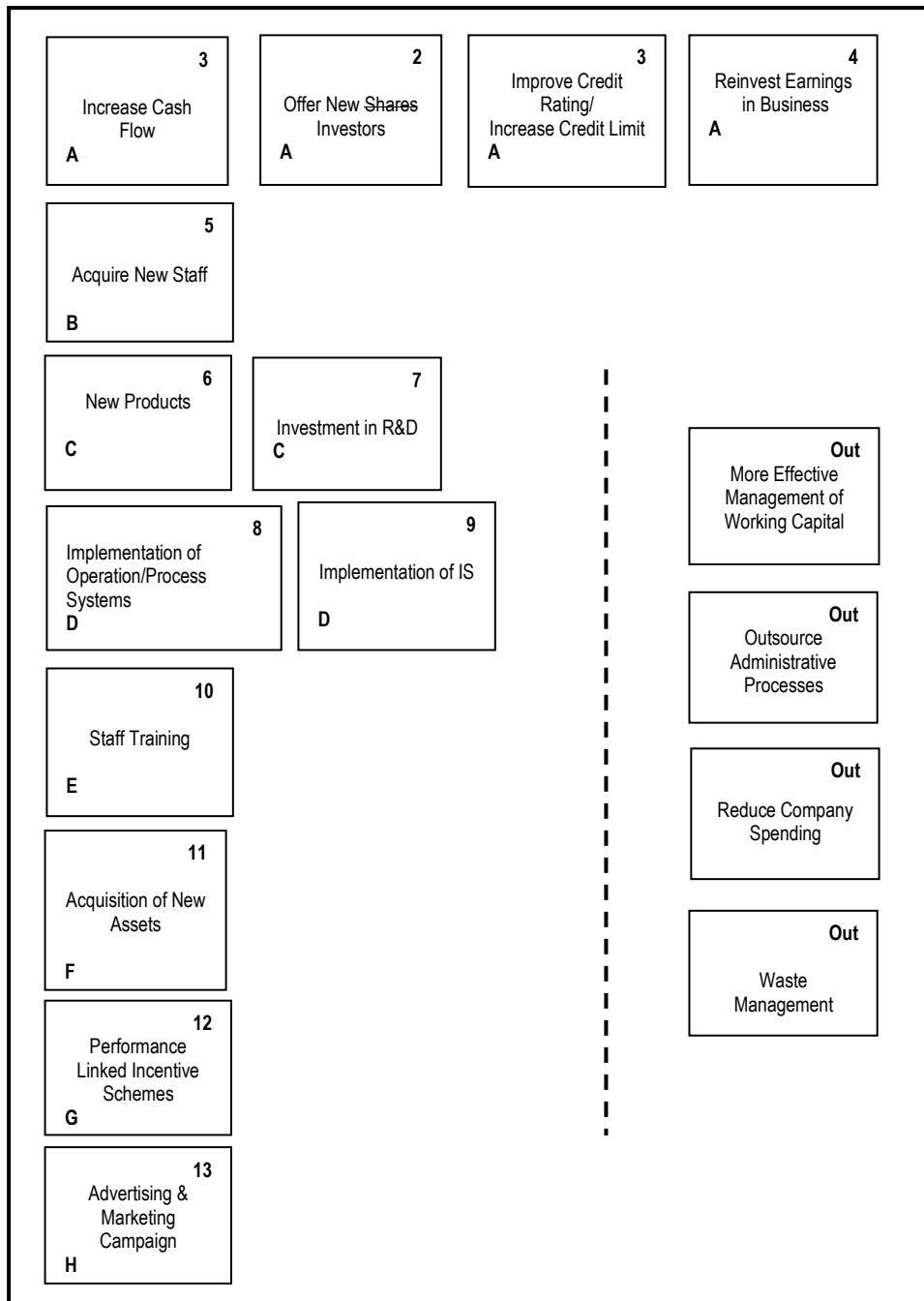
f. OK, or is it the way it has evolved from the original company?

DGE-R4: It started as [Name of Parent Company] Limited. That was back in 1979 and then it was a design house. And it stayed as a design house through until around 1989-90; so it was a consultant engineering company. And then we got involved with [Name of Client Company] and they wanted to use this connect system that we designed for their oil field. And so they wanted us to make it. So we did a few pop manufactures, so our first attempt was to contract the whole manufacture in so when the [Name of project] came along we set up our own manufacturing organisation and made all the stuff ourselves. That's going back to 1995. So it really has only been in its current form since about 1995. That was [Initial Name of Company] and then the company was bought by [name of Company which acquired it- ACQ1] in about 2001 I think it was. We had about 4 years in [ACQ-1], a tech hardware business unit. And then the company was bought out of [ACQ-1] and DGE-R3 called it DGE Limited but what he bought out of [ACQ-1] was the old fuel business. It hasn't really changed, the people have proven the same, we just have a series of name changes but the company have stayed pretty much the same. DGE-R3 and DGE-R1 joined about 2001 when we were in ACQ1 but DGE-R2 and the rest of the team, DGE-R2 comes from ACQ1 but for the rest of the team it has been a very constant evolution. We have a relatively small turnover of people but it's relatively very stable.

15. What are your expectations from participating in this study?

**Exercise: Flash Cards with value drivers identified from initial interview. As Interviewee to rank in order of most important to least. At the end, ask for reasons and justification for the ranked value drivers.**

Outcome of DGE-R4 value exercise





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**INTERVIEW QUESTIONS with RESPONSE – SPL-R1**

FORM CODE: NF1

**A. COMPANY BACKGROUND**

Name of Company: [SPL Limited](#)

Location: [South East England](#)

Job Title: [Company Chairman \(SPL-R1\)](#)

**B. MANAGEMENT STRUCTURE**

1. Describe the role and responsibilities of your job function?

SPL-R1: I am the company chairman. We are pretty much a family business and we started 21 years ago. I started the business with my son SPL-R3. And when I reached retirement age at 65 I retired as Managing Director (MD), appointed myself Chairman as the majority shareholder and he became Managing Director. So the formal handover if you like. So my main activity now is to look at long term projects that we do. I concentrate on trying to find more acquisitions because we are an acquisitive business. We grow largely by acquisition. More recently I guess by organic growth but from the companies that we acquire through our acquisitions we bought eleven businesses over the last fifteen years. My position is pretty much hands off now although I formally chair the Board meeting each month and obviously as a 50% shareholder in the business I have a keen interest in its direction. But SPL-R2 is the MD and it seems to work well.

2. How would you describe the organizational structure of the company?

- a. Comment on its effectiveness in terms of dissemination of information and the impact on making:
  - i. Management & strategic decisions
  - ii. Financial decisions.
- b. How involved are the management team in these process?
- c. Has the hierarchy or chain of command changed in the past 5 years

SPL-R1: It is, despite having thought a lot about it, it is traditionally pretty much top down. In the sense that it is a small business, there are three family members who are Directors in the business, including myself. To be absolutely precise, Mrs X who is the MD's wife is the Financial Director and company Secretary but she doesn't hold a formal directorship as such. So decisions in terms of investment, acquisitions, company direction if you like - is very much with the three of us.

- d. Is it just the three of you in the senior management team?

SPL-R1: Yes. We have got a good middle management structure as well that we are bringing along because the value of that for the Managing Director is to be able to step back from the MD's job because it runs well. We have good systems, surprisingly good for a company of our size I suppose. I have always worked for much larger businesses than this; and so it is only until fairly recently since we have got a bit bigger and we feel more comfortable with the structure; apart from a big formal multinational company forming their own businesses is totally different of course.

- e. Do you have an organisational chart for the company?

SPL-R1: Yes I can get you one (to send in copy of chart)

The key functions are covered for example purchasing, the production control, quality and tool making – those are our key functions – oh, one other which is essentially personnel function and management of people on the shop floor; it's a joint function. The nature of the business is that we have relatively low staff turnover. Getting the right people is the key.

- f. How many employees are there in the company?

SPL-R1: About 50.

- g. Is there anyone from middle management on the Board?

SPL-R1: No, not in the board meetings.

- 3. At what point do you become involved in a project and what would your main focus for input?

SPL-R1: In terms of – although the key management decisions are made by the Board, in the case of let's say an acquisition – if we take that as an example, I would advertise in the trade magazines and contact agencies on looking at acquisitions. So that is an active role – it is an active role rather than a passive role. We go out there looking for it; we don't just wait for someone to say we are selling our business and they contact us; we try to get there first. And in the case of a new contract, and we have a lot more of those – people that have projects that they are interested in new product of some form, that would go to the MD. They used to come to me as MD but they now go directly to him, so the channel goes to him. Once he gets a quote he would liaise with the tool maker to get it priced for tooling. We can calculate various prioritise shop weight, cost of material, the quantities that we are going to make, the production run volumes and so on – and we got that on a computer. And so the quote for the actual product is relatively quick and pretty accurate.

- a. Is that costing component built within your inventory?

SPL-R1: Yes. We used to be able to quote on raw materials in particular over a long period of time because you would assume if you are paying whatever it is; £1 for it now then it wouldn't be £1 in 5 years' time. Now inflation on raw materials is so high that we will literally go from production line to production run checking the raw materials it is a constant operation because it's been extraordinarily dramatic. One of the difficulties is the PBIT for this industry as it is now around 1.2 for the industry average. Last year for example it was 2.1, it is now 1.2 and it is difficult to imagine it would go any further down. And the other thing; we have been working in an environment where when we started 21 years ago, there were 5,500 injection moulders in the UK and now there is something like 769; so more than 4/5<sup>th</sup> of the industry has declined in only 15/16 years. So it has been an unprecedented decline in the number of players. On the other hand, if you look at the global manufactured plastics

being produced in the UK, it is not dissimilar to what it was 20 years ago but it is in smaller hands – a smaller number of hands. And because we bought 11 other businesses, we have now basically consolidated them in here. Either people have been growing like us or they have been frankly getting out of the business. And if their system isn't good enough for – and frankly if they don't know what they are doing, then they are likely to be trapped. But was arguably largely this was one of the Mamma and Papa industries left where you could start up in business relatively cheaply – have 1 moulding machine and just do it in the garage or something of that sort and you could still make a kind of living just running the 1, 2 or 3 machines – that kind of stuff. But as it got more complex and as people want more high quality or as they need to make the transition from doing a job in a back yard into running a business; and that has been one of the major challenges.

The other interesting are is, a lot people – the majority of moulders who are in business today started out not as moulders but their background is tool making. And essentially what was happening – one of the built in technical financial aspect of tool making is that it is feast or famine. You get tools maybe worth £20,000, and then he will spend 8 – 10 weeks manufacturing it, so he might get 25% upfront, 25% half way through and then maybe another 25% and so on, he might get 1/3, 1/3, 1/3 – whatever. Now, whenever there is a cash flow situation there is catastrophe, and unless you have got the volume on that with tool starting week 1, week 2, week 3, week 4 and you spread it, you get loads of money - then nothing, then loads of money - then nothing. So what they tended to do was to say okay, what we can do is to even this out. I think the more they thought this out and the way the matter evolved became as a natural process almost. They say let's buy more machine so if we make some tool and the company like me, we need to get some more and more machine to do them anyway. If the customer likes them why don't we carry on running it for them? So they moved from tool making to tool making/moulding and then in many cases they stop tool making and just do moulding. So there is an evolution period over perhaps a decade for that happening. And the skill sets you need as a tool maker is highly technical - into managing a moulding outfit is different again. So many a failures I suppose were technically avoid, but business wise I guess they just weren't up to it – interesting.

- b. I maybe deviating a bit from the standard question but do you think academic institutions cater for the needs of this industry?

SPL-R1: I don't think they do in a sense. Tool making is an active shadow of what it used to be even 20 years ago and people are leaving tool making, very few are coming into it. And it is dying off at a huge rate – almost nonstop in the UK. And the surviving tool makers are actually technically quite good. Again like us, they are surviving because they have invested in tool making machinery, automation, in people and in training. But it is a fraction of what it was. And the fact that we can almost go back 30 years to where, as a country we allowed ourselves to get into a situation where the machine tool industry basically vanish completely. We used to make lathes and drills and CLC machinery of all sorts and we don't anymore.

Company 1 and Company 2 for example was a huge multi-national business that used to make lathes and all sort of sophisticated tool making equipment. But these are the fundamentals you need the machine tools in order to make tools of that sort. So I think the step 1 began to vanish and we didn't defend that. And now the average mill is not a bridge for it anymore, it is X Y Z. So it is kind of the norm the industry change. It is the same that would apply to injection moulding machines themselves. I can't think of a single UK manufacturing moulding machine, they are German, Italian, Austrian – we just bought our first Chinese one.

- c. Is it that everything is moving towards China?

SPL-R1: Yes, that makes some sense in terms of lower unit costs but we found fundamentally if you should make a comparison with the Germans or say the French who will defend their manufacturing industry, the German people will buy a German – if you look at the BMWs they are probably no better than the Ford Mondeo – Ford Mondeo are made in the UK aren't they – but anyway they are similar cars, but because of the BMW badge on it, you get more money for it. And I think that this Government will probably recognise that that is true, but whether it is too late to do anything about it it's a – I hear the rhetoric, but I see no actual positive Government help. The only one we had, you know those Carbon Trust loans introduced by the last Government. It worked brilliantly. It was a hands-off thing; Carbon Trust was Government owned but they ran it as an independent operation. And as a result we took Carbon Trust loans to have our new lights in. We have lights in that use low

energy lights, we replaced a tubing system in the factory, and we replaced all kinds of things – in terms of energy saving devices that we did. And we save nearly 30% of our energy costs on our investment. And the first thing the Government did when they came in was to pull the plug on it – they ended it. It was particularly beneficial to manufacturing where they are energy intensive users. In fact, if they didn't want to risk it on retail which, according to this piece – rest they do, even if they didn't - if they purely wanted to focus on manufacturing, or even certain section in manufacturing, an easier way to do it, if they want more energy efficiency; but the Government seems to shot themselves in the foot with closing the Carbon Trust in terms of supporting manufacturing and the same time climate control and they manage to shoot themselves in both feet. I thought it was an insane decision. And the only people who are lending money now for energy to the manufacturing industry are Siemens finance a German finance company that the Government have provided. In fact, the only loans that they have are no different from loans that you could get from a bank. They are not interest free loans; they are loans of 8 or 9% which, for a company of our size, is the going rate of borrowing in the marketplace.

d. Are the banks friendly towards small businesses?

SPL-R1: No they are not. It is ironic, we have been with HSBC for 17 years I think and they have just announced that if we want to go for an acquisition again, and we most definitely will - they insist on doing all the due diligence in house at HSBC and all of the legal matter that have to do with that in house. And that would add at least £10,000 minimum to our costs.

e. Are they trying to see how best they can service their clients?

SPL-R1: You would think with a company like ourselves, profitable, 20 years in the industry and a record of 11 acquisitions that they would trust us to do our own thing. But they don't take anything on trust at all and they would take us just like somebody who has got some half-baked experience of the business. However, so much for the banks!

4. Are all key management decisions decided at Board level or are responsibilities and decision-making devolved?

SPL-R1: All major decisions are made at Board meetings.

We get reports obviously back from quality department – formal reports back from quality - so we are able to get a grasp on – we have a cost of quality system - so we actually put pen note on whatever quality issues that we had – and when we come to the management within the manufacturing management, he will report formally back on costs as well which include how many staff, total cost as a percentage of his budget and as a percentage of turnover.

- a. Are workers aware of what their targets are?

SPL-R1: Yes, they are aware of what their targets are.

We monitor things like efficiency levels, which would include machine utilisation in the main areas - there are two main areas, one in general production and the other is in our clean room facility. The clean room facility, because it is highly automated it is a much higher utilisation - the fact that it is the standard mod shop. The nature of that business is that it is very complex in terms of manufacturing. It is like you have got 1,400 customers and perhaps 1,000 of those would be standard part – we have a catalogue range of standard parts that we buy – but the balance of those are custom moulding customers. And we will make specific items custom designed for them; and theirs can be we have 3 or 4 or 10 tools with us; many of those are different materials and possibly different colours. So it is relatively complex. They may want 10,000 of one product and then 5,000 of the same product but of a different colour – or the same colour but a different product. So utilisation is relatively low, something like 46% on the main production area because of the sheer complexity. You need lots of machines because different components need different size machines. So our main drive is always on increasing productivity.

It is an interesting field (moulding) as much as people concentrate as you know in plastics in certain subsections, as subsection goes we decided to opt for the broadest possible product range and customer range and even if that meant having lots of small production lines. Other people in packaging or blow moulding in particular would be a situation where they would want relatively few customers but extremely high volumes. And some people will take it to the extreme where they have 1 customer and 1 product and make billions of it.

- b. Do you favour any particular technique?

SPL-R1: We have moved away from areas, as a business, which are low margin. It is a deliberate choice, for example, if you take automotive, automotive business can be good in terms of funding but can be awful in terms of price because they constantly looking for price downs which are frankly unrealistic in a situation where there is any kind of inflation at all. Let alone raw material costs are increasing double figures we have had over the last 12 months. So in avoiding those areas, we concentrate on relatively high market areas, avoiding all the.....altogether.

5. Does the owner/manager influence the outcome of decisions taken at Management board meetings?

SPL-R1: Yes I do.

#### C. FINANCIAL INFORMATION & DECISION-MAKING

6. Are you involved in the processing or analysis of financial information?
- If yes, what is your involvement?
  - What models are used and what are they used for?
  - How is the information used? – (request monthly reports to demonstrate)

SPL-R1: Yes. This tends to be – the answer is yes. We have a formal report every month on turnover, profitability and so on and so on. And we have a daily report on sales and sales against target – that's daily. And that's send to all managers within the company – what our monthly target is and where we are with those targets. And also it is cumulative thing. So this month you will have a complete breakdown of what the targets and turnover was for the 11 months to date. And we issue that on a daily basis.

Do you use that to inform future work?

SPL-R1: Yes. That affects for example, if we know what the budget is and we know what the order position is and in terms of appointing temporary staff or staff consideration of all the hours worked and so on, we would change according to our conflicting demand. That's what the guy who handles the personnel side does. He looks at the controls. We have the daily meetings on the financial information which basically relates frankly more to matching supply to demand. So we will look at the order position and certain things for

example – because it is relatively complex in manufacturing spread, some components we may say well we need 10,000 for the day which is simply putting a tool on a machine and running on fully automatic with no staff. Other things, we may say we want 10,000 of these components but that requires two or three people to do that. So there maybe somebody at the end of the machine taking the component off, someone else assembly it and someone else packaging it. So it may be fully automatic - so we have daily meetings about it.

7. Are any capital investment performance appraisal methods used in the company at present (NPV, IRR, ROI, etc)?
  - a. If so, how are they used?
  - b. If any discounting models are used, how do you determine the discounting factor used in the models?

SPL-R1: We don't – and I am thinking if there is anything – and I tell you when you ask that question, I realise we may have a gap there. Because we have been doing the same thing for 20 odd years we kind of – one of the danger is that you don't have the internal investments like that. You see the totality of the business and - for example, if we talk about the specific, you may get the situation where, in your judgement, it is better to close loop as a faucet, where you get a moulding machine, you put a robot on top, a granulator sat next to it and the robot takes the ....drops it into the granulator, the granulator mixes it back with the virgin material through yet another device – that's the closed loop bit. That takes people out of the equation. It is better utilisation of raw material, but you look on the return on investment, and it is totally difficult to do. We tend to, I suppose, make a judgement on the return on investment in terms of knowledge in the way that the business is going rather than saying, OK when it gets to – rather than putting a percentage or figure on it. Because the business is almost entirely fluid – some products are becoming more important than others. Some customers are putting more business with us and taking more and as others see it as a decline in the market. Because most products that we make – we make business to business operation and we make generally some component parts that fit our own things. There are exceptions, we make ...we do the packaging and we even do the warehousing and distribution – so we do the complete package.

8. How is the company funded?
  - a. What is the level of gearing (Is it Debt/Equity or Debt/ (Equity+Debt)?
  - b. How was the funding decision made?
  - c. Are there any barriers to financing of the company? Example access to funds etc.
  - d. What types of debt do you have?
  - e. Do you know the cost of the debt?

SPL-R1: Right - what we have – the company funded – we started – again it's an evolutionary thing. When we started 21 years ago, we started as a distribution company. We didn't manufacture at all and we imported and distributed a wide range of American made caps and plugs sold to automotive hydraulics – those sorts of heavy engineering areas. And over the years, after 4 years, we bought our first manufacturing business and it began to change the ratio – before as we were 100% distribution and 100% importing. Then we became 5% manufacturing and 95% other, and as it moved on we ended up where we still are actually. We don't import or distribute anything anymore. We manufacture everything that we sell. But the caps and plugs business that we started as a distributor still accounts for about 20% of our turnover but now we make them in-house. And the American involvement was with us until this year in fact. We finally bought out my American partner that we started with 20 odd years ago. So we finally half American; it took long – overnight success after 20 years.

f. That's an impressive achievement for a small company.

SPL-R1: Yes it is interesting I suppose but I have always had this slightly different view of the business. I have always felt that this was a large business in embryo stage rather than a small business because probably I have always worked with multi-nationals.

g. Is it because you come with that expertise from your pass employment?

SPL-R1: Yes, I am sort of happier with a bigger business really. I also think that the thing that there is this critical size beyond which it gets difficult in .....I have also ...in businesses I have had...it is also the classic business that grew too big to be properly managed. I wasn't a Director, I was in senior management but not a Director and my board of directors have virtually – that I reported to – have virtually have no influence in the global Thorn business. When they linked with EMI and I know they have now demerged again – but when they linked, it made absolutely no sense whatsoever for Thorn and EMI to get together. And I could see that.

h. Do you know what the level of gearing is?

SPL-R1: Not off the top of my head. I haven't got that information – SPL-R2 has it. We are fairly low gearing. We made – the recession when it hit us in 2008/9, we relatively, had lots of debts. We were relatively high geared and we made it – we were terribly keen to make sure we pay off the debt quickly and make ourselves less vulnerable in case the recession happened again as a need to stay in the margin. And now we are in a much, much better position. Some of

the debt was incurred because we were paying off my American partner and it kept us really – we were short of cash nearly all the time because we have to buy him out and that ceased only last month so we had 2 extremely very good years. This has been a record year for us so it had helped enormously.

- i. Apart from the Banks attitude towards small businesses, do you think there any other barriers to accessing funding?

SPL-R1: I think the barriers – the key funding amounts we tend to worry about are the acquisitions where we typically look for something like a 3 to 4 years payback. And we are very disciplined when we buy a company, we make sure for example that they stand alone as a business - that we never subsidise a new section of a business with profits from the rest of the company. It has to stand alone as something that makes money or we are not in it, so we are very keen on that. But when we go to the banks in the past, as I have said before we would normally expect to – we don't have a huge amount of money from the banks but a few hundred thousand – a couple of hundred thousand perhaps. What we tend to do is to buy a business where we particularly - we always buy something where there are assets and goodwill; we never buy shares because of the share complexity of the financial positions and having to understand their tax position and so on. If we buy assets and goodwill, it is something we can manage in-house and it is easy to just check how and what they have done before. What we tend to do, we get – we know what the assets are worth pretty easily - we don't buy buildings for example, most of which are rented, or if they own them we say let's look at your assets minus your factory because if we buy a factory – if we buy a business which is based in Yorkshire, fact is we haven't got a clue as to what is the situation it is in up in Yorkshire. So we will never price that correctly. So what we say is well, you sell your factory yourselves, we will buy the assets – all the contents essentially. So we buy the moulding machines, we keep whatever we want in-house – it maybe something that we need to keep because it is unique to one of their customers – but we keep a few machines, sell everything else on and the money that we get for that he pay upfront as a cash sum to the vendor. And the goodwill aspect we tend to phase that over 2 or 3 years or there about. And that is pretty much a fair way to do it – they basically get a lump sum, retire and then for the next 3 or 4 years get a very good income to the value which is guaranteed – personal guarantees which we have done in the past or with company guarantee. I know that probably don't answer the question (*Interviewer: It does explain a bit about the mechanics of the company finance*).

SPL-R1: So with banks I think it's been – accessing money is not – it is one of these kinds of global terms – I think we can access money but at a high price. When you think that the inter-bank transfer figures are now 2% or something; we are having to borrow at 9%, they are making huge amount – that's a big interest rate for a business. And if we have to pay £10,000 cost for no reason to

HSBC – we frankly won't go to HSBC. We will go to a company where we can finance the machines because they are interest in assets, sell those, pay them back immediately so we will avoid banks.

9. How many shareholders are there?
- For significant shareholders, what percentage of shares is owned by each?
  - Are dividends paid, how is this determined?
  - What level of returns do shareholders expect?
  - Would you consider the company to be low, medium or high risk?

SPL-R1: There are 2 shareholders – we are essentially 50-50.

- e. Is that you and SPL-R3?

SPL-R1: Yes. SPL-R3's wife used to be a Director and my wife SPL-ExEMP used to be a Director - but we move them based on advice from our accountants as Directors because our houses were still on as collateral. They still are – my house is still on as collateral; so even after 20 odd years the banks still want. I did make a speech once to say look, why don't they have banks signs, why don't they have 3 glass balls hanging outside each one because they are essentially pawn shops. They don't make any investment decision to people like ourselves even after 2 decades. They must be completely covered several times over. So I they are make a loan, they want to make sure they have my house on one in case we don't pay. They want to make sure that they own invoice discounting or something of that sort and they want complete coverage; and they want to be able to sell all the assets – close us down, sell it so they walk away with no indebtedness. So when take now, they make it more difficult. They have never taken on any risk with this business in 20 odd years. And I think our banks in comparison with German banks are a disgrace. And the other aspect is; not only are they a disgrace but if there is a situation where your bank representative - your so-called relationship manager that you all have – they are categorise. So if you are in a business like we are for example, we are included in the VAT and turnover would be like £4M - £3.5/£3.6M plus whatever – I always include VAT because of cash flow; £4M is VAT – you would get a relationship manager who deals with companies from £100K to £5M so they get someone that handles £5-£10M and so it goes on. So what you basically got, just when you need a company of our size which is growing but their turnover isn't above £5M, you get a – if I can call it that - a relatively low grade relationship manager to deal with - a junior relationship manager and the more senior one as you move up. That seems to be completely half baked! It's like trying to run a school where you say well, this is a deprived area school let's put a stupid teacher in there. Let's not put the best teachers. Where that is exactly where you should be putting them because that is where the business need it. And in Germany too you have the situation where you can have a bank manager sat on your board if you want to relatively easily. You can say to them we are weak on financial

structures, would you like to come in. over here it is prohibited – it is against the law to do that. And I never understood that. So in Germany; this is why very few German companies have been taken over.

- f. So in the grand scheme of thing, would you say this business is a high, medium or low risk entity?

SPL-R1: I would say it is – that's an interesting question. I would say it is a low risk personally. But whenever we do a credit check on another moulding company we always get written words provided - please note this section of business carries a much higher risk of failure than is typical. So we are low risk in an environment which is typically very high risk. And that's because of the huge reduction in numbers from five and a half thousand (5,500) down to six hundred and seventy odd. So you kind of look at it two ways; if you are typical for the industry you are typically retaining capital probably; typical PBIT and so on – then you are high risk. But our profitability is at least 3 times better than the average for this industry. We have got huge spread of customers as against very limited – typically in this industry we might have a customer base of 40 or so we have got roughly over 1000 or so; so it is – and it is as a result of acquisition because we were buy 50 customers here, 100 there and 50 there and aggregate them.

10. Do you know what the cost of capital for the company is?
- Have you ever calculated this?
  - What would you use this information for?

SPL-R1: That would be with the SPL-R2.

#### D. IDENTIFYING VALUE WITHIN THE COMPANY

11. What do you consider drives value within your business?
- Do you collect data on these drivers?
  - If so what data and how are the drivers measured?
  - What do you use this information for?

*(Interviewee: Request explanation about value)*

SPL-R1: There is this big thing that have emerged within businesses and that is to identify the key thing they think would boost; ultimately the wealth of the shareholders but at the same time it has a knock on effect in that it increases the worth of the company; its market value and how it is perceived by interested parties looking on the business and also create some sort of worth to customers and even employees within the companies. So what I want is, from your perspective what do you think drives value within your company and where do you think that is placed – is it with shareholders; your customers; external parties?

It is a very difficult one. Most people will – when they are valuing – most persons who buys and sells companies and advice people like us not to bother to invest in machinery or a kit; in fact, many of them when they value a business they completely discount your asset base. They frankly don't care whether you have got 10 moulding machines or 50; or whether they are 2 years old or 52 years old. They don't care. What they are looking at is the profitability of the business or the PBIT if you like or the EBITDA. And that in a sense has nothing to do with the investment value. We – this is a deep psychological question!

We have run the business differently from most because we always saw this as a two generation business. And I think if you run a business for 20 years or for whatever years when you started whether you are 30 or 40 or if you want to retire at retirement age; you kind of run a business – design the business perhaps like that. You would typically for example, in order to build up the EBITDA you would tend not to carry debt. You would tend to have some money in the bank. You would tend to under invest in the business; and you wouldn't take as much money out of the business or show as much net profit as you can. If you are running a business as we are, for up to 2 generations or more; first of all you have got a long period of time and you can take on evolution change. We move from distribution to manufacturing; incidentally at the same time as the rest of the world including the UK was moving from manufacturing into distribution. But we are also – we are still investing this year; we have invested more heavily in the business than in any other year of our existence. So we bought new machines, robots; we painted the floor; we invested in – we painted the floor costing us £50K to do it; we invested in more energy saving devices and so on and so on. We have done all kinds of investment decisions; state of the art measuring equipment in our quality office, all that kind of stuff. So we have invested very heavily. And if you would put it on the market tomorrow, that wouldn't show up as being a positive thing to do. All they would see is that the profits – OK the profits are better than they were last year, but they are perhaps nearly £200,000 less from the bottom line of what they could be had we not invested. So you have got this kind of strange dichotic here. I think if we get to the state where we want to sell the business, we would have to change our philosophy – stop investing. Which is a great change because people buying and selling businesses, if they look at EBITDA as the be all and end all they miss the whole point. When we buy businesses, in order to carry on, we are looking at the level of investment because we buy assets and goodwill. With the assets, we value the assets really carefully, and that's a key function. And yet most people, if they would to buy this business; publicly they would look at it they wouldn't care. The fact that we have got a clean room for example; if you started off from scratch it would cost you at least £600K to build a clean room and stock in there; we have got all these stuff; HEPA filters, air conditioning systems, double glazing and all kind of stuff. For them to repeat that, it is say £600K,

you would never get that back if they don't value they just kind of ignore. There would be much money you would make under that section.

- d. But do you value that because it adds some amount of quality to the process?

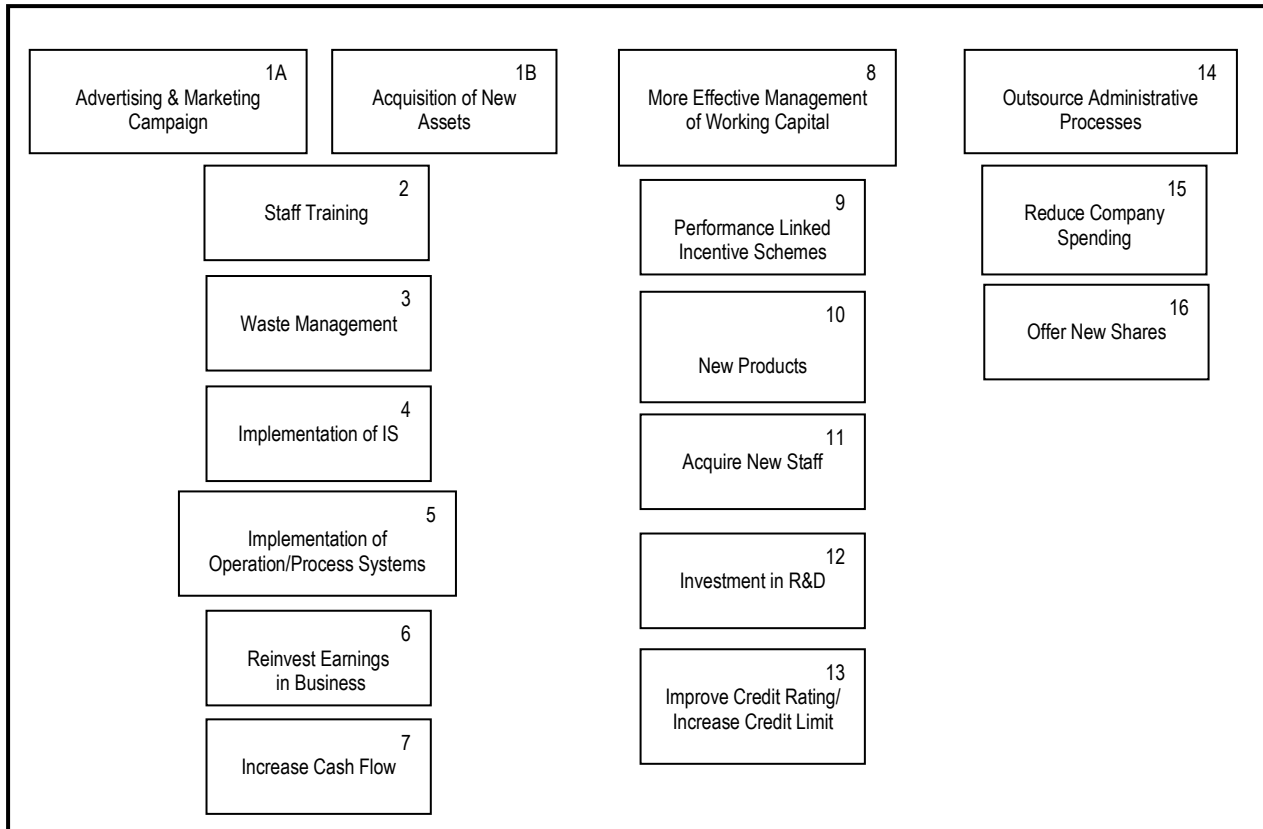
SPL-R1: Yes, that's a difficult thing. In a sense you kind of have two different values; you have got the purely financial sense if it is a kind of buying and selling value – that's one value. But what we see is the fact that, for example we have a Class 7 ISO 13485 HC7145 approved quality clean room where we can manufacture medical/biomedical components – and we do. We see that as a key driving force in the business where we can attract more of that kind of business which is amongst the most profitable and at highest volume. Because if we put on another tool in a clean room, it will run virtually robotically, probably never ever more than 1 person in there as they are efficient machines, very constant. I don't know if that answers your question. It is kind of 2 sorts of value – buying and selling value and the perceived value to us which is probably different.

- e. From what you have said I have gathered that you haven't really attached a – perhaps a tag to whatever you see as something that would add 'value'.

SPL-R1: Not really, no; no - no, whether we do this unconsciously or whatever I don't know. For example, we have one customer – 3M – one of our customers – where we make components for cleanliness test kit in our clean room and they use a variant – a very sophisticated measuring device. So if we make something with 20/30 impressions on a tool, we make 30 component parts which look pretty much the same to everybody although they are fractionally different. And the only way you can – and they take so darn long to measure with a vernier – you need to kind of automate that process. So you have got to largely stock that all you have got, put it on the machine and that will give you all the comparisons. Once you have done it once, it will scan through very quickly if have got 1 component out of that 30 which is out of tune. And we needed to buy that from this end because that is what they use at their end. That similar degree of sophistication of measurement where we say, we measure it; we can't see anything else - now we are using a really sophisticated measure. So there is that kind of stuff. So I suppose we look at that important in keeping that key customer was investing in an expensive and sophisticated measuring equipment.

***(Exercise: Flash Cards with value drivers identified from initial interview. As Interviewee to rank in order of most important to least.)***

Outcome of SPL-R1 value exercise



Some thoughts - SPL-R1: Bonus and incentive scheme – we have one, and we have just given out sort of a record amount to everyone. What we did we gave a set amount to all staff members regardless of what their salary levels were – as their Christmas bonus in fact! And it obviously meant more to people who are on the lowest salaries than those that are on higher salaries.

## E. STAFF TRAINING AND DEVELOPMENT

12. Can you describe how development issues are address within the company?
  - a. Is it incumbent on you or other members of the management team to raise issues associated with product development (R&D) or operational improvements?
  - b. Is it expected that staff should express training needs or is this taken into consideration when any changes are implemented?

SPL-R1: Very much so; we formalise it. We have – we found that most companies tend to have an annual review of staff and they say get whatever at Christmas time or something – and say, you have done a good year/bad year – here look, here is an extra 20% on your salary or you are not getting any more money this year or whatever. And we deliberately do two things; we separate the staff development training from salaries by having two meetings. So you have meeting as far away from the annual financial review as we can get so. So on training, every single person has a developmental and training programme. So we sit down and have a formal one-on-one meeting. Normally this is either with SPL-R3 when it gets to the management level – I used to do it but now SPL-R3 does it. So all the managers he would interview them and do this to. And each of the managers does it to their own staff. And so we meet and we discuss – how do you think we have done this? And in some cases if we take for example technical areas where you have perhaps tool setting. There are about 5 levels of tool setting we can do and everyone within the company is on some sort of training course or another. So it is quite formal and we adhere to it. And we want everyone – people we often start with can be in as perhaps in the sorting area downstairs. And 2 ladies for example in our office: SPL-E1 who started as a machine minder, she then started on sales and having progressed her way through and is now our Production Planner. SPL-E2 who started in the sorting bay downstairs and now she handles production. She knows the products because obviously she had handled them and she

understands them and it's a tremendous benefit. Now she is actually production planning and she runs production planning meetings every day. And that goes extremely well. So there is things like – she for example is on a course – a management course at the moment; a buyers and purchasing course. All of the tool setters - if they are grade 3, they would be going to grade 2 and grade 2 would be going to grade 1 - yes, so right the way through. A tool maker who is a manager has just taken on a course for design - CAD systems as well. So everybody literally in the company– whether it is from driving a forklift truck or first aid or whatever everyone is on one.

c. And everyone has the opportunity to progress?

SPL-R1: Absolutely! I think that is key; we try for development too. We try to have a – and this is difficult – I confess that we are a sort of top down organisation and we have really, really tried to change that. Where we are looking to staff involvement and for ideas to come up; and that it is incredibly difficult to do. One would imagine – I imagine, it would be – because I never wanted it to be – I always want to manage a company.

d. So you have always managed top down but now you are trying to change that which is changing the culture within the organisation.

SPL-R1: That's it, and I never understand why someone working on the shop floor wouldn't want to influence what we decided. I would have thought it would almost be a natural organic process but it would tend not to be. It tends to be, we have always done it like this. So we have tried over the last two years to have a series of what we call vision meetings where, each department head gathers together his staff. And they said '*How would we make the job simpler and faster, better and easier for ourselves? What do we need? Do we need any extra tools in order for us to do that?*' Now, we have done that but we have found out that in particularly in the meetings, people would say, '*Well there isn't anything much that we can do or there is nothing we can suggest.*' We find it extremely difficult and I know Japanese companies do this on a daily basis, we found it extremely difficult. And of course the moment Senior Managers and Directors get involved in that, it kills it. So it's an issue and I would like another way around that.

- e. I do understand that when a culture is engrained within an organisation, it is very difficult; and the whole process of change is a challenge so people will react.

SPL-R1: Whenever we appoint someone, a new staff, we all say to them 'Look, you have got lots of experience from previous companies, and you will – when we do it in a particular way, you may well have a different way or a better way of doing it.' What I don't want you to do is sort of say, 'Oh well I will change my ways to do it the way SPL Limited does it.' What I want you to do is to talk to your colleagues and boss and say 'Look, we used to do it a different way in my previous company, why don't you suggest this.'

And as intellectuals we want quick antidote. We went round a company we were looking at possibly buying; and we look at on average of maybe 10 or 12 businesses before we buy 1. Many of them fail before we even get to due diligence stage because they just don't fit or whatever. We walk around and we saw at the end of the production line a wonderfully simple quality system. Where there was a standard sign and a red plastic box in place, and they have a sample of the product, production details on a clipboard more or less your usual kind of stuff to run, a drop card around everything else. And the red box – I asked what is the red box for? And they said, well we put the scrap in there. So, it is so simple. Whatever that machine makes, if it makes scrap, all of that scrap goes in that red box and that's just 2 things; such a delightfully simple idea. You can walk down the production line, and if you see a pile of widgets in that red box, you know immediately you have a problem there and why. And because all of the plastic or moulding is waste in that red box is weighed and then costed, we know what the cost of the scrap is. And which is of fundamentally importance to us. And then it leads on to the question, ok we collect the scrap. How do we reprocess it? Are we reusing it and so on and so on; and these sorts of questions. But such a delightfully and simple idea as the red box with problem in it so that anybody can walk pass that box and see all the problems there. And we stole that as an idea; we said we love this system, do you mind if we copied – (and they said) help yourselves; and we did exactly that. And so we have done it ourselves and we do like the staff to brings new ideas in and push it on to us. Very difficult to do; that's what we find.

- f. That is why there are things like change management to help with the process.

SPL-R1: And we have just done that. Yes, last year we had every single person on such a course and even after that we still had difficulty in getting them to do it. Extraordinary! I don't know why. You would think they were controlled by the stars in it, and you know - and that people sort of saying, why that person is coming up with all the good idea and wants to change? We were overtly in the other direction and were saying for God's sake, come up with some new ideas and challenge it. But it was extraordinary that – that's perhaps my most challenge in the last couple of years. I am amazed, that despite really trying to get the change – there we are!

#### F. THOUGHTS on EVA<sup>®</sup> and EXPECTATIONS from PARTICIPATING IN THE STUDY

13. Have you heard of EVA<sup>®</sup>?
  - a. What are your thoughts on EVA<sup>®</sup>?
  - b. What are your experiences of EVA<sup>®</sup>?

SPL-R1: No, I have never heard of it.

*(Interviewer explained the EVA<sup>®</sup> concept)*

SPL-R1: My guess is that when we – us looking at our business as we do, we do ask some probing questions. And we find that, to be honest, the general level of management is incredibly low to be frank. And what we get - the last company we bought for example, classic way, he would – his manufacturing process was out of control; that was no way to control a business. He would - people would scream to him they want a delivery and he would put the tool on the machine, he would run 1/3 of the production, take the stock machine, put the parcels in his car, drive 150 miles to deliver that day, drop off and go back and someone else would scream and he would put another tool on. And he had got into that sort of stage where he never has enough stock. He had no proper production planning and so on. And we were able; having bought the company to train – if you like - his customers to say, look, give me your monthly production figures. What you think how far is your planning horizon and if you want 10,000 monthly we can do that. We don't care if you call them off in a few days, or whatever. If you tell us in June, July, August, September you need 10,000 in each of those months that's fine, we can deal with those

production. And another thing which he didn't do was to actually cost. So when he first sold the products, they were current price. But then they were raw material that had increase, packing had increase and he didn't include it in the sale price. So in many instances we went in and said, you know I am sorry but you have been buying this part for £20, it is now £38. And it is amazing most of them said, we told him we have a catalogue and we have to publish the price in 6 months – and we did say to him, give us the new price and he never got back to us so we carried on with the old price. So it was pure lack of management. But the other issue; the thing that occurred to me from what you are saying is how useful this could be to small businesses. Many small businesses they – there is no kind of middle management system and so the manager and a couple of people might makes all the decision for every department. And if they are given a system, they would say, I am sorry but I am 99% full on my capacity of my workload. I haven't the time to learn a new system. So you get this kind of lack – I think when you get up to Director's level they don't want to learn – they see the training need as everybody else rather than themselves.

14. What are your expectations from participating in this study?

## INTERVIEW QUESTIONS with RESPONSE – SPL-R2

FORM CODE: MD1

### A. COMPANY BACKGROUND

Name of Company: **SPL Limited**

Location: **South East England**

**Job Title: Finance Director - SPL-R2**

Turnover: \_\_\_\_\_

1. Describe the role and responsibilities of your job function?

**SPL-R2: I do all the finance bits.**

### B. MANAGEMENT STRUCTURE

2. What is the nature of your business?
  - a. Principal activity?
  - b. Main products/services
  - c. Markets
3. How would you describe the organizational structure of the company?
  - a. Comment on its effectiveness in terms of dissemination of information and the impact on making:
    - i. Management & strategic decisions
    - ii. Financial decisions.
  - b. How involved are the management team in these process?
  - c. Has the hierarchy or chain of command changed in the past 5 years
4. Who is on the Board of Directors?
  - a. What are their management roles/responsibilities?
5. Are all key management decisions decided at Board level or are responsibilities and decision-making devolved?
6. If owner managed, does the owner influence the outcome of decisions taken at management board meetings?

### C. FINANCIAL INFORMATION & DECISION-MAKING

7. Are you involved in the processing or analysis of financial information?
  - a. If yes, what is your involvement?

SPL-R2: Yes

- b. What models are used and what are they used for?
- c. How is the information used? – (request monthly reports to demonstrate)
- d. Can you tell me what you do with the data that is collected?

SPL-R2: We are looking at obviously cash flow forecast, budgets and basically all aspects of our profitability.

8. Are any capital investment performance appraisal methods used in the company at present (NPV, IRR, ROI, etc)?
  - a. If so, how are they used?
  - b. If any discounting models are used, how do you determine the discounting factor used in the models?
  - c. What information is captured?
  - d. What has been the impact?
  - e. Are results monitored or evaluated?

SPL-R2: Yes, we use the ratios – gross profit, net profit and others.

- f. Is that information filtered down to the management team? Do you know how they use that?

SPL-R2: Yes, that would be used by me, SPL-R3 and SPL-R1.

- g. Is this information used at the Board meetings where all the decisions are made?

SPL-R2: Yes.

9. How is the company funded?
  - a. What is the level of gearing (Is it Debt/Equity or Debt/ (Equity+Debt)?

SPL-R2: We do, yes. We are actually – and I think it's a tell-tale sign of manufacturing. We are geared towards cash flow. That is our biggest thing. Have we got enough money basically? Gearing only really affects us when we want to borrow money from the bank because they go by gearing. But we are very cash orientated. So the money that we make is ploughed back into the business; improving machinery, buying robots and better technical ability; updating the clean rooms; basically updating our infrastructure.

- b. How was the funding decision made?
- c. Are there any barriers to financing of the company? Example access to funds etc.

SPL-R2: Cash

- d. So how do you try to resolve that?

SPL-R2: We pay a huge amount of attention to our cash flow. We use the money to buy new machines and we are looking at the moment to fit all the machines with this special gizmo which would save us a lot of money in terms of energy. Because energy is a huge amount of cost for us so by fitting these little gizmos we would save a lot of money. So granted, gearing in all of that is very important. But it is not as important to us at this stage as it is for the bank when they want to lend us money - or when we want to borrow money from them rather.

- e. So because of this cash flow is your major concern?

SPL-R2: I think that's small business for you though. I think gearing is for when you are in a multi-pound business; then gearing is important because you have all the shareholders and things. But to us, this is a family run business and so for us, cash is king.

- f. Does that mean that you work closely with Production to make that whatever in in the order books comes through and work together on the costing?

SPL-R2: Yes. Our current system encompasses everything so all the information is put in such as raw material cost, cycle time for the parts, if there is any additional packaging, carriage – all that is put in and then the system basically calculates; so we update the day's keys to make sure that we pay double attention to the margins basically. And they change because the cost of the goods and materials – they fluctuate quite often. At the moment they are going up. So that is very important for our size of business to make sure that the margins are not deteriorating. And again that's cash.

I think you will probably find that with a lot of small businesses that margin is hugely important because your fixed costs are always fixed; and the variables which would be the staff and things; that would be key for us to keep track of that.

g. Do you have a particular per cent margin that you try to maintain?

SPL-R2: Yes and no. It depends a little bit on the extra part. We try to maintain a certain level of staff to sales but when it comes to individual parts, it depends if it's a big one or not. The smaller one, the more expensive and if it's a very, very long one then there might be some acceptance even though the margins are small. But sales ratio staff; I try to keep that within acceptable levels.

h. What types of debt do you have?

i. Do you know the cost of the debt?

10. How many shareholders are there?

a. For significant shareholders, what percentage of shares is owned by each?

b. Are dividends paid, how is this determined?

c. What level of returns do shareholders expect?

d. Would you consider the company to be low, medium or high risk?

11. Do you know what the cost of capital for the company is?

a. Have you ever calculated this?

SPL-R2: Yes and no again; because when we borrow money it's because we have no other solution. But in order to go forward with the business we have to borrow money and it is expensive. But we only do that when it is strictly necessary.

b. And you have not borrowed any money at the moment?

SPL-R2: No. We have been very luck this year.

c. Do you revisit your budget and cash flow at the end of each month?

SPL-R2: Yes, constantly. In case new things comes up like new machines; a new product might come on and we are required to set aside a certain amount of investment and how quickly we would recuperate that money. So it might be upfront cost of buying a new machine like we recently done because of a hairbrush. And then we look at how quickly we can recuperate that money on spending money on the new machine.

This is a small business, every penny counts!

(Request made for the last 5 years company reports also the last 3 months budget and cash flow – FD to email the reports)

- d. What would you use this information for?
- e. Do you actively manage the cost of capital, for example refinancing to get better rates?

#### **D. IDENTIFYING VALUE WITHIN THE COMPANY**

- 12. What do you consider drives value within your business?
  - a. Do you collect data on these drivers?
  - b. If so what data and how are the drivers measured?
  - c. What do you use this information for?

***(Exercise: Flash Cards with value drivers identified from initial interview. As Interviewee to rank in order of most important to least.)***

Thoughts by SPL-R2 during the exercise:

That's the least of my worries (Offer new Shares) – I think it's the nature of our business (why it isn't important).

If we don't invest we don't grow. If we don't implement in IT we don't grow. We don't really do that do we? We haven't really got anything to research (Research and Development). If we don't advertise we don't get new business. If we don't control waste management that a cost. We don't particularly look to reduce our spending; we just see it as it is covered by our cash flow. (This is really quite difficult). That's all costs. Organic growth doesn't particularly happen with us.

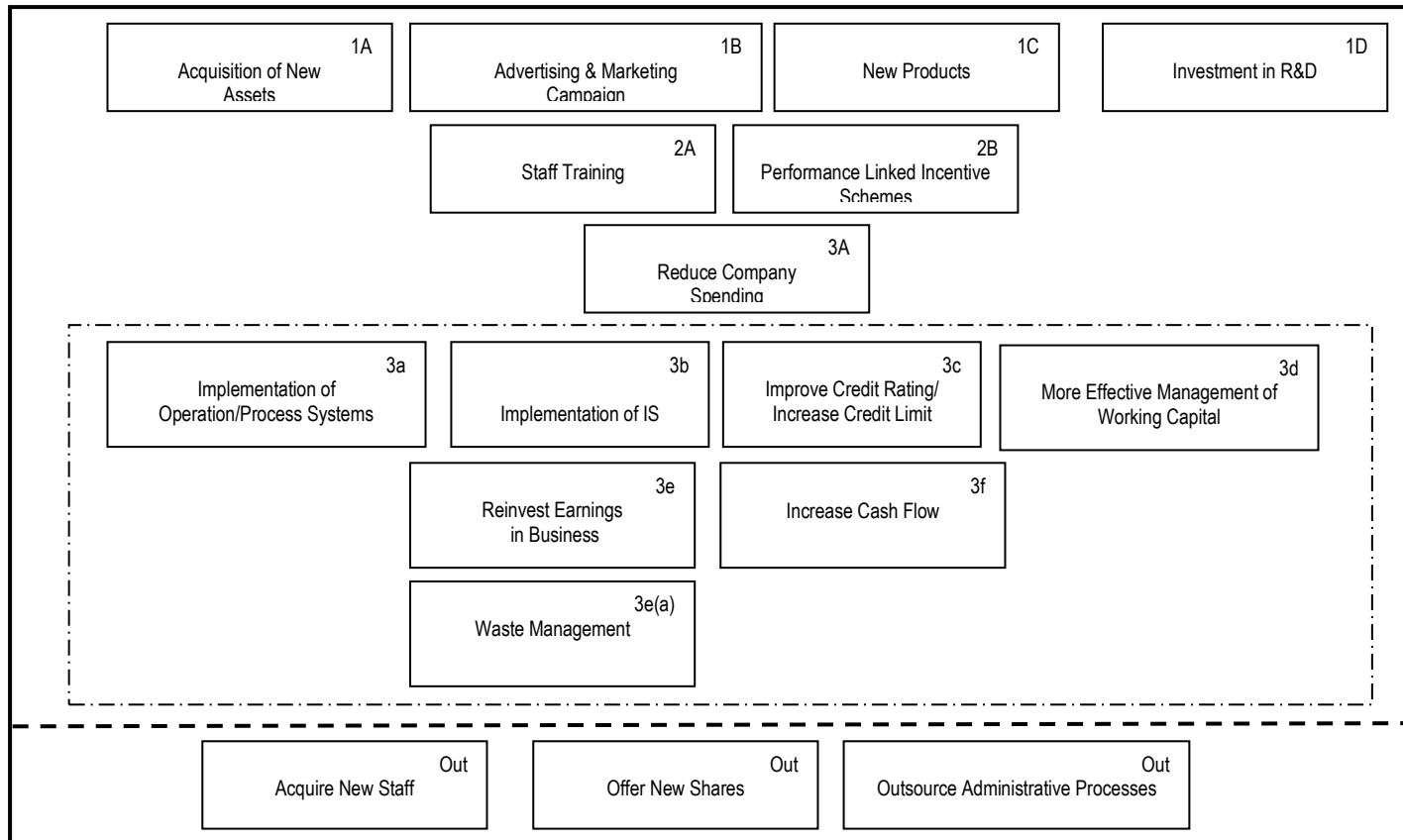
SPL-R1: Do I have to have 1 at the top or can I have several?

Interviewer: Yes, you can have several – any way you see it.

Improve credit rating; I suppose credit rating will get better – although we don't have any real problem with credit. These are out, out, out (Acquire new staff, Offer new shares, Outsource Administrative Processes).

Acquisition of new assets, I think we need more machines. So reduce company spending; yes if cash flow was a problem but I also think that by reinvesting a lot in things like better machinery and things we are in effect reducing the company spending. So in spending all this we will save all this. Reinvest earnings – you have to spend to accumulate; is that the saying? (This is actually quite difficult).

Outcome of SPL-R2 value exercise



The other thing which is important especially in a small company – and I suppose in a big company as well. Reducing company spending, that is basically sort of happen up here somewhere. Waste management saves us money. (All done).

#### **E. STAFF TRAINING AND DEVELOPMENT**

13. Can you describe how development issues are address within the company?
  - a. Is it incumbent on you or other members of the management team to raise issues associated with product development (R&D) or operational improvements?
  - b. Is it expected that staff should express training needs or is this taken into consideration when any changes are implemented?

#### **F. THOUGHTS on EVA<sup>®</sup> and EXPECTATIONS from PARTICIPATING IN THE STUDY**

14. Have you heard of EVA<sup>®</sup>?
  - a. What are your thoughts on EVA<sup>®</sup>?
  - b. What are your experiences of EVA<sup>®</sup>?
  
15. What are your expectations from participating in this study?

## INTERVIEW QUESTIONS with RESPONSE – SPL-R3

FORM CODE: MD1

### A. COMPANY BACKGROUND

Name of Company: **SPL Limited**  
**England**

Location: **South East**

**Job Title: Managing Director (SPL-R3)**

Turnover: \_\_\_\_\_

### B. MANAGEMENT STRUCTURE

1. What is the nature of your business?
  - a. Principal activity?
  - b. Main products/services
  - c. Markets

**SPL-R3: Plastic injection moulding is our main activity. Currently our main product is hairbrushes. So our main market sector would be the medical.**

- d. That is why you have the clean room?

**SPL-R3: Yes.**

2. How would you describe the organizational structure of the company?
  - a. Comment on its effectiveness in terms of dissemination of information and the impact on making:
    - i. Management & strategic decisions
    - ii. Financial decisions.

**SPL-R3: We have regular board meetings where the Finance Director (SPL-R2), the Chairman (SPL-R1) and I would make the key decisions that need to be made. And then we have, going down – we have management meetings so the Manufacturing Manager and Departmental Manager as well; and we would all meet with them and discuss where we are going.**

- iii. So are you responsible for ensuring that information from the Board meeting is filtered down?

SPLR-3: Not always, sometimes it comes from me. It all depends on what we are doing. So the Finance Director does a lot of financial stuff and the Chairman does the marketing side of it and I do the people side of it.

- b. How involved are the management team in these process?
  - c. Has the hierarchy or chain of command changed in the past 5 years
3. Who is on the Board of Directors?
- a. What are their management roles/responsibilities?
4. Are all key management decisions decided at Board level or are responsibilities and decision-making devolved?
5. If owner managed, does the owner influence the outcome of decisions taken at management board meetings?

### **C. FINANCIAL INFORMATION & DECISION-MAKING**

6. Are you involved in the processing or analysis of financial information?
- a. If yes, what is your involvement?
  - b. What models are used and what are they used for?
  - c. How is the information used? – (request monthly reports to demonstrate)
7. Are any capital investment performance appraisal methods used in the company at present (NPV, IRR, ROI, etc)?
- a. If so, how are they used?
  - b. If any discounting models are used, how do you determine the discounting factor used in the models?
  - c. What information is captured?
  - d. What has been the impact?
  - e. Are results monitored or evaluated?
8. How is the company funded?
- a. What is the level of gearing (Is it Debt/Equity or Debt/ (Equity+Debt)?
  - b. How was the funding decision made?
  - c. Are there any barriers to financing of the company? Example access to funds etc.
  - d. What types of debt do you have?

- e. Do you know the cost of the debt?
9. How many shareholders are there?
- a. For significant shareholders, what percentage of shares is owned by each?
  - b. Are dividends paid, how is this determined?
  - c. What level of returns do shareholders expect?
  - d. Would you consider the company to be low, medium or high risk?
10. Do you know what the cost of capital for the company is?
- a. Have you ever calculated this?
  - b. What would you use this information for?
  - c. Do you actively manage the cost of capital, for example refinancing to get better rates?

#### **D. IDENTIFYING VALUE WITHIN THE COMPANY**

11. What do you consider drives value within your business?
- a. Do you collect data on these drivers?
  - b. If so what data and how are the drivers measured?
  - c. What do you use this information for?

SPL-R3: Well in terms of people, I do think people drive value in the business; so staff training definitely. The more we effectively train our people, the more efficient we become. So that is a key value.

- d. Your management style seems to be different from SPL-R1; You appear to be more management focus in trying to implement a bottom up approach.

SPL-R3: Yes.

- e. How do you find staff managing the process of change?

SPL-R3: We spend quite a lot of time over last year training people; business improvement techniques from the bottom up, and I think that has been reasonably successful. I think that now people are starting to see that it makes a financial difference at the end of the year suddenly it is more tangible for them. Actually, with all those improvements, suddenly we end up with cash in their pockets, so I think people will work now to that. I think - I am now in the middle of changing some people's role because as we grow, people who we have employed to do the job, their role have evolved into something slightly different. Some people stick to things that they like doing that is

because they avoid the thing that they don't like doing. And basically jobs get left behind because they are too busy doing something else. We are in the middle of a process with 10 people currently, long term members of staff – key members of staff in the business; we are changing some of their roles in order to make them happy. And that is a different..... But I want them to be doing jobs and understanding where we are going over the next 3, 4, 5 years. I am trying to make sure they are all on board with what they are doing.

*(Interviewer: SPL-R3, what you are doing is essentially encompasses some of the theory of EVA – basically empowering staff, informing and giving responsibility so they begin to feel they are a part of the organisation. [Explanation of EVA followed])*

SPL-R3: What I am trying to achieve is that September 2013, I want my job to be completely redundant and I don't have to be at any point running the company. I want the staff within the company to run the company. Not because I am saying I want to be gone in 2 years' time, but I want to be in a different position. I want to be able to drive directions and I want people to see they will all take on parts of that role and have financial control.

**f. Do you share extensive financial information with other staff (such managers/supervisors)?**

SPL-R3: Yes, we set budgets for people so, in terms of staffing levels, spend levels over months, quarters, year. We publish sales figures. We report back at the end of each month to say this is the target and this is what was achieved – so we do that regularly. What we also do, we tell people they can take any new ideas they have; they have to put the financial case forward. So they will have to say this is how much it will cost you to invest in 'x', this is what payback would be in terms of people – wage structure, this is the payback and this is the payback within 3 years.

**g. Do you find staff was receptive to that?**

SPL-R3: They came up with £200K worth of ideas last year - which is most important. They had a bendy forklift truck which reduces the width of the pallet racking so that we could get more storage into the same space. And having a pallet wrapper because the nature of our business had changed from lots of bags

and boxes to pallets and they need wrappings. By taking that in and we have taken 10 hours per week off our warehouse man so he has more time. Before he used to run it with somebody else, now he has much more time on his own.

***(Exercise: Flash Cards with value drivers identified from initial interview. As Interviewee to rank in order of most important to least.)***

***Outcome:***

Thoughts as expressed by SPL-R3:

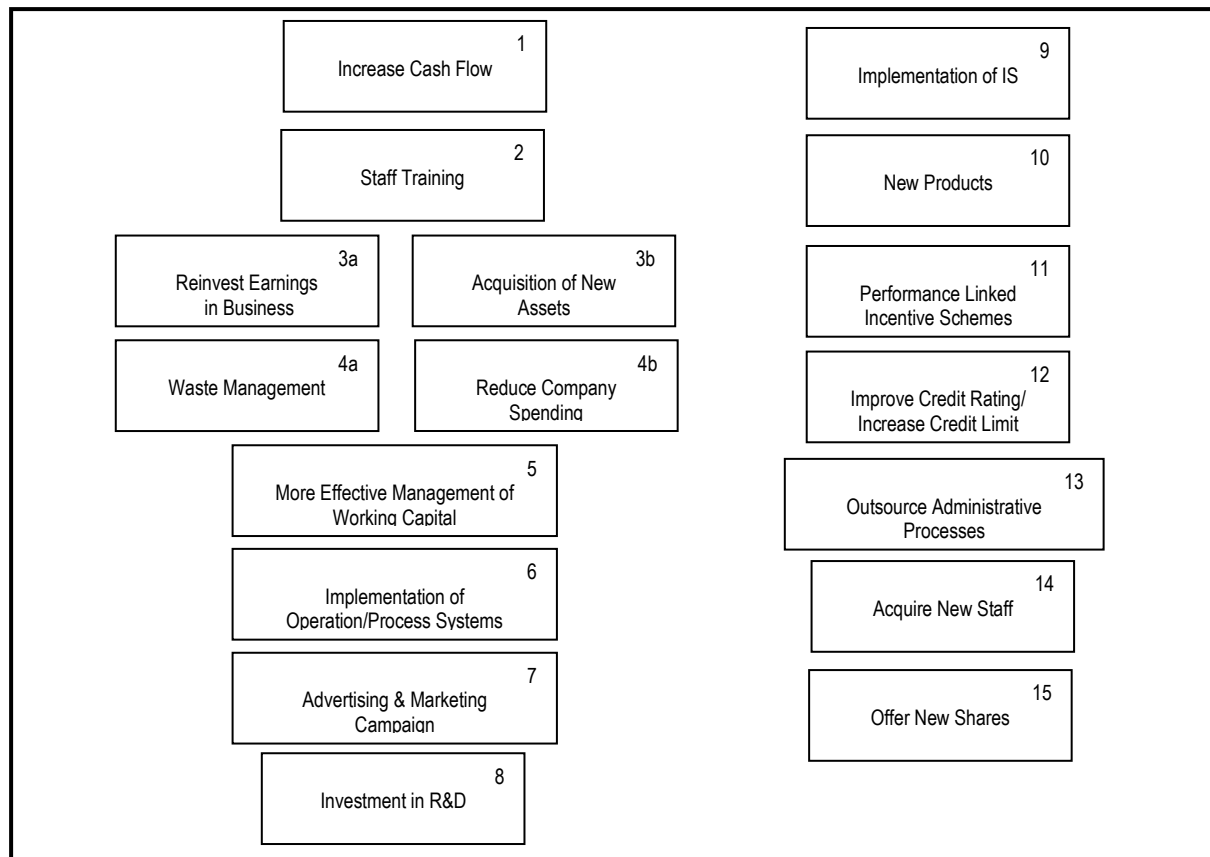
I think cash is king for a small business (I may shuffle these around later). I think we found that highly trained staff has a direct impact on what we do and we have trained 45 of our 50 staff within the last 12 months, which I think is highly important. Reinvesting back in the business – again this is something we do in the company. Waste Management – it is also something which we have done because it helps improve cash flow. Effective Management of Working Capital; Implementation of Operation/Processes which is kind of our background

*[Finish: followed by a talk through]* Because, I think cash is the king for us, I think if we don't have the cash flow; the rest of it doesn't matter. Staff training I think is very important in terms of getting the right people doing the jobs for us. The company reinvesting the money back in the business to make sure we got the right new assets in there because it's a big investment in the business.

*[Some pondering – rearrangement]*

Waste management and reducing company spending in the company goes hand in hand and effectively, whatever working capital we have got – if we don't have that then the business won't work. Then improving our operations which are constantly going on; Advertising and Marketing – again these are very close together. Some investment in Research and Development again I think as a company we need to be looking at research. New Product; I am happy with 9 (implementation of IS). We have only just started looking at Performance Incentive Schemes and we just made a bonus payment this year. And Improve Credit Rating/Credit Limit is something it would be good to hear other people's opinion. Outsource Administrative Processes; Acquire New Staff - I rather train from within and Offer New Shares.

Outcome of SPL-R3 value exercise



## **E. STAFF TRAINING AND DEVELOPMENT**

12. Can you describe how development issues are address within the company?
  - a. Is it incumbent on you or other members of the management team to raise issues associated with product development (R&D) or operational improvements?
  - b. Is it expected that staff should express training needs or is this taken into consideration when any changes are implemented?

## **F. THOUGHTS on EVA® and EXPECTATIONS from PARTICIPATING IN THE STUDY**

13. Have you heard of EVA®?
  - a. What are your thoughts on EVA®?
  - b. What are your experiences of EVA®?
14. What are your expectations from participating in this study?



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| Case Code:      |  |

**INTERVIEW QUESTIONS with RESPONSE – WIC-R1**

FORM CODE: MD1

**A. COMPANY BACKGROUND**

Name of Company: [WIC Limited](#)  
[England](#)

Location: [South West](#)

**Job Title: [Managing Director \(WIC-R1\)](#)**

Turnover: The turnover over last year was £2.1M. The projections for this year should be just getting up to £2.4M.

The company was started by [WIC-R2](#). He originally worked for a company called [[Name of Company](#)]; they make fire fighter's uniforms. He was responsible for selling to the fire brigades in Scotland; this goes back to the late 70's. One of the opening markets at the time was the North Sea oil and gas and there was a small market for selling fire fighter's clothing to the gas rigs. Having sold some, they then said well we need something to put it in out on deck; around the helipad on deck around the rig. And they wanted something to store the fire suit in. The company he was with didn't want to make them; didn't have a lot of interest in it – to cut a long story short, [WIC-R2](#) saw a hole in the market. *'I can do that, I'll find out how to make, what to make it from; I don't know whether it should be steel or plastic or whatever'*. Then .....perfect material for offshore environment. So he started this up. He started buying and selling from the late 70's to 1986 along with other fire equipment. And then in 1986 we started doing the manufacturing ourselves on this site. To some ...supplying the North Sea oil and gas but gradually our UK customer; we were finding oil and gas markets overseas. We started expanding far out of the UK district, and then gradually we started to realise actually there is a lot of potential to export for ourselves directly. And we took that on even more and more.

## B. MANAGEMENT STRUCTURE

1. What is the nature of your business?

- a. Principal activity?
- b. Main products/services

WIC-R1: So the principal activity is manufacture; design and manufacture of cabinets to store fire safety and lifesaving equipment.

- c. Do you make those equipment?

WIC-R1: No. Just the storage – just the environment – the protective environment for the safety equipment supplied by others. So it is very much a niche because we sell to people who probably manufacture them –the lifejackets or manufacture the fire extinguishers. And we supply to them so; we don't want to compete with our customers. So we have our niche.

- d. Do you manufacture to a given specification?

WIC-R1: Well that one there (pointing to one on the wall) we have a couple of different ranges you see for different markets. So that product there is injection moulding – we have it in red, we have it in green; and basically there is nothing much else you can have bespoke about that. Whereas our glass storage cabinets are bespoke; so you can say to me I want one of those but I want it in in red, I want it with shelves in it; I want it with insulation or heat in it. So it is very much bespoke and the specification for the product, we try and influence. But there aren't no mandatory standards for our product.

- e. So do you have a base design that you work with (a template)?

WIC-R1: Maybe it's easier if we had a tour of the facility first.

*(Went on tour of the operation)*

WIC-R1: So the main products are cabinets to store any type of safety equipment or lifesaving equipment generally on deck of oil gas platforms or on a petrochemical site. And the other areas are marine, industrial, crystal – it could be anywhere – a marina, a light way housings, it could be a seagoing vessel with a life jacket cabinet. Those are the particular areas; it is just providing safe area for safety equipment.

f. Markets

WIC-R1: The geographical market is worldwide.

- g. The Company have done very well in this time when things just seem to be getting worst.

WIC-R1: Yes, that's very strange because I have talked to a lot of people who are very, very busy. And it's the media; everything is dire. And then I talk to a lot of people; the injection moulder that makes some of our products and they are very, very busy. The rotor moulder that makes our product is very, very busy

Some of the advisors we use on manufacturing don't know where to turn next. So there are people who are almost overheating.

We saw a recession if you like in 2008/9. We saw that when the sub-contract tankers that we did went, so our turnover went down from just over £2M down to £1.6M. So it hit us quite hard. Then we decided not to replace it with more subcontract work, so we try to grow our own products and frankly that has paid off.

- h. Has that decision paid off for you?

WIC-R1: Yes, and we certainly felt that the recession was some while ago. And it's the public sector that seems to be in recession now. It's an average of everyone's activity; isn't it? So there will be people who are down 20% and people who are 20% and the average is naught.

2. How would you describe the organizational structure of the company?

WIC-R1: We are not too hierarchical. We try and be easily approachable so; I have actually got a chart (produce copy of organisational chart) – it shows who report to whom. But we tend to act in a way that; we tend to consult people and we discuss things.

2b. When you say consult, who do you consult, is it like the managers?

WIC-R1: Yes, we have monthly managers' meetings in which will be WIC-R2 and myself, WIC-R3 from sales and WIC-EMP1 from production – the four of us.

- a. Comment on its effectiveness in terms of dissemination of information and the impact on making:
- i. Management & strategic decisions
  - ii. Financial decisions.
- b. How involved are the management team in these process?

- c. Has the hierarchy or chain of command changed in the past 5 years

WIC-R1: We tend to make joint decisions. OK I tend to have the final say but it tends to be done by agreement.

Well 5 years ago I took over as MD. There were 2 changes I suppose; one, change of MD from WIC-R2 to me – that took place. In reality it doesn't make a huge amount of difference because we are all making a lot of decisions as a group anyway. But I have certain ways of doing things. I've got a different idea of what I want for the company; so that has probably propelled quite a lot of it. Now we do what we think the company ought to be doing. So the change was just a switch in roles.

3. Who is on the Board of Directors?

- a. What are their management roles/responsibilities?

WIC-R1: The Board of Directors is just myself - and my wife who is the company secretary. We had a reorganisation of the company nearly 2 years ago. Because WIC-R2 who founded it was – he owned about 70% of the business. He is getting close to retirement age and – I know they don't have fixed retirement age any more – but he was getting towards it so he started thinking about getting money out of the company. I got up to 25% shares but couldn't really get much further than that and couldn't make a significant inroad into his shareholding. So actually what we did, I bought some from him; WIC-R3, my brother, he bought a small shareholding as well. And then the company actually bought some of WIC-R2 shares to reduce his shareholding. So by default, by reducing the shareholding therefore I became the majority shareholder. But part of that is to get entrepreneur's relief; and to do that WIC-R2 can no longer have 30% - or 30% is the maximum holding he could have and he could no longer be a Director – so he was the only Director at that point. So at the moment, that's around the kitchen table. But in effect, most things are decided by the 4 of us; almost and always at Board meeting.

As far as the shareholding is concerned, my wife and I effectively own 65%, WIC-R2 owns 30% and WIC-R3 owns 5%.

4. Are all key management decisions decided at Board level or are responsibilities and decision-making devolved?

WIC-R1: Decisions can't be by the board because the board is me – and my wife – and she won't take financial decisions. I may well be the one that's saying from a financial aspect, this is affordable so I will put my finance head on; that's a part of my background. Financial things, I will have a lot of input into it. It's not quite a democracy.

5. If owner managed, does the owner influence the outcome of decisions taken at management board meetings?

(See response to question 2c).

WIC-R1: It is quite simple when the owners are the Board and the Director – which I think from our point of view, makes the decision-making easier because we are the shareholder sitting around the table as well as effectively the Board who are going to make the decisions at that time. So we are not behind the people whose idea for the financial gain of the company differs from our own. I think it's a quite useful thing. You look at these Plcs and think it's a pity; the structure and the demand of the shareholders to get this or the other are not in the company long term interest but in the short term.

5a. How is information disseminated down to the shop floor?

WIC-R1: A lot of this is done informally; so it will be going around and chat to them and say where things are. We have occasional works meeting to just have a chat and say well this is the latest thing on health and safety or this is what we are doing on the environment. A lot of it comes out of meetings that we have to do with lean manufacturing. So we try and get people involved in the process of change. But it tends to be in an informal way of doing it rather than attempting to use newsletters or other things. We are a small company; come and see what we are doing in injection moulding – so its that's sort of thing; that is what we are doing and equal opportunity at any point to say does this mean we are not going to be laminating them anymore or if they have any concerns, we are very much open door – so it is informal.

5b. How many employees are there in the company?

WIC-R1: At the moment we are 20; we were 16 a while ago but we had to take on a few more.

### C. FINANCIAL INFORMATION & DECISION-MAKING

6. Are you involved in the processing or analysis of financial information?
- If yes, what is your involvement?

WIC-R1: I produce the monthly management accounts. So what we do (gave copy example of end of November report), we discuss that at management meeting. So the four of us get around the table and we will go through the accounts and start comparing the budgets and margins and; those sorts of things, just to make sure we all have a picture of where we are. Some of those things, they are there, like gearing and that sort of stuff, is not a big concern of ours because last year we didn't have any – well we don't have any debt now; which is a nice position to be in.

- What models are used and what are they used for?
- How is the information used? – (request monthly reports to demonstrate)

WIC-R1: It is used to adjust our decisions based on how we have done so far.

- Do you do forecasting and budgeting and do you align with what is done?

WIC-R1: Yes we do and in here (shared a copy), so we have a variant of – budget against actions for each period. Our budget was fairly modest because without performance we can't depend hugely depending on whether or not you get a particularly big project. It's flattering. We tend to do a conservative budget. It is what we think is realistic without getting too optimistic so we know it is financially viable and then try and do much better. It's also a part of making sure that when we are agreeing whether it is salaries or any other cost increases that we know with reasonable certainty that that's a profitable situation and then try and do a lot better.

7. Are any capital investment performance appraisal methods used in the company at present (NPV, IRR, ROI, etc)?
- If so, how are they used?

WIC-R1: I have been here for 22 years and I have used it once; net present value (NPV); but that involved dusting off my economics degree to try and work out how it is calculated. Actually it wasn't that but was my brief accountancy career of 10 months in 1989 – because it was on the solar panels (presented copy of analysis). So I was trying to work out to the public, either the discount rate of 2% and at different rates foregone and the decrease in feed-in tariffs

because the feed-in tariffs goes up with RPI. But with interest rates being effectively 0, it didn't seem very high. We don't tend to use them (performance appraisal methods).

b. Why did you decide to invest in solar energy?

WIC-R1: Yes, we have ISO 14001 environmental standard and we try to improve our performance year on year; and that was part of it. It reduces the amount of electricity we use and once we have got to that stage then we can generate some in a green way; hopefully it will have a long term advantage to the company.

Yeah, ROI – occasionally look at it from a shareholder point of view, not so regularly. I know what they are but not regularly.

c. If any discounting models are used, how do you determine the discounting factor used in the models?

d. What information is captured?

WIC-R1: Yeah, on a day by day return on capital in like management accounts; I suppose if you like management accounts for the management rather than the shareholders per say so – when we have been 1945...on that on the strategic review we actually went back through our previous accounts to do with investment, but the trouble from doing it from the financial information is that it can often be done after we have made payment to a pension fund and or we pay bonuses. So everything is a bit distorted – you could see what I mean.

But the only way we return on capital, you get to the point where you feel that the company is probably over capitalised. So that is the only time we have thought hmmm, yes, it's going down, do we need to give an extra dividend because actually we have more cash than we really need. So they are not really monitor or evaluated.

e. What has been the impact?

f. Are results monitored or evaluated?

8. How is the company funded?

WIC-R1: The Company now is debt free. So we haven't had to worry about getting any funding from the bank except for what happened with – and we have been cash positive for quite a few years. But when we did the shares buy out the company we had to use its cash reserves to buy those shares. But in fact we didn't have sufficient cash reserves to do it, so the Chairman lent back. He loaned back the company about £150,000 but we managed to pay that off at a cash flow in about 18 months - so as of a few months ago; so at the moment - no debt.

- a. What is the level of gearing (Is it Debt/Equity or Debt/ (Equity+Debt)?
- b. How was the funding decision made?
- c. Are there any barriers to financing of the company? Example access to funds etc.
- d. What types of debt do you have?
- e. Do you know the cost of the debt?
  
- f. If needs be, do you think there would be any barriers to accessing finance?

WIC-R1: We don't really need it. I think the answer would be I don't think there would be any (barriers) for us with the bank that we have because we have a good track record with them. So if we did need to borrow some I don't think there would be an issue.

It's not that we have a problem borrowing. For the first 10 years of the company, yes we had quite large overdraft and things. But now we don't need to. We continue to get a lot out of cash flow anyway. I think the problem is because we have been debt free for quite long, I am not rushing to go and borrow £100,000 to force change even fast than its going on anyway.

9. How many shareholders are there?
  - a. For significant shareholders, what percentage of shares is owned by each?  
(See answer in question 3a)
  
  - b. Are dividends paid, how is this determined?

WIC-R1: Dividend is paid twice yearly. How it is determined – by the requirements of the company. So we – I would say roughly as I think of it, it is probably about 25-30% of the profit will probably be distributed to the shareholders. But it really depends on what – it's from the company's perspective what's the investment requirements it is going to have over the next 6 – 12 months.

That's the most important thing really – what does the company need for its cash flow and investment. Can we therefore afford to give a dividend and what is reasonable?

c. So do you make the decision as to what is reasonable and at what point?

WIC-R1: When we decide whether we are going to pay one. Basically WIC-R2 and I – I will come up with an idea and I will say, what do you think without showing what I have done, and then we will review it; its pragmatic in that there is no fixed – it's going to be 70% of profit or anything like that. If anything it is probably nearer 30.

d. And you reinvest some of that cash (profit) back into the business.

WIC-R1: Yes, which we do need.

e. What level of returns do shareholders expect?

f. Would you consider the company to be low, medium or high risk?

WIC-R1: Are you talking here financially?

Interviewer: Yes, broadly on the financial risk (of investing) and overall sustainability of the company.

WIC-R1: Yes I suppose long term stability is reasonable but there are fluctuations because when there are boom time – due to oil and gas been nice and high – well most people don't like gas been – but if oil is \$110 a barrel it is worth them getting an explorer in and getting more out so they need more of our products. But fully aware of this, we will have our own downturn at some point. So I would like to have a cushion so I know we can whether short term storms such as the end of 2008 we had quite a lot of cash at the time and things had gone very quiet. As it turned out, we only really lost money in the 1st month and then it got busy. But it is having that ability to say we didn't have to do anything drastic, we didn't have to chop off our arm to survive

10. Do you know what the cost of capital for the company is?

a. Have you ever calculated this?

WIC-R1: I have never calculated it.

What would you use this information for?

b. Do you actively manage the cost of capital, for example refinancing to get better rates?

- c. Have you considered intellectual property to be a variable within the cost of capital of the company?

WIC-R1: I haven't seen it as a part of capital but I would - intellectual property is certainly something that we have invested in and are – I mean, I am about to sign off a design rights for a handle for an injection moulding cabinet – I signed it off yesterday. It has got some protection. We can't patent it as it isn't patentable. But we registered our trademarks, we register the company name. We have design rights on one of our micro housings. We do as far as it is reasonable; and we have benefited from it. One company wanted to use fibres in the same class as us and they pay us £2500 for 5 years to use it. It didn't cause any confusion in the market – a very nice bit of money.

- d. Would you say then that intellectual property is likely to add some value to the company and should be considered in the cost of capital?

WIC-R1: Yes, I suppose in theory it is, or you could say it is an insurance policy. In some cases it is an insurance policy to prevent someone coming into the market and using that brand or a copy of – so, we don't see it generally as a money earner but it's more of a defensive position to take. Having said that, I give you an example of where we have gained from it and we do have at the moment subcontract manufacture in [Location] and the supplier in [Location] is also a distributor and in those cases we are getting a commission on the use of our product name and our moulds as it is our design. So if you like, it is at best intellectual property and more our brand name that is being used to generate commission and that has been very successful. The downside of course is control and all the rest of it. So the brand idea is I think where we see more of it as a – something to gain from rather than as a defensive thing which I see design rights and patents are. I guess we only see the value when someone tries to infringe it – they are trade mark.

When it comes on to cost of capital, I would say more it's the opportunity cost because if I spend all then I can't spend on something else and that's more the issue for us. I don't think in 18 months or 2 years' time we actually might need it for this. If I spend a huge chunk on a warehouse I can't spend on machinery.

- e. So you have to make decisions along those lines?

WIC-R1: I think having finite resources is a good thing otherwise you could do everything and not having to make all these decisions.

#### **D. IDENTIFYING VALUE WITHIN THE COMPANY**

11. What do you consider drives value within your business?

- a. Do you collect data on these drivers?
- b. If so what data and how are the drivers measured?
- c. What do you use this information for?

WIC-R1: Quite a few things really I suppose. From a sales point of view, the value that we add is by the customisation of the product. So we can engineer it to suit the environment whereas our competitors tend to sell on price. So we are saying to the people – so that is going into a cyclone environment, you can't use a normal spec cabinet for this so we will engineer it for them. So we take a lot of the head ache out for the client. We give them the confidence that we know what we are talking about. And then we do a lot on the service side of things as well which is - things that we do now, we draw everything in 3D. So we can do a lot of the drawing which previously would have either been done by our customer or the contractor at the end who is out on the rigs. So a lot of that is now coming down to us. So I think that is helping us to maintain our margins against cheaper competition. So we are very much trying to do a bit more for the customer. So they are cutting engineering cost by effectively us doing it – they are pretty happy with it. I think that has helped us move into niches so whether it is cyclone or we are looking at an artic environment where there is more exploration around that. So from the sales side of things I think that has helped us a lot. We are obviously – if you talk about driving profit and costs; with the time spent with [Consultancy Firm] has been fantastic. You see here (pointing to some charts posted on the walls), is just the latest that we have done in bringing lean manufacturing in, laminating all the bays – with our lean manufacturing in with moulds. We have done it within the office and we have saved 600plus hours – and that's just in a small office like this by looking at how people – how their work went around, who did what - very little investment in the actual case, I think it was £1500 or something. I think a lot of that is just - it has gradually changed our attitude I think; rather than doing things the way we have always done it. One of the things when I started is that I have been here a long time and actually I never really got involved in production, so first thing I did was to sit and listen to everyone in

production to come and have a chat. And I gave them so new ideas; and a lot of questions I was asking why we do things, the answer is, because we always have – which was not an answer. And I think with the lean manufacturing it has shown everyone - actually that there is a better way of doing things and most of those ideas came from the people within the company. And it is not – we don't have to get some outside consultants to bring those ideas in; you often need an outside person to bring it out of us.

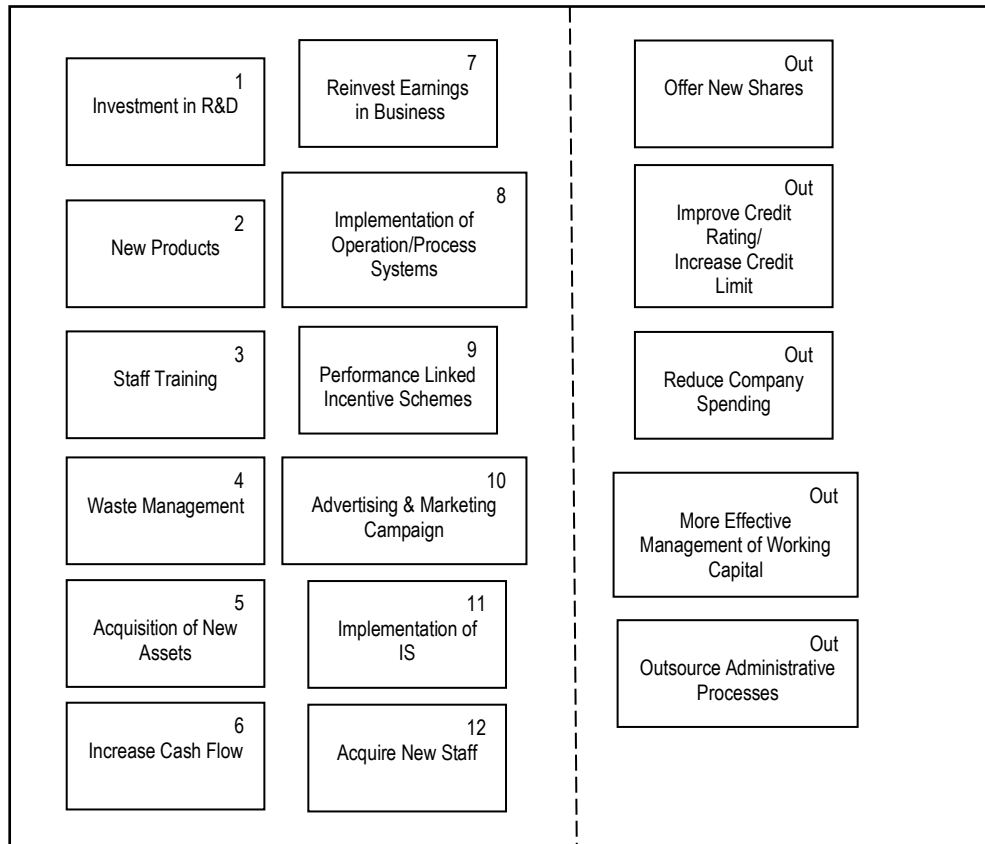
I like it. One thing I keep saying in work meetings is that change is constant and that we will always be changing here because what I find a lot of the information that I gather is when I go abroad; you don't get it sitting here – you are not exposed to the real world. And if I go out to Korea or Thailand, I see what else is going on and will give a spur to come back here and say actually there are people out in Korea making cabinets; there are people out in Thailand making cabinets and they are doing that or the other so we have got to improve something else to keep ahead of them. So again I think that reducing costs within the company; also better buying and we keep a close eye on overheads and as you can see, things are going up well ahead of profit on budget we might spend a bit more, we have a flexible approach.

*(Interviewer talked a bit on adding value and early thinking by Adam Smith)*

WIC-R1: But that is why lean manufacturing is so good because you are looking at, when you were walking around; 80–90% of what they were doing is in value added. That person is walking from here to there, no value added; that person its transport this, no value added; that person there is laminating, value added.

***(Exercise: Flash Cards with value drivers identified from initial interview. As Interviewee to rank in order of most important to least.)***

Outcome of WIC-R1 value exercise



## E. STAFF TRAINING AND DEVELOPMENT

12. Can you describe how development issues are address within the company?

- a. Is it incumbent on you or other members of the management team to raise issues associated with product development (R&D) or operational improvements?
- b. Is it expected that staff should express training needs or is this taken into consideration when any changes are implemented?

WIC-R1: We have annual appraisals which we do of which training is a part. The appraisal we do, working out, particularly within the office what the objectives are for the next year, what training therefore is likely to be needed to enable that to happen. And within the factory it is also carried out but with a slightly different approach but it is also carried out. A lot of it though is ad hoc because it is not something that is planned; you have got all the legal training that you have to do – manual handling, forklift truck driving. Training is a vital spur for people; there was demonstration of mould cleaning which we had the other day which came in as part of this. So some things it will come out of appraisals some of it come out of things like lean manufacturing because we then identify a training need and then bring that person in to solve it. So it is a sort of formal and informal way of doing it.

- c. Can staff approach management if they think they have a training need?

WIC-R1: Absolutely, in fact earlier on we tried to get people up to like the idea of learning – which is an odd thing to say, but a lot of people here didn't do particularly well at school so they don't see learning as something that they would want to go and do; to go in the class room. But I said - night school, I would pay for anyone who wants to go night school to do any course you want to go on, it doesn't matter what it is. I only had one person take it up but it was something he wants to do – computing or something. So yes, it is approachable; people can come and say I need to get on this.

- d. Is there any incentive scheme for staff?

WIC-R1: We do a bonus which whether you call that incentive or not. Maslow's hierarchy of needs and all that sort of stuff – I think there is an element of truth in it. I think the absence of money is a demotivator. Bonus is good; the physical amount of the bonus is soon forgotten; maybe the thought of getting one is most important rather than getting one. So we do one around the same

time as dividends. Bonus is really related to the performance of the company and the individual. The overall sum is determined by how well the company is doing, but the division of the sum depends on the performance of the individual.

But a lot of the laminators are on piece work anyway, so actually they get a nominal bonus because the incentive for them is, if they work, for every cabinet that they make they will do another one; they will do it faster, they get more per hour. So that is actually what drives those a lot. I think trying to get involved in the company and how it makes its decisions is probably means as much to those people as would go as physical money.

e. Is it that they feel their opinion is valued by the MD?

WIC-R1: Yes, because you would think that it wouldn't matter in a small company. The Managing Director sounds like a rather grand title in a company of 20 people, but it surprise me if you like – but I don't consider myself above anyone. But it is the fact that if they say something to me and it happen, that means quite a lot. Which seems strange but - yes.

#### **F. THOUGHTS on EVA<sup>®</sup> and EXPECTATIONS from PARTICIPATING IN THE STUDY**

13. Have you heard of EVA<sup>®</sup>?

- a. What are your thoughts on EVA<sup>®</sup>?
- b. What are your experiences of EVA<sup>®</sup>?

*(MD never heard of EVA<sup>®</sup> before so the Interviewer explained EVA<sup>®</sup> and the context in which is considered in the study)*

14. What are your expectations from participating in this study?

## INTERVIEW QUESTIONS with RESPONSE – WIC-R2

FORM CODE: NF1

### A. COMPANY BACKGROUND

Name of Company: [WIC Limited England](#)

Location: [South West](#)

**Job Title:** [Chairman \(WIC-R2\)](#)

### B. MANAGEMENT STRUCTURE

1. Describe the role and responsibilities of your job function?

[WIC-R2](#): I am the chairman of the company. I was the original founder of the company in about 1982. And we came to this site around 1986 when we purchased it. So as I am chairman and I will be 65 this year, I have less and less of a major role in the company. But my main job function is still sales especially to the offshore and petrochemical industrial particularly engineers. And I have quite an influence I think on and strategy and future direction of the company and obviously continue to take an interest and share in management meeting etcetera. And that is roughly speaking my role.

2. How would you describe the organizational structure of the company?
  - a. Comment on its effectiveness in terms of dissemination of information and the impact on making:
    - i. Management & strategic decisions
    - ii. Financial decisions.
  - b. How involved are the management team in these process?
  - c. Has the hierarchy or chain of command changed in the past 5 years

[WIC-R2](#): Well [WIC-R1](#) of course is now Managing Director; and the decisions of course are finally his as the senior director and major shareholder. But he is anxious to carry me along with any changes in direction or just the general direction of the company. And so I would say that between us, the MD and I in particular, have a strong working relationship; and we don't always agree but we generally reached not a compromise – reach agreement, very rarely it's a compromise. The generally talk ourselves to the situation where one person's strong feelings may carry the day. And it is usually by persuasion and discussion that we arrived at decisions.

3. At what point do you become involved in a project and what would your main focus for input?

WIC-R2: Yes, it would be very much based on my current role. When you say a project it could be in a project within the organisation here; a big project could be putting another building up or something like that, that would be a discussion that all of us would participate in because to some extent the other members in teams in the factory have an interest in what we there and we are interested to hear what they have got to say to the efficiency of the company. When it comes to project related to incoming work, i.e. sales, if you are referring to that as well, then project work tends to be mainly me really if it is in the UK or Europe and MD's strongest point is Australia and the Far East in particular.

4. Are all key management decisions decided at Board level or are responsibilities and decision-making devolved?
5. ~~Does the owner/manager~~ Do you think as the founder/chairman that you still influence the outcome of decisions taken at Management board meetings?

WIC-R2: I think I have a strong influence probably because I think I still have some – I am still valued I think because of my past experience, I do have some influence. Not influence and that I would necessarily wish to force but I think my influence is noted.

### **C. FINANCIAL INFORMATION & DECISION-MAKING**

6. Are you involved in the processing or analysis of financial information?
  - a. If yes, what is your involvement?
  - b. What models are used and what are they used for?
  - c. How is the information used? – (request monthly reports to demonstrate)

WIC-R2: Yes. In terms of with WIC-R1, he provides me with the information; he is excellent at his accounting. I would go so far as to say he is first class at it. And so he provides me with very readable and understandable information. So it is easy for me, who is not an accountant by the way, to help reach an agreement on the way forward from the information that WIC-R1 provided - which really answers most of those points I think (a, b and c really). And moving on – how is the information used – we have monthly management meetings, when we have, one of the item on the agenda is finance. And we have monthly discussions during which all aspects of finance; it could be bad debts although that is not an issue here (touch wood). All aspects of finance are discussed monthly and so it is a very open situation.

7. Are any capital investment performance appraisal methods used in the company at present (NPV, IRR, ROI, etc)?
- If so, how are they used?
  - If any discounting models are used, how do you determine the discounting factor used in the models?

I don't really understand all that but that – that's highly physics - but for instance where we are making a decision whether to put a building in around the back (which I am sure the MD showed you this morning) and we obviously look very, very carefully at the costing on that. And in terms of ROI, that is a vital ingredient.

8. How is the company funded?
- What is the level of gearing (Is it Debt/Equity or Debt/ (Equity+Debt)?
  - How was the funding decision made?
  - Are there any barriers to financing of the company? Example access to funds etc.
  - What types of debt do you have?
  - Do you know the cost of the debt?

WIC-R2: No, we are generally cash rich here, so we are in a happy position of being in a position where we don't have to borrow. Apart from the mortgage that the pension fund has – the pension fund owns the property here – and so the pension fund has a relatively small mortgage. And the company pays for it – the pension fund. And although we have an overdraft facility, we very rarely take that up these days expect under extreme circumstances. So we are in a happy position where we are self-funding; we have grown organically and we have the cash.

9. How many shareholders are there?
- For significant shareholders, what percentage of shares is owned by each?

WIC-R2: One, two, three, four (percentage owned by each was given by WIC-R1).

- Are dividends paid, how is this determined?
- What level of returns do shareholders expect?

WIC-R2: I think that is a difficult question to answer. Yes we expect a level of return if the company makes a profit. Shareholders would go on riot if they didn't get something for their investment in the company.

However, that is affected to some extent by what the company may be doing, i.e. perhaps an expansion of a building or putting up another building or whatever; that would affect the shareholder's dividend reward. But as a general idea, we would expect that, something like 10 to 15 per cent of profit would be distributed as dividend.

- d. Would you consider the company to be low, medium or high risk?

WIC-R2: I would say we are a relatively low risk entity. We have some competition, we are aware of the competition we strive to be the best and for the last three years we have been successful. Although I would say for anybody who might invest in us; if that were the case, we would be – yeah - low risk.

10. Do you know what the cost of capital for the company is?
- Have you ever calculated this?
  - What would you use this information for?

#### **D. IDENTIFYING VALUE WITHIN THE COMPANY**

11. What do you consider drives value within your business?
- Do you collect data on these drivers?
  - If so what data and how are the drivers measured?
  - What do you use this information for?

*(Interviewer explain in broad terms the term 'value')*

WIC-R2: The drivers of value I would say would be quite simple; we strive to be the best in what we do. Nobody makes better products than we do in our particular market. Because we strive for that; excellence being the operative word I suppose, that is what have put us in the position where we are today. We have had many occasions in the past where we have been tempted to cut corners and to make products more cheaply and therefore more inferior. We have done that, we have made mistakes and we have learnt by those mistakes; it is very frustrating at times that we lose business. The true value of the company is in the quality of the products that it manufacturers and the loyalty of the staff that we employ. And I would say all of them are a committed to the success of the company because they are paid on results. Some of them earn extremely good money and they are welcome to it because they work hard for it.

- d. Does the company have an incentive scheme?

WIC-R2: Yes we do have; it is basically piece work. There is no – people who are on piece work do not earn anything significant but they may have small bonuses payable at times like Christmas and that sort of thing. The bonuses are paid to people for whom paying piece work is very complicate. That usually applies to the finishing staff out there; it is very difficult to pay them piece work because they would have a variation on the amount of time taken on individual product.

So they would be paid more a bonus system and the office staff would be paid on a bonus system as well. To a lesser extent the management are also paid bonus but it means they are paid by dividends.

I agree with that. Intellectual Property is a little more difficult for us to claim here because we effectively make a product which is a lot of people make very similarly. But the [Brand] is of absolutely fundamental importance being we certainly say that our two brand names are strong. People know those [Brand] names in the trade. And so I would say, yes, branding is – I think we can say we are pretty focused on it

- e. Have you ever thought of attaching and accounting a monetary value to that (Brand)?

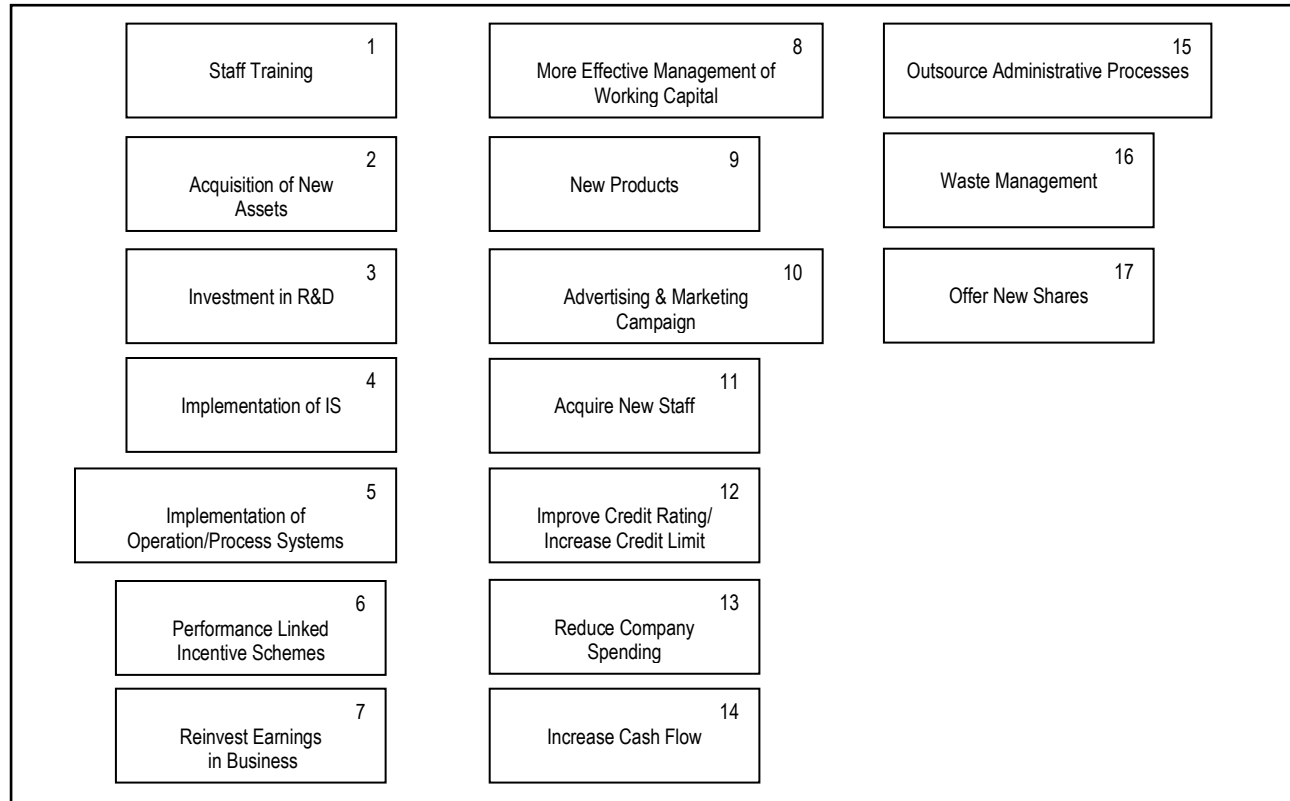
WIC-R2: It is not in our case (accounted for on the book). That is so in our case. If you like we have two strong brand names as well as the company name. The company name obviously has a value because that is how it is identified to any would be purchaser of the company who would be interested in buying us; they are looking at first of all the name. But you are quite right; yes, I think the brand name still have value. It is rather the same way we don't value our moulds from which all the products are made here is another thing. You have seen all the moulds outside; we don't put any value on them. But if there is a fire, we would be completely we would be completely and utterly smothered because we wouldn't have – it would take us a long time to start all over again. Which is why we have to design business interruption into our – but it is a very valid point there.

- f. Do you collect any particular data on what you considered to be the main drivers of value that you just spoke about? How are they measure, monitored or valued, if any at all?

WIC-R2: I am not sure I can really answer that. I think whether WIC-R1 does, we don't actually measure it per say. I would say we don't really measure it. The only yard stick we have is the meetings we have and the staff meetings that we have where we are gathering information, we are gathering comments and feedback from everybody. We take an interest, a great interest in what people have to say. So if that is a form of measurement then that is how it is measured. I cannot think particularly in any other way. Not that I would be able to identify it – obviously anyway.

**(Exercise: Flash Cards with value drivers identified from initial interview. Ask Interviewee to rank in order of most important to least.)**

Outcome WIC-R2 value exercise



## E. STAFF TRAINING AND DEVELOPMENT

12. Can you describe how development issues are address within the company?
- a. Is it incumbent on you or other members of the management team to raise issues associated with product development (R&D) or operational improvements?
  - b. Is it expected that staff should express training needs or is this taken into consideration when any changes are implemented?

WIC-R2: Again, development is all about improvement I suppose really you could use the same word – improvement or development. Something which I have to give WIC-R1 full credit for – although I am not sure I would have done it in the same way; but I think he has done it much better than me. In bringing in Lean Manufacturing and the amount of time that has been spent in this office; sometimes I must say to my frustration I think, goodness me! You know, what we are doing in here. But in the scheme of things, the amount of time spent looking at all this (pointing to charts on the wall) – all of this has paid huge dividends. And I suppose the oldest chestnut is really, if you ask someone why you do this this way, the answer is because we always have! And for someone to come in from outside who is a little bit like a lighthouse and they are a bit high above the sea – they are not actually there sort of watching you struggle to keep off the rocks. They have a bigger longer view. And for somebody to come in to say, well actually if you have thought of doing it this way, have you thought that if you do it that way you would actually say time and you would be able to do 2 rather than 1.5 or whatever (using a metaphor) and I am astonished and really pleased with how that has progressed because everybody is involved. And they go away and they think about more things that they can do because they realise that's more money in their pocket. That's the thing. And they discuss about team work; and if we did this together we would both do better. I think that is very wonderful, wonderful – and it made the single biggest improvement in the company's performance has been by outsiders coming in and helping us – holding a mirror up to us sometimes and helping us with that. So that's the answers most of your questions really – everything else follow on from that. Research and Development obviously we have got to use our brains to think about where we are going to go; what the next trek is going to be. And I think that we have to look at the fact that we operate within what is effectively a niche market and

we constantly look at ways in which we can exploit that niche to fill every little corner of it. And we have got a willing team on site to help us do it.

#### **F. THOUGHTS on EVA and EXPECTATIONS from PARTICIPATING IN THE STUDY**

13. Have you heard of EVA<sup>®</sup>?
- a. What are your thoughts on EVA<sup>®</sup>?
  - b. What are your experiences of EVA<sup>®</sup>?

WIC-R2: No.

*(Interviewer explains about EVA<sup>®</sup> and put it with the context of the study)*

WIC-R2: I think you have got to labour a bit with us, sort of - if you like. Us sort of a country folk, have to get our head around it – it's a new approach.

*(Interviewer also explained the early concept of Residual income which is basically now EVA<sup>®</sup> and the work of Adam Smith and other early economists and discussions value).*

WIC-R2: The way I see it, you are already rewarding a manager, you are paying him for what he is already producing from his mind really – in a way; so, because that is all part of the overall – the product that goes out of the door in the end. If you are making more money out of it, it is because people have put time and effort in thinking about it.

14. What are your expectations from participating in this study?

## INTERVIEW QUESTIONS with RESPONSE – WIC-R3

FORM CODE: NF1

### A. COMPANY BACKGROUND

Name of Company: [WIC Limited England](#)

Location: [South West](#)

**Job Title:** [Sales and Marketing Manager \(WIC-R3\)](#)

### B. MANAGEMENT STRUCTURE

1. Describe the role and responsibilities of your job function?

[WIC-R3](#): I was originally sales manager but it has changed somewhat; and being a part of a small company I wear a number of hats like everybody else. Primarily on a day to day basis I am doing quotes for projects and orders and I also have sales responsibility for Northern Europe. So that is UK, Scandinavia and parts of Northern Europe; Holland, Belgium and Germany. And that is about it at the moment; slowly the Chairman is relinquishing countries to me.

2. How would you describe the organizational structure of the company?

[WIC-R3](#): It is not too complex in this company.

- a. Comment on its effectiveness in terms of dissemination of information and the impact on making:
  - i. Management & strategic decisions
  - ii. Financial decisions.

*Effectiveness:*

[WIC-R3](#): From my side, I think it works very well in terms of it is obviously a short management structure; and because everybody has a sort of open door policy that works well. We also have sales and marketing meetings to discuss what is going on. So I think the information is very good and people are effective in passing on information. We all should know what is going on at any one time. And it supports us well because if one of us was out now of the office we have to let the other know what is going on and what they have been up to.

*Management & Strategic Decisions and Financial*

WIC-R3: Again it is very good. We discuss in our management meeting the finances on a regular basis. It is quite democratic if I must say; everyone has their say also ultimately everyone does have to make the decision. The nice thing is I used to work for a large company where decisions can take a long time to make. Working for a small company, it is so different.

b. How long have you been with the company?

WIC-R3: I have been with the company about 4 and a-half years – just under.

c. During your time with the company, has the structure of the organisation changed?

WIC-R3: It has, I mean; this structure hasn't fundamentally changed some of the roles of individual shifted. The role I am now doing used to be done by someone else when I first joined. So I was looking after more the industrial products. And then WIC-ExEMP who was doing the quotes on the projects, he left to the Middle East. So I have taken over his role. The Chairman of the company has gone; it is now WIC-R2. So no, not really – none of the head count haven't gone up; both in here and in the factory.

d. How involved are the management team in these process?

e. Has the hierarchy or chain of command changed in the past 5 years

3. At what point do you become involved in a project and what would your main focus for input?

WIC-R3: The main focus for me is receiving the information from the customer in the first place; which can be very detailed or lacking in detail; and just making sure that I have enough information to actually put together a recommendation of the products that we should be selecting for that project. And also looking at the internal layout and looking at the equipment needed to be stored. I will come up with the internal layout and then cost them out and then sell it to the customer. Usually if it is an existing structure we would have terms already set up but there are occasions when it is really large project and then you have to be a bit more flexible. So yes, I can take that decision (on costing).

4. Are all key management decisions decided at Board level or are responsibilities and decision-making devolved?

WIC-R3: I am not a member of the Board. Well I think those sort of decisions are normally made in the management meetings of which I am part of – so yes, I have my say in what we do.

5. Does the owner/manager influence the outcome of decisions taken at Management board meetings?

WIC-R3: Yes, they always get their way of course.

### C. FINANCIAL INFORMATION & DECISION-MAKING

6. Are you involved in the processing or analysis of financial information?
  - a. If yes, what is your involvement?
  - b. What models are used and what are they used for?
  - c. How is the information used? – (request monthly reports to demonstrate)

WIC-R3: As far as that goes I don't do any of the processing of it. I do some of the analysis in terms of where we get some of the thing is like monthly figures; the profit and loss statement and so forth, I will go through that as we all do. Like with sales primarily and profitability in what areas are performing well and which aren't. So there is some information and we have to take on board; and if some area is underperforming, then obviously I need to look into why that might be. But the actual processing of financial information is not really part of my role. So I couldn't say what models are been used.

7. Are any capital investment performance appraisal methods used in the company at present (NPV, IRR, ROI, etc)?
  - a. If so, how are they used?
  - b. If any discounting models are used, how do you determine the discounting factor used in the models?

WIC-R3: No (Question for the MD)

8. How is the company funded?
  - a. What is the level of gearing (Is it Debt/Equity or Debt/ (Equity+Debt)?
  - b. How was the funding decision made?
  - c. Are there any barriers to financing of the company? Example access to funds etc.
  - d. What types of debt do you have?
  - e. Do you know the cost of the debt?

WIC-R3: Yes, cash.

9. How many shareholders are there?
- For significant shareholders, what percentage of shares is owned by each?
  - Are dividends paid, how is this determined?
- (The MD provided the answers to a & b)*
- What level of returns do shareholders expect?

WIC-R3: No, not really. I am hoping that it will be positive – that there will be some return and so far there has been.

- Would you consider the company to be low, medium or high risk?

WIC-R3: Yes, it's a slightly tricky one to answer. Hopefully low risk, whether you are feeling positive – I mean we have a very diverse customer base, so hopefully that does reduce the risk somewhat. There is always the possibility of a large Chinese manufacturer can appear out of nowhere and taking the market away. But we don't know. We will try keep developing the company and our products to stay competitive and I am sure you have seen some of that in your field. So I would say low.

10. Do you know what the cost of capital for the company is?
- Have you ever calculated this?
  - What would you use this information for?

WIC-R3: No (Maybe something for MD)

#### **D. IDENTIFYING VALUE WITHIN THE COMPANY**

11. What do you consider drives value within your business?
- Do you collect data on these drivers?
  - If so what data and how are the drivers measured?
  - What do you use this information for?

WIC-R3: Value, I think are things like quality of the products we produce, is that right?

*Interviewer: Yes, that's also on the correct path but also I need you to think of all things that you do which could eventually add to the net worth of the company.*

WIC-R3: Correct me if I am wrong on this; one of the things I try to do is to turn around quotes quickly. So people have the information which means we may then be the preferred supplier for the products. And we could also add additional information that people might need such as specialised drawings of the products with layouts using their templates. There are all things that some of our competitors do and some don't, so it is some sort of value added in that respect and it could hopefully lead to more orders and it does in some cases.

Otherwise it is more of work in a sort of ethical way and building trust with our distributors, so again they are more likely to trust us; and more to work with us. There is an element of cost involved in this as it takes more time. Sometimes we could have had people who could be making things or doing drawing that we have to choose between that adds to costs and we have to try and get the value back. Hmm, I am not too sure how to answer that really.

d. Do you collect any data to monitor these things you spoke of?

WIC-R3: Yes, I don't so much personally; the quality of the products is really the role of the finishers. I would go out there and say

What I tend to do is to look at the performance of our various distributors in my region to see what they are doing and hopefully they are growing well and working with us and providing information as to what they are up to. So we would try to work as closely as possible to help us see the orders come through. Some of our distributors don't get business at all from our competitors, so again we are putting ourselves out there, showing that we are there to help and working closely with them and so we are developing products alongside them as well. Again that is pretty intangible as figures go unless you look financially year on year how they are doing. But with project work it is difficult; you might have some years where there is a huge project and obviously that is very valuable. And if you don't have the same or similar next year; the figures can drop even though they are doing well – if you see what I mean.

e. Have you considered the value element of intellectual property or Branding?

WIC-R3: In some markets the WIC brand is well known and people are prepared to pay a premium to have a WIC product. We can obviously back that up by saying why the product is technically superior. But it does carry some weight particularly in the offshore market; so exactly, there it is of value to it. I think in more of the industrial rich products like this one, we are less bothered, and I don't think the brand carries particular weight; in which case we try to focus on the quality of the product itself and also that it is UK product.

***(Exercise: Flash Cards with value drivers identified from initial interview. As Interviewee to rank in order of most important to least.)***



## E. STAFF TRAINING AND DEVELOPMENT

12. Can you describe how development issues are address within the company?
  - a. Is it incumbent on you or other members of the management team to raise issues associated with product development (R&D) or operational improvements?
  - b. Is it expected that staff should express training needs or is this taken into consideration when any changes are implemented?

WIC-R3: Yes, on an informal basis we would have a chat about what we think once in a while – the MD and I will also discuss things that might need to be done and then there is the more formal appraisal that happens twice per year. So that is when these things are identified if we don't recognise it and do it ourselves.

- c. How do you think staff has reacted to the opportunity for assistance if they want to go back to school?

WIC-R3: I think it has been mixed; there are some that have been quite keen and have done a couple of NVQs which were completed last year as the MD may well have said. But you can't always push people into doing something that they don't want to do.

- d. Would you say people are well trained for the position they are in?

WIC-R3: Yes absolutely, particularly when it comes to people like the laminators; it is highly skilled work. They have to be trained for probably 6 months plus so it is all on-going, and I think people in this company support each other well when it comes to this (training). So with WIC-EMP2 who is our new guy here, WIC-R2 and I have all spent time developing his capabilities.

## F. THOUGHTS on EVA<sup>®</sup> and EXPECTATIONS from PARTICIPATING IN THE STUDY

13. Have you heard of EVA<sup>®</sup>?
  - a. What are your thoughts on EVA<sup>®</sup>?
  - b. What are your experiences of EVA<sup>®</sup>?

WIC-R3: No, haven't heard of EVA<sup>®</sup>. (Interviewer explains the EVA<sup>®</sup> theory and how that ties into her work).

14. What are your expectations from participating in this study?

## Appendix 6: Sample Letter to Practitioners

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**Faculty of Business**

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www.brookes.ac.uk

[Date]

Dear [Name],

**Re: Assistance with Research**

I am a research student at Oxford Brookes University in the United Kingdom where I am undertaking research on value creation, growth and performance within SMEs towards a PhD in Business Studies. My work is being overseen by Dr Samantha Miles, Reader in Accounting and Finance and Stephen Duhan, Senior Lecturer both from the Department of Accounting, Finance and Economics in the Faculty of Business.

For my work, I will be using case studies to collect data from 4 medium-sized companies in the UK. In order to maximise the potential from these cases, I intend to use the Delphi technique to gathering data from experts/practitioners like yourself, to take into account your experience of using the EVA<sup>®</sup> model. We would like to ask for your co-operation to participate in this respect.

Having read your paper 'Measuring value enhancement through Economic Value Added: Evidence from Literature', I am particularly keen on learning of your thoughts on the EVA<sup>®</sup> model and to lean of any experience you have in practical or theoretical application of it as a performance model. I have attached a questionnaire outlining some questions but you are also free to make further comments if you desire to do so.

While I appreciate that you may have a really busy schedule, I sincerely hope you can afford a few minutes of your time to assist me with my work. For this I will be truly grateful. I am aiming to collect all my data before 25<sup>th</sup> November 2011.

Please feel free to contact me should you have any questions.

Thank you

Sincerely,

Dr. Samantha Miles, Stephen Duhan and Karen Dennis

## Appendix 7: Transcripts of Practitioner Interviews



### Faculty of Business

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#### Office Use Only

Case Code:

### Practitioner 1: US University Lecturer

Q: From your work on EVA, what do you think are the principles on which it was established?

A: Let me explain why I was a little bit interested in EVA. My dissertation when I was in grad school was on inflation adjustments to stock valuation. And in order to test this, what we did was take the Edward Bell Residual Income Model and adjust it for inflation.

We took this model and use it to value stocks, and we said, we allow the market stock investors as a whole; we might make some errors in terms of having valued stocks. And we kind of model it using this residual income model.

Q: how did you set out about using this model? How did you determine the variables to use in the model?

A: How did we model this? Well we tried to model it using the Edward Bell Model. We tried to make some adjustments to the model. We correct for inflation for example.

Well one of the things about this residual income model is one of the main components of it is Economic Value Added.

What it does it equates the stock price to future economic value added and the current book value of equity.

Why don't we take a look at Economic Value Added and apply the same adjustments to that and modify the residual income we can identify the distortions which might occur in applying Economic Value Added.

In the presence of inflation it's alleged that there are distortions to EVA. It might produce - it might miscalculate the EVA number, and the basic compensation which can be obtained from that prime resource.

Q: What data did you collect?

A: So each of those steps we collect the accounting data for a sample of firms. And then I looked at each one of those values and said, what could have been distorted by inflation? And if that's the case - and basically produce inflation adjustments to economic value added. That was my approach to it.

Now, if you can picture the data that I collected. I am sure in the UK you have similar collectable data. The data was just pure accounting numbers.

The main important numbers of EVA are earning numbers, depreciation numbers and so on. I collected these raw data numbers and... .... from a large data set and then apply mathematical adjustments to them. The names of the companies, the industries they are in, I was not interested in. I just did it purely on a statistical basis I did not really have any interest the decision to adopt and implement EVA. And that was pretty much the nature of my work.

Q: How did you use EVA in your work?

A: The EVA model, depending on how much value has been created in a single growth period. The Edward Bell Model also called the Residual Income Model-that model, what it does is, says we can actually take EVA and if we can estimate future EVA we can equate that to the current stock price. So we can actually tell you what the stock prices were. So of the two EVA is of 1 year snapshot whereas the Edward Bell Model takes multiple years of EVA. That is forecasted EVA and relates it to the current stock price. So they do different things.

In fact EVA, both models estimates EVA in a fairly simple way. I actually met Bennett-Stewart years ago at a conference years ago. His whole business was we were going to tell you basically what your EVA is. But we are not going to tell you exactly how to do it. His whole business line was based on the estimation of these actually inputs of the model. So when I did it, I did it using publicly available information and that is not what Stern Stewart would do you will probably have to be a bit more specific about the detailed nature of the adjustments

EVA is not a new concept. Accountants have called it residual income for centuries. Stern-Stewart basically trade mark it and then build a consultancy around using this residual income concept as compensation measure for rewarding managers if they create EVA. My point, what I try to show is that you could either create or destroy EVA by failing to make adjustments in the presence of inflation.

I teach MBA students here at [name of University] and I mentioned EVA in one of my courses and more or less none of the students have ever heard of it and I am wondering whether or not it is going out of favour. It seems to be becoming less popular than more popular.

Q: What advice could you offer in terms of trying to establish a robust methodology for the determination of principles, value drivers and variables?

A: Well I would start off with, you have got the basic economic model that they the developers [Stern Stewart] stated; that of NOPAT. They were dealing with some of the more peculiar financial statements ever for EVA. And so for EVA to work - you want to use it as you can work it out for a company; for a large corporation - but it is not that useful on a large corporation basis, its much more useful as I understand it if you could use it more at a divisional level within the firm.

We compute EVA for the British Petroleum, what we are going to find that EVA, if I compute EVA, if the EVA goes up this year I probably would expect that the stock price went up its like posting a large profit.....kind of getting into this simpler.....

But my understanding of EVA is like what.....it's the division manager who is in charge of meeting 150 people and the problem is how you determine whether is he or she is doing a good job. At the end of the year to say they did anything. And you can't just look at the stock price of a corporation because for a huge multinational corporation what it is an individual divisional manager does, may or may not have any effect on the stock prices it's not really related to him. So what you do is you say using EVA, you will apply EVA to this division. And this is where it gets complicated because now what you have got to do is where you can easily calculate EVA from large corporations what you have got to do is create EVA variables on a divisional basis to work out what the cost of the operating profit is going to be. But you also have to work out the capital employed in that because EVA is  $\text{NOPAT} - \text{Cost of Capital} \times \text{the Capital Employed}$ . You have to work out the capital employed by the division. And that's where it gets complicated because then you have depreciation charges. And what about assets that are shared between two divisions? And then you want to try and work out the return on the capital because you want to know the division of the risk levels at different levels of return. And that is where Stern Stewart really makes their money.

Q: How do you think EVA can be applied within an organisation?

A: I don't know whether you can compute EVA on a company wide basis but on a division wide basis. I think its complex because it comes down to really trying to untangle the internal accounts of the company. Where you have two divisions which share the same buildings, you need to charge that capital that's tied up in that building against the division because they are utilising that capital to generate

revenue to make a profit. So how much of that capital of that building is attributed. So, they use the market price of that building, how do they apportion the depreciation of that building and all the rest of it.

Q: In your opinion, do you think EVA<sup>®</sup> is more suited for smaller companies vs large organisations?

A: I think EVA<sup>®</sup> if implemented properly is really more applicable for divisions that are medium to small divisions. So this could be a company, a smaller company but I am not sure that doing it on a company wide basis makes so much that much sense because if its a publicly traded company then we have a better measure of value creation invest in the stock price. And we don't have to calculate it. The stock price will tell you whether or not you are doing the right thing. And if investors like what you are doing then that's good. The derivation of EVA<sup>®</sup> is that it's a way of establishing whether or not you are doing the right thing for people who works in the organisation too as whose actions directly impact the stock price or maybe too small or insignificant to impact the stock price. So we are trying to basically measure or create a proxy, another measure of whether you are creating value.

The beauty of EVA<sup>®</sup> is that it discourages managers growing their divisions just on an ad hoc basis. So if you are a manager of a division of 100 people you might say well, I have a bigger division I need more money, I want to expand, I want to open up more offices – this is great! But EVA<sup>®</sup> works because your profits are offset by the cost of those assets that you are employing. So if you are just adding more offices, more divisions you get more workers you are increasing your cost base and that considerably reduces your EVA<sup>®</sup>. So it really forces you to create value without just making the enterprise bigger. On a firm level basis, I am not sure that EVA<sup>®</sup> tells me anything or everything that I cannot be certain of just looking at the stock price.

Q: But what if the company is not trading on the stock market?

A: If the company is not trading on the stock market then that becomes a little more interesting. Because now you still have to determine the big unknown there is to determine the required return of the company. So one of the impacts of EVA<sup>®</sup> is the required return because you know EVA<sup>®</sup> basically says it's the economic value less than the amount of money you should earn from assets.

So you go estimate the required return. Assuming you could do that it's not impossible that you could do that, I mean people do it all the time; but you know you have to do it. Then I think for private companies EVA<sup>®</sup> could be a good performance measure, but I am not sure who the audience is. I mean, most private companies are owned by the managers.

*[Interviewer: Yes, that is the sort of thing I will be looking at. I will also be taking into consideration things like attitude of the manager, how likely they are in adapting to change or anything that might improve the company performance. How do they make decisions and not just based on whether or not they have the raw cash to invest.]*

Q: In your opinion, do you think EVA<sup>®</sup> can be used to aid decision-making in organisations?

A: You are talking about management decisions right? Whether or not they make the decision to pursue a new factory or some expansion or buy a piece of equipment.

But we have a better tool than EVA<sup>®</sup> and the better tool is NPV. So if I was talking to this company, if I was saying you need a tool to decide whether or not to make an investment decision – the investment decision is a NPV decision. And NVP is closely related to EVA<sup>®</sup> but it's a simpler more straight forward tool. What they should be using NPV or the IRR (Internal Rate of Return). This is what they want to use, not EVA<sup>®</sup>.

EVA<sup>®</sup> is more of a post measurement. It tells you how well you did. NPV is going to tell you whether or not to do it.

*[Interviewer: The thing is EVA<sup>®</sup> is marketed as this tool that can do all these things including aiding in the decision-making process of a company to invest or not to invest. So I want to look at the performance of the company based on the investment decisions that are made. So I will be looking at EVA<sup>®</sup> within that context.]*

Q: How do you think this EVA<sup>®</sup> measures up as a performance measure?

A: EVA<sup>®</sup> is a one period mark. So what happens, how do you find EVA<sup>®</sup> for a project that is going to cost example say £1M today and then it is going to generate some future returns of £300K for the next four years. EVA<sup>®</sup> will tell you that this year you are going to have. EVA<sup>®</sup> will tell you at the end of the project, we will be able to establish what the revenues received were, how much capital was employed. It will be able to tell us whether or not we did it. EVA<sup>®</sup> cannot tell me today whether or not to do it. I cannot see how you can use EVA<sup>®</sup> to make a multi-period investment decision that is going to have a cash flow today with multiple cash flows coming in the future. EVA<sup>®</sup> tends to be a one period measure; it measure performance over one period. It doesn't allow you to evaluate the performance over multiple periods whereas the NPV does. The NPV is very simple to analyse. I teach Corporate Finance to MBA students where they make these decisions and nobody uses EVA<sup>®</sup> to make investments decisions. Everyone use NPV. In fact, there is a study by John Graham and Campbell Harvey.

It was a survey they did and they surveyed the Chief Financial Officers of firms in the United States. And they say, how do you make investment decisions? What methods do you use, what tool do you use? The vast majority uses some sort of NPV analysis and there were also some other qualified methods.

I think I would be more skeptical just because Stern Stewart says that EVA<sup>®</sup> can solve the world's problems. I think probably not! I do not think it's true.

*Interviewer: That is what I will be exploring because I am looking at the robustness of EVA<sup>®</sup> and its applicability to do these things. However I will be looking at smaller entities as they have created and implemented the model in large and multinational organisations.*

Q: From the work you have done, do you think EVA<sup>®</sup> would be a suitable tool for decision-making in smaller companies?

A: Smaller companies have, I would think of EVA<sup>®</sup> as a compensation tool to reward managers after the event. Or you are going to use it as a decision-making tool going forward – and that isn't the same thing.

One of the problems for smaller companies with a NPV, for smaller companies is that NPV does make some assumptions about accessibility of the capital. And so we normally assume that firms can raise capital when they need it. For a lot of small companies, that is obviously not the case. If they have the money around they can get it but they may not be able to go back to the bank and get more money. Which does limit the ability, but we have a way around that and the way around that is something called profitability index which is basically a modification of the NPV which basically says you know you have got a certain amount of money. Ok, if I have a certain amount of money and I have got three different projects, which one should I pick? And I cannot do them all, I have to pick one of them – maybe do none of them. But the profitability index combines with the NPV will answer that question and will produce the right decision. It is not obvious how you are going to use EVA<sup>®</sup> to make that decision.

Q: Do you think that EVA<sup>®</sup> could be used after a decision has been made to look at the performance of the company after a particular decision has been made – whether it is after 1 month, 6 months, 1 year etc.?

A: It depends. If you are a manager and I have invested in a project and it is going to take 5 years before the project comes through to fruition; say for instance product development, if you value it year from year, it's not going to look very good, right? You know there is no revenue coming in yet and we have spent a lot of money. So if I might not have an inclination of any EVA that year.

And then as the years go by, it begins to show EVA<sup>®</sup>, the project was good.

I don't think that you can use it to evaluate individual project but you would probably use it to evaluate the performance of an individual manager who is in charge of that project.

So on average he or she is picking good projects its because the value will show you positive EVA<sup>®</sup> which will means that manager is picking good project and creating value.

And you could give or take; you could say well you might decide to give a bonus if he or she picks positive EVA<sup>®</sup> projects. But in terms of actually picking this project, the rule is that you should use the NPV rule. Because if picked, if you should add value, you should pick consistently positive NPV projects you will end up with positive EVA<sup>®</sup>. The two are intrinsically related. So you use NPV on the front end and then EVA<sup>®</sup> check to see if what you did was right at the back end using EVA<sup>®</sup>. So one is the pre, one is the post.

If you could show the relationship between NPV and EVA<sup>®</sup> on the other end and think of them as two pieces to the puzzle that might help in terms of showing how small firms could employ NPV and then that they can come back and check they did the right thing with EVA<sup>®</sup> that would be interesting.

Q: Could you give some specific details about the adjustments you had made to the different variables in your work and were there any particular reasons other than effect of inflation on these variables why they were selected?

A: I really can't remember off hand. If I did make any adjustments, they would be fully described in the papers.

Q: How many adjustments were made and what were the main ones?

A: See above

Q: Although you had not taken into account characteristics of company in you work, in your opinion and from your work do you think that a company's characteristic would influence the selection of those variables selected for adjustment.

A: From a pure EVA<sup>®</sup> computation, the answer is no. As long as I have the accounting data, other characteristics are unimportant. As an analogy, if I was computing the area of a building, I wouldn't care what it was made out of.

## **Practitioner 2: University Lecturer in Slovakia**

### **1. EVA® PRINCIPLES**

Q 1.1: In the determination of EVA® adjustments what do you consider the main principles to be?

A: In the determination of EVA® adjustments the main principle should proceed from a developed capital market.

Q. 1.2: Would it be possible to establish a set of principles on the basis of corporate characteristics? If so what factors would need to be taken into consideration?

A: On determining EVA® principles the main factors include the possibility of a company to make business with securities in the Stock exchange market in Bratislava or in stock exchange markets abroad, or to make business with securities in the off-exchange market.

Q. 1.3 What other considerations need to be taken into account for model formulating and testing?

A: Other important considerations which need to be taken into account in model formulating and testing are the costs of alternative opportunities. They should be considered and utilized by a company for investing.

### **2. VALUE DRIVERS**

Q. 2.1: Value can be created by 1) increasing return for the same level of investment; 2) reducing the cost of capital 3) reducing investment whilst maintaining returns. Are there any other ways in which value can be created which are central to EVA®?

A: Value is created by 1) increasing return at the same level of investment.

Q. 2.2: In terms of increasing return, what would you say are the value drivers of EVA® for a typical company?

A: In term of increasing return, the value drivers of EVA® in a typical company can be considered an increase of the sale or a price increase of the products produced by a company.

Q. 2.3: In terms of reducing the cost of capital, what would you say are the value drivers of EVA® for a typical company?

A: In terms of reducing the capital costs, the value drivers of EVA® in a typical company can be considered a decrease of the interest rates and a dividend policy, i.e. the profit distribution among shareholders.

Q. 2.4: How do you identify the adjusting variables from the principles and value drivers identified? How confident are you with the selection process?

A: The suitable variables from the principles are difficult to define because we are not able to quantify the capital market development. From among the chosen drivers the variables can be obtained from the intradepartmental accounting.

Q. 2.5: From your work on EVA<sup>®</sup>, are the value drivers independent or dependent variables?

A: The value drivers are considered by us to be dependent variables.

Q. 2.6: What other factors should be taken into consideration when making amendments to a company's financial statement?

A: Another factor which must be taken into account is the intradepartmental accounting.

Q. 2.7: What advice could you offer in terms of trying to establish a robust methodology for the determination of principles, value drivers and variables?

A: In the determination of principles it is recommended to focus on the compatibility of data obtained from the accounting and accounting statements.

### **3. APPLICATION OF EVA<sup>®</sup>**

Q. 3.1: How have you used EVA<sup>®</sup>? i.e What core functionality of EVA<sup>®</sup> did you use?

Q. 3.2: What type of organisations have you applied the EVA<sup>®</sup> model to?

Q. 3.3: Are certain organisational characteristics important for EVA<sup>®</sup> application?

Q. 3.4: Does organisation size matters when implementing EVA<sup>®</sup>?

Q. 3.5: What are the main information sources needed to produce an EVA<sup>®</sup> model?

Q. 3.6: How success was your implementation of EVA<sup>®</sup>? What went well and what could have gone better?

Q. 3.7: From your experience how has management and workers respond to EVA<sup>®</sup>?

Q. 3.8: From your experience, how has EVA<sup>®</sup> responded to sensitivity analysis?

A: Considering the fact that the practical application of the EVA<sup>®</sup> method is at present at the stage of our research and verification this part of your questions cannot be satisfactorily answered.

#### 4. PROBLEMS, CHALLENGES AND ISSUES

Q. 4.1. What are the major constraints experienced when applying EVA® in practice?

- A: The major constraints on applying EVA® can be described as follows:
- since it is based on the accounting information, the calculation of entrance data related to profit and invested capital requires many adjustments in accounting variables,
  - calculation of costs of the owned capital does not give a clear result even on applying several models,
  - as long as the growth of EVA® indicators is accompanied by an increase of capital costs, the value of a company can decrease even with the simultaneous increase of EVA®,
  - although it considers returns and costs achieved in a particular period, it does not contain expected benefits in the years to come, that is neither directly in the form of the estimates of future flow variables nor by means of the valuation of assets and engagements in the present value of future returns.

Q. 4.2: How can these major constraints be dealt with?

- A: These obstacles can be overcome by an adjustment of data obtained from the accounting and accounting statements.

Q. 4.3: What are the challenges of applying EVA® in practice?

- A: At present we are not aware of any challenges.

Q. 4.4: Are any of the following important issues in practice, if so can you please explain why

- Inflation
- inability to determine the cost of capital accurately
- problem of wrong periodizing
- focus on short-termism
- accounting distortions
- international accounting differences?

- A: Problems expected in practice can arise from the:
- inability to define the capital costs precisely,
  - accounting distortion and international accounting differences; in this case it is mainly the difference between American accounting standards and European ones.

#### 5. Opinion

Q. 5.1: In your opinion how effective is EVA® as a measure of

- Shareholder value:
- Performance measure:
- Evaluation tool for decision-making:

- A: Effectiveness of the EVA<sup>®</sup> method is a measure of the:
- shareholder's value which is expressed in the growth of the market value,
  - output - enables the company to measure its output through the growth of the market value,
  - instrument for the evaluation of decisions - the application of the EVA<sup>®</sup> method is recommended especially in the case of long-term decisions (for example, investment projects).

Q. 5.2: How do you think EVA<sup>®</sup> compares with other methods of evaluation?

- A: The EVA<sup>®</sup> method is close to the category of the net present value. In comparison with the capital profitability it is characterized by these differences:
- in the economic interpretation it is based on the profit, i.e. it incorporates also the
  - alternative costs of the invested own capital,
  - it includes only returns and costs associated with the main activity,
  - on calculating the capital costs it considers only the capital which is tied in assets exploited in the main company activity.

Q. 5.3: In your opinion how could EVA<sup>®</sup> be improved?

- A. The question how could be EVA<sup>®</sup> improved can be answered only after its practical verification and research completion.

#### **ADDITIONAL COMMENTS**

Q1. Relating to 1.3 : Are there any issues you can identify that would be associated with the availability of information or the misinterpretation of information?

Answer to the point 1.3:

Problems concerned with the availability of the information occur when companies are not willing to give data for performing the analysis, or they do not want to collaborate. Sometimes there are occasions when companies do not want to publish the real information and instead of it they give applicants the modified information.

Q2. Relation to 1.4: Can you kindly define cost alternative opportunity?

Answer to the point 1.4.

In this point the matter in question are the costs of alternative opportunities which can arise in company investments, and it is not the case of alternative costs.

Q3. Relating to 2.4: Can you kindly explain what is meant by "quality cost of capital market development"

Answer to the point 2.4:

In our initial answer we wrote that we did not know to quantify the capital market development, which means that we were not able to say how it would be developing in the future. As for the expression “quality costs during the capital market development “ it is probably a mistake because we did not use it.

### **Practitioner 3: Business Manager in the US**

#### **1. WHAT IS VALUE**

Q1.1: Can you provide a definition of value?

A: Value is controlling complexity for stakeholders, especially for customers.

Q1.2: Is there a link between value and the economic worth of a business?

A: It is imperative.

Q1.3: Who are the various stakeholders in a company?

A: Society and the Planet in the broadest sense. Then come the economic stakeholders such as shareholders and supply chains, local communities, etc.

Q1.4: Is the definition of value dependent on for whom value is being created?

A: Of course. Value creation for each stakeholder is different.

Q1.5: To what extent do you agree or disagree that 'the purpose of any business is to create value for its stakeholders (customers, employees, investors) and that sustainable value cannot be created for one stakeholder group unless it is created for all of them.

A: Value must also be produced for society in a broader manner and for the planet (perhaps, "first do no harm"), before other stakeholders should be considered.

Q1.6: Do you think that value is identified in companies? If so how?

A: A value proposition that includes society, planet and profits is what sustainable enterprise is all about. It was not so important in an "empty world" but is imperative now.

#### **2. WHY CREATE VALUE**

Q2.1: For whom should value be created and why?

A: Answered above. Why? Enterprise is simply a vessel for value creation. NGO's also create value. A single person can create value.

Q2.2: Is there a defined path for creating value in a business?

A: Take the triple bottom line and do the accounting

Q2.2.1 Is this path; the act of creating and destroying value, differ between:

- stakeholder groups?

A: Of course as discussed above.

- large companies and SMEs

A: I would prefer to say that value creation or the control of value destruction is different as companies become large enough to create feedback loops that are too large to maximize efficiency.

Q2.3: What are the barriers to creating value within a business?

A: The bandwidth of communication. The size and efficiency of learning loops. The loss of balance of power between stakeholder groups.

Q2.4: Can value be destroyed? If so how?

A: If value can be created, it can be destroyed. Yin/Yang. Creation of economic value for a few stakeholders at the cost of polluting the air, for example, destroys value for many incrementally.

### **3. MEASURING VALUE**

Q3.1: How can value be created?

A: Control complexity for as many stakeholders as possible.

Q3.2: What factors drive value within a company?

A: Community and management.

Q3.3: Can value be quantified? How can value be measured?

A: Yes value can be quantified. Measure the TBL and account for it.

Q3.4: Should a cost be assigned to the nonfinancial value created (destroyed) by a business?

A: Of course.

Q3.5: Can you think of any examples of financial and non-financial value created in business?

A: Read Natural Capitalism by Hawken, cases in the HBJ, etc. There are many examples.

Q3.6 To what extent do you consider the factors that create value within large companies can be transferred to SMEs?

A: SMEs create values that should be transferred to larger companies.

#### **4. EVA<sup>®</sup> and value creation**

Q: 4.1: Are you familiar with EVA<sup>®</sup>? (If not move on to Question 5)

A: No

Q4.2: To what extent do you think that EVA<sup>®</sup> captures value creation?

Q4.3: Do you think that the development of an EVA<sup>®</sup> model, in which value is quantified, is useful?

Q4.4: What do you think the problems associated with this kind of approach would be?

#### **5. STRATEGY & VALUE CREATION**

Q5.1: Should value creation be central to the strategy employed by the business or is it a consequent thereof?

A: It is impossible to develop a vision for a firm without a value proposition.

Q5.2: To what extent is the sustainability of a business dependent on the value creation activities of the business?

A: If a business does not create value, then it is not a business.

Q5.3: To what extent do you think value creation determines the competitiveness of a business?

A: Long-term it is central. Short term it may make little difference.

Q5.4: To what extent do you think that R&D and Innovation amounts to value creation in a business?

A: Innovation from R+D creates a customer which is a central stakeholder group.

Q5.5: To what extent do you think that traditional financial reporting is a barrier to value creation?

A: It accounts for only one dimension and it is highly artificial and arbitrary from natural laws.

#### **6. MANAGEMENT ATTITUDE & VALUE CREATION**

Q6.1: How important is leadership and management style and personal beliefs in value created within a business?

A: Depends on the size of the firm and the influence of managers.

Q6.2: Are there any specific skills or traits needed by management in the pursuit of creating value within a business?

A: They need to understand sustainability, limits to growth and the requiem scenario.

Q6.3: How important are the following managerial characteristics 'leadership', enterprise, corporate social responsibility?

A: Do not understand question

Q6.4: Is there a relationship between the way in which a company operates and the value created?

A: Long-term yes. Short term, maybe not.

Q6.5: How important are the following operational characteristics "innovation and evolution", "R&D capability", and "capability for differentiation"?

A: Important for what? Do not understand question.

Q6.6: Can certain operational characteristics destroy value? Can you give examples?

A: Yes. If you pollute a river, value is destroyed. If you treat employees like chattel, you destroy value.

Q6.7: Is there a link relationship between value creation and employee performance?

A: Long term yes. Short term, maybe not.

Q6.8: How important are the following employee characteristics: "distinctive skills", "personal experience", "learning and training", and "team work" in creating value?

A: How employees and stakeholders are organized and how they learn are the underlying human assets of a firm.

Q6.9: Can certain employee characteristics destroy value? Can you give examples?

A: Unhappy, sick, poor, uneducated employees (or customers) do not create value and can destroy it. If an unhappy employee comes to work with a gun and kills others, he has destroyed value.

## Appendix 8: Sample Company Reports

### Appendix 8.A: ABC Limited Sample Annual Report (2007/08)

| <b>ABC SYSTEMS LIMITED</b>                           |              |                   |                   |
|--|--------------|-------------------|-------------------|
| <b>Profit and Loss Account</b>                       |              |                   |                   |
| <b>for the year ended 31 December 2008</b>           |              |                   |                   |
|  | <b>Notes</b> | <b>2008<br/>£</b> | <b>2007<br/>£</b> |
| <b>Turnover</b>                                      |              | 4,892,451         | 4,631,500         |
| Cost of sales  |              | (3,253,243)       | (3,112,450)       |
| <b>Gross profit</b>                                  |              | <u>1,639,208</u>  | <u>1,519,050</u>  |
| Administrative expenses                              |              | (1,240,246)       | (1,357,261)       |
| Other operating income                               |              | 1,141             | 203               |
| <b>Operating profit</b>                              | 2            | <u>400,103</u>    | <u>161,992</u>    |
| Interest receivable                                  |              | 585               | 557               |
| Interest payable                                     |              | (18,777)          | (17,985)          |
| <b>Profit on ordinary activities before taxation</b> |              | <u>381,911</u>    | <u>144,564</u>    |
| Tax on profit on ordinary activities                 | 3            | (31,512)          | (29,400)          |
| <b>Profit for the financial year</b>                 |              | <u>350,399</u>    | <u>115,164</u>    |
| <b>Retained profit for the financial year</b>        | 10           | <u>350,399</u>    | <u>115,164</u>    |

# ABC SYSTEMS LIMITED

## Balance Sheet as at 31 December 2008

|  | Notes | 2008<br>£        | 2007<br>£        |
|--|-------|------------------|------------------|
| <b>Fixed assets</b>  |       |                  |                  |
| Tangible assets  | 4     | 99,634           | 110,059          |
| <b>Current assets</b>  |       |                  |                  |
| Stocks   |       | 203,287          | 208,364          |
| Debtors  | 5     | 1,160,351        | 842,642          |
| Cash at bank and in hand                                       |       | 53,036           | 27,682           |
|  |       | <u>1,416,674</u> | <u>1,078,688</u> |
| <b>Creditors: amounts falling due within one year</b>          | 6     | (1,225,745)      | (1,021,660)      |
| <b>Net current assets</b>                                      |       | <u>190,929</u>   | <u>57,028</u>    |
| <b>Total assets less current liabilities</b>                   |       | <u>290,563</u>   | <u>167,087</u>   |
| <b>Creditors: amounts falling due after more than one year</b> | 7     | (12,770)         | (20,131)         |
| <b>Provisions for liabilities and charges</b>                  | 8     | -                | (5,000)          |
| <b>Net assets</b>  |       | <u>277,793</u>   | <u>141,956</u>   |
| <b>Capital and reserves</b>                                    |       |                  |                  |
| Called up share capital  | 9     | 50,000           | 50,000           |
| Capital reserve  |       | 11,724           | 11,724           |
| Profit and loss account  | 10    | 216,069          | 80,232           |
| <b>Shareholders' funds</b>                                     |       | <u>277,793</u>   | <u>141,956</u>   |

The directors are satisfied that the company is entitled to exemption under Section 249A(1) of the Companies Act 1985 and that no members have requested an audit pursuant to section 249B(2) of the Act.

The directors acknowledge their responsibilities for:

- (i) ensuring that the company keeps proper accounting records which comply with Section 221 of the Companies Act 1985; and
- (ii) preparing accounts which give a true and fair view of the state of affairs of the company as at the end of the financial year and of its profit or loss for the financial year in accordance with the requirements of Section 226 of the Companies Act

The accounts have been prepared in accordance with the special provisions relating to small companies within Part VII of the Companies Act 1985.

Director

Approved by the board on 3<sup>rd</sup> SEPTEMBER 2009

# ABC SYSTEMS LIMITED

## Notes to the Accounts for the year ended 31 December 2008

### 1 Accounting policies

The accounts have been prepared under the historical cost convention and in accordance with the Financial Reporting Standard for Smaller Entities (effective January 2007).

#### Turnover

Credit is taken for revenue on a billing basis within the year of accounting whilst expenditure is dealt with on the accruals basis.

#### Depreciation

Depreciation is calculated to write off the cost of the tangible fixed assets on a reducing balance from acquisition date as follows :

|                      |        |
|----------------------|--------|
| Motor vehicles       | 25%    |
| Office Machinery     | 33.33% |
| Furniture & Fittings | 15%    |
| Plant & Loose Tools  | 20%    |

#### Stocks

These have been valued by the directors at acquisition cost.

#### Pension costs

Contributions in respect of the company's defined contribution pension scheme are charged to the profit and loss account for the year in which they are payable to the scheme. Differences between the contributions payable and contributions actually paid in the year are shown as either accruals or prepayments at the year end.

| 2 Operating profit              | 2008           | 2007           |
|---------------------------------|----------------|----------------|
|                                 | £              | £              |
| This is stated after charging:  |                |                |
| Depreciation & loss on disposal | 29,298         | 33,216         |
| Directors remuneration          | 132,298        | 293,107        |
| Bad debts                       | 465            | -              |
| Staff pension scheme            | 26,636         | 29,596         |
|                                 | <u>188,697</u> | <u>355,919</u> |
| 3 Taxation                      | 2008           | 2007           |
|                                 | £              | £              |
| UK corporation tax              | <u>31,512</u>  | <u>29,400</u>  |

... received surrendered tax losses from ... of  
£153,844 and £107,336 from ... with no payments being made.

# ABC SYSTEMS LIMITED

## Notes to the Accounts for the year ended 31 December 2008

### 4 Tangible fixed assets

|                       | Property<br>improvements<br>£ | Motor<br>vehicles<br>£ | Office<br>machinery<br>£ | Furniture &<br>fittings<br>£ | Plant &<br>loose tools<br>£ | Total<br>£     |
|-----------------------|-------------------------------|------------------------|--------------------------|------------------------------|-----------------------------|----------------|
| <b>Cost</b>           |                               |                        |                          |                              |                             |                |
| At 1 January 2008     | 11,978                        | 104,849                | 89,268                   | 28,897                       | 10,052                      | 245,044        |
| Additions             | -                             | 15,146                 | 3,536                    | -                            | 191                         | 18,873         |
| Disposals             | -                             | -                      | -                        | -                            | -                           | -              |
| At 31 December 2008   | <u>11,978</u>                 | <u>119,995</u>         | <u>92,804</u>            | <u>28,897</u>                | <u>10,243</u>               | <u>263,917</u> |
| <b>Depreciation</b>   |                               |                        |                          |                              |                             |                |
| At 1 January 2008     | -                             | 38,087                 | 69,473                   | 17,747                       | 9,678                       | 134,985        |
| Charge for the year   | -                             | 20,162                 | 7,361                    | 1,673                        | 102                         | 29,298         |
| At 31 December 2008   | <u>-</u>                      | <u>58,249</u>          | <u>76,834</u>            | <u>19,420</u>                | <u>9,780</u>                | <u>164,283</u> |
| <b>Net book value</b> |                               |                        |                          |                              |                             |                |
| At 31 December 2008   | <u>11,978</u>                 | <u>61,746</u>          | <u>15,970</u>            | <u>9,477</u>                 | <u>463</u>                  | <u>99,634</u>  |
| At 31 December 2007   | <u>11,978</u>                 | <u>66,762</u>          | <u>19,795</u>            | <u>11,150</u>                | <u>374</u>                  | <u>110,059</u> |

### 5 Debtors

|                 | 2008<br>£        | 2007<br>£      |
|-----------------|------------------|----------------|
| Trade debtors   | 733,216          | 820,711        |
| Holding Company | 411,088          | -              |
| Other debtors   | 16,047           | 21,931         |
|                 | <u>1,160,351</u> | <u>842,642</u> |

### 6 Creditors: amounts falling due within one year

|   | 2008<br>£        | 2007<br>£        |
|---|------------------|------------------|
| Receivables finance   | 417,480          | 196,481          |
| Associated companies  | 129,776          | 204,587          |
| Obligations under finance lease and hire purchase contracts | 17,663           | 21,804           |
| Trade creditors   | 538,679          | 469,138          |
| Corporation tax   | 30,706           | 30,263           |
| Other taxes and social security costs                       | 68,446           | 70,522           |
| Directors' current account                                  | -                | 18,214           |
| Accrued charges & provisions                                | 22,995           | 10,651           |
|   | <u>1,225,745</u> | <u>1,021,660</u> |

### 7 Creditors: amounts falling due after more than one year

|   | 2008<br>£     | 2007<br>£     |
|---|---------------|---------------|
| Obligations under finance lease and hire purchase contracts | <u>12,770</u> | <u>20,131</u> |

# ABC SYSTEMS LIMITED

## Notes to the Accounts for the year ended 31 December 2008

### 8 Provisions for liabilities and charges

|  |          |              |
|--|----------|--------------|
| Deferred taxation:                     | 2008     | 2007         |
|  | £        | £            |
| At 1 January                           | 5,000    | 5,000        |
| Charged to the profit and loss account | (5,000)  | -            |
|  | <u>-</u> | <u>5,000</u> |
| At 31 December                         |          |              |

This reserve had been made to take account of the timing differences arising between depreciation allowed for tax purposes on fixed assets qualifying for capital allowances and the depreciation of those accounts. This provision is no longer required.

### 9 Share capital

|                                     |        |        |                |                |
|-------------------------------------|--------|--------|----------------|----------------|
| Authorised:                         |        |        | 2008           | 2007           |
| Ordinary shares of £1 each          |        |        | £              | £              |
|                                     |        |        | <u>100,000</u> | <u>100,000</u> |
|                                     | 2008   | 2007   | 2008           | 2007           |
|                                     | No     | No     | £              | £              |
| Allotted, called up and fully paid: |        |        |                |                |
| Ordinary shares of £1 each          | 50,000 | 50,000 | <u>50,000</u>  | <u>50,000</u>  |

### 10 Profit and loss account

|                 |  |  |                |               |
|-----------------|--|--|----------------|---------------|
|                 |  |  | 2008           | 2007          |
|                 |  |  | £              | £             |
| At 1 January    |  |  | 80,232         | 91,331        |
| Retained profit |  |  | 350,399        | 115,164       |
| Dividends       |  |  | (214,562)      | (126,263)     |
|                 |  |  | <u>216,069</u> | <u>80,232</u> |
| At 31 December  |  |  |                |               |

### 11 Receivables Financing

The Company entered into a contract with [redacted] limited now known as [redacted] on 16 September 1990 to provide [redacted] the company's turnover. The arrangements were secured by a charge on the book debts of the company and the indemnities given by the directors together with two associated companies.

### 12 Related parties

Two directors and shareholders were also controlling directors and shareholders of two associated companies [redacted] on 20th April 2008 when the latter company was acquired by [redacted] remains an associated company as does [redacted] but the shareholders of the holding company have no financial interest in that company.

The total manufacturing production of [redacted] amounting to £1,142,577 (2007:£1,271,514) is sold exclusively to this company.

Intercompany indebtedness at 31 December 2008 is shown in Notes 5 & 6.

**Appendix 8.B: DGE Limited Sample Report (2010/11)**

**DGE LIMITED**

**PROFIT AND LOSS ACCOUNT  
for the Year Ended 31 March 2011**

|  | Notes | 31 3 11<br>£  | 31 3 10<br>£   |
|--|-------|---------------|----------------|
| <b>TURNOVER</b>  | 2     | 7,532,691     | 8,302,924      |
| Cost of sales  |       | (5,219,109)   | (5,661,449)    |
| <b>GROSS PROFIT</b>                                      |       | 2,313,582     | 2,641,475      |
| Administrative expenses                                  |       | (2,267,225)   | (2,288,501)    |
| <b>OPERATING PROFIT</b>                                  | 3     | 46,357        | 352,974        |
| Interest receivable and similar income                   |       | 415           | 2,370          |
|  |       | 46,772        | 355,344        |
| Interest payable and similar charges                     |       | (33,306)      | (27,344)       |
| <b>PROFIT ON ORDINARY ACTIVITIES<br/>BEFORE TAXATION</b> |       | 13,466        | 328,000        |
| Tax on profit on ordinary activities                     | 4     | 47,017        | (66,537)       |
| <b>PROFIT FOR THE FINANCIAL YEAR</b>                     |       | <u>60,483</u> | <u>261,463</u> |

The notes form part of these financial statements

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**DGE LIMITED**

**BALANCE SHEET**  
31 March 2011

|  | Notes | 31 3 11<br>£     | 31 3 10<br>£     |
|--|-------|------------------|------------------|
| <b>FIXED ASSETS</b>                          |       |                  |                  |
| Intangible assets                            | 6     | -                | 6,570            |
| Tangible assets                              | 7     | 245,085          | 296,295          |
|  |       | <u>245,085</u>   | <u>302,865</u>   |
| <b>CURRENT ASSETS</b>                        |       |                  |                  |
| Stocks                                       |       | 17,410           | 17,410           |
| Debtors                                      | 8     | 3,192,986        | 2,299,990        |
| Cash at bank and in hand                     |       | 161              | 546,167          |
|  |       | <u>3,210,557</u> | <u>2,863,567</u> |
| <b>CREDITORS</b>                             |       |                  |                  |
| Amounts falling due within one year          | 9     | (2,213,337)      | (1,836,316)      |
| <b>NET CURRENT ASSETS</b>                    |       | <u>997,220</u>   | <u>1,027,251</u> |
| <b>TOTAL ASSETS LESS CURRENT LIABILITIES</b> |       | 1,242,305        | 1,330,116        |
| <b>CREDITORS</b>                             |       |                  |                  |
| Amounts falling due after more than one year | 10    | (407,732)        | (566,026)        |
| <b>NET ASSETS</b>                            |       | <u>834,573</u>   | <u>774,090</u>   |
| <b>CAPITAL AND RESERVES</b>                  |       |                  |                  |
| Called up share capital                      | 14    | 3                | 3                |
| Profit and loss account                      | 15    | 834,570          | 774,087          |
| <b>SHAREHOLDERS' FUNDS</b>                   |       | <u>834,573</u>   | <u>774,090</u>   |

The financial statements have been prepared in accordance with the special provisions of Part 15 of the Companies Act 2006 relating to small companies and with the Financial Reporting Standard for Smaller Entities (effective April 2008)

The financial statements were approved by the Board of Directors on its behalf by

11 / 4 / 2011 and were signed on

- Director

The notes form part of these financial statements

# DGE LIMITED

## NOTES TO THE FINANCIAL STATEMENTS - continued for the Year Ended 31 March 2011

### 1 ACCOUNTING POLICIES - continued

#### Leasing commitments

Assets obtained under hire purchase contracts or finance leases are capitalised in the balance sheet. Those held under hire purchase contracts are depreciated over their useful estimated lives. Those held under finance leases are depreciated over their estimated useful lives or the lease term, whichever is the shorter. The interest element of these obligations is charged to the profit and loss account over the relevant period. The capital element of the future payments is treated as a liability.

Rentals paid under operating leases are charged to the profit and loss account on a straight line basis over the period of the lease.

#### Pension costs and other post-retirement benefits

The company makes contributions, on behalf of employees and directors, to personal pension plans. Contributions for the period are charged in the profit and loss account.

#### Revenue Grants

Government grants and contributions received are matched with the expenditure to which they are intended to contribute when the conditions for their receipt have been fulfilled.

#### Share Based Payments

Share options in issue have been accounted for in line with the FRSS (effective April 2008) whereby disclosure is made of the principal terms and conditions of the arrangement and no charge is recognised in profit and loss.

### 2 TURNOVER

All turnover has been generated from transactions within the United Kingdom.

### 3 OPERATING PROFIT

The operating profit is stated after charging/(crediting)

|  | 31 3 11            | 31 3 10            |
|--|--------------------|--------------------|
|  | £                  | £                  |
| Depreciation - owned assets                        | 108,846            | 88,078             |
| Goodwill amortisation                              | 6,569              | 19,710             |
| Auditors' remuneration                             | 7,600              | 7,500              |
| Foreign exchange differences                       | (1,079)            | (7,562)            |
| Pension costs                                      | <u>68,131</u>      | <u>64,781</u>      |
| <br>Directors' remuneration and other benefits etc | <br><u>422,664</u> | <br><u>500,277</u> |

The number of directors to whom retirement benefits were accruing was as follows

|                        |          |          |
|------------------------|----------|----------|
| Money purchase schemes | <u>4</u> | <u>4</u> |
|------------------------|----------|----------|

### 4 TAXATION

#### Analysis of the tax (credit)/charge

The tax (credit)/charge on the profit on ordinary activities for the year was as follows

|                                      | 31 3 11         | 31 3 10       |
|--------------------------------------|-----------------|---------------|
|                                      | £               | £             |
| Current tax                          |                 |               |
| UK corporation tax                   | -               | 498           |
| Deferred tax                         | <u>(47,017)</u> | <u>66,039</u> |
| Tax on profit on ordinary activities | <u>(47,017)</u> | <u>66,537</u> |

**DAE LIMITED**

**NOTES TO THE FINANCIAL STATEMENTS - continued**  
for the Year Ended 31 March 2011

**7 TANGIBLE FIXED ASSETS**

|                       | Plant and<br>machinery<br>£ | Fixtures<br>and<br>fittings<br>£ | Computer<br>equipment<br>£ | Totals<br>£    |
|-----------------------|-----------------------------|----------------------------------|----------------------------|----------------|
| <b>COST</b>           |                             |                                  |                            |                |
| At 1 April 2010       | 276,751                     | 42,023                           | 183,033                    | 501,807        |
| Additions             | -                           | 1,525                            | 56,111                     | 57,636         |
| At 31 March 2011      | <u>276,751</u>              | <u>43,548</u>                    | <u>239,144</u>             | <u>559,443</u> |
| <b>DEPRECIATION</b>   |                             |                                  |                            |                |
| At 1 April 2010       | 79,670                      | 17,832                           | 108,010                    | 205,512        |
| Charge for year       | 56,005                      | 3,050                            | 49,791                     | 108,846        |
| At 31 March 2011      | <u>135,675</u>              | <u>20,882</u>                    | <u>157,801</u>             | <u>314,358</u> |
| <b>NET BOOK VALUE</b> |                             |                                  |                            |                |
| At 31 March 2011      | <u>141,076</u>              | <u>22,666</u>                    | <u>81,343</u>              | <u>245,085</u> |
| At 31 March 2010      | <u>197,081</u>              | <u>24,191</u>                    | <u>75,023</u>              | <u>296,295</u> |

Included in Plant and Machinery are assets held under finance leases with a net book value of £18,398 (2010 £33,563) at the year end, depreciation of £15,164 (2010 £13,954) has been charged on these assets during the year

**8 DEBTORS AMOUNTS FALLING DUE WITHIN ONE YEAR**

|                                 | 31 3 11<br>£     | 31 3 10<br>£     |
|---------------------------------|------------------|------------------|
| Trade debtors                   | 1,060,521        | 689,395          |
| Amounts recoverable on contract | 1,974,594        | 1,544,196        |
| Other debtors                   | 157,871          | 66,399           |
|                                 | <u>3,192,986</u> | <u>2,299,990</u> |

**9 CREDITORS AMOUNTS FALLING DUE WITHIN ONE YEAR**

|                              | 31 3 11<br>£     | 31 3 10<br>£     |
|------------------------------|------------------|------------------|
| Bank loans and overdrafts    | 335,654          | 160,750          |
| Finance leases               | 16,439           | 16,937           |
| Trade creditors              | 1,675,088        | 1,235,837        |
| Taxation and social security | 55,672           | 130,268          |
| Other creditors              | 130,484          | 292,524          |
|                              | <u>2,213,337</u> | <u>1,836,316</u> |

**10 CREDITORS AMOUNTS FALLING DUE AFTER MORE THAN ONE YEAR**

|                | 31 3 11<br>£   | 31 3 10<br>£   |
|----------------|----------------|----------------|
| Bank loans     | 406,896        | 538,479        |
| Finance leases | 836            | 17,547         |
|                | <u>407,732</u> | <u>556,026</u> |

**DGE LIMITED**

**NOTES TO THE FINANCIAL STATEMENTS - continued**  
for the Year Ended 31 March 2011

**11 OPERATING LEASE COMMITMENTS**

The following operating lease payments are committed to be paid within one year

|                            | 31 3 11 | 31 3 10 |
|----------------------------|---------|---------|
|                            | £       | £       |
| Expiring                   |         |         |
| Between one and five years | 40,995  | 46,512  |
| In more than five years    | 95,586  | 95,586  |
|                            | 136,581 | 142,098 |

**12 SECURED DEBTS**

The following secured debts are included within creditors

|                | 31 3 11 | 31 3 10 |
|----------------|---------|---------|
|                | £       | £       |
| Bank overdraft | 158,237 | -       |
| Bank loans     | 584,313 | 699,229 |
|                | 742,550 | 699,229 |

The bank loan and overdraft are secured by a fixed and floating charge on the assets of the company

**13 DEFERRED TAX**

|                           | £        |
|---------------------------|----------|
| Balance at 1 April 2010   | (4,803)  |
| Credit to profit and loss | (47,017) |
|                           | (51,820) |
| Balance at 31 March 2011  | (51,820) |

The deferred tax asset at the year end is included in debtors. The constituent parts of the closing deferred tax asset are shown below

|                                | £        |
|--------------------------------|----------|
| Accelerated capital allowances | 19,217   |
| Short term timing differences  | (3,080)  |
| Losses and other deductions    | (67,957) |
|                                | (51,820) |

**14 CALLED UP SHARE CAPITAL**

|                                 |          |               | 31 3 10 | 31 3 09 |
|---------------------------------|----------|---------------|---------|---------|
| Allotted, issued and fully paid |          |               |         |         |
| Number                          | Class    | Nominal value |         |         |
| 276,965                         | Ordinary | 0 001p        | 3       | 3       |

DQE LIMITED

NOTES TO THE FINANCIAL STATEMENTS - continued  
for the Year Ended 31 March 2011

15 RESERVES

|                     | Profit<br>and loss<br>account<br>£ |
|---------------------|------------------------------------|
| At 1 April 2010     | 774,087                            |
| Profit for the year | 60,483                             |
| At 31 March 2011    | 834,570                            |

16 TRANSACTIONS WITH DIRECTORS

Under the terms of the loan agreements entered into during the year with a director of the company, has provided a personal guarantee, up to a maximum of £200,000, on behalf of the company in respect of liabilities due under the loan agreements

17 RELATED PARTY DISCLOSURES

During the year, the company recharged costs of £59,046 (2010 £136,061) in respect of costs incurred on the part of a director of the company. At the year end, £59,046 (2010 £14,874) was owed by a director of the company.

18 ULTIMATE CONTROLLING PARTY

The ultimate controlling party is the company by virtue of his 100% shareholding, this is unchanged from the prior year

19 EMI SHARE OPTION SCHEME

During 2006 share options were issued to employees over 35% of his shareholding at the date granted shares in the company under an EMI scheme ('old options'), totalling 35% of his shareholding at the date granted

A total 59,376 options are in issue at the year end and by this date none of these have been exercised

The fair value of the share has been agreed at 95p and accordingly for an EMI scheme the exercise price has been set at this value. The options can be exercised after employees have completed three years service and must be exercised within ten years of the options being granted

The fair value of the options granted is considered by the directors to be the same as the fair value of the share, i.e. 95p. A charge of £nil (2010 £nil) has been made to profit and loss in respect of the deemed cost to the company of issuing these options, which reflects the impact of options that have lapsed during the period

On 20th November 2008 an additional 32,276 options were issued over 35% of his shareholding at the date granted shares in the company with an exercise price of £1.42. These options have been granted with the same terms as the old options. The company is exempt from recognising the cost of issuing these options under the Financial Reporting Standard for Smaller Entities and as such no charge has been made to profit and loss in respect of these shares

**Appendix 8.C: SPL Limited Sample Report (2010/11)**

| <b>SPL LIMITED</b>   |              |                  |                  |                  |                 |
|--|--------------|------------------|------------------|------------------|-----------------|
| <b>Abbreviated balance sheet</b>                               |              |                  |                  |                  |                 |
| <b>as at 31 December 2011</b>                                  |              |                  |                  |                  |                 |
|  | <b>Notes</b> | <b>2011</b>      |                  | <b>2010</b>      |                 |
|  |              | <b>£</b>         | <b>£</b>         | <b>£</b>         | <b>£</b>        |
| <b>Fixed assets</b>  |              |                  |                  |                  |                 |
| Tangible assets  | 2            |                  | 392,436          |                  | 355,603         |
| <b>Current assets</b>  |              |                  |                  |                  |                 |
| Stocks   |              | 197,291          |                  | 244,051          |                 |
| Debtors  |              | 460,465          |                  | 545,283          |                 |
| Cash at bank and in hand                                       |              | 100              |                  | 100              |                 |
|  |              | <u>657,856</u>   |                  | <u>789,434</u>   |                 |
| <b>Creditors: amounts falling due within one year</b>          | 3            | <u>(764,635)</u> |                  | <u>(829,194)</u> |                 |
| <b>Net current liabilities</b>                                 |              |                  | <u>(106,779)</u> |                  | <u>(39,760)</u> |
| <b>Total assets less current liabilities</b>                   |              |                  | 285,657          |                  | 315,843         |
| <b>Creditors: amounts falling due after more than one year</b> | 4            |                  | (51,845)         |                  | (81,383)        |
| <b>Provisions for liabilities</b>                              |              |                  | <u>(43,305)</u>  |                  | <u>(35,925)</u> |
| <b>Net assets</b>  |              |                  | <u>190,507</u>   |                  | <u>198,535</u>  |
| <b>Capital and reserves</b>                                    |              |                  |                  |                  |                 |
| Called up share capital  | 5            |                  | 54,630           |                  | 54,630          |
| Share premium account  |              |                  | 34,355           |                  | 34,355          |
| Profit and loss account  |              |                  | 101,522          |                  | 109,550         |
| <b>Shareholders' funds</b>                                     |              |                  | <u>190,507</u>   |                  | <u>198,535</u>  |

The directors' statements required by Sections 475(2) and (3) are shown on the following page which forms part of this Balance Sheet

**The notes on pages 3 to 5 form an integral part of these financial statements.**

Page 1

SPL LIMITED

**Notes to the abbreviated financial statements  
for the year ended 31 December 2011**

continued

**1.8. Foreign currencies**

Monetary assets and liabilities denominated in foreign currencies are translated into sterling at the rates of exchange prevailing at the accounting date. Transactions in foreign currencies are recorded at the date of the transactions. All differences are taken to the Profit and Loss account.

**1.9. Going concern**

In the light of its budgeted turnover and operating costs, the directors believe that the company will be able to maintain positive cash flows for the foreseeable future. As a result, the going concern basis of accounting has been adopted.

**2. Fixed assets**

|                        | <b>Tangible<br/>fixed<br/>assets<br/>£</b> |
|------------------------|--|
| <b>Cost</b>            |  |
| At 1 January 2011      | 1,536,708                                  |
| Additions              | 152,273                                    |
| Disposals              | (21,432)                                   |
| At 31 December 2011    | <u>1,667,549</u>                           |
| <b>Depreciation</b>    |  |
| At 1 January 2011      | 1,181,105                                  |
| On disposals           | (13,405)                                   |
| Charge for year        | 107,413                                    |
| At 31 December 2011    | <u>1,275,113</u>                           |
| <b>Net book values</b> |  |
| At 31 December 2011    | <u>392,436</u>                             |
| At 31 December 2010    | <u>355,603</u>                             |

**3. Creditors: amounts falling due within one year**

|                                 | <b>2011</b>    | <b>2010</b>    |
|---------------------------------|----------------|----------------|
|                                 | <b>£</b>       | <b>£</b>       |
| Creditors include the following |                |                |
| Secured creditors               | <u>294,826</u> | <u>301,799</u> |

SPL LIMITED

Notes to the abbreviated financial statements  
for the year ended 31 December 2011

continued

|    |  |               |               |
|----|--|---------------|---------------|
| 4. | <b>Creditors: amounts falling due after more than one year</b> | <b>2011</b>   | <b>2010</b>   |
|    |  | <b>£</b>      | <b>£</b>      |
|    | Creditors include the following                                |               |               |
|    | Secured creditors  | <u>37,876</u> | <u>54,683</u> |
| 5. | <b>Share capital</b>   | <b>2011</b>   | <b>2010</b>   |
|    |  | <b>£</b>      | <b>£</b>      |
|    | <b>Allotted, called up and fully paid</b>                      |               |               |
|    | 54,630 Ordinary shares of £1 each                              | <u>54,630</u> | <u>54,630</u> |
|    | <b>Equity Shares</b>   |               |               |
|    | 54,630 Ordinary shares of £1 each                              | <u>54,630</u> | <u>54,630</u> |

## Appendix 8.D: WIC Limited Sample Report (2010/11)

### WIC LIMITED

Profit and Loss Account  
for the Year Ended 31 May 2011

|  | Notes | 31.5.11<br>£          | 31.5.10<br>£         |
|--|-------|-----------------------|----------------------|
| TURNOVER   |       | 2,109,167             | 1,572,934            |
| Cost of sales                                    |       | <u>1,285,094</u>      | <u>947,282</u>       |
| GROSS PROFIT                                     |       | 824,073               | 625,652              |
| Administrative expenses                          |       | <u>595,098</u>        | <u>561,171</u>       |
|  |       | 228,975               | 64,481               |
| Other operating income                           |       | <u>9,604</u>          | <u>4,000</u>         |
| OPERATING PROFIT                                 | 2     | 238,579               | 68,481               |
| Interest receivable and similar income           |       | <u>103</u>            | <u>204</u>           |
| PROFIT ON ORDINARY ACTIVITIES<br>BEFORE TAXATION |       | 238,682               | 68,685               |
| Tax on profit on ordinary activities             | 3     | <u>50,142</u>         | <u>16,042</u>        |
| PROFIT FOR THE FINANCIAL YEAR                    |       | <u><u>188,540</u></u> | <u><u>52,643</u></u> |

The notes form part of these financial statements

Page 3

# WIC LIMITED

Balance Sheet  
31 May 2011

|  | Notes | 31.5.11        |                | 31.5.10        |                |
|--|-------|----------------|----------------|----------------|----------------|
|  |       | £              | £              | £              | £              |
| <b>FIXED ASSETS</b>                          |       |                |                |                |                |
| Tangible assets                              | 5     |                | 36,586         |                | 55,969         |
| <b>CURRENT ASSETS</b>                        |       |                |                |                |                |
| Stocks                                       |       | 121,049        |                | 77,804         |                |
| Debtors                                      | 6     | 378,940        |                | 342,905        |                |
| Cash in hand                                 |       | 155,343        |                | 67,445         |                |
|  |       | <u>655,332</u> |                | <u>488,154</u> |                |
| <b>CREDITORS</b>                             |       |                |                |                |                |
| Amounts falling due within one year          | 7     | <u>340,368</u> |                | <u>245,313</u> |                |
| <b>NET CURRENT ASSETS</b>                    |       |                | <u>314,964</u> |                | <u>242,841</u> |
| <b>TOTAL ASSETS LESS CURRENT LIABILITIES</b> |       |                | 351,550        |                | 298,810        |
| <b>CREDITORS</b>                             |       |                |                |                |                |
| Amounts falling due after more than one year | 8     |                | -              |                | <u>85,800</u>  |
| <b>NET ASSETS</b>                            |       |                | <u>351,550</u> |                | <u>213,010</u> |
| <b>CAPITAL AND RESERVES</b>                  |       |                |                |                |                |
| Called up share capital                      | 9     |                | 198            |                | 198            |
| Share premium                                | 10    |                | 74,537         |                | 74,537         |
| Capital redemption reserve                   | 10    |                | 194            |                | 194            |
| Profit and loss account                      | 10    |                | 276,621        |                | 138,081        |
| <b>SHAREHOLDERS' FUNDS</b>                   |       |                | <u>351,550</u> |                | <u>213,010</u> |

The company is entitled to exemption from audit under Section 477 of the Companies Act 2006 for the year ended 31 May 2011.

The members have not required the company to obtain an audit of its financial statements for the year ended 31 May 2011 in accordance with Section 476 of the Companies Act 2006.

The director acknowledges his responsibilities for:

- ensuring that the company keeps accounting records which comply with Sections 386 and 387 of the Companies Act 2006 and
- preparing financial statements which give a true and fair view of the state of affairs of the company as at the end of each financial year and of its profit or loss for each financial year in accordance with the requirements of Sections 394 and 395 and which otherwise comply with the requirements of the Companies Act 2006 relating to financial statements, so far as applicable to the company.

The notes form part of these financial statements

# WIC LIMITED

## Notes to the Financial Statements for the Year Ended 31 May 2011

### 1. ACCOUNTING POLICIES

#### Accounting convention

The financial statements have been prepared under the historical cost convention and in accordance with the Financial Reporting Standard for Smaller Entities (effective April 2008).

#### Turnover

Turnover represents net invoiced sales of goods, excluding value added tax.

#### Tangible fixed assets

Depreciation is provided at the following annual rates in order to write off each asset over its estimated useful life.

Plant and machinery etc - 33% on cost, 20% on cost and at varying rates on cost

#### Stocks

Stocks and work in progress are valued at the lower of cost and net realisable value, after making due allowance for obsolete and slow moving items.

Cost includes all direct expenditure and an appropriate proportion of fixed and variable overheads.

#### Deferred tax

Deferred tax is recognised in respect of all timing differences that have originated but not reversed at the balance sheet date.

#### Foreign currencies

Assets and liabilities in foreign currencies are translated into sterling at the rates of exchange ruling at the balance sheet date. Transactions in foreign currencies are translated into sterling at the rate of exchange ruling at the date of transaction. Exchange differences are taken into account in arriving at the operating result.

#### Hire purchase and leasing commitments

Rentals paid under operating leases are charged to the profit and loss account on a straight line basis over the period of the lease.

#### Pension costs and other post-retirement benefits

The company operates a defined contribution pension scheme. Contributions payable to the company's pension scheme are charged to the profit and loss account in the period to which they relate.

### 2. OPERATING PROFIT

The operating profit is stated after charging/(crediting):

|  | 31.5.11       | 31.5.10        |
|--|---------------|----------------|
|  | £             | £              |
| Depreciation - owned assets                    | 30,151        | 38,475         |
| Profit on disposal of fixed assets             | (3,542)       | -              |
| Foreign exchange differences                   | (11,976)      | (27,820)       |
| Pension costs                                  | 20,008        | 10,008         |
|  | <u>69,250</u> | <u>124,297</u> |
| Director's remuneration and other benefits etc | <u>69,250</u> | <u>124,297</u> |

# WIC LIMITED

Notes to the Financial Statements - continued  
for the Year Ended 31 May 2011

## 3. TAXATION

Analysis of the tax charge

The tax charge on the profit on ordinary activities for the year was as follows:

| 31.5.11       | 31.5.10       |
|---------------|---------------|
| £             | £             |
| 50,142        | 16,042        |
| <u>50,142</u> | <u>16,042</u> |

Current tax:

UK corporation tax

Tax on profit on ordinary activities

## 4. DIVIDENDS

| 31.5.11       | 31.5.10       |
|---------------|---------------|
| £             | £             |
| 50,000        | 30,000        |
| <u>50,000</u> | <u>30,000</u> |

Ordinary shares of £1 each

Final

## 5. TANGIBLE FIXED ASSETS

Plant and  
machinery  
etc  
£

COST

At 1 June 2010

Additions

Disposals

At 31 May 2011

406,049  
16,726  
(16,250)

406,525

DEPRECIATION

At 1 June 2010

Charge for year

Eliminated on disposal

At 31 May 2011

350,080  
30,151  
(10,292)

369,939

NET BOOK VALUE

At 31 May 2011

At 31 May 2010

36,586

55,969

## 6. DEBTORS: AMOUNTS FALLING DUE WITHIN ONE YEAR

| 31.5.11        | 31.5.10        |
|----------------|----------------|
| £              | £              |
| 355,593        | 321,746        |
| 23,347         | 21,159         |
| <u>378,940</u> | <u>342,905</u> |

Trade debtors

Other debtors

# WIC LIMITED

Notes to the Financial Statements - continued  
for the Year Ended 31 May 2011

|    |  |  |                |  |                |
|----|--|--|----------------|--|----------------|
| 7. | CREDITORS: AMOUNTS FALLING DUE WITHIN ONE YEAR |  | 31.5.11        |  | 31.5.10        |
|    |  |  | £              |  | £              |
|    | Trade creditors                                |  | 196,143        |  | 147,302        |
|    | Taxation and social security                   |  | 74,042         |  | 30,251         |
|    | Other creditors                                |  | 70,183         |  | 67,760         |
|    |  |  | <u>340,368</u> |  | <u>245,313</u> |

Other creditors include an interest-free loan from Mr J R Bird, a previous director.

|    |   |  |          |  |               |
|----|---|--|----------|--|---------------|
| 8. | CREDITORS: AMOUNTS FALLING DUE AFTER MORE THAN ONE YEAR |  | 31.5.11  |  | 31.5.10       |
|    |   |  | £        |  | £             |
|    | Other creditors   |  | -        |  | 85,800        |
|    |   |  | <u>-</u> |  | <u>85,800</u> |

Other creditors represent an interest-free loan from Mr J R Bird, a previous director.

|    |                                  |          |                |            |            |
|----|----------------------------------|----------|----------------|------------|------------|
| 9. | CALLED UP SHARE CAPITAL          |          |                |            |            |
|    | Allotted, issued and fully paid: |          |                |            |            |
|    | Number:                          | Class:   | Nominal value: | 31.5.11    | 31.5.10    |
|    |                                  |          | £1             | £          | £          |
|    | 129                              | Ordinary |                | 198        | 198        |
|    |                                  |          |                | <u>198</u> | <u>198</u> |

|     |                     |                         |               |                            |                |
|-----|---------------------|-------------------------|---------------|----------------------------|----------------|
| 10. | RESERVES            |                         |               |                            |                |
|     |                     | Profit and loss account | Share premium | Capital redemption reserve | Totals         |
|     |                     | £                       | £             | £                          | £              |
|     | At 1 June 2010      | 138,081                 | 74,537        | 194                        | 212,812        |
|     | Profit for the year | 188,540                 |               |                            | 188,540        |
|     | Dividends           | (50,000)                |               |                            | (50,000)       |
|     | At 31 May 2011      | <u>276,621</u>          | <u>74,537</u> | <u>194</u>                 | <u>351,352</u> |

## 11. RELATED PARTY DISCLOSURES

The company was under the control of the director throughout the year.  
The company paid rent of £49,000 (2010 - £49,000) in respect of a property owned by the small self administered pension scheme operated by the company of which the director is a member.  
The company has an annual commitment for rent of £49,000 based on a three year lease.

# INIC LIMITED

## Trading and Profit and Loss Account for the Year Ended 31 May 2011

|                               | 31.5.11           |                   | 31.5.10           |                   |
|-------------------------------|-------------------|-------------------|-------------------|-------------------|
|                               | £                 | £                 | £                 | £                 |
| Turnover                      |                   |                   |                   |                   |
| Sales                         | 2,083,616         |                   | 1,537,453         |                   |
| Commission received           | 25,551            |                   | 35,481            |                   |
|                               | <u>          </u> | 2,109,167         | <u>          </u> | 1,572,934         |
| Cost of sales                 |                   |                   |                   |                   |
| Purchases                     | 692,391           |                   | 556,200           |                   |
| Small plant & tools           | 5,591             |                   | 4,736             |                   |
| Plant maintenance             | 12,850            |                   | 5,237             |                   |
| Protective clothing           | 7,591             |                   | 5,879             |                   |
| Consumables                   | 30,096            |                   | 22,866            |                   |
| Packaging & pallets           | 25,709            |                   | 22,576            |                   |
| Haulage (net of recovered)    | 8,835             |                   | 10,547            |                   |
| Wages and subcontractors      | 502,031           |                   | 319,241           |                   |
|                               | <u>          </u> | 1,285,094         | <u>          </u> | 947,282           |
| <b>GROSS PROFIT</b>           |                   | <b>824,073</b>    |                   | <b>625,652</b>    |
| Other income                  |                   |                   |                   |                   |
| Rents received                | -                 |                   | 3,000             |                   |
| Grants received               | 9,604             |                   | 1,000             |                   |
| Deposit account interest      | 103               |                   | 204               |                   |
|                               | <u>          </u> | 9,707             | <u>          </u> | 4,204             |
|                               |                   | <b>833,780</b>    |                   | <b>629,856</b>    |
| Expenditure                   |                   |                   |                   |                   |
| Office salaries               | 221,793           |                   | 161,105           |                   |
| Pension contributions         | 20,008            |                   | 10,008            |                   |
| Rent                          | 49,000            |                   | 49,000            |                   |
| Rates and water               | 8,461             |                   | 9,801             |                   |
| Insurance                     | 19,579            |                   | 15,800            |                   |
| Light, heat and power         | 11,773            |                   | 9,977             |                   |
| Repairs and renewals          | 16,885            |                   | 9,429             |                   |
| Directors' salaries           | 69,250            |                   | 124,297           |                   |
| Directors' social security    | 8,222             |                   | 15,733            |                   |
| Medical insurance             | 8,772             |                   | 6,643             |                   |
| Post and communication        | 5,714             |                   | 6,652             |                   |
| Advertising and marketing     | 23,290            |                   | 15,218            |                   |
| Travelling expenses           | 30,207            |                   | 28,695            |                   |
| Motor expenses                | 8,681             |                   | 5,615             |                   |
| Stationery & computer costs   | 23,360            |                   | 15,549            |                   |
| Office equipment maintenance  | 838               |                   | 1,863             |                   |
| Health & safety and training  | 13,401            |                   | 14,397            |                   |
| Entertaining                  | 2,719             |                   | 885               |                   |
| Canteen and cleaning          | 1,565             |                   | 1,649             |                   |
| Research and development      | 7,491             |                   | 3,260             |                   |
| Subscriptions & donations     | 10,414            |                   | 5,439             |                   |
| Accountancy                   | 1,755             |                   | 5,282             |                   |
| Design fees                   | 5,136             |                   | 13,714            |                   |
| Legal fees                    | 11,708            |                   | 6,803             |                   |
| Foreign exchange gains/losses | (11,976)          |                   | (27,820)          |                   |
| Depreciation of fixed assets  | 30,151            |                   | 38,475            |                   |
|                               | <u>          </u> | <u>          </u> | <u>          </u> | <u>          </u> |
| Carried forward               | 598,197           | 833,780           | 547,469           | 629,856           |

## WIK LIMITED

### Trading and Profit and Loss Account for the Year Ended 31 May 2011

|                                     | 31.5.11      |                | 31.5.10       |               |
|-------------------------------------|--------------|----------------|---------------|---------------|
|                                     | £            | £              | £             | £             |
| Brought forward                     | 598,197      | 833,780        | 547,469       | 629,856       |
| Profit/loss on sale of fixed assets | (3,542)      |                | -             |               |
| Bad debts                           | <u>(524)</u> |                | <u>12,595</u> |               |
|                                     |              | 594,131        |               | 560,064       |
|                                     |              | 239,649        |               | 69,792        |
| Finance costs                       |              |                |               |               |
| Bank charges                        |              | <u>967</u>     |               | <u>1,107</u>  |
| NET PROFIT                          |              | <u>238,682</u> |               | <u>68,685</u> |

This page does not form part of the statutory financial statements

Appendix 9: Sample Bloomberg FTSE Data (Beta)

FTSE 250: 2007

| FTSE 250 INDEX |                    |   |                |              |            |          |
|----------------|--------------------|---|----------------|--------------|------------|----------|
|                | Ticker             | Name                                    | % Index Weight | Shares       | Last Price | Beta:Y-1 |
| 77             | MICRO LN Equity    | Micro Focus International PLC           | 0.163698       | 149,512,403  | 254.0000   | 1.04     |
| 78             | HFD LN Equity      | Halfords Group PLC                      | 0.286254       | 220,075,037  | 301.7500   | 1.04     |
| 79             | GNK LN Equity      | Greene King PLC                         | 0.475510       | 137,891,389  | 800.0000   | 1.04     |
| 80             | JDW LN Equity      | JD Wetherspoon PLC                      | 0.225993       | 141,888,977  | 369.5000   | 1.04     |
| 81             | DNX LN Equity      | Dana Petroleum PLC                      | 0.516309       | 86,047,361   | 1392.0000  | 1.04     |
| 82             | CGL LN Equity      | Cathie Group Ltd                        | 0.417583       | 252,936,234  | 383.0000   | 1.04     |
| 83             | CKSN LN Equity     | Cookson Group PLC                       | 0.637536       | 212,196,902  | 697.0000   | 1.04     |
| 84             | RDA LN Equity      | Redrow PLC                              | 0.224554       | 159,552,011  | 326.5000   | 1.03     |
| 85             | MRC LN Equity      | Mercantile Investment Trust PLC         | 0.481469       | 105,872,395  | 1055.0000  | 1.02     |
| 86             | CBG LN Equity      | Cbea Brothers Group PLC                 | 0.602506       | 147,131,270  | 950.0000   | 1.02     |
| 87             | JMG LN Equity      | JPMorgan Emerging Markets Investment Tr | 0.230603       | 110,3037,42  | 485.0000   | 1.02     |
| 88             | AML LN Equity      | Amis PLC                                | 0.609429       | 474,432,389  | 298.0000   | 1.02     |
| 89             | RFS LN Equity      | Randgold Resources Ltd                  | 0.596374       | 75,157,630   | 1847.0000  | 1.01     |
| 90             | ECM LN Equity      | Electrocomponents PLC                   | 0.390057       | 434,000,000  | 208.5000   | 1.01     |
| 91             | PFC LN Equity      | Petrofac Ltd                            | 0.409153       | 172,579,960  | 550.0000   | 1.01     |
| 92             | MRO LN Equity      | Merricks Trust PLC/The                  | 0.208424       | 103,759,877  | 466.0000   | 1.01     |
| 93             | RNK LN Equity      | Rank Group PLC                          | 0.153009       | 389,001,362  | 91.2500    | 1.01     |
| 94             | MARS LN Equity     | Marsbar's PLC                           | 0.403540       | 282,616,613  | 331.2500   | 1.01     |
| 95             | PFG LN Equity      | Prudent Financial PLC                   | 0.466936       | 129,962,667  | 833.5000   | 1.01     |
| 96             | BBA LN Equity      | BBA Aviation PLC                        | 0.364270       | 411,726,083  | 205.2500   | 1.00     |
| 97             | CRDA LN Equity     | Croda International PLC                 | 0.341084       | 136,192,380  | 581.0000   | 1.00     |
| 98             | IPL LN Equity      | International Ferro Metals Ltd          | 0.195531       | 378,000,094  | 120.0000   | 1.00     |
| 99             | GRI LN Equity      | Granger PLC                             | 0.145351       | 96,896,226   | 348.0000   | 1.00     |
| 100            | MCCR LN Equity     | Morgan Crucible Co PLC                  | 0.241467       | 277,314,680  | 202.0000   | 1.00     |
| 101            | GKN LN Equity      | GKN PLC                                 | 0.895288       | 704,429,446  | 282.0000   | 1.00     |
| 102            | SMDS LN Equity     | DS Smith PLC                            | 0.354515       | 393,039,198  | 209.2500   | 1.00     |
| 103            | DNGT LN Equity     | Daily Mail & General Trust PLC          | 0.594885       | 277,805,285  | 496.7500   | 1.00     |
| 104            | IMI LN Equity      | IMI PLC                                 | 0.549518       | 323,7637,67  | 393.7500   | 0.99     |
| 105            | 820360Q LN Equity  | Arbon PLC                               | 0.352604       | 1076,319,960 | 7.6.0000   | 0.99     |
| 106            | DLAR LN Equity     | De La Rue PLC                           | 0.630503       | 149,7897,36  | 97.6.5000  | 0.99     |
| 107            | ROR LN Equity      | Robitk PLC                              | 0.369725       | 86,300,000   | 967.0000   | 0.99     |
| 108            | LAD LN Equity      | Ladbroke's PLC                          | 0.886172       | 614,454,207  | 323.2500   | 0.99     |
| 109            | CSR LN Equity      | CSR PLC                                 | 0.338652       | 130,939,229  | 600.0000   | 0.98     |
| 110            | PMO LN Equity      | Premier Oil PLC                         | 0.465301       | 82,400,492   | 1310.0000  | 0.98     |
| 111            | 9408593Q LN Equity | Arriva PLC                              | 0.677813       | 197,792,441  | 795.0000   | 0.98     |
| 112            | MUT LN Equity      | Murray Income Trust PLC                 | 0.181041       | 65,419,958   | 642.0000   | 0.98     |
| 113            | PLI LN Equity      | Perpetual Income and Growth Investment  | 0.217794       | 206,850,637  | 244.2500   | 0.98     |
| 114            | SDY LN Equity      | Speedy Hire PLC                         | 0.182039       | 50,396,062   | 838.0000   | 0.98     |

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## FTSE All-Share: 2009

### FTSE ALL-SHARE INDEX

|     | Ticker         | Name                                     | % Index Weight | Shares      | Last Price | Beta:Y-1 |
|-----|----------------|--|----------------|-------------|------------|----------|
| 77  | CCL LN Equity  | Carnival PLC                             | 0.280095       | 212.541587  | 2135.0000  | 1.13     |
| 78  | SDRC LN Equity | Schroders PLC                            | 0.040894       | 61.917808   | 1070.0000  | 1.13     |
| 79  | MRCH LN Equity | Merchants Trust PLC/The                  | 0.022000       | 103.759877  | 343.5000   | 1.13     |
| 80  | IHG LN Equity  | InterContinental Hotels Group PLC        | 0.157717       | 286.130395  | 893.0000   | 1.13     |
| 81  | BG/ LN Equity  | BG Group PLC                             | 2.333384       | 3369.221045 | 1122.0000  | 1.12     |
| 82  | ASHM LN Equity | Ashmore Group PLC                        | 0.047609       | 283.570000  | 272.0000   | 1.12     |
| 83  | GEMD LN Equity | Gem Diamonds Ltd                         | 0.019333       | 137.977853  | 227.0000   | 1.12     |
| 84  | PFC LN Equity  | Petrofac Ltd                             | 0.166659       | 258.869940  | 1043.0000  | 1.12     |
| 85  | TOMK LN Equity | Tomkins Ltd                              | 0.104608       | 877.191161  | 193.2000   | 1.11     |
| 86  | ITV LN Equity  | ITV PLC                                  | 0.125670       | 3889.129751 | 52.3500    | 1.11     |
| 87  | FGP LN Equity  | Firstgroup PLC                           | 0.126654       | 481.665008  | 426.0000   | 1.11     |
| 88  | MARS LN Equity | Marston's PLC                            | 0.030965       | 570.069043  | 88.0000    | 1.11     |
| 89  | RR/ LN Equity  | Rolls-Royce Holdings PLC                 | 0.552674       | 1851.862370 | 483.5000   | 1.10     |
| 90  | RDW LN Equity  | Redrow PLC                               | 0.025261       | 307.708781  | 133.0000   | 1.10     |
| 91  | CHLD LN Equity | Chloride Group Ltd                       | 0.028978       | 260.817808  | 180.0000   | 1.10     |
| 92  | QED LN Equity  | Quintain Estates & Development PLC       | 0.019166       | 517.495236  | 60.0000    | 1.09     |
| 93  | PFD LN Equity  | Premier Foods PLC                        | 0.052843       | 2398.021581 | 35.7000    | 1.09     |
| 94  | FENR LN Equity | Fenner PLC                               | 0.018069       | 174.770029  | 167.5000   | 1.09     |
| 95  | MAB LN Equity  | Mitchells & Butlers PLC                  | 0.062325       | 406.976458  | 248.1000   | 1.09     |
| 96  | DRTY LN Equity | Darty Plc                                | 0.048769       | 529.553216  | 149.2000   | 1.08     |
| 97  | PMO LN Equity  | Premier Oil PLC                          | 0.078198       | 114.648840  | 1105.0000  | 1.08     |
| 98  | CNE LN Equity  | Cairn Energy PLC                         | 0.282659       | 1376.820700 | 332.6000   | 1.08     |
| 99  | MLC LN Equity  | Millennium & Copthorne Hotels PLC        | 0.035217       | 153.908788  | 370.7000   | 1.08     |
| 100 | GPOR LN Equity | Great Portland Estates PLC               | 0.055409       | 312.670579  | 287.1000   | 1.08     |
| 101 | BEE LN Equity  | Baring Emerging Europe PLC               | 0.017231       | 36.755185   | 759.5000   | 1.07     |
| 102 | SDY LN Equity  | Speedy Hire PLC                          | 0.008700       | 517.215666  | 27.2500    | 1.07     |
| 103 | MGGT LN Equity | Meggitt PLC                              | 0.109173       | 680.266948  | 260.0000   | 1.07     |
| 104 | PVCS LN Equity | PV Crystalox Solar PLC                   | 0.007897       | 208.362668  | 61.4000    | 1.06     |
| 105 | TLW LN Equity  | Tullow Oil PLC                           | 0.644462       | 800.060700  | 1305.0000  | 1.06     |
| 106 | AHT LN Equity  | Ashtead Group PLC                        | 0.025227       | 503.325554  | 81.2000    | 1.06     |
| 107 | DMGT LN Equity | Daily Mail & General Trust PLC           | 0.070285       | 272.279565  | 418.2000   | 1.06     |
| 108 | NEX LN Equity  | National Express Group PLC               | 0.080173       | 507.999743  | 191.9000   | 1.06     |
| 109 | DIG LN Equity  | Dunedin Income Growth Investment Trust P | 0.016992       | 151.251187  | 182.0000   | 1.05     |
| 110 | DLN LN Equity  | Derwent London PLC                       | 0.081941       | 100.568801  | 1320.0000  | 1.04     |
| 111 | EUK LN Equity  | Edinburgh UK Tracker Trust PLC           | 0.015665       | 106.859779  | 237.5000   | 1.04     |
| 112 | MRO LN Equity  | Melrose PLC                              | 0.055285       | 497.586779  | 180.0000   | 1.04     |
| 113 | GNK LN Equity  | Greene King PLC                          | 0.054117       | 214.887320  | 408.0000   | 1.04     |
| 114 | BRBY LN Equity | Burberry Group PLC                       | 0.159946       | 432.595034  | 599.0000   | 1.03     |

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## Appendix 10: Description of Proxy Companies

### Appendix 10.A: Proxy Companies for ABC Limited

|                       | <b>Name of Company</b>             | <b>Type of Company</b>   |
|-----------------------|------------------------------------|--|
| <b>FTSE 100</b>       | Wolseley PLC                       | Distributors of building products  |
|                       | Smiths Group PLC                   | A technology company in the practical application of advanced technologies   |
|                       | BAE Systems PLC                    | Development and delivery and support of advanced defence, security and aerospace systems in the air, on land and at sea. |
|                       | WPP PLC                            | A market communications company.   |
| <b>FTSE 250</b>       | Darty Plc                          | Electronics retailer   |
|                       | Halma PLC                          | Company specialising in products for hazard detection and life protection.   |
|                       | Electrocomponents PLC              | Distributor of electronics and maintenance products.   |
|                       | Ultra Electronics Holdings PLC     | Company providing services for defence, security, transportation and energy.   |
| <b>FTSE All-Share</b> | Darty Plc                          | -  |
|                       | Wolfson Microelectronics PLC       | Providing high performance mixed-signal semiconductors to the consumer electronics market.                               |
|                       | Electrocomponents PLC              | -  |
|                       | Ultra Electronics Holdings PLC     | -  |
|                       | Halma PLC                          | -  |
| <b>FTSE AIM</b>       | James Halstead PLC                 | Manufacturer of commercial flooring.   |
|                       | Songbird Estates PLC               | Management of commercial properties.   |
|                       | May Gurney Integrated Services PLC | Integrated construction, engineering and maintenance services.   |
|                       | Nanoco Group PLC                   | Commercial scale manufacturing company of advanced materials.  |
|                       | Aero Inventory PLC                 | Aftermarket supplier of aircrafts parts.   |

## Appendix 10.B: Proxy Companies for DGE Limited

|                       | Name of Company                | Type of Company  |
|-----------------------|--------------------------------|--|
| <i>FTSE 100</i>       | <b>BP PLC</b>                  | Oil and gas exploration and production   |
|                       | <b>Royal Dutch Shell PLC</b>   | Oil and gas exploration and production   |
|                       | <b>Tullow Oil PLC</b>          | Oil and gas exploration and production   |
|                       | <b>BG Group PLC</b>            | Natural gas exploration  |
| <i>FTSE 250</i>       | <b>Rotork PLC</b>              | Manufacturer of electronic, pneumatic and hydraulic valves, gear boxes and other accessories used in the oil and gas industry. |
|                       | <b>Meggitt PLC</b>             | Engineering companies specialising in extreme environment components; defence, aerospace.                                      |
|                       | <b>JKX Oil &amp; Gas PLC</b>   | Oil and gas exploration  |
|                       | <b>WS Atkins PLC</b>           | Engineering and design company of advance technical systems  |
|                       | <b>Exillon Energy PLC</b>      | Oil producer   |
|                       | <b>Salamander Energy PLC</b>   | Exploration production company   |
| <i>FTSE All-Share</i> | <b>BP PLC</b>                  | -  |
|                       | <b>Royal Dutch Shell PLC</b>   | -  |
|                       | <b>Tullow Oil PLC</b>          | -  |
|                       | <b>BG Group PLC</b>            | -  |
| <i>FTSE AIM</i>       | <b>Gulfsands Petroleum PLC</b> | Oil and gas exploration and production   |
|                       | <b>Bowleven PLC</b>            | Oil and gas exploration and production   |
|                       | <b>Sterling Energy PLC</b>     | Oil and gas exploration and production   |
|                       | <b>Max Petroleum PLC</b>       | Oil and gas exploration and production   |
|                       | <b>Regal Petroleum PLC</b>     | Oil and gas exploration and production   |
|                       | <b>Rockhopper Exploration</b>  | Oil and gas exploration and production   |
|                       | <b>Sibir Energy PLC</b>        | Oil and gas exploration and production   |

**Appendix 10.C: Proxy Companies for SPL Limited**

|                       | <b>Name of Company</b>                     | <b>Type of Company</b>   |
|-----------------------|--|--|
| <b>FTSE 100</b>       | <b>Reckitt Benckiser Group PLC</b>         | Manufacturing company providing consumer products for health, hygiene and home.  |
|                       | <b>Rexam PLC</b>                           | Consumer packaging and beverage can maker.   |
|                       | <b>Shire PLC</b>                           | Specialist health care provider and developer of medicines.  |
|                       | <b>Unilever PLC</b>                        | Manufacturer of wide range of consumer products.   |
| <b>FTSE 250</b>       | <b>Renishaw PLC</b>                        | Manufacturer of medical equipment.   |
|                       | <b>Filtrona PLC</b>                        | Supplier of specialist plastic, fibre and foam products, porous technologies, coated & security products and filler products.    |
|                       | <b>BTG PLC</b>                             | Specialist healthcare company; develop and commercialise its products.   |
|                       | <b>Victrex PLC</b>                         | Manufacturer of high performance polymer.  |
|                       | <b>Tomkins Ltd</b>                         | Engineering and manufacturing group.   |
| <b>FTSE All-Share</b> | <b>Oxford Biomedica PLC</b>                | Biopharmaceutical company developing innovative treatments for unmet patient needs.  |
|                       | <b>BTG PLC</b>                             | -  |
|                       | <b>Filtrona PLC</b>                        | -  |
|                       | <b>Victrex PLC</b>                         | -  |
| <b>FTSE AIM</b>       | <b>Hamworthy PLC</b>                       | Provide technological innovative solutions to industry including marine and oil and gas.   |
|                       | <b>Caretech Holdings PLC</b>               | Provides care and support for children, young people and adults with learning disabilities, mental health and complex needs.     |
|                       | <b>MP Evans Group PLC</b>                  | Management and investment company in agricultural sector.  |
|                       | <b>James Halstead PLC</b>                  | Manufacturer of commercial flooring.   |
|                       | <b>Andor Technology PLC/United Kingdom</b> | Development and manufacture of high performance scientific digital cameras for academic, industrial and government applications. |

#### Appendix 10.D: Proxy Companies for WIC Limited

|                       | Name of Company                         | Type of Company   |
|-----------------------|---|---|
| <i>FTSE 100</i>       | <b>AMEC PLC</b>                         | Consultancy, engineering, project management services   |
|                       | <b>Cairn Energy PLC</b>                 | Oil and gas exploration and development   |
|                       | <b>Rio Tinto PLC</b>                    | Mining and processing of earth minerals   |
|                       | <b>Tullow Oil PLC</b>                   | Oil and gas exploration and production  |
| <i>FTSE 250</i>       | <b>Chemring Group PLC</b>               | Manufacturing business supplying high technology electronics and energetic products   |
|                       | <b>Bodycote PLC</b>                     | Provider of thermal processing services   |
|                       | <b>Filtrona PLC</b>                     | Supplier of specialist plastic, fibre and foam products, porous technologies, coated & security products and filler products.                                     |
|                       | <b>Spectris PLC</b>                     | Develops and markets precision instrumentation and controls.  |
| <i>FTSE All-Share</i> | <b>Filtrona PLC</b>                     | -   |
|                       | <b>British Polythene Industries PLC</b> | Manufacturer and supplier of polythene products.  |
|                       | <b>Chemring Group PLC</b>               | -   |
|                       | <b>Bodycote PLC</b>                     | -   |
| <i>FTSE AIM</i>       | <b>James Halstead PLC</b>               | Manufacturer of commercial flooring   |
|                       | <b>BowLeven PLC</b>                     | Oil and gas exploration and production  |
|                       | <b>Cape PLC</b>                         | Providing multi-disciplinary services, including access, insulation, refractory services, fireproofing, coatings and cleaning, throughout the construction phase. |
|                       | <b>Faroe Petroleum PLC</b>              | Oil and gas company focusing principally on exploration, appraisal and production.  |
|                       | <b>Regal Petroleum PLC</b>              | Oil and gas exploration and production  |
|                       | <b>Gulfsands Petroleum PLC</b>          | Oil and gas exploration and production  |

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