

**Financial technology and business model
innovation: A study of UK banking**

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Abstract

Business model innovation is increasingly seen as an imperative by many traditional organisations, if they are to be resilient in a time of rapid technological change. This thesis addresses the approaches to business model innovation employed by a traditional UK bank to enable it to adapt and stay competitive within the financial technology (FinTech) ecosystem. The qualitative research presented here aims to provide a substantial and meaningful contribution to the literature on financial technology and business model innovation. This is accomplished by extending the theory of dynamic capabilities in order to provide a better understanding of business model innovation in a traditional bank and across the FinTech ecosystem. The thesis also aims to show the wider implications of this research for traditional organisations in any industry, and the mechanisms that are necessary in order for them to adapt and stay competitive in their own dynamic digital ecosystems. The thesis presents a body of empirical research, using data obtained from multiple semi-structured interviews with executives and senior managers of a case study organisation (a large traditional UK bank), alongside multiple semi-structured interviews with key stakeholders in the FinTech ecosystem and focus groups comprised of individual end-users. Twelve key stakeholders of the ecosystem are identified and a thematic analysis of the data set reveals two main themes underlying the bank's approach to business model innovation: *leveraging existing capabilities* and *experimenting with new capabilities*. These two themes are supported by four key capabilities which are present within the traditional bank and which can also be obtained through engagement with other key stakeholders within the wider FinTech ecosystem: customer centricity, data analytics, talent management, and leadership mindset.

Overall, the research findings of this thesis argue that, in order to adapt and stay competitive in the dynamic FinTech ecosystem, the traditional bank in the case study is innovating its business models through a *simultaneous ambidextrous approach*: while leveraging its existing capabilities, the bank is experimenting with new capabilities, drawing upon the interconnected and symbiotic relationships among the twelve key stakeholders in the ecosystem. The implications of these findings, both for the banking sector and more generally, for other organisations in dynamic and rapidly changing environments, are discussed along with possible directions for further research.

Dedication

To the loving memories of
my mother (1947-1998)
and
my husband, Kae (1972-2009)

Acknowledgements

This thesis is the result of a long and winding journey. I would like to express my gratitude to God, with whom all becomes possible. In this section, I would like to acknowledge the people who have supported me since September 2016.

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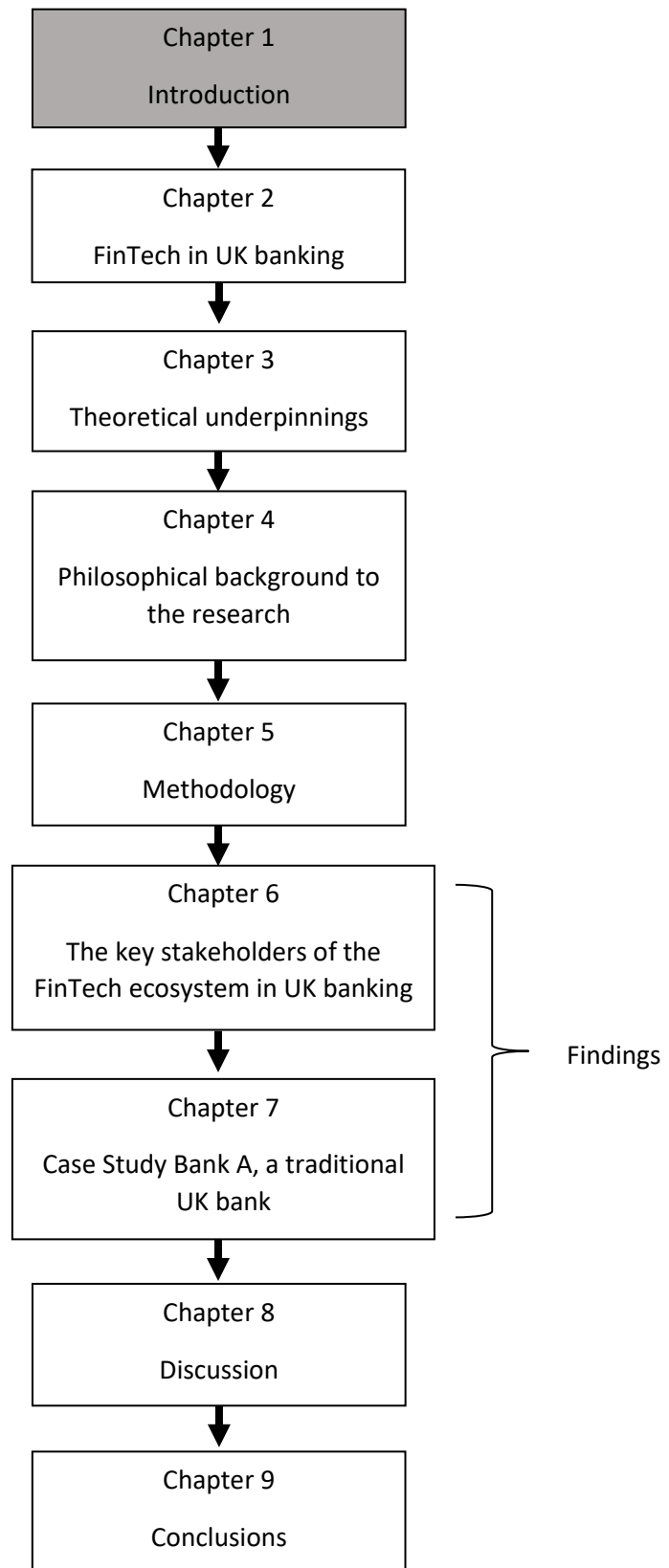
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Structure of this thesis



Chapter 1

Introduction

Inevitably, rapid developments in digital technologies and related innovations over recent decades have radically changed the nature of products, services and operations in many organisations (Yoo *et al.*, 2012; Selander *et al.*, 2013; Lyytinen *et al.*, 2016) and enabled the creation of novel business models that agitate the status quo (Teece, 2018). In recent years, there has been a proliferation of such disruptive business models across many industries including taxis, hotels, videos, booksellers and retailers. The end results can be far-reaching: for instance, in the video industry, the disruptive business model of Netflix caused the demise of the Blockbuster video rental chain through the digital innovation of video streaming (Abraham, 2013). Thus, there have been calls for more research to provide a better understanding of business model innovation in a dynamic environment (Teece, 2018).

This thesis presents an empirical investigation into the *business model innovation* concept in the context of *the UK banking sector*. Within this sector, there are a growing number of new business models relating to *financial technology* that are disrupting the traditional banks (Gomber *et al.*, 2018).

This introductory chapter provides an overview of the present study and addresses the need to update the current understanding of business model innovation and financial technology in a dynamic environment. It comprises six sections and is organised as follows. The next section (Section 1.1) provides an overview of this study, beginning with the research question that motivates it, and explaining the importance of examining the various ways in which a traditional organisation approaches business model innovation. The following section (Section 1.2) addresses the scope of the thesis and the unit of analysis. Section 1.3 explains why the UK banking sector has been selected as the context for this study. The chapter continues with the research aim and objectives in Section 1.4 and a research design

diagram in Section 1.5. The chapter then concludes in Section 1.6 with a description of the structure of this thesis.

1.1 Overview and research question

This thesis addresses the following research question:

In the face of digital technology innovation, how do traditional organisations innovate their established business models in order to adapt and stay competitive within a dynamic industry ecosystem?

The relevance of this research question derives from the profound changes that have taken place in many industries in recent years due to rapid technological developments. In order to answer the question, this study focuses on the banking sector (Section 1.3). Therefore, a more specific form of the research question for this thesis is:

In the face of financial technology (FinTech) innovation, how does a traditional bank innovate its established business models in order to adapt and stay competitive within a dynamic FinTech ecosystem?

Business model innovation is increasingly seen as an imperative if organisations are to be resilient in times of change, and to create growth unconstrained by the limits of existing business models (Christensen *et al.*, 2016). Thus, business model innovation is becoming an important way to sustain value creation and act as a competitive advantage that goes beyond a reliance on the innovation of products, services and operations (Amit and Zott, 2012). To fully understand the implications of these statements it is important to first address two related questions: what is a *business model* and what is *business model innovation*?

Many scholars (Magretta, 2002; Al-Debei and Avison, 2010; Foss and Saebi, 2018) argue that there is currently little consensus within the academic literature as to the definition of a business model. The theoretical underpinnings of this concept will be discussed in the literature review (Chapter 3) but this thesis takes the

position that a 'business model' can be described as "a construct that mediates the value creation process" (Chesbrough and Rosenbloom, 2002, p.550), and that it "consists of four elements: (1) customer value proposition, (2) profit formula, (3) key resources, and (4) key processes, that, taken together, create and deliver value" (Johnson *et al.*, 2008, p.52).

In recent years, the concept of 'business model innovation' has increasingly attracted attention from business practitioners and academic scholars (Amit and Zott, 2012; Clemons *et al.*, 2013; Christensen *et al.*, 2016; Foss and Saebi, 2018; Teece, 2018) but reviewing the recent literature on business model innovation shows that there is also a lack of agreement on how to define the concept. However, Amit and Zott (2012, p.41), in an attempt to bring together a consensus from across the literature, posit that "business model innovation can consist of adding new activities, linking activities in novel ways or changing which party performs an activity".

The concept of 'business model innovation' is also sometimes referred to as 'business model transformation' (Aspara *et al.*, 2013; Kavadias *et al.*, 2016), 'business model evolution' (Demil and Lecocq, 2010) or 'reinventing business models' (Johnson *et al.*, 2008). These terms are often used interchangeably (Foss and Saebi, 2018) although business model innovation can be transformative through incremental change (Tushman and Anderson, 1986) by constantly evolving within existing business models, or be radical (Hill and Rothaermel, 2003) through the introduction of a completely new business model.

Technological innovation and changing customer behaviours have spurred attention towards organisational change and how the organisation adapts to its environments (Teece, 2009). The importance of information technology (IT) across many different sectors is reflected in various neologisms, as in biomedical organisations that are affected by 'BioTech' innovation, retail companies that are affected by 'RetailTech', higher educational institutions that are affected by 'EduTech', and financial institutions that are affected by 'FinTech'. Past research in

organisational studies has shown that technological changes (Tushman and Anderson, 1986; Tripsas, 1997) or disruptive technologies (Bower and Christensen, 1995) can cause established organisations in an industry to fail and be replaced by new entrants, as seen in the disk drive industry (Christensen, 2000). Indeed, the rising number of corporate failures over recent years has raised concerns about corporate survival. Disruptive innovations such as new IT-based business models are not necessarily superior to the established business models of many traditional organisations, but it is not always clear to the leaders of these organisations what the appropriate responses to such innovations should be (Charitou and Markides, 2003).

Several scholars (Amit and Zott, 2012; Clemons *et al.*, 2013; Christensen *et al.*, 2016; Ojala, 2016; Rayna and Striukova, 2016; Afuah, 2019) suggest that business model innovation is a vital tool for value creation and corporate survival. Therefore, it is a strategic imperative to select the right business model to compete in the marketplace (Voigt *et al.*, 2017). It is important to highlight that the notion of ‘competition in the marketplace’ should not assume that it takes place in a static environment. Rapid technological changes have provided opportunities for many individuals and organisations to engage in the innovation of new products, services and business models (Amit and Zott, 2012; Afuah, 2019). The ‘marketplace’ now refers to a ‘dynamic ecosystem’ where there are interconnected relationships between many *stakeholders* (Iansiti and Levien, 2004a; Cusumano *et al.*, 2019). Freeman (1984, p.46) defined a stakeholder in an organisation as “any group or individual who can affect or is affected by the achievement of the organisation’s objectives”. By extension, in the current study, a stakeholder of an ecosystem refers to any individual or organisation who can either affect or be affected by the collective actions of the ecosystem.

In recent years, many traditional organisations in various industries have been innovating their established business models in order to adapt and stay competitive within their dynamic ecosystems. Many business practitioners and academics alike are eager to learn how these organisations carry out their business model innovation. The approach to business model innovation is relatively underexplored

in the academic literature and there is insufficient research-based guidance for organisational practitioners. Hence, the current study aims to address this gap. A stark illustration of the need for such guidance occurred in March 2020, during the writing of this thesis, when the world was struck by the health and economic crisis of the coronavirus (Covid-19) pandemic. This vividly demonstrates the present and ongoing relevance of research into how incumbent organisations can innovate their business models in order to survive in such uncertain business environments.

In order to answer the research question set out above, this study adopts a qualitative research methodology based on an empirical investigation within the context of the UK banking sector. The scope of this doctoral thesis is set out in the next section.

1.2 Scope of the thesis and unit of analysis

This section introduces the scope of the current study by addressing the significance of this area of research within the broader field of information systems (IS). It also describes the main unit of analysis of the study.

This doctoral thesis focuses on *financial technology* and *business model innovation* in the UK banking sector. Previous studies of these topics, which will be discussed in the literature review chapters (Chapters 2 and 3), are not in themselves sufficient to answer the research question posed by this thesis. As a starting point, the current study adopts the perspective of *dynamic capabilities* as a supporting theory, which seeks to explore how traditional organisations are responding to business model innovation and how they are managing their capabilities in response to changes in the environment. The term ‘dynamic’ in this theory refers to the “capacity to renew competences to achieve congruence with the changing business environment” (Teece *et al.*, 1997, p.515).

'Dynamic capabilities' are defined by Teece *et al.* (1997, p.516) as "the firm's ability to integrate, build and reconfigure internal and external competences to address rapidly changing environments". This theory takes account of the dynamic nature of the environment that traditional organisations are operating within when facing the technological innovations which create new IT-based business models. The background to this theory and the debates relevant to it will be reviewed in Chapter 3 (Section 3.6).

The main unit of analysis of this research is a large, traditional UK bank which is undergoing business model innovation in response to innovations in financial technology. The empirical investigation looks at two levels of analysis: at the organisational level and at the wider ecosystem level. The next section explains why the UK banking sector was selected as the context for this study.

1.3 Choice of industry

For the purposes of this thesis, the research question will predominantly be pursued within the context of the financial services industry: more specifically, the UK banking sector. In terms of innovation, the financial services industry has generally been considered to be conservative, especially so in the case of the traditional banks which tend to adopt a risk-averse attitude (Mention and Torkkeli, 2014; Yip and Bocken, 2018).

The UK banking sector has undergone profound changes over the past decade (Burrows and Low, 2015). Some scholars suggest that these changes are perhaps the result of the Global Financial Crisis from 2007 to 2009 (Chen *et al.*, 2014; Eastburn and Boland, 2015) and also of the developments and innovations in financial technology or 'FinTech' (Shim and Shin, 2016; Gomber *et al.*, 2018). 'FinTech' is a portmanteau word that stands for Financial Technology; that is the technology which is

“concerned with building systems that model, value, and process financial products such as bonds, stocks, contracts and money. It also integrates mathematical, statistical, computing and economic models with news and analytical systems; these are further integrated with message, transaction, order processing, and payment systems” (Freedman, 2006, p.1).

The Global Financial Crisis of 2007 to 2009 has resulted in a proliferation of IT-based start-up entrepreneurs with new FinTech products, services and business models (Chen *et al.*, 2014; Eastburn and Boland, 2015) that challenge the viability of conventional banks (Boot, 2014; Cecchetti, 2014). Examples of these, which involve some novel and agile FinTech business models of new entrants, include peer-to-peer lending, crowdfunding, real-time business-to-business (B2B) payments, identity management, digital banking, robo-advisory services using artificial intelligence, and blockchain technology. Inevitably, these FinTech developments have created threats and opportunities for traditional banks. In such a situation these traditional banks need to create new business opportunities and this can be achieved by innovating their business models (Johnson *et al.*, 2008).

However, the innovation and changing of established business models pose significant challenges for traditional banks (Enders *et al.*, 2006; Sia *et al.*, 2016). As Gilbert and Bower (2002) point out, it is not easy to master the skill of managing the competing frames of threats and opportunities. It is difficult for management teams to formulate strategies in response to FinTech without a clear understanding of the role of IT (Iansiti and Levien, 2004a) and the FinTech ecosystem. Thus, banks need to formulate the right business models before innovating their products or services (Kavadias *et al.*, 2016) because, ultimately, if a new business model is “difficult to replicate, it can create a strong competitive advantage” (Magretta, 2002, p.92).

While UK banks are dealing with technological innovation, economic and geo-political changes such as the European Union referendum (Brexit) are also deeply affecting their balance sheets. In addition, in 2018, the regulators imposed new

rules such as Open Banking, ringfencing, General Data Protection Regulation (GDPR) and Payment Service Directives 2 (PSD2) to increase competition and to protect consumers' interests. Therefore, banks need to find business models that are both less risky (Cecchetti, 2014) and in the public interest. Strategic innovations in banking business models need meticulous planning but they also need to be executed swiftly. As the landscape of FinTech in the UK banking sector is dynamic, innovating the business model has become increasingly important for success and survival (Amit and Zott, 2012).

The current study presents an empirical investigation into the business model innovation concept in the context of the UK banking sector. It can be seen as a response to the call by Teece (2018, p.48) for studies "that provide a better understanding of business model innovation, implementation and change to shed light on important aspects of dynamic capabilities". The existing academic literature in this context is not sufficient to provide an understanding of business model innovation in a traditional bank. This context and the relevant academic literature will be discussed in more detail in Chapter 2.

It is important to note that the researcher has more than 20 years of experience in the financial sector, which facilitates a general understanding of the context of this research. The researcher has been a chartered certified accountant (FCCA) since 2003 and has worked in the UK, Europe, Asia and Australia. Chapter 5 describes in detail the measures taken to ensure that the current research project is independent from the case study subject and all the research participants, to counter the possibility that the researcher's own professional experiences might create bias in the research. Nevertheless, the researcher's experience and knowledge have proved useful as a means of gaining access to research participants, and to facilitate the interviews in an effective manner (due to a common understanding of business jargon with the participants). They also form the preliminary understandings of FinTech and business model innovation used in interpreting the findings.

1.4 Research aim and objectives

This study aims to provide a better understanding of business model innovation in traditional organisations. Specifically, it will analyse how a traditional UK bank can innovate its established business models in response to digital innovation, such as FinTech, in order to adapt and stay competitive within a dynamic industry ecosystem.

The research aim will be achieved via the following objectives:

1. To critically analyse the relevant literature on business model innovation and dynamic capabilities, particularly in the context of the banking sector.
2. To identify and understand the perspectives of the key stakeholders in the UK FinTech ecosystem.
3. To conduct an empirical investigation into business model innovation in a traditional UK bank.

The research will provide the following contributions to knowledge:

1. A theoretical contribution, by extending and elaborating the dynamic capabilities theory to provide a better understanding of the business model innovation of a traditional bank in the face of FinTech innovations. By adapting Ketokivi and Choi (2014), Figure 1.1 below illustrates how this study aims to elaborate on the existing theories.

The study does not seek to introduce new concepts or to test the concept of business model innovation or the dynamic capabilities theory. Instead, it integrates the existing theories with the empirical context (a traditional UK bank) to unlock the latent value of the concept and thus create new knowledge in the field of IS. This will be achieved by bringing the conceptual and empirical investigations together in answering the research question above.

Figure 1.1 has been removed from this version of the thesis due to copyright restrictions

Adapted from Ketokivi and Choi (2014)

Figure 1.1: Theoretical aim: elaboration of existing theories

2. A practical contribution, by showing the implications for established organisations in any industry of the mechanisms of business model innovation, in order for them to adapt and stay competitive in a dynamic digital ecosystem.

1.5 Research design diagram

The following diagram (Figure 1.2) illustrates the overall design for this study. It also shows the research process. The individual elements of the diagram will be explained in more detail at the appropriate points within this thesis.

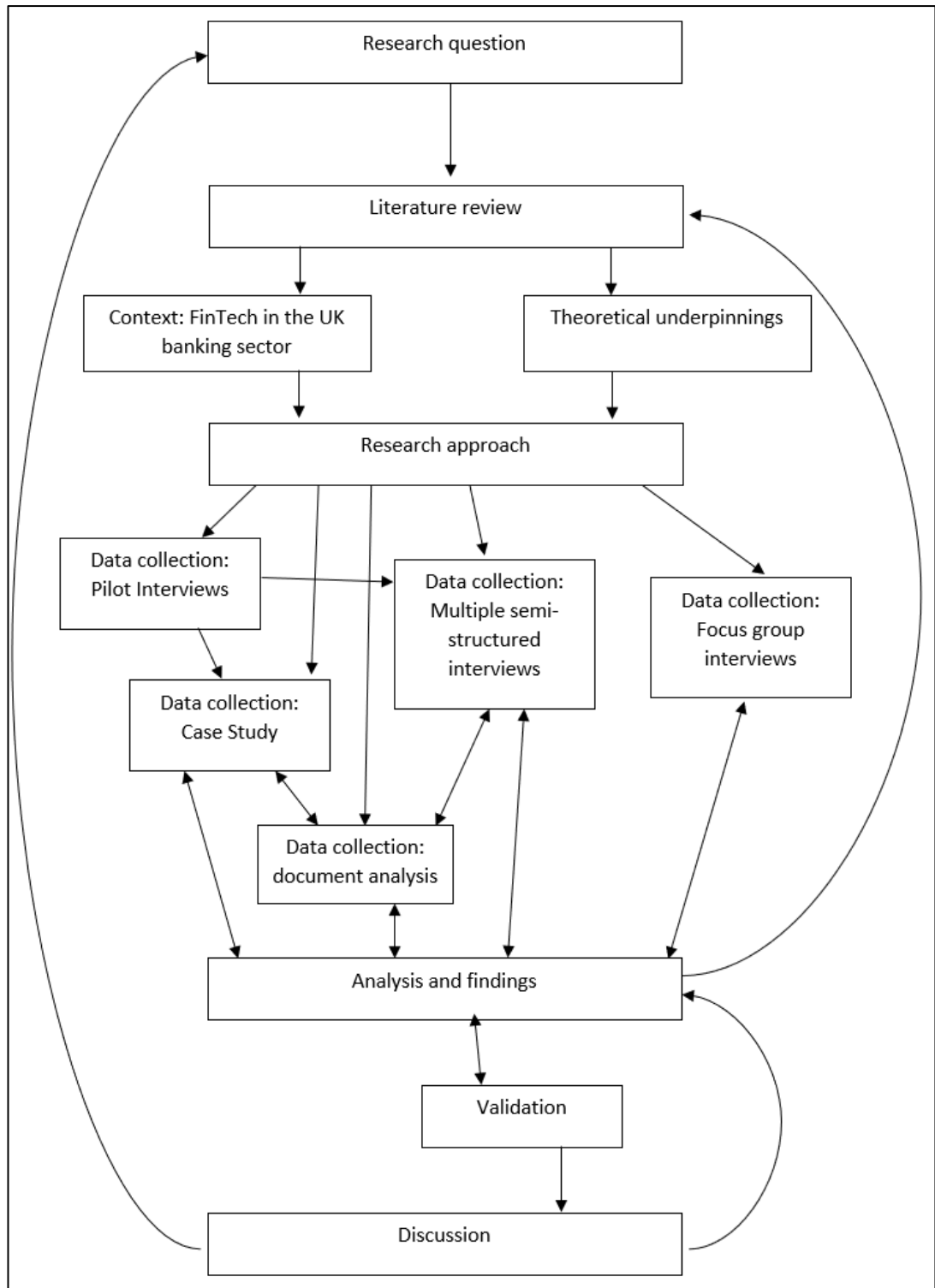


Figure 1.2: Research design

1.6 Structure of this thesis

This thesis, *Financial technology and business model innovation: A study of UK banking* consists of nine chapters and is structured in the following manner.

The opening chapter has presented an overall introduction and has addressed the research question and research aims of this study. The unit of analysis and the empirical setting have been briefly discussed and a research design diagram has been presented to give an overview of the study itself.

Chapter 2 reviews the existing literature relevant to the context of this study: the UK banking sector. It begins by setting out the definition and background of FinTech, then goes on to provide an understanding of the UK banking sector. The chapter focuses on the dynamism of the UK banking sector as a result of developments in FinTech.

Chapter 3 continues the literature review to discuss the antecedents and the theoretical underpinnings for this study, with a focus on the concept of business model innovation and dynamic capabilities theory. It then sets out the current debates and research agenda. The chapter concludes by summarising the significance of the current study and the importance of empirical applications in the banking sector for furthering academic knowledge in this domain.

Chapter 4 presents the philosophical background to the current research. The chapter focuses on ontology and epistemology to explain how the underlying philosophical assumptions have steered the research.

Chapter 5 focuses on methodology and explains how FinTech and business model innovation in UK banking will be studied. It discusses the qualitative research

approach and the strategies for data collection and data analysis. The chapter concludes with the axiological aspect of the study, which focuses on ethics.

Chapters 6 and 7 present the findings of the study. Chapter 6 identifies the key stakeholders in the FinTech ecosystem and sets out the evidence which will be used to understand the perspectives of these stakeholders on how FinTech innovations are affecting the traditional banks' business models. It then provides the background for understanding the empirical findings presented in the subsequent chapter. Chapter 7 reports the findings derived from the empirical investigation of business model innovation in a traditional UK bank. It presents two main themes: (1) *leveraging existing capabilities* and (2) *experimenting with new capabilities*, and four key capabilities derived from thematic analysis. The chapter concludes with a conceptual framework, which explains the approach to business model innovation in the traditional UK bank.

Chapter 8 is the penultimate chapter and consists of a discussion of the findings presented in Chapters 6 and 7 with reference to the academic literature. In the light of these findings and theoretical underpinnings, this chapter examines their implications for the UK banking sector and contextualises them in relation to the existing body of literature reviewed in Chapters 2 and 3.

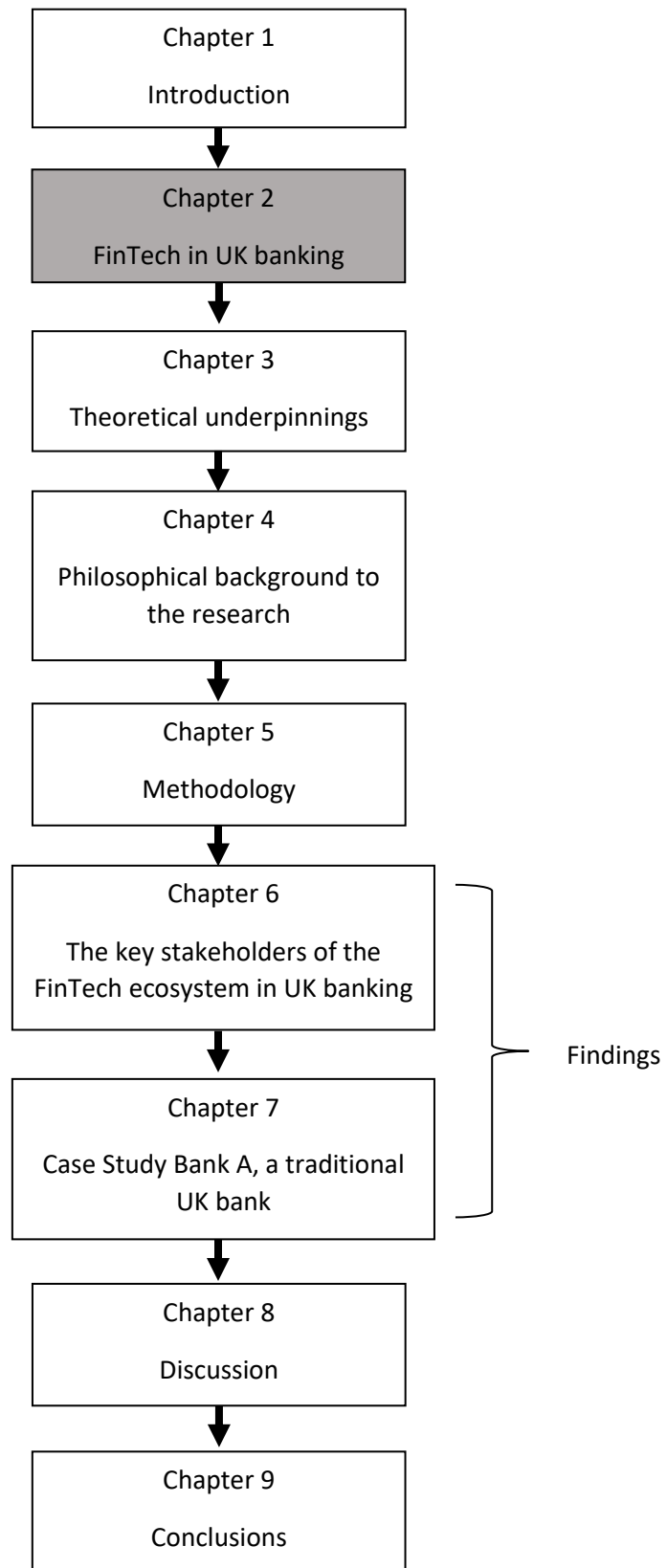
Chapter 9 concludes the thesis with a review and summary of the current study that aims to culminate in answering the research question. It summarises the strategy and methodology of the research, provides a brief overview of the key findings, a set of implications for both theory and practice, a list of limitations to the current work and suggestions for further research. Thus, the chapter summarises and presents the evidence that this thesis has meaningfully addressed the initial research question:

In the face of financial technology innovation, how does a traditional bank innovate its established business models in order to adapt and stay competitive within a dynamic FinTech ecosystem?

The findings can be further generalised to the overall research question:

In the face of digital technology innovation, how do traditional organisations innovate their established business models in order to adapt and stay competitive within a dynamic industry ecosystem?

Structure of this thesis



Chapter 2

FinTech in UK banking

2.1 Introduction

The present chapter, along with the next, review the literature relevant to the research question articulated in Chapter 1, concerning the business model innovation of traditional organisations in a dynamic industry ecosystem. The purpose of this chapter is to discuss the existing literature in this area, with particular focus on the specific context of the current study: FinTech in the UK banking sector.

Financial innovation, as in the broader sense of innovation in general, includes processes of invention and adoption of new financial products, services or ideas (Tufano, 2003). Despite acknowledging that financial innovation provides growth opportunities for traditional banks, Beck *et al.* (2016) argue that financial innovation associated with technology has led banks to take greater risks, which significantly increase profit volatility and which eventually caused the Global Financial Crisis from 2007 to 2009. The impact of the Global Financial Crisis has led some studies (Mention and Torkkeli, 2014; Yip and Bocken, 2018) to recognise that, although traditional banks are increasingly adopting risk-adverse attitudes when innovating their products, services or business models, the importance of FinTech cannot be ignored.

As such, innovations bound up with FinTech are seen as a recent phenomenon in the banking sector. It is therefore unsurprising that there is a lack of academic literature in this area. Hence, this chapter also utilises other published sources such as books, professional journals and industry reports in order to provide the most comprehensive and up to date overview of FinTech and the UK banking sector.

This chapter is organised as follows. The next section provides the definition of FinTech that is adopted in this study. The following section provides a brief history of FinTech innovation. The subsequent section then describes the dynamic environment of the UK banking sector and the final section discusses recent developments in FinTech. The theoretical underpinnings for this study are then discussed in the next chapter.

2.2 Defining FinTech

The term FinTech is not new: it has been used since 1972 in the banking sector, when it was defined as “an acronym, which stands for financial technology, combining bank expertise with modern management science techniques and the computer” (Bucatinsky, 1972, p.62).

Meanwhile, in the field of computer science and financial engineering, Freedman (2006, p.1) describes financial technology as follows:

“Financial technology is concerned with building systems that model, value, and process financial products such as bonds, stocks, contracts and money. It also integrates mathematical, statistical, computing and economic models with news and analytical systems; these are further integrated with message, transaction, order processing, and payment systems”.

Despite being in use for more than four decades, the term ‘FinTech’ only entered into the dictionary in 2018, where it is defined as “products and companies that employ newly developed digital and online technologies in banking and financial services industries” (Merriam-Webster, 2018). However, this definition is not as descriptive as Freedman (2006) and refers to the products and companies rather than financial technology itself.

Henceforth, this thesis adopts Freedman's (2006) description of financial technology as the working definition of FinTech, and the Merriam-Webster's (2018) description as the definition of FinTech-related products and companies.

2.3 A brief history of financial technology innovations

The evolution of FinTech commenced many decades ago, and this section summarises this history in order to provide the background to recent FinTech innovations. In order to understand this evolution, Ferguson (2008) has chronologically examined the history of money and banking from the 17th to the 21st century. Financial innovations can be traced back to the 17th century, for example the introduction of the stock market, options and futures. Financial history, as Ferguson (2008, p.342) presents it, is a "roller-coaster ride of ups and downs, bubbles and busts, manias and panics, shocks and crashes" during which financial evolution has resulted in the proliferation of new forms of financial firms, assets, services and business models, but has also contributed to numerous economic recessions affecting many countries.

Many of the FinTech innovations in modern banking took place during the 20th century. In the 1950s, the introduction of charge cards from Diners Club and credit cards from Visa and Interbank (now MasterCard) began to erode the need for customers to always carry cash. Then, in 1967, Automated Teller Machines (ATMs) were introduced, with the world's first ATM installed outside a Barclays bank branch in London (Barclays, 2019). By 1972, the ATMs, which provided customers with 24-hour access to deposit and withdraw cash, had been widely adopted (Gourlay and Pentecost, 2002). The ATM was considered to be the most significant technology innovation in the banking sector (Dos Santos and Peffers, 1995), and it co-evolved with the adoption of the Personal Identification Number (PIN). FinTech innovations continue to progress globally with the development of the SWIFT (Society for Worldwide Interbank Financial Telecommunication) network in the mid-1970s, which facilitated worldwide banking transactions (Scott *et al.*, 2017).

In the 1980s, when the internet was introduced, the world started to experience the effects of internet banking or e-banking using computers (Enders *et al.*, 2006). This provided consumers with the option of not having to go to physical bank branches in order to conduct banking transactions. In the mid-1980s, the EFTPOS (Electronic Fund Transfer at Point of Sale) was introduced as an electronic payment system which enabled customers to make a transaction with their payment cards at a merchant's EFTPOS terminal (Hedman and Henningsson, 2015). Then, in the late 1980s, FirstDirect was formed as a telephone-based bank which offered banking facilities via telephone calls and SMS (short messaging system) communications (Charitou and Markides, 2003; HSBC, 2019). As the internet and e-commerce business models began flourishing in the 1990s (Al-Debei and Avison, 2010), the internet became another means by which banks could interact with their customers, including online payment transactions.

Now, in the 21st century, with developments in IT such as smartphones and advanced IT infrastructure such as 4G, the banking sector is being further digitalised via mobile banking and near field communication (NFC) technology (widely known as 'contactless payment'). This evolution of FinTech has enabled customers to perform banking - especially payment transactions - anytime and anywhere. Also, there has been an increasing number of FinTech innovations such as cloud banking and cryptocurrency, which are based on cloud computing and blockchain technology (Tapscott and Tapscott, 2016; Gomber *et al.*, 2018). It is now apparent that banking developments in this century are enabled by developments in IT and IT infrastructure. Figure 2.1 illustrates how financial innovation has co-evolved with IT developments and IT infrastructure.

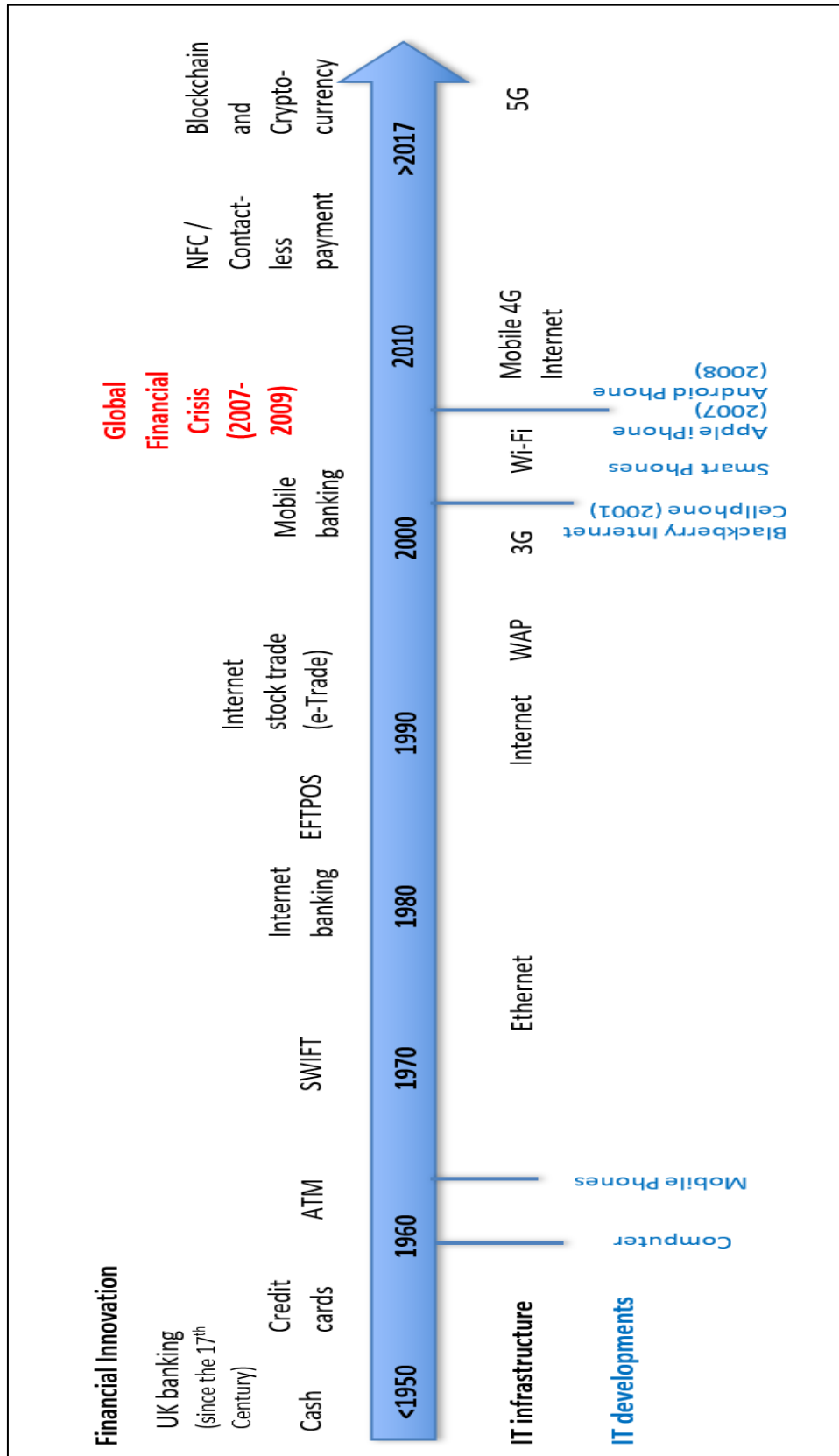


Figure 2.1: Timeline of financial innovation and IT infrastructure innovation

IT developments, as illustrated in Figure 2.1, have evolved from the introduction of computers to the latest mobile devices such as smartphones and tablet computers. At the same time, IT infrastructure has also been constantly evolving, from the days of local networking via ethernet to the present day of wireless internet (Wi-Fi) and 4G wireless mobile technology. The increase in digital adoptions has enabled connectivity between people and services using mobile devices and digital platforms. Thus, these developments in IT technology and IT infrastructures provide opportunities for innovation in products, services, processes and business models that could facilitate transactions and the movement of money. Put simply, the evolution of IT infrastructure has facilitated the evolution of FinTech.

It is worth noting that in several developing countries FinTech has been able to play a key role in the pursuit of economic development because of a lack of physical infrastructure and a high population of under-served customers. For instance, in Kenya, the mobile money service operator M-Pesa leads the world in mobile-money transfer (Foster and Heeks, 2013) and microfinancing (as a solution for lack of capital) through mobile networks that reduce the movement of cash to make financial transactions convenient and safer for its customers (Bruton *et al.*, 2015). In China, Shim and Shin (2016) noted that, with Chinese government intervention, the convergence between the country's traditional undeveloped financial system and cutting-edge technology has resulted in the proliferation of FinTech companies. These companies have leapfrogged the need for physical banks. An example is the e-commerce company Alibaba which, because of innovations such as Alipay, by 2015 had become one of the largest FinTech companies in the world (Shim and Shin, 2016).

In contrast, the rise of innovations in FinTech in developed countries such as the US and the UK was part of the aftermath of the Global Financial Crisis of 2007 to 2009 (Chen *et al.*, 2014; Eastburn and Boland, 2015). The financial crisis had negative impacts on public perceptions of, and trust in, financial institutions, especially the big traditional banks (Beck *et al.*, 2016). Beck *et al.* (2016, p.28) identify financial innovation as the 'root cause' of the Global Financial Crisis because banks were taking higher risks in order to achieve faster growth. As a result of the financial

crisis, the regulators have imposed new legislation to control the economy, which has deeply affected the financial performance of traditional banks (ibid.).

Such rapid developments in technology and infrastructure have enabled greater connectivity between customers and businesses. But the technology adoptions, financial crisis and regulatory changes have also created a dynamic environment in which customers are actively finding alternative banking solutions to their finance-related problems. Hence, many new FinTech business models have emerged and, in turn, the traditional banks have had to respond to this phenomenon (Chen *et al.*, 2014).

2.4 The dynamic environment of UK banking

The UK banking system has become well established since its origins in the 17th century. The Bank of England was formed in 1694 and is the central bank of the UK (Ferguson, 2008). The UK has one of the world's largest financial sectors, especially in London, where the technology and financial services sectors have an established relationship. As mentioned earlier, the world's first ATM machine was situated in London in 1967 while Clemons and Weber (1990, p.54) note that London "has long been a global financial centre and a financial capital for Europe" and suggest that London's 'Big Bang' financial reform, which introduced the screen-based dealing system on 27 October 1986, has effectively leveraged this strength.

The UK financial system has grown rapidly in recent decades, with the largest part of it being the banking sector. In a Bank of England bulletin for the second quarter of 2015 Burrows and Low (2015, p.114) chart the UK financial system according to the type and balance sheet size of financial institutions. The sub-sectors of the financial system are mainly divided into the banking sector and non-banking sector, with the Bank of England being the centre of this system (Burrows and Low, 2015). The article shows that the UK financial system was valued at £13 trillion in 2014,

and that £8 trillion of this is banks, demonstrating that the UK banking sector is a substantial component of the overall financial system.

The UK is recognised as a global FinTech capital, also known as a 'FinTech hub', which attracted approximately £524 million in investment in 2015 (HM Treasury, 2016). It has successfully produced a number of FinTech companies including Worldpay, one of the largest IPOs (Initial Public Offerings) among UK FinTech companies (ibid.). The UK is one of the most attractive markets for FinTech, largely due to the combination of market opportunity, availability of capital, wealth of talent, quality of infrastructure and regulatory environment. Additionally, the UK also has a strong regulatory environment supported by the Financial Conduct Authority (FCA) and UK regulators provide support (such as the 'FCA Regulatory Sandbox') for new entrants and innovative business models (Financial Conduct Authority, 2018; HM Treasury, 2016). The 'FCA Regulatory Sandbox' allows businesses to test their innovative products and services in the UK financial services market with real consumers within a controlled environment (Financial Conduct Authority, 2017). It is noticeable that the current presence of FinTech companies in the UK banking sector is skewed towards payment innovations (HM Treasury, 2016; Bank of England, 2019).

In recent years, coinciding with the period of this study, the UK banking sector has gone through a rapid transformation. In 2016 the UK electorate voted for Brexit in the European Union (EU) Referendum and this has created ongoing uncertainty in the sector. In January 2018, the nine largest UK banks had to be compliant with new Open Banking rules, which compelled the banks to share their customers' data securely, in a standardised form of open application programming interfaces (APIs) (CMA, 2016). Additionally, from 1 January 2019, 'ring-fencing' rules came into effect for the largest traditional UK banks. Ring-fencing is a structural reform introduced post-financial crisis to separate the UK's core retail banking from investment banking in order to support financial stability (Financial Conduct Authority, 2018). Most recently, as of March 2020, the world is battling the coronavirus pandemic, which resulted in the UK government imposing social distancing and lockdown rules across the country, thereby encouraging contactless

and online banking transactions. The global economic impact of the pandemic is still unknown at the point of writing, but it is widely predicted to be comparable to that of the Global Financial Crisis (McKinsey, 2020). These developments provide additional urgency and relevance for the research presented in the current study, which focuses on a large traditional UK bank.

With the advent and development of FinTech and the new business models that are associated with these innovations (discussed in the next section), the landscape of the UK banking sector is constantly changing. The phenomenon has encouraged many players to become part of a new innovative environment, 'the UK FinTech ecosystem'. Many professional journals from international consultants such as PwC, Accenture, Deloitte and KPMG (Accenture, 2016; HM Treasury, 2016; PwC, 2016) have attempted to identify these key players or stakeholders in the ecosystem, but their roles are constantly changing due to the dynamic nature of the ecosystem itself. In view of this volatility, Chapter 6 of this thesis includes a cross-sectional identification of the key stakeholders and their roles in the ecosystem as part of the findings of the study.

2.5 Developments in FinTech

Traditionally, developments in FinTech are mostly related to products, services or process innovations. For example, the ATM was both a process and a product innovation (Gourlay and Pentecost, 2002). However, as mentioned in Section 2.3 above, rapid developments in both IT and IT infrastructure have contributed to the overall rate of financial innovation. Developments in FinTech no longer focus only on products, services or process innovations. Instead, there has been a proliferation of innovative FinTech business models (which may at the same time include new products, services or process innovations) with different niches and aims to serve the evolving needs and expectations of the consumers.

Most of these new business models are associated with FinTech *start-up* companies. A start-up is defined by Ries (2011, p.8) as “a human institution designed to create new products and services under conditions of extreme uncertainty”. In the UK, FinTech start-up entrepreneurs have several common characteristics. They tend to focus on specific customer propositions, offer seamless user experience, are nimble, free from the legacy of traditional banking systems and tend to have innovative business models that are often designed for less compliance (HM Treasury, 2016).

Table 2.1 illustrates various new business models and is based on an industry report published by the UK government (HM Government and EY, 2016, p.22-23). It is increasingly evident, as can be seen from Table 2.1 that these new FinTech business models are disrupting traditional banking business models. At the same time, the taxonomy of products and services in the banking sector is expanding.

FinTech Subsectors	Focus areas	Business models	Example of FinTech start-up companies
Alternative Finance	P2P lending	Loans to consumers and businesses (SMEs) whereby numerous lenders contribute to a single loan.	Zopa Funding Circle
	Crowdfunding	Sale of a stake to a number of investors in return for investment, facilitated by an online platform.	Crowdcube Seedrs Iwoca
	Invoice trading	The auctioning of invoices (for immediate payment at a discount) through online trading platforms.	MarketInvoice LendInvest Landbay
Payments	Cross border/ foreign exchange (FX)	Low-cost international money transfers and exchange with superior customer experience.	TransferWise Azimo Currency Cloud WorldRemit
	B2B payments	Propositions facilitating the transfer of B2B payments through automated, efficient and real-time payment platforms.	GoCardless AccessPay Skrill Ringpay
Advanced Analytics	Identity	The use of multiple data sources and API architecture to expedite traditional KYC processes, through a single point of integration.	Ravelin
	Underwriting data	Aggregation from alternative data sources to generate improved and near real-time credit decisions.	Behavox ClearScore Suade Sybenetix
	AI and Machine learning	Advanced data analysis providing tangible business value through iterative insight models.	Qumram Duco OpenGamma
Digital Challenger Banks	Customer journey	Improved customer engagement through a personalised service.	Tandem Atom
	Digital only	Branchless approach to banking, with digital only channel access.	Starling Oak North
	Transparency	In pricing and communications, increasing consumer adoption and engagement.	Monese

Based on: HM Government and EY (2016, pp. 22-23)

Table 2.1: FinTech focus areas with new business models

Table 2.1 shows the four common FinTech focus areas with new business models, which are outside the traditional banking business models in the UK:

1. Alternative finance, which covers various lending models, such as peer-to-peer (P2P) lending, crowdfunding, and invoice trading.
2. FinTech payments, including the processing of payments (both locally and cross-border) through real-time payment platforms.
3. Advanced analytics using sophisticated quantitative methods for credit reference and insurance.
4. Digital challenger banks, which are employing branchless or digital-only business models.

The developments in FinTech are likely to continue evolving and transforming the banking sector further. Some sources (Tapscott and Tapscott, 2016; PwC, 2016) are predicting future trends in FinTech, which include artificial intelligence, biometric recognition, cryptocurrency, blockchain technology and automation with the 'internet of things'. In the most recent IS literature, Gomber *et al.* (2018) concur with these predictions and highlight the importance of research in FinTech, labelling this phenomenon as the 'FinTech Revolution'.

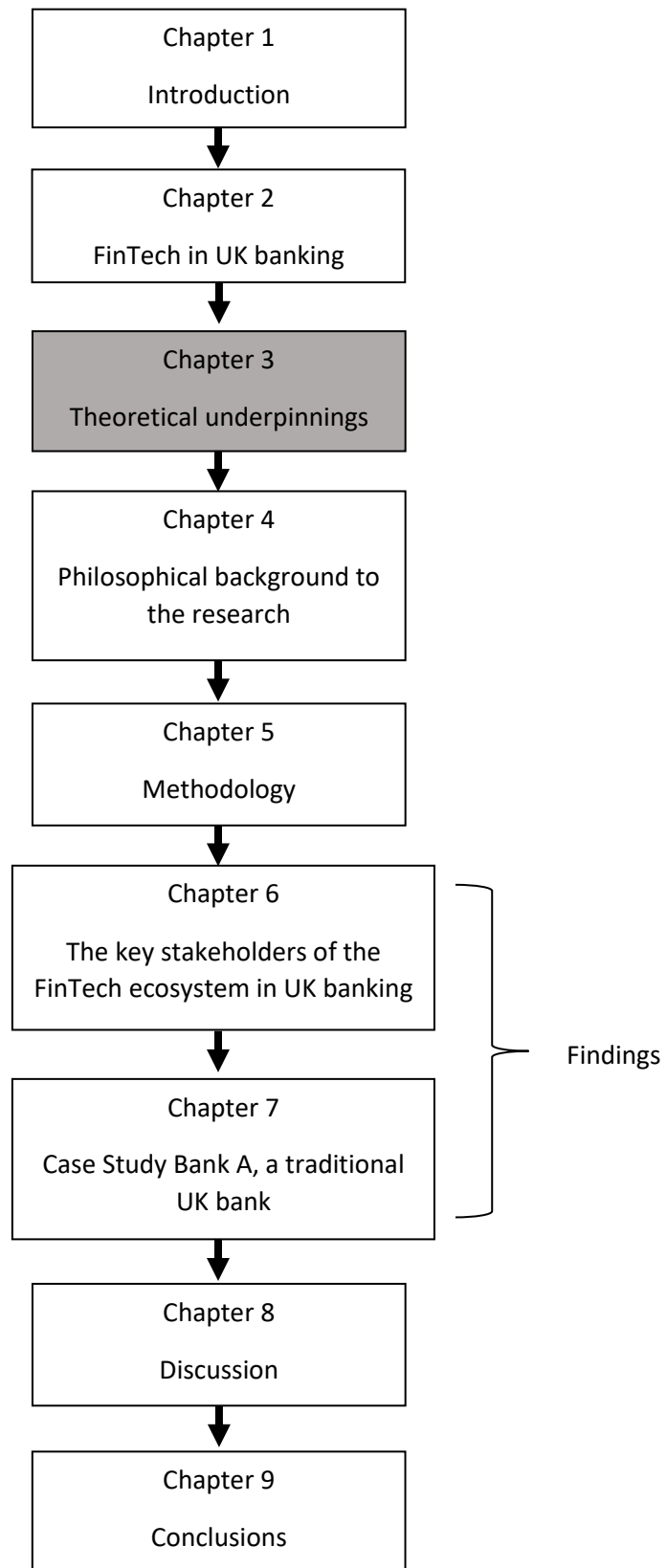
According to industry reports and professional journals, there are various ways for banks to respond to the disruption from FinTech innovation. For example, Accenture (2016, p.10) suggests that banks could "act open, collaborate or invest" in order to be successfully represented in the digital revolution. In the Global FinTech report, PwC (2016) suggests a top-down approach to fully leverage the potential of FinTech by embracing new technologies in every aspect of their businesses. Several sources (Molvig, 2016; Høbe and Alas, 2015) advocate collaboration between banks and FinTech start-ups. Accenture (2016) also report that large traditional banks are now adopting open innovation and setting up incubator and accelerator programmes. Traditional UK banks such as HSBC, Barclays, Royal Bank of Scotland and Lloyds are all investing heavily in FinTech and APIs in their banking platforms (*ibid.*). However, there is no clear evidence of what banks' strategic approach to disruptive FinTech innovation might be, or of how they are innovating their business models in response.

2.6 Chapter summary

The rapid development of FinTech innovation has created extensive opportunities and risks for the banking sector. It is therefore inevitable that traditional banks are now facing challenges from FinTech innovators, who are using technology in an attempt to disrupt or even revolutionise the banking sector. As FinTech innovation is an emerging phenomenon, it is increasingly being discussed in the media and by international consultancy firms such as PwC, KPMG, EY, Deloitte and McKinsey. However, as reviewed in this chapter, the current academic literature is not sufficient to provide a clear understanding of how the traditional banks are innovating their established business models in order to survive and thrive in the dynamic FinTech ecosystem. The current study aims to address this gap.

In summary, this chapter has presented the background and literature for the context of the current study. The theoretical underpinnings for the study are reviewed in the next chapter, which will also highlight gaps in the existing research and set out in more detail the need for the new research presented in this thesis.

Structure of this thesis



Chapter 3

Theoretical underpinnings

3.1 Introduction

The previous chapter reviewed a body of literature relevant to the context of this study - the role of FinTech in the UK banking sector - and also highlighted the need for new research in order to better understand business model innovation in traditional banks. The current chapter reviews a further body of literature which focuses on the antecedents and theoretical concepts that underpin the research presented in this thesis. In particular, this chapter analyses the literature that influenced the development of the research question (Chapter 1, Section 1.1) and the research aims (Section 1.4).

This chapter comprises seven sections and is organised as follows. Section 3.2 provides a background to the concept of *innovation* that is relevant in defining the research problem. Section 3.3 explores the antecedents of *business models* and provides a working definition of the concept, to be adopted by this study. Section 3.4 examines the *platform ecosystem* perspective and Section 3.5 reviews the literature on *business model innovation*. Section 3.6 provides a background to dynamic capabilities theory and explores its relevance to this study. The chapter concludes with a summary of gaps in the existing research in order to explain the significance of the current study, and to delineate the intellectual territory in which this empirical investigation into the UK banking sector is being conducted.

3.2 Background to the concept of innovation

The purpose of this section is to provide a brief background to the concept of innovation with a particular focus on the literature that is specifically relevant to the current study. The term 'innovation' is widely used but the concepts behind it

are often poorly understood, and this in turn has prompted a significant number of studies into various ways of conceptualising it.

The concept of innovation in its modern sense goes back to the work of political economist Joseph Schumpeter who explored the concepts of entrepreneurship and innovation, leading him to define innovation as 'new combinations'. These *new combinations* refer to the introduction of a new good or a new quality of a good, a new method of production, a new market, a new source of supply of raw materials or half-manufactured goods, and the carrying out of the new organisation of any industry (Schumpeter, 1934, p.66). Schumpeter's concept of new combinations focused mostly on individual entrepreneurship in order to explain economic and social change (ibid.). However, as described by Tripsas (1997), Schumpeter in his later work expanded his earlier theory to examine how established organisations could gain advantages over new entrants by using '*creative destruction*' and existing competences, despite the potential technological competence of the new entrants. The term 'creative destruction' is introduced by Schumpeter (1950, p.82) as follows:

“The opening of new markets, foreign or domestic, and the organisational development from the craft shop and factory to such concerns as US Steel illustrates the same process of industrial mutation - if I may use that biological term - that incessantly revolutionises the economic structure from within, incessantly destroying the old one, incessantly creating a new one. The process of creative destruction is the essential fact about capitalism. It is what capitalism consists in and what every capitalist concern has got to live in.”

The concept of innovation has clear applications in the context of this study. As described in Chapter 2, the banking sector has been going through rapid transformation, from bricks-and-mortar banking to telephone and internet banking and on to the evolution of mobile banking and FinTech. In Schumpeter's theory, this is 'creative destruction', when new FinTech products, services, processes and

business models replace the existing and established ones, and this is seen as necessary for economic progress.

After the Schumpeterian era, Nelson and Winter (1982) took into account the economic developments of interactions within the population of heterogeneous actors, by not limiting their attention to single firms. Drawing upon the work of Nelson and Winter (1982), large incumbent organisations such as traditional banks can appropriate returns from successful investment in institutional laboratories or research and development (R&D) because of their scale in terms of both financial resources and market power.

However, more recently, the ideas underpinning the concept of innovation have evolved beyond the organisations' own internal R&D departments. Von Hippel (1988) posits that some new ideas have been driven by customers or users. This has the effect of 'democratising' the innovation process by distributing the control over innovation activities across many external actors (Von Hippel, 1988; Chesbrough, 2003; Boudreau and Lakhani, 2009). Indeed, the notion of democratising has highlighted the need to understand the actions and relationships among stakeholders in an innovation ecosystem, such as the FinTech ecosystem, which in turn leads to the concept of *open innovation*, described in the next section.

3.2.1 Open innovation

Chesbrough (2003) introduced the concept of open innovation, which builds on the work of Von Hippel (1988) and recognises that no single organisation can know everything. Open innovation is defined by Chesbrough (2003, p.xxiv) as:

“a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology. Open innovation combines internal and external ideas into architectures and systems whose requirements are defined by a business model”.

In contrast, 'closed innovation' refers to traditional R&D or internally focused innovation (Chesbrough, 2003). Chesbrough posits that a number of insights can be gained when the innovation context shifts from closed innovation toward open innovation. This concept is closely linked to knowledge creation in an organisation or an industry, and places strong emphasis on the concept of the business model (ibid.).

Consistent with the concept of open innovation, the innovation in FinTech, described in Chapter 2, comprises innovation from many sources including banking end-users, regulators, universities and competitors. It is therefore appropriate for the current study not only to explore business model innovation within a traditional bank but to also look beyond that organisation's boundaries and into the wider FinTech ecosystem in the UK banking sector.

3.2.2 Disruptive innovation

A large and growing body of literature has investigated the impact of technological innovations in traditional organisations with a particular emphasis on disruptive technology. Drawing on Schumpeter's (1950) creative destruction theory, it is perhaps unsurprising that many organisations are scrambling to innovate and to change at the pace of the market.

The term '*disruptive innovation*' was introduced in 1995 to describe the way established organisations can fail when they are faced with disruptive technology as seen, for example, in the disk drive industry (Christensen, 2000). In the 1980s this industry saw a transition from the traditional 14-inch and 8-inch disk drives to the new smaller 5.25-inch disk drives introduced by a new entrant, Seagate. The Seagate 5.25-inch disk drives eventually became the industry standard and Seagate became the market leader. Christensen (ibid.) argued that traditional organisations are vulnerable to competition from unexpected sources even when they are doing everything right, such as focusing on customers. Christensen further describes

these organisations as being stuck in an ‘innovator’s dilemma’ that prevents them from moving forward for the fear of losing the old. This contrasts with a new entrant, which by definition has little to lose in terms of established customers and market share, or as what Ries (2011) refers to as ‘lean start-up’. As a result, the concept of ‘disruptive innovation’ has created fear and paranoia in the minds of many executive leaders of traditional organisations which has in turn led some academics to question the validity of Christensen’s theory (Gans, 2016).

Twenty years after its introduction, Christensen updated the disruptive innovation theory, suggesting that technology in itself is not disruptive, but rather the disruption is often the business model. In this revised formulation disruptive innovations have two characteristics as follows (Christensen *et al.*, 2015, p.47):

1. Disruptive innovations originate in low-end or new-market footholds, which incumbents overlook.
2. Disruptive innovations do not catch on with mainstream customers until quality catches up to their standards.

Christensen *et al.* (ibid.) use the example of the ride-sharing company Uber: although they acknowledge that the company is *transforming* the taxi industry, they do not agree that Uber is *disrupting* the industry because the changes do not fit the dual characteristics of disruptive innovations as set out above.

In the context of this study, new FinTech business models, such as crowdfunding (for example, Zopa) and peer-to-peer lending (for example, Funding Circle), fit the dual characteristics of Christensen *et al.* (2015) because they originate from a low-end market for individual loans or SME financing, and also were not initially attractive to general banking consumers or to the traditional banks. Thus, FinTech innovations are disruptive innovations and in Christensen’s (2000) terminology the traditional banks are currently facing ‘the innovator’s dilemma’. As such, the banks have to respond swiftly to these innovations. The question is: how?

This section has provided a background to the concept of innovation, including open innovation and disruptive innovation, and also has highlighted that FinTech innovations are disruptive innovations that give rise to new business models. Before probing this subject further, it is necessary to explore the concept of the *business model* in more detail, and this is the purpose of the next section.

3.3 What is a business model?

The concept of the 'business model' is increasingly gaining attention not just from business practitioners but also from academics, especially those working in the strategic management domain (Porter, 2001; Magretta, 2002) and the information systems (IS) domain (Hedman and Kaling, 2003; Al-Debei and Avison, 2010; Clemons *et al.*, 2013). However, many academics (Magretta, 2002; Chesbrough and Rosenbloom, 2002; Al-Debei and Avison 2010; Foss and Saebi, 2018) argue that there is a lack of consensus on the actual definition of the business model concept. This section presents a set of definitions in chronological order to track the progress of this concept, and concludes with a working definition of a business model that is adopted for the purposes of this study.

More than two decades ago, in addressing various classifications of business models associated with internet electronic commerce (e-commerce), Timmers (1998, p.4) defined a business model as:

“an architecture for the product, service and information flows, including a description of the various business actors and their roles; and a description of the potential benefits for the various business actors; and a description of the sources of revenues.”

This definition suggests that a business model is an architectural template for a business but does not provide an understanding of how it can realise a business mission (Timmers, 1998).

Many subsequent attempts to define the concept of business models have been made. In 2001, Porter (2001, p.73) made the criticism that, unlike 'business strategy', "the definition of business model is murky at best" because the term 'business model' is often used very loosely. However, Porter also pointed out the importance of the *value chain* of a business. A value chain is "a set of activities through which a product or service is created and delivered to customers" (Porter 2001, p.74). Porter's value chain framework was one of the theoretical foundations that influenced Amit and Zott (2001) in their research, in which they defined a business model as "the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities" (Amit and Zott, 2001, p.511).

Academics and business practitioners rarely articulate the concept of business model clearly, sometimes confusing it with the term business strategy and using both terms - 'business model' and 'business strategy' – interchangeably (Magretta, 2002). In order to resolve these confusions, Magretta (*ibid.*, p.91) clarified that 'business strategy' explains "how a business organisation competes with its rivals" while 'business model' describes "how the pieces of a business fit together".

The main purpose of a business model is subtly different from a business strategy, as it emphasises how a business creates value. Chesbrough and Rosenbloom (2002, p.550) defined a business model as "a construct that mediates the value creation process". To be more specific, these authors viewed a business model as "a mediating construct between technology and economic value", whereas a business strategy places more "emphasis upon [the] value capture and sustainability" of the business (Chesbrough and Rosenbloom, 2002, pp.533-535).

From a different perspective, Johnson *et al.* (2008, p.52) proposed that "a business model consists of four interlocking elements that, taken together, create and deliver value". The four elements are:

1. Customer value proposition: the way the company creates value for customers.

2. Profit formula: the way the company creates value for itself while providing value to the customer.
3. Key resources: the assets such as the people, technologies, products, facilities, equipment, channels, and brand required to deliver the customer value proposition.
4. Key processes: the operational and managerial processes that allow the company to deliver the customer value proposition.

These authors insisted that one element stands above the rest: the customer value proposition, that is, that a business model should help to solve customers' problems (Johnson *et al.*, 2008, p.52).

Instead of providing another definition of 'business model', Osterwalder and Pigneur (2010, pp.14-15) put forward a business model mapping tool framework called the 'Business Model Canvas'. The canvas consists of nine main elements that set out the logic of how a company intends to make money: key partners, key activities, key resources, value proposition, costs structure, revenue streams, customer relationships, channels, and customer segments. The authors ambitiously claimed that this canvas is a concise, one-page universal tool for any business to describe, design, challenge and pivot its business model (Osterwalder and Pigneur, 2010). However, this canvas (*ibid.*) limits its usage to the context of a given organisation rather than the wider context of an entire industry (Ojala, 2016). Furthermore, the Business Model Canvas can be difficult to apply in practice if business managers do not understand the delineation of each element in the canvas, for instance, the confusion between customer relationships and channels.

Having recognised the fuzziness of the business model concept in the light of technological developments, Al-Debei and Avison (2010, p.371) proposed a unified framework for the concept, which built upon the business model definition of Chesbrough and Rosenbloom (2002), and suggested that a business model signifies "a mediating construct between technological artifacts and the fulfilment of strategic goals and objectives". Al-Debei and Avison (*ibid.*) also highlighted the importance of the value network in a business model and made a distinction between the terms 'actors' and 'stakeholders'. Value network actors include

suppliers, partners, marketers, distributors and intermediaries, but stakeholders are actors as well as customers (ibid., p.368).

In order to update their decade-old definition of business models, Amit and Zott (2012, p.42) defined a company's business model as "a system of interconnected and interdependent activities that determines the way the company does business with its customers, partners and vendors". This definition emphasised value creation with stakeholders. In a similar way, Kavadias *et al.* (2016, p.92) defined a business model as "a system whose features interact, often in complex ways, to determine the company's success". Most recently, Teece (2018, p.41) described a business model as "the design or the architecture of the value creation, delivery, and capture mechanisms" which a company employs.

Thus far, this section has discussed the various definitions and descriptions of the concept of the business model to be found in the literature over the past two decades. This review confirms the findings of Foss and Saebi (2018, p.10) that presently there is a lack of clarity around what is meant by the term 'business model' and that there is no single, universally agreed definition of the concept.

Despite this lack of consensus across the literature it is important for the purposes of the current study into business model innovation to settle on a clear, working definition of the concept of 'the business model' in order to inform the programme of research and the discussion of its findings. This thesis therefore proposes that the essential components reflected in most literature on the concept are well captured by the following two studies: (1) Chesbrough and Rosenbloom (2002), in which the authors defined a business model as a 'construct' dedicated to 'value creation' and (2) Johnson *et al.* (2008) which highlights the 'value architecture'. A combination of these two definitions provides a comprehensive starting point for a review of the theoretical underpinnings of the current study. Therefore, the working definition of a business model to be used in this thesis is as follows:

A business model is "a construct that mediates the value creation process" (Chesbrough and Rosenbloom, 2002, p.550) and which "consists of four

elements - customer value proposition, profit formula, key resources, and key processes - that, taken together, create and deliver value” (Johnson *et al.*, 2008, p.52).

Most importantly, this working definition is adopted for the empirical component of the current research, in order to facilitate a comparison of the business models of large traditional banks in the UK in the years 2006 and 2018 (to be presented in Chapter 7, Table 7.2).

It is worth noting that the element of ‘create and deliver value’ in this working definition is not limited to operating within the boundaries of an organisation. Rather it is increasingly extending beyond these boundaries, as seen in technological partnerships (Hagedoorn, 1993), strategic networks (Dyer and Singh, 1998; Gulati and Singh, 1998), ‘co-opetitions’ that combine both co-operations and competitions (Nalebuff and Brandenburger, 1997), collaborations (Pisano and Verganti, 2008), and, most recently, digital platform ecosystems (Tiwana *et al.*, 2010; Ceccagnoli *et al.*, 2012; Selander *et al.*, 2013; Gawer and Cusumano, 2014; Hedman and Henningsson, 2015; Cusumano *et al.*, 2019). As discussed in Chapter 2, most new FinTech business models are platform-based and involve many stakeholders in an industry ecosystem. The next section will therefore discuss the concept of the *platform ecosystem*.

3.4 The platform ecosystem perspective on business models

Originating from the biological field of ecology, the concept of an ‘ecosystem’ has now been widely adapted and applied across the IS and business domains (Moore, 1993; Iansiti and Levien, 2004a; El Sawy *et al.*, 2010; Selander *et al.*, 2013; Hedman and Henningsson, 2015). Moore (1993) claimed that every company is part of a business ecosystem that crosses a variety of industries.

In a business ecosystem, “companies co-evolve capabilities around a new innovation: they work cooperatively, and competitively to support new

products, satisfy customer needs, and eventually incorporate the next round of innovation” (Moore, 1993, p.76).

Moore’s definition is concerned mostly with business strategy and competition within the ecosystem, and he metaphorically labelled it as the ‘predators and prey’ scenario. The simultaneous co-operations and competitions within an ecosystem are also known as ‘co-opetitions’ (Nalebuff and Brandenburger, 1997).

Based on Moore’s (1993) conceptualisation of the business ecosystem, lansiti and Levien (2004a; 2004b) highlighted the complex interactions and relationships among players within the ecosystem, especially in making strategic decisions. Also, the players in one ecosystem may also be players within other business ecosystems, leading lansiti and Levien (2004a, p.78) to argue that “the role of an ecosystem is not static”, but instead is dynamic and evolving. This view suggests that defining boundaries for an ecosystem may be challenging.

In contrast to the work of Moore (1993) and lansiti and Levien (2004a; 2004b), recent studies (Adner, 2017; Ritala and Almpantopoulou, 2017) have instead suggested that an ‘ecosystem’ should be conceptualised in the form of an alignment structure. Ritala and Almpantopoulou (2017) argued that the use of ‘ecosystem’ as an analogy in the literature on innovation lacks conceptual and empirical rigor. For Adner (2017, p.40), an ecosystem is “the alignment structure of the multilateral set of partners that need to interact in order for a focal value proposition to materialise”, and this study emphasised the activities and the alignment of the actors. Unlike lansiti and Levien (2004a; 2004b), Adner (2017, p.43) suggested that “value proposition creates the (endogenous) boundary of the relevant ecosystem”. This perspective of structural conceptualisation is potentially an interesting one to apply to the FinTech ecosystem, provided that the findings of the current research can specify the discrete activities of each actor within the ecosystem.

In order to realise the opportunities provided by an ecosystem, Iansiti and Levien (2004b) highlighted the importance of value creation in the ecosystem for sustaining innovation, and they further suggested that one of the strategies to achieve this is by integrating a *platform* into the ecosystem. The studies of Moore (1993), Iansiti and Levien (2004a; 2004b) and Adner (2017), provided the powerful insights that value creation (as the foundation of the business model) is important in the FinTech ecosystem (which has many players interacting within it) and that the platform is a strategic tool connecting these players.

From the perspective of the IS domain, an organisation is dependent on the extent of its relationships with various partners and users within the *network* (Al-Debei and Avison, 2010). In a study of IS strategy in turbulent environments, El Sawy *et al.* (2010) found that there are complex interactions among the IT systems, dynamic capabilities and environmental turbulence, which in turn have led to a digital ecosystem. *Digital ecosystem* is “a collective of firms that is inter-linked by common interests, using digital technology for their product or service innovation” Selander *et al.* (2013, p.184). Selander *et al.* (2013) focused on non-focal actors’ participation in the digital ecosystem, and this suggests a new theoretical perspective in cultivating innovation. In a digital ecosystem, symbiotic relationships are created through collaboration with others within the environment (Hedman and Henningsson, 2015).

Building on *network effects*, Gawer and Cusumano (2014) suggested that a platform provides an open infrastructure and sets governance conditions for interactions within the platform ecosystem, and also that platforms can be categorised as internal or external:

An internal platform is “a set of assets organised in a common structure from which a company can efficiently develop and produce a stream of derivative products”, while external platforms are “products, services or technologies that serve as foundations upon which external innovators can develop their complementary innovations in an ecosystem” (Gawer and Cusumano, 2014, p.418).

These descriptions by Gawer and Cusumano (ibid.) explain the *multi-sided network* effects observed in a platform ecosystem, where interactions can occur in all directions between all of the players, all of whom may need each other in some way (ibid.) and can in turn create new values (Ceccagnoli *et al.*, 2012). This can be seen in the case of Google: the Google search engine not only connects advertisers to their potential customers but it also helps those advertisers to access targeted groups of users of Google's search results.

One common type of multi-sided platform focuses on 'two-sided network effects' in which platforms are intermediaries that support one side - the producers - and another side - the end-users (Parker and Van Alstyne, 2005). For example, in the context of banking, the credit card payment provider and processing company Visa Inc. coordinates both merchants and cardholders through its platform. Parker *et al.* (2016, p.17) defined these network effects as "the impact that the number of users a platform has on the value created for each user".

Referring back to the concept of innovation described in Section 1.2, the interconnections (or the network effects) in a platform ecosystem are thus fundamentally built on Von Hippel's (1998) 'democratising innovation' and Chesbrough's (2003) concept of 'open innovation', in which ideas arise from many actors or stakeholders within the ecosystem. In the context of the current research, building upon the working definition of a business model from Section 3.3, the concept of the platform ecosystem highlights the interconnectivity between all stakeholders within the ecosystem, which enables the value creation process and in turn creates novel platform-based business models (Selander *et al.*, 2013; Hedman and Henningsson, 2015; Parker *et al.*, 2016; Shaughnessy, 2016).

As discussed in Chapter 2, the rapid developments in IT and IT infrastructure that have occurred to date during this century (see Figure 2.1) have enabled the digitisation of products and services. Yoo *et al.* (2010, p.729) suggest that a digitalised product can simultaneously be a product *and* a platform that enables others to innovate using firm-controlled platform resources such as standard

development kits (SDKs) and application programming interfaces (APIs). For example, the Apple's iPad is a product and, at the same time, its operating system (iPadOS) is also a platform that enables other software developers to innovate new applications which expand the basic functions of the product (ibid.). In this way, digital platforms have transformed the nature of competition (Tiwana *et al.*, 2010). This is especially true since 2008, when the technology giants Apple Inc. and Google Inc. opened their smartphone application (app) platforms to a number of developers (or heterogeneous actors) ranging from individuals to large organisations (Boudreau, 2012; Eaton *et al.*, 2015; Sørensen *et al.*, 2015). Thus, platforms are modifying and even erasing the boundaries within and between industries, while the incumbent organisations are often unaware of new competitors, such as technology start-up entrepreneurs, from apparently unrelated industry sectors (Parker *et al.*, 2017).

Yoo *et al.* (2012) suggest that the development of software-based platforms could probably be one of the most profoundly disruptive innovations to date, leading to innovative platform-based business models such as those of Uber in the taxi industry and AirBnB in the hotel industry. Uber, the ride-sharing provider, is a technology start-up company that uses a mobile platform to connect drivers with passengers in an innovative way to offer more competitive transportation fares than traditional taxi services. Similarly, AirBnB uses a multisided technology platform to connect people who want to provide their spare space (hosts) with people who are looking for places to stay (guests) making possible more competitive short-term accommodation rates than traditional hotels (Afuah, 2019).

Applying the platform-based business model concept in the context of the banking sector illuminates how the revolution in FinTech has resulted in a dynamic landscape of combined businesses and technologies. The direct and indirect network effects thereby create an ecosystem: in this context, the platform ecosystem. Because of the opportunities provided by these network effects within the ecosystem it is unsurprising that many FinTech business models are platform-based. For example, a FinTech company with a 'crowdfunding' business model allows an individual or a company to raise funds via an online platform that

connects many users (or donors) without the need for traditional or physical intermediaries such as banks. This illustration resonates well with what Tiwana *et al.* (2010) meant by saying that digital platforms are changing the nature of competition.

Extending this concept further, Amit and Zott (2012) suggest that business model innovation can help organisations to stay ahead in a dynamic environment. Meanwhile, in the recent literature, Cusumano *et al.* (2019) suggest the use of a digital platform as a strategy in innovating business models in traditional organisations, by deploying one of the following methods:

1. Belonging to a competing platform.
2. Acquiring a platform (especially with strong technology and talent).
3. Building a new platform.

The literature reviewed in the current section points to an avenue for further research into business model innovation from the perspective of the platform ecosystem, which is clearly relevant to the current study. The next section therefore reviews the literature and recent debates on business model innovation.

3.5 Business model innovation in traditional organisations

Following on from the discussion of the concept of innovation (Section 3.2) and the definitions of a business model (Section 3.3) and a platform ecosystem (Section 3.4), this section now reviews the literature dealing with the underpinning concept of this study: *business model innovation*.

Business model innovation is a subset of the concept of innovation (Section 3.2). It is consistent with Schumpeter's concept of 'new combinations', in particular with what he described as "the carrying out of the new organisation of any industry, such as the creation of a monopoly position or the breaking up of a monopoly position." (Schumpeter, 1934, p.66).

Traditionally, managers of established companies tend to keep doing what has worked in the past by serving their current customers without large investments in technology to address the rapidly growing needs of their current customers (Bower and Christensen, 1995). However, by adhering too closely to its core strategy this traditional 'stick to the knitting' approach can sometimes contribute to failure (Charitou and Markides, 2003). In managing disruptive innovation, Christensen (2000) suggests that managers need to understand the intrinsic conflicts entailed by the technology. It is therefore important for managers to evaluate the cost and revenue structure in making investments in emerging technologies as a response to technological innovation (Hill and Rothaermel, 2003). Many of the established companies are well resourced, but are struggling to take advantage of the digital opportunities to build their relationships with customers because they are restricted by their own value chains (Wessel *et al.*, 2016). Collectively these studies highlight the need for traditional organisations to innovate their business models.

Over the last decade, 'business model innovation' has become a fashionable term especially among business practitioners. Johnson (2010, p.17) cites a survey conducted in 2008 by IBM that revealed that 98% out of 1,130 CEOs who responded to the survey reported the need to innovate their business models, of which two-thirds agreed that extensive change was required. However, no more than 10% of innovation investments at these companies focus on business model innovation and those companies that do attempt this rarely succeed (*ibid.*). It is instructive to ask why this is the case and what implications it might have.

3.5.1 Defining business model innovation

As with the concept of 'business model', the research on business model innovation has increasingly attracted attention in recent years (Amit and Zott, 2012; Clemons *et al.*, 2013; Aspara *et al.*, 2013; Afuah, 2014; Christensen *et al.*, 2016; Rayna and Striukova, 2016; Foss and Saebi, 2018; Teece, 2018). However, as with business models more generally, Foss and Saebi (2018) argue that these 'voluminous' studies

have resulted neither in clarity of concept nor in the synthesis of a single, universally agreed definition.

Although there may be some nuanced differences between the various terms, the concept of 'business model innovation' is sometimes used interchangeably with 'business model reinvention' (Johnson *et al.*, 2008), 'business model evolution' (Demil and Lecocq, 2010), or 'business model transformation' (Aspara *et al.*, 2013). Johnson *et al.* (2008) cite Apple Inc. as an example of successful business model innovation in a well-established company: Apple reinvented its business model with the introduction of the iPod and iTunes stores, which in turn created a new market and transformed the company. However, the authors also suggest that established companies should not simply pursue *business model reinvention* unless the new business model provides a new or 'game-changing' opportunity for the company or industry (ibid.).

By viewing business models as components, Demil and Lecocq (2010, p.227) define *business model evolution* as "a fine-tuning process involving voluntary and emergent changes in and between permanently linked core components". From a different perspective, and drawing upon the value aspects of the business model concept, Aspara *et al.* (2013, p.460) refer to *business model transformation* as "a change in the perceived logic of how value is created by the corporation, when it comes to the value-creating links among the corporation's portfolio of businesses, from one point of time to another".

For Osterwalder and Pigneur (2010) business model innovation is about value creation for companies, customers and society, and simultaneously about replacing outdated models, which is why the authors proposed the Business Model Canvas as a universal tool to map an organisation's business models. Although recognising that the Business Model Canvas (ibid.) has been widely adopted by entrepreneurs and practitioners, Rayna and Striukova (2016) argue that the canvas does not address the key drivers that are associated with value creation, value capture and value delivery. Instead, Rayna and Striukova (ibid.) propose a 360° business model

innovation framework that claims to present all value aspects of a business model - value creation, value proposition, value capture, value delivery and value communication - using the examples of Netflix and Spotify. But the current study takes the view that this framework is a mapping tool for business models, not for business model innovation as it was intended to be. Furthermore, Netflix and Spotify are not traditional organisations with established business models. Instead, these two companies possess new innovative business models that disrupt the business models of traditional organisations. Thus, Rayna and Striukova's framework is not suitable for understanding and guiding many traditional organisations.

Meanwhile, business model innovation, according to Amit and Zott (2012, p.41), can "consist of adding new activities, linking activities in novel ways or changing which party performs an activity". This definition is built upon three elements: the content, structure and governance of a business model. Amit and Zott (2012, p.44-p.45) provide an example for each type:

1. IBM is an example of business model innovation focused on *content* (by adding new activities): a company that has evolved from being a hardware supplier to becoming a service provider.
2. Priceline.com is an example of business model innovation focused on *structure* (by linking activities in novel ways): an online travel agency that introduced reverse market structure.
3. Next Issue Media is an example of business model innovation focused on *governance* (by changing one or more parties that perform any of the activities): a consortium jointly owned by magazine publishers that are industry rivals, to digitise magazines to ensure their survival.

Similarly, but in a more general conceptualisation, Afuah (2014, p.4) defines business model innovation as a "framework or recipe for creating and capturing value by doing things differently, and it is often about changing the rules of the game".

Since both Amit and Zott's (2012) and Afuah's (2014) definitions seem to capture the meaning of business model innovation as a response to technological innovation, and because they also support Schumpeter's (1950) creative destruction concept (as discussed in Section 3.2), the current research adapts and combines them in order to create a working definition for *business model innovation*. By integrating them with the working definition previously arrived at for the concept of *business model* (in Section 3.3), for the purposes of this study *business model innovation* henceforth refers to:

The change of an existing value creation process which can consist of adding new activities, linking activities in new ways or changing one or more of the four elements of the business model – customer value proposition, profit formula, key resources and key processes.

3.5.2 Business model innovation as a response to FinTech innovations

As mentioned in Section 3.4, FinTech innovations create opportunities for new platform-based business models which are in turn viewed as 'disruptive innovations'. The managers of traditional banks will thus need to learn to manage such innovation "in a more nuanced, balanced way, so they can unlock the potential of both the old and the new" (Gilbert and Bower, 2002, p.101). Instead of relying on innovations in products or services banks can now innovate their business models through platforms in order to stay competitive (Yoo et al., 2012; Sia et al., 2016; Parker et al., 2017).

Business model innovation is essential in order for traditional banks to survive and continue to thrive (Afuah, 2014). In a study of the typesetting industry, Tripsas (1997) finds that incumbents who possessed investments and technical capabilities as well as specialised complementary assets can survive and prosper in the face of technological innovation. Applying this lesson to FinTech in the banking sector suggest that it may be the case that the traditional banks already have some of these complementary assets and that these could help with their business model

innovation efforts. Additionally, by drawing on network effects in the digital ecosystem the banks could also benefit from external innovators.

Currently, only a small fraction of the academic literature is concerned with business model innovation in banks. One such piece of research is Chen *et al.* (2014), which uses a grounded theory method to suggest that banks should look at the role of intangible resources, especially their own intellectual capital, when rethinking their business models. Also, in a case study of Nordea Bank in Sweden Enders *et al.* (2006) examine the transformation of the e-banking business model to an e-business platform business model. They find that business model innovation can be successfully implemented by the incumbent bank by leveraging existing capabilities with modest investment.

In the process of digitising their business models, traditional banks need to ensure that the potential benefits of IT investments are actually realised (Peppard *et al.*, 2007). However, developments in IT have created new challenges and changes for existing organisations (Clemons *et al.*, 2013). Previous studies (Harris, 2001; Beccalli, 2007; Tallon, 2010) indicate that banks are cautious in their investments in IT. The existence of the 'IT productivity paradox' (Harris, 2001) and the 'IT profitability paradox' (Beccalli, 2007) shows that considerable investment in IT often yields little improvement for banks in either productivity or profitability. However, more recently Scott *et al.* (2017) conducted a longitudinal study of the adoption of the SWIFT (Society for Worldwide Interbank Financial Telecommunication) network since its inception in 1977. They find that there is a large effect on profitability performance especially for large banks in the long term (*ibid.*). This is consistent with the empirical study conducted by Goh and Kauffman (2013) which quantitatively analysed US banks from 2003 to 2005, highlighting the importance of internet banking technology investments as a competitive strategy. Ultimately, despite the fact that they have the capital, traditional banks should not simply commit to business model innovation (Johnson *et al.*, 2008) or choose to engage in activities that do not create value (Boot, 2014).

As Christensen *et al.* (2016) note, many attempts at business model innovation have failed. They suggest that organisations need to understand that business models develop through predictable stages such as creation, sustaining innovation, and efficiency over time, and should evaluate whether their approaches to business model innovation are consistent with the priorities of their existing business models.

Although in general the literature emphasises the importance of business model innovation, several scholars (Porter, 2001; Charitou and Markides, 2003; Sainio and Puumalainen, 2007; Tallon, 2010; Bharadwaj *et al.*, 2013; Sia *et al.*, 2016) have instead placed emphasis on the digital business strategy of traditional incumbent organisations as a means of staying competitive in their industries. The term ‘digital business strategy’, as defined by Bharadwaj *et al.* (2013, p.472), is “the organisational strategy formulated and executed by leveraging resources to create different value”. Using a similar research approach to the current study Sia *et al.* (2016) employ a single case study of DBS Bank in Singapore to analyse the digital business strategy of the bank and how it is responding to FinTech innovation. In doing so the authors identify a set of capabilities that are required for the digital transformation journey: leadership, digital operations, designing new digitally enabled customer experiences and incubating and accelerating digital innovations. However, their research focuses on digital business strategy and not on business model innovation.

Most studies that focus on FinTech have been carried out using a quantitative approach. For example, in payment innovation, Milne (2006) finds a positive impact due to network effects by using quantitative analysis of data from four countries (the UK, Norway, Sweden and Finland). In a more recent study Sobehart (2016) specifically examines the phenomenon of the FinTech revolution and provides a quantitative model that can estimate the synergies between firms in competitive environments with disruptive technologies. These quantitative studies were not able to provide an explanation of how traditional banks are responding to FinTech innovations.

There are only a few qualitative studies that directly address FinTech within the banking sector around the world but these focus on individual countries and territories and their relevance to the specific case of the UK banking sector is therefore limited. Foster and Heeks (2013) analyse the scaling strategy by conducting a case study of a large FinTech company, MPesa, in Kenya, while Mustafa (2015) uses a mobile network operator in Pakistan, Telenor Easypasia, as an illustrative case in order to understand business model innovation in mobile banking. Using a grounded theory methodology, Kabakova *et al.* (2016) analyse FinTech platforms and the creation of ecosystems using multiple case studies in the context of Russia. Meanwhile, Shim and Shin (2016) analyse China's FinTech from the perspective of actor-network theory (ANT) and argue that the successful development of FinTech is closely linked to technology development and China's government policy.

The most recent published qualitative study in the context of UK banking is that of Audzeyeva and Hudson (2016), who conducted a case study research on the Clydesdale and Yorkshire Bank (CYB). But this study examines structural transformation of the bank by using business intelligence, rather than business model innovation, as the construct. Furthermore, CYB is owned by NAB Australia and thus it is not representative of the UK banking sector – a marked difference from the current study.

Overall, the consensus from the literature is that banks should not ignore the FinTech phenomenon, but that they need to innovate their business model carefully. In the words of Amit and Zott (2012, p.49): “when you innovate, look at the forest, not the trees - get the overall design of your activity system right before optimising the details”.

And yet, the problem of how to innovate established business models remains unsolved. The existing literature has not been able to prescribe a set of standard mechanisms that define how to execute business model innovation successfully. Neither does the literature give any recent examples of an established bank going

through business model innovation as a response to the developments in FinTech in the UK banking sector. Without a proper framework, business executives have employed a range of different approaches, including product or service focused, process focused, marketing focused or business model focused. As Weill and Woerner (2015) suggest, a new approach is needed in order to evaluate the current opportunities and threats within an existing business ecosystem and propose effective responses that are applicable to the context of FinTech in the banking sector.

To achieve this, the current thesis analyses business model innovation from the perspective of dynamic capabilities theory. Having discussed the concept of business model innovation and its antecedents, the next section will therefore review the literature and recent debates on the theory of dynamic capabilities.

3.6 The dynamic capabilities perspective on business model innovation

Thus far, the current chapter has highlighted that the antecedents of the concept of *business model innovation* lack clarity, and hence the concept would benefit from a tighter conceptualisation using supporting theories in order to understand it in more detail. Business model innovation in the UK banking sector is clearly an important phenomenon that needs to be explored and understood, especially where traditional banks are operating in a dynamic environment with the presence of rapid technological developments, and taking into account the unpredictable nature of future competition and markets (Wehinger, 2012; Chen *et al.*, 2014; Boot, 2014; Eastburn and Boland, 2015). Therefore, in order to obtain a better understanding of the approaches to business model innovation, the current study sets out to conduct an empirical investigation into a traditional bank by adopting the perspective of dynamic capabilities - a theory which has influenced both the data collection and data analysis presented in this thesis.

3.6.1 Defining dynamic capabilities

In their seminal paper Teece *et al.* (1997, p.516) define dynamic capabilities as:

“the firm’s ability to integrate, build and reconfigure internal and external competences to address rapidly changing environments”.

This theory built upon the work of Nelson and Winter (1982) that highlights the nature of the dynamic environment due to technological innovations.

Additionally, Teece (2009, p.131) acknowledges that the work of Penrose (1959), *The Theory of the Growth of the Firm*, was “an important inspiration to dynamic capabilities”. Penrose (1959, p.320) views ‘the firm’ as “both an administrative organisation and a collection of productive resources, both human and material” and explores how firms can use the combination of these resources to achieve growth. Although Penrose’s work (*ibid.*) has made obvious contributions to the resource-based view (RBV) theory it also highlights the importance of capabilities in the ‘fungible nature’, and this is consistent with the core insights of dynamic capabilities theory (Teece, 2009, p.121).

3.6.2 Dynamic capabilities and the resource-based view

Helfat *et al.* (2007) argue that dynamic capabilities theory is similar to resource-based view (RBV) theory, which is concerned with strategy and organisational performance. RBV theory suggests that organisations could develop sustainable competitive advantages if their resources consist of all four VRIN attributes, these being: (1) valuable; (2) rare among the organisation’s current and potential competition; (3) imperfectly imitable; and (4) non-substitutable (Barney, 1991, p.105). However, Teece (2009) claims that dynamic capabilities theory has expanded the RBV theory and that, unlike RBV, dynamic capabilities do not assume a static business environment.

3.6.3 Relevance of dynamic capabilities to the current study

As noted in Chapter 2, in the current study the FinTech ecosystem in the UK banking sector is considered to be a dynamic environment for traditional banks and all other key stakeholders within the ecosystem. It is therefore appropriate to select the theory of dynamic capabilities as the foundation for the empirical research described in this thesis. Furthermore, dynamic capabilities also emphasise the importance of ‘path dependencies’ of an organisation defined as: the ways in which an organisation’s decisions are often shaped by strategic decisions made in the past (Teece *et al.*, 1997, p.522). The notion of path dependencies has obvious relevance to the current research since the unit of analysis, a traditional bank, has a long and established history in the UK.

It should be noted that the dynamic capabilities theory also highlights a connection with the field of strategic management, which studies how organisations can achieve and sustain a competitive advantage (Teece *et al.*, 1997; Eisenhardt and Martin, 2000). Some scholars (Eisenhardt and Martin, 2000; Zollo and Winter, 2002) have argued that there is no significant link between dynamic capabilities and organisation performance. The work of Eisenhardt and Martin (2000, p.1107) is especially prominent in the literature on dynamic capabilities theory and they define dynamic capabilities as:

“the firm’s *processes* that use resources - specifically the processes to integrate, reconfigure, gain and release resources - to match and even create market change. Dynamic capabilities thus are the organisational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve and die.”

However, this view is strongly opposed by Teece (2018), who argues that Eisenhardt and Martin (2000) are restricting the dynamic capabilities merely to organisational routines and rules.

Unlike Eisenhardt and Martin (2000), Wang and Ahmed (2007, p.36) argue that “dynamic capabilities are not organisational processes, but embedded in processes”, and can be a source of competitive advantage. However, Ambrosini and Bowman (2009) contend that dynamic capabilities do not automatically lead to a sustained competitive advantage because in a dynamic environment, an organisation has to constantly invest in and upgrade their resources. More succinctly, dynamic capabilities theory places emphasis on organisational and managerial competences in response to a changing environment, such as the dynamic FinTech ecosystem. It is also based on the assumption that the organisational structure is able to develop and transfer knowledge according to the new needs of the organisation in responding to technological changes (Helfat *et al.*, 2007; Teece, 2009).

The micro-foundations of dynamic capabilities are the “distinct skills, processes, procedures, organisational structures, decision rules, and disciplines which undergird enterprise-level sensing, seizing and reconfiguring capabilities” (Teece, 2009, p.3). Essentially, dynamic capabilities theory emphasises the following three capabilities (Teece, 2009, p.4):

1. Sensing: the capacity to sense and shape opportunities and threats.
2. Seizing: the capacity to seize the opportunities.
3. Transforming: the capacity to maintain competitiveness through enhancing, combining, protecting and, when necessary, reconfiguring the business enterprise’s intangible and tangible assets.

It is important to note that the current study, which investigates business model innovation in a traditional UK bank, adopts these micro-foundations of dynamic capabilities theory in constructing the interview schedules and also in the initial coding process of the data analysis stage (to be described in Chapter 5). In the context of this study, ‘sensing’ is the phase in which opportunities and threats from new FinTech innovations, such as products, services and business models, are explored by scanning the environment in which the bank is operating. This includes detecting the technological possibilities in FinTech developments that use the bank’s existing capabilities and resources. The bank will then seize the

opportunities and manage the threats (Helfat *et al.*, 2007). It is at this 'seizing' phase in which Teece (2018) suggests that designing and redefining the business model should take place. 'Transforming' refers to the innovation efforts of the bank, which include business model innovation. The current study therefore builds upon dynamic capabilities theory to explore how a traditional bank is innovating its business models, by deploying its own existing capabilities and also capabilities derived from within the FinTech ecosystem, in order to adapt and stay competitive in this dynamic environment.

In his most recent contribution to this field, Teece (2018) claims that business models, dynamic capabilities and strategy are interdependent. Indeed, Teece highlights the importance of business model innovation and explicitly calls for more research in this area to provide a better understanding of business model innovation on key aspects of dynamic capabilities theory (*ibid.*). The current study is therefore directly addressing this call to action.

Having established dynamic capabilities theory as a suitable context for the current research into business model innovation in a traditional bank, the following section describes the gaps in the existing bodies of literature and thus makes clear the need for, and significance of, the current study.

3.7 Summary: research gaps in the existing literature

The principal items of literature reviewed in this chapter are summarised in Table 3.1 below. Taken together the relevant key insights from these studies highlight a number of gaps and ambiguities in current knowledge, which create an urgent need for the current research.

Key concept	Author(s)	Relevant key insight(s)
Innovation (Section 3.2)	Schumpeter (1934)	The definition of innovation as 'new combinations'.
	Schumpeter (1950)	The concept of 'creative destruction'.
	Nelson and Winter (1982)	Interactions with populations of heterogeneous actors.
	Von Hippel (1988)	The notion of 'democratising' in which some new ideas are driven by customers or users.
	Chesbrough (2003)	The concept of 'open innovation', combining internal and external ideas.
	Christensen (2000); Christensen <i>et al.</i> (2015)	The concept of 'disruptive innovation' due to disruptive technology.
Business model (Section 3.3)	Timmers (1998); Amit and Zott (2001); Magretta (2002); Chesbrough and Rosenbloom (2002); Johnson <i>et al.</i> (2008); Al-Debei and Avison (2010); Amit and Zott (2012); Kavadias <i>et al.</i> (2016); Teece (2018); Foss and Saebi (2018)	These authors provide many definitions of 'business models' but collectively there is a lack of consensus on the definition of the concept of the business model.
The platform ecosystem perspective on business models (Section 3.4)	Moore (1993)	The concept of the business ecosystem.
	Nalebuff and Brandenburger (1997)	The concept of 'co-opetition'.
	Iansiti and Levien (2004a; 2004b)	The role of an ecosystem is complex and dynamic.
	Adner (2017); Ritala and Almpantopoulou (2017)	Ecosystems should be conceptualised in the form of an alignment structure.
	Al-Debei and Avison (2010); El Sawy <i>et al.</i> (2010); Selander <i>et al.</i> (2013); Hedman and Henningsson (2015)	The concept of the digital ecosystem.
	Parker and Van Alstyne (2005)	Two-sided network effects.
	Gawer and Cusumano (2014)	The definitions of internal and external platforms.
	Ceccagnoli <i>et al.</i> (2012); Parker <i>et al.</i> (2016); Parker <i>et al.</i> (2017)	Multi-sided network effects observed in a platform ecosystem.
	Tiwana <i>et al.</i> (2010); Yoo <i>et al.</i> (2010); Boudreau (2012); Eaton <i>et al.</i> (2015); Sørensen <i>et al.</i> (2015); Cusumano <i>et al.</i> (2019)	Platform-based business models.
Business model innovation (Section 3.5)	Bower and Christensen (1995); Christensen (2000); Charitou and Markides (2003); Hill and Rothaermel (2003); Johnson (2010); Wessel <i>et al.</i> (2016)	Collectively these authors highlight the need for traditional organisations to innovate their business models.
	Johnson <i>et al.</i> (2008); Demil and Lecocq (2010); Osterwalder and Pigneur (2010); Amit and Zott (2012); Aspara <i>et al.</i> (2013); Afuah (2014); Rayna and Striukova (2016); Foss and Saebi (2018)	These authors provide many different definitions of business model innovation, which highlights the lack of clarity of the concept.
	Yoo <i>et al.</i> (2012); Sia <i>et al.</i> (2016); Parker <i>et al.</i> (2017)	Managers can now innovate their business models through platforms in order to stay competitive.
	Afuah (2014)	Business model innovation is essential to survive and thrive.
	Tripsas (1997)	Incumbents with complementary assets can survive and prosper in the face of technological innovation.
	Harris (2001); Beccalli (2007); Tallon (2010); Clemons <i>et al.</i> (2013); Goh and Kauffman (2013); Scott <i>et al.</i> (2017)	Traditional banks are cautious in their investments in IT.
	Christensen <i>et al.</i> (2016)	Many attempts at business model innovation have failed, highlighting the need to understand business model innovation.
The dynamic capabilities perspective on business model innovation (Section 3.6)	Wehinger (2012); Chen <i>et al.</i> (2014); Boot (2014); Eastburn and Boland (2015)	Traditional banks operating in a dynamic environment with the presence of rapid technological developments.
	Penrose (1959)	The theory of the growth of the firm.
	Nelson and Winter (1982)	The evolutionary theory of economic change.
	Barney (1991)	Resource-based view (RBV) theory.
	Teece <i>et al.</i> (1997)	This is the seminal article on the dynamic capabilities theory.
	Eisenhardt and Martin (2000); Zollo and Winter (2002)	Dynamic capabilities as organisational and strategic routines.
	Helfat <i>et al.</i> (2007)	Dynamic capabilities theory is similar to RBV theory.
	Wang and Ahmed (2007)	Dynamic capabilities are not organisational processes, but embedded in processes, and can be a source of competitive advantage.
	Ambrosini and Bowman (2009)	Dynamic capabilities do not automatically lead to a sustained competitive advantage.
	Teece (2009)	Dynamic capabilities theory has expanded the RBV theory. Dynamic capabilities theory places emphasis on 'sensing', 'seizing' and 'transforming' capabilities.
	Teece (2018)	Business models, dynamic capabilities and strategy are interdependent. Calls for research that could provide a better understanding of business model innovation on key aspects of dynamic capabilities theory.

Table 3.1: Summary of key literature reviewed

Despite the growing body of literature, reviewed in this chapter, on financial technology and business model innovation, there are still significant gaps in knowledge and understanding which the current research is well placed to address. These research gaps can be summarised as follows:

1. Lack of empirical illustrations in the context of UK banking

It is now apparent that traditional organisations are scrambling for the best approach to innovate their business models in order to remain relevant and competitive within their digital ecosystems. Much of the existing research has been descriptive in nature in order to highlight the importance of business model innovation but the literature does not provide clear guidance on how to carry out this important task, especially in the context of UK banking. Furthermore, there are insufficient empirical illustrations in this context. The current research therefore offers some important insights into business model innovation through an empirical investigation into a traditional UK bank. By doing so, the findings of this study have the potential to be generalised, with lessons for traditional organisations in other industries on how to innovate business models when faced with disruptive innovations.

2. Incomplete understanding of the nature and role of the FinTech ecosystem and its stakeholders

Based on the limited antecedents to be found in the literature, the rapid development of FinTech in the banking sector clearly raises an urgent need for further research in this area. While there have been calls for more empirical studies to examine business models (Hedman and Kalling, 2003) and business model innovation (Teece, 2018), to date none of the existing academic literature has taken a holistic approach to business model innovation that looks both within the organisation and beyond it to the wider FinTech ecosystem. Little is known about the FinTech ecosystem: in particular it is not clear who are the key stakeholders in the ecosystem and what their relationships are. Also, most studies of FinTech have only focused on FinTech start-up companies instead of the traditional banks and the overall ecosystem. Together, these gaps indicate a need to understand

how the key stakeholders within the ecosystem view the impact of FinTech on the business models of traditional banks.

3. Dynamic capabilities and business model innovation

Business model innovation has been studied by researchers using various theoretical perspectives (as described in Section 3.5.2), such as disruptive innovation, actor-network theory (ANT), strategic networks and platform strategy. However, to date, far too little attention has been paid to the relative importance of dynamic capabilities to this topic. Section 3.6.3 has described the relevance of dynamic capabilities in the context of the current research but, so far, the work in this area has been limited and inconclusive. The question remains whether dynamic capabilities are ‘the process of’ or are ‘embedded in’ the business model innovation of a traditional bank when faced with FinTech innovations. The current study presents empirical research on business model innovation in a traditional bank and its wider FinTech ecosystem using the theory of dynamic capabilities in order to provide a clearer understanding in this area. The findings should therefore make an important contribution to the field of IS by extending the dynamic capabilities theory into research on business model innovation in UK banking.

4. Limitations in previous research approaches

In the existing literature on business model innovation both quantitative and qualitative methods have been used but there have been few studies using the case study method. The current research employs a qualitative method and it is exploratory and interpretative in nature (described in more detail in Chapter 4). The single case study design used here provides an in-depth analysis of how a traditional bank innovates its business models. This approach directly addresses the heart of our understanding of business model innovation in traditional organisations. Furthermore, the research design also includes multiple semi-structured interviews with representatives of the key stakeholders of the ecosystem in order to understand the research problem from the perspectives of the FinTech ecosystem.

Previous research in the UK banking sector used single case studies to examine innovation already proven to be successful, but these studies are more than three decades old. For example, Scarbrough and Lannon (1989) analysed Bank of Scotland (which is now part of Lloyds Banking Group) when faced with technological change in the 1980s, and Morris and Westbrook (1996) examined Midland Bank (which is now part of HSBC Group) in its implementation of IT change in the early 1990s. The current research, utilising a single case study, therefore has the potential to refresh this approach to research on the UK banking sector.

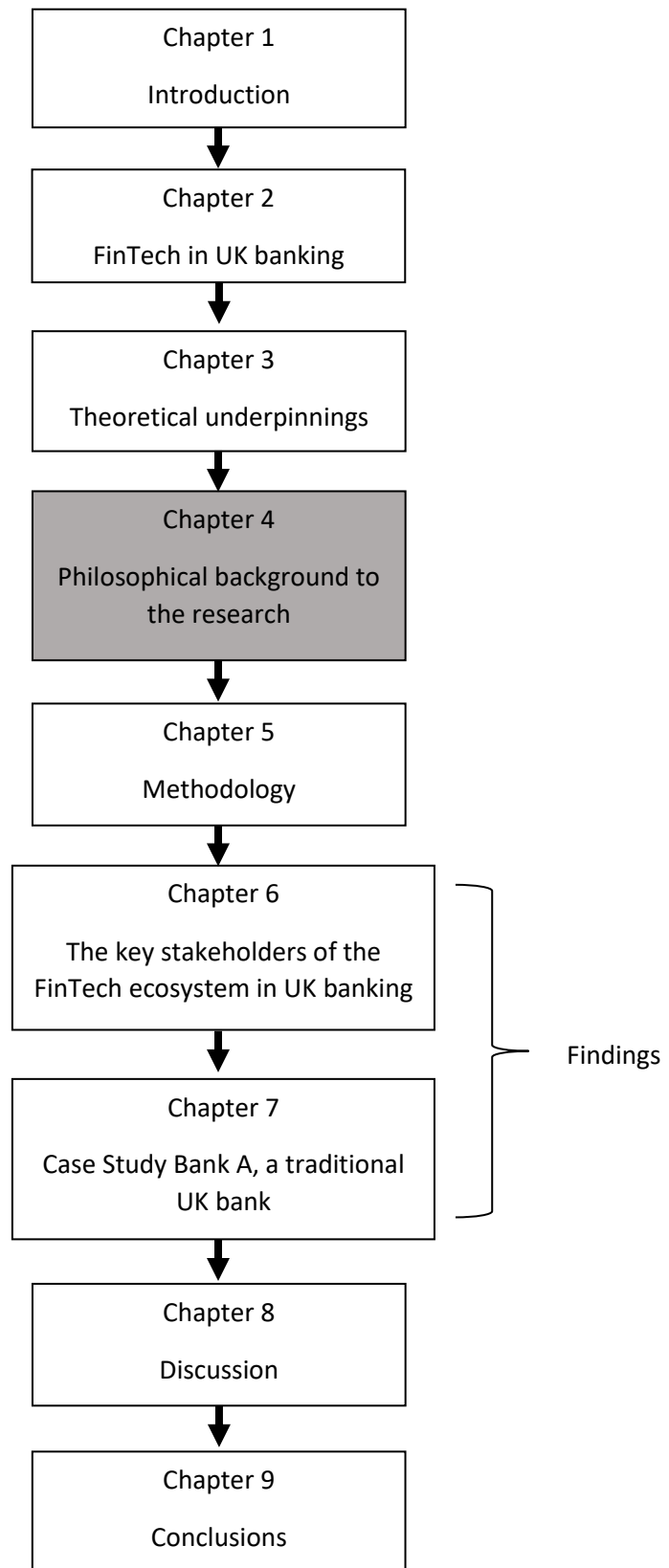
As mentioned in Chapter 2, while there is a lack of academic research in the context of FinTech in the UK banking sector, there are an increasing number of commercial research reports produced in this area by large consultancy companies, a fact which highlights the practical importance of such research. However, as these reports are written in a commercial context for the clients of these companies there is a clear risk of limited focus and potential bias in their findings. In contrast, the current study is academic in nature and is independent from any organisation (a claim which will be explained in more detail in Section 5.6). Thus, there is a high likelihood of novel findings emerging from this research.

In view of these research gaps, a strong case can be made that business model innovation is still largely unexplored in the context of the UK banking sector. Therefore the findings of this study, with its carefully considered research design and methods, will constitute a novel contribution to knowledge in this area.

In summary, the literature review for this thesis comprises two chapters (Chapters 2 and 3) which between them have addressed the context for the current study and have discussed the existing literature and the theoretical concepts that underpin it. In the process, the literature review has also highlighted knowledge gaps resulting from the limitations of existing research into the antecedents of FinTech and a lack of research into business model innovation in the context of the UK banking sector.

These gaps provide motivation for the current study, the findings of which are presented in this thesis. In order to address the identified gaps in knowledge, the research presented here aims to assess the FinTech ecosystem in the UK and to analyse the business model innovation in a traditional bank by applying the theoretical concept of dynamic capabilities. The next chapter will describe and justify the philosophical background which informs the current study, to provide an understanding of how this has influenced the research methods employed.

Structure of this thesis



Chapter 4

Philosophical background to the research

4.1 Introduction

The current research aims to provide a better understanding of business model innovation in traditional organisations when faced with disruptive innovations, by using an empirical illustration drawn from the UK banking sector. Specifically, this study adopts a qualitative research approach which analyses how a traditional UK bank can innovate its established business models in response to FinTech innovations, in order to adapt and stay competitive within the dynamic FinTech ecosystem. The current research design (described in Section 1.5, Figure 1.2) is shaped by the philosophical assumptions established by the researcher. Therefore, the purpose of this chapter is to convey these philosophical assumptions - in particular, the ontological and epistemological assumptions - that underpin the research in this thesis.

4.2 Ontological and epistemological assumptions

Ontology is the branch of philosophy which, in the context of the research presented here, is concerned with how the researcher views the nature of reality, and with the nature of human beings in the world (Denzin and Lincoln, 2018, p.97). Meanwhile, *epistemology* relates to the nature, scope and structure of human knowledge (Risjord, 2014; Creswell and Poth, 2018). As a researcher it is important to establish the ontological stance first in order to then build the epistemology, which in turn leads to the research design and methodological approaches. There are ongoing debates within the philosophy of science regarding both ontology and epistemology, but there is no consensus on how to group the schools of thought or the research paradigms (Schwartz-Shea and Yanow, 2012; Risjord, 2014; Denzin and Lincoln, 2018).

In general, there are two opposing philosophical presuppositions, namely the positivist and the interpretivist (Schwartz-Shea and Yanow, 2012). The proponents of the positivist paradigm contend that there is a single 'real' reality which is based on observable facts. For the positivists, reality exists independently of the researcher and the researcher is able to observe reality by collecting data in an objective manner, an approach which is often applied in the natural sciences (ibid.). However, although the positivist approach strives to be independent and unbiased, it does not always give sufficient attention to the experience or perspectives of the individuals or groups involved (Risjord, 2014).

In contrast, the proponents of interpretive-based philosophical presuppositions such as social constructionism, hermeneutics, phenomenology and critical theory paradigms, hold that there are multiple constructed realities, created via meanings and understandings that have been developed socially (Walsham, 1995; Schwartz-Shea and Yanow, 2012). For interpretivists, reality cannot be separated from the researcher's knowledge of the research, and therefore the researcher is not completely independent from the data collection and data analysis process – a process in which the researcher can be the interpreter of events and sometimes also the actor in them (Schwartz-Shea and Yanow, 2012). Interpretivists contend that the knowledge of reality behind these details (both the 'how' and the 'why') can be understood and constructed through language, consciousness and shared meaning (Klein and Myers, 1999) from multiple intersubjective perspectives (Schwartz-Shea and Yanow, 2012).

In order to gain a deeper understanding of business model innovation in a traditional bank, the research presented in this thesis takes the form of an interpretive investigation. This approach has been adopted because the researcher assumes that reality is an intersubjective construction of meanings, comprising the perspectives of research participants from a traditional bank and those of key stakeholders in the FinTech ecosystem. Furthermore, as described in Chapter 3, there is a lack of research in the area of FinTech in the banking sector, which creates a need for interpretation using approaches that make use of 'thick description' (Geertz, 1973). The concept of 'thick description' emphasises the context of the

research in order to construct meaning that involves human experiences and, although Geertz (1973) focuses on the field of anthropological studies, it can also be applied in the IS domain (Walsham, 1995; Cole and Avison, 2007) and in the current research. Thus, it would seem that the ontological stance of this research is consistent with the paradigm of social constructionism, which is explained in the next section.

4.2.1 Social constructionism

The social constructionism paradigm can be considered as one of the aspects of interpretivism. Social constructionists hold that people construct their own understanding of reality based on social interactions (Berger and Luckmann, 1966; Risjord, 2014). Hence, from an ontological perspective there are multiple realities while, in terms of epistemology, knowledge is constructed through the societal processes.

It can be argued that social constructionism is particularly fitting for the context of the current research because one of the research objectives is to identify and to understand the perspectives of the key stakeholders in the UK FinTech ecosystem. Every key stakeholder has their own experience in the FinTech ecosystem and their own understanding of how banks are responding to the innovations in FinTech. Furthermore, by using the case study method (to be explained in Chapter 5), people within the bank itself also have their unique experiences and opinions on the questions of how, why and in what ways the bank is innovating its business models. Adopting the social constructionism paradigm suggests that a qualitative research approach, using in-depth interviews, can explore the perspectives of the research participants on FinTech and business model innovation in a traditional UK bank. This research approach focuses on actions (the bank's responses), perceptions (of both the executives and senior managers of the banks and the stakeholders) and the interactions (roles and relationships) among the stakeholders.

However, in terms of epistemology, the current research does not fully assume the social constructionism paradigm. This is because the research findings in this thesis, presented in Chapters 6 and 7, *were not entirely dependent on the social processes* in the research. Instead some elements of *hermeneutics* are considered to be more suited to the interpretation of meanings in this research, as explained in the next section.

4.2.2 A hermeneutic approach in the interpretation of meanings

The traditional philosophical hermeneutics paradigm rejects omniscience or a single version of truth and focuses on the analysis and interpretation of texts, as often practiced in theological studies. However, the modern hermeneutics approach has shifted the focus on the interpretation of texts to include the element of ‘pre-understandings’, or the prior knowledge of, and prejudices about something (Cole and Avison, 2007). The most profound implication of hermeneutics in the IS domain (ibid.) and also in the current research, is the *hermeneutic circle*. The principle of the hermeneutic circle focuses on the *interchange between the part and the whole* (Gadamer, 1975). Gadamer (1975, p.291) suggests that the parts of a social phenomenon can only be understood within a framework of the whole and, conversely, a whole phenomenon can only be understood as consisting of parts. This interchange leads to the process of continuous theory development and interpretation. For Gadamer, the hermeneutic circle is ontological because it is a way of understanding both the interpretation and the experience.

To frame the current research in Gadamer’s (1975) concept of the hermeneutic circle, the ‘parts’ consist of three elements:

1. The existing body of academic theory and concepts as discussed in the literature review (Chapter 3).
2. The researcher’s own knowledge and personal experience, derived from 20 years in the financial sector, which form the element of the ‘pre-understandings’ of FinTech and business model innovation.

3. The empirical data, which consists of the perspectives of the research participants from a traditional UK bank and the wider FinTech ecosystem.

The 'whole' in Gadamer's (1975) terminology refers to the shared meanings (Klein and Myers, 1999; Walsham, 1995) that emerge from the interchange between the three parts. As such, the theory and interpretations are developed, and continuously redeveloped within the hermeneutic circle during the data collection, data analysis and data validation stages of the current research. This process will be explained in the next chapter (Section 5.5). By adapting Ezzy (2002), Figure 4.1 below shows how this study applies some aspects of hermeneutics to the interpretation of the data.

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Adapted from Ezzy (2002, p.26)

Figure 4.1: The application of hermeneutics in the interpretation of meanings

In terms of epistemology, in his criticism on the paradigm of positivism, Polanyi famously proclaimed, "we can know more than we can tell" and suggests that personal knowledge is the unification of the objective and subjective aspects of all knowledge (Polanyi, 1966, p.4). For Polanyi, knowledge can be categorised into two components: (1) *explicit knowledge*, which is articulated and formal; and (2) *tacit knowledge*, which is unarticulated and informal. This thesis is located within the 'tacit knowing' process (Polanyi, 1958) because it starts with a research question

that relates to the 'objective' understanding of business model innovation in the banking sector, but it pursues this question with 'subjective' interpretation within the hermeneutic circle drawing upon the context of the researcher's personal awareness and understanding, and concludes with a set of findings that form a contribution to knowledge.

Thus it is important to emphasise that, in pursuing the aim of this research, the findings of the empirical study (presented in Chapters 6 and 7) are not limited to the perspectives of the research participants since the researcher's pre-understandings of the financial sector also influence the interpretation of meaning. Hence, as described above, this study fits broadly within the paradigm of social constructionism, with some aspects of hermeneutics. These philosophical assumptions are considered to be the most suited to meeting the research objectives that were set out in Chapter 1 (Section 1.4).

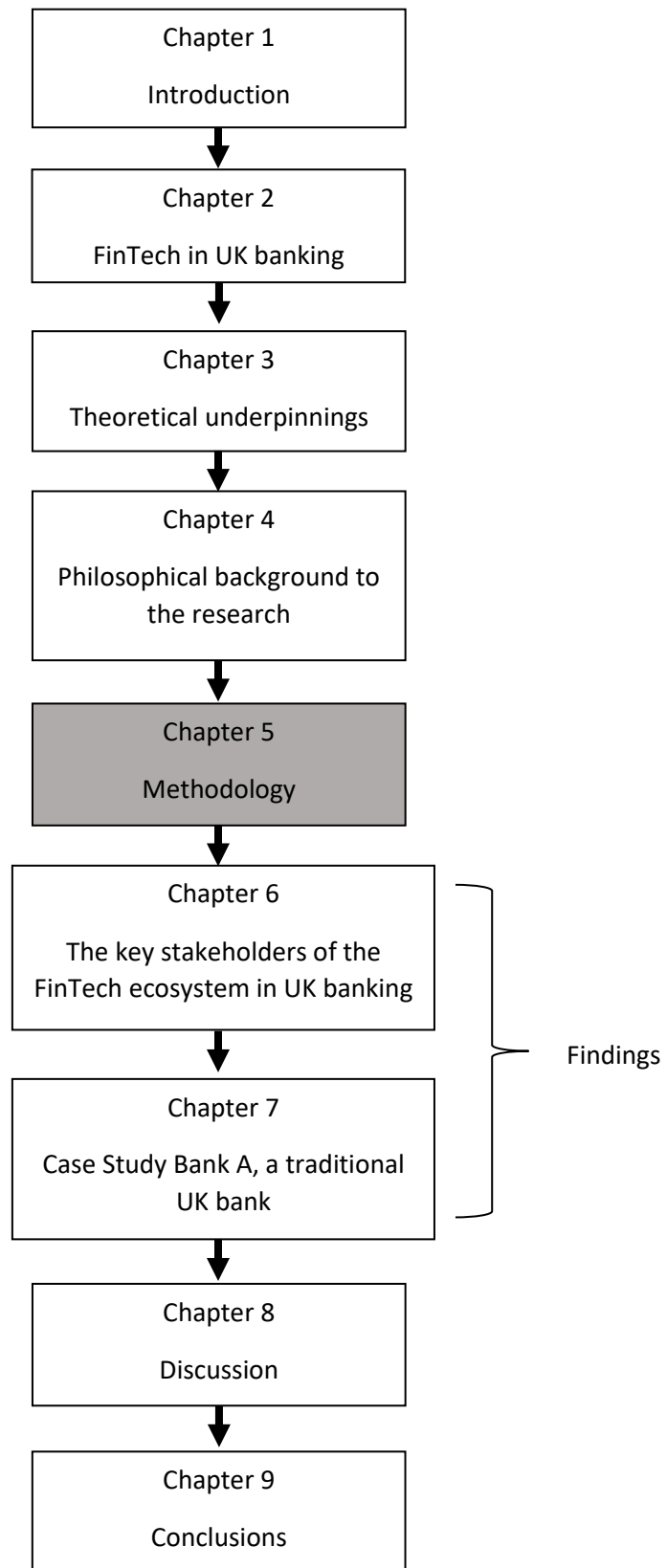
4.3 Chapter summary

This chapter provides an explanation of and a justification for the philosophical background of this thesis, specifically: interpretivism that broadly fits the social constructionism paradigm, but with some aspects of hermeneutics applied to the interpretation of meaning.

Thus far, the discussion has focused on the philosophical background to the research, particularly the ontology and epistemology. However, philosophical assumptions encompass ontology, epistemology, axiology and methodology (Denzin and Lincoln, 2018; Creswell and Poth, 2018). Axiology refers to ethics, in which the researcher asks "How will I be a moral person in the world?" (Denzin and Lincoln, 2018, p.97), while methodology refers to the choices and procedures adopted in the study, particularly in data collection and data analysis (Creswell and Poth, 2018, p.18-20; Braun and Clarke, 2013). In terms of axiology, the current research project is independent from the case study subject and all the research

participants. The researcher has taken an independent role and the research has been conducted ethically; this will be explored in more detail in the next chapter, particularly in Section 5.6. The methodological approaches of the current research will also be discussed in depth in the following chapter, which focuses on the practical issues relevant to this study and provides a justification for the conduct of the research.

Structure of this thesis



Chapter 5

Methodology

5.1 Introduction

Having described the underlying research philosophy that guides this thesis, the current chapter will now focus on the research methods used during the study, including a description of the methodology of the data collection, sampling strategies and data analysis. The chapter also explains and justifies the overall approach to conducting the research project in an ethical manner.

As discussed in Chapter 4, the current research adopts an interpretivist approach, broadly fitting within the paradigm of social constructionism with some aspects of hermeneutics - in particular, the principles of the hermeneutic circle. In order to achieve the aims and objectives of the current study, and drawing upon these philosophical assumptions, overall, the research is designed using a holistic approach to business model innovation that looks both within the organisation, from the perspective of dynamic capabilities, and also beyond the organisation to the wider FinTech ecosystem. An interpretive in-depth case study was deemed most appropriate in order to provide a better understanding of the concept of business model innovation, with an emphasis on the interpretation of shared meanings between the researcher and the research participants (Walsham, 1995; Klein and Myers, 1999). Furthermore, a case study method is particularly suitable when the research is incorporating existing theories and empirical data (Ketokivi and Choi, 2014).

As described in Chapter 1 (Section 1.4), the current study aims to extend and elaborate the dynamic capabilities theory to provide a better understanding of the business model innovation of a traditional bank in the face of FinTech innovations. This is achieved by integrating the concepts of dynamic capabilities and business

model innovation with the empirical context (a traditional UK bank in the FinTech ecosystem) in order to create new knowledge in the field of IS.

Thus, the qualitative research presented in this thesis is designed predominantly with a single case study approach in order to obtain an in-depth understanding of business model innovation from the perspective of a traditional UK bank. However, the research also addresses the wider FinTech ecosystem using multiple semi-structured interviews and focus groups to investigate the same phenomenon from the perspectives of various key stakeholders in the FinTech ecosystem. This holistic research approach is illustrated in Figure 5.1, which shows two concentric circles, the inner circle being the case study subject and the outer circle representing the FinTech ecosystem. In this way, the empirical study gains deeper insights from the analysis of the relationships between the bank and its dynamic environment at the ecosystem level, and is not solely confined to the bank itself at the organisational level.

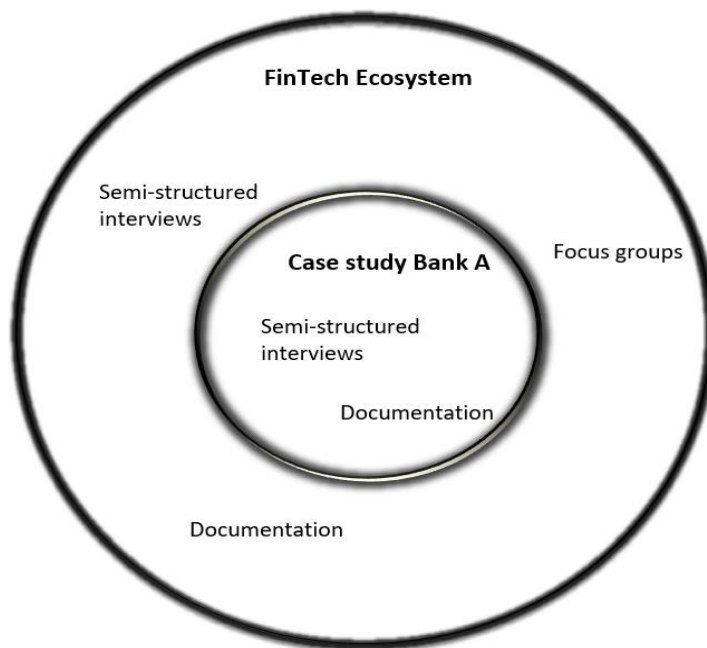


Figure 5.1: A holistic research approach

The next section describes the case study method and explains why a single case method is most appropriate for this research.

5.2 Case study method

This thesis aims to provide an in-depth understanding of business model innovation in a traditional bank within a dynamic FinTech ecosystem. In order to achieve this, a *case study* approach (Stake, 2005; Yin, 2018) was selected. A case study, as defined by Yin (2018, p.15), is “an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident”. This definition is particularly relevant to the current study, since FinTech innovation in the context of business model innovation in UK banking is a situation in which precise boundaries are as yet uncertain. This provides a clear rationale for using a case study approach in the current research.

To be even more specific, a single-case method has been selected for the purposes of this study. As mentioned in Chapter 1 (Section 1.2) the empirical unit selected for the study is a large traditional bank in the UK and the aim of the study is to analyse the bank’s approach to business model innovation in response to FinTech innovations in the banking sector. A single-case approach is able to provide highly detailed and in-depth information, and therefore has the potential to explore and richly describe the extent and nuances of the FinTech phenomenon in a traditional UK bank (Eisenhardt, 1989; Siggelkow, 2007; Edmondson and McManus, 2007).

A potential criticism of this approach is that, although the case study is designed to provide an in-depth understanding of business model innovation in a traditional bank, one could argue that a single bank may not be representative of the whole banking sector. A single case study cannot always be generalised in the same way as a study of a wider sample, but it can be regarded as an “opportunity to shed empirical light about some theoretical concepts or principles” (Yin, 2014, p.40). Such an opportunity is consistent with the objectives of the current study, which aims to extend the theoretical concepts of business model innovation and dynamic capabilities. By incorporating both existing theories and empirical data, Ketokivi and Choi (2014) posit that case study research such as the current study can be

methodologically rigorous. Moreover, Flyvberg (2001) also rejects the common misunderstanding that a single case study cannot be generalised and argues that a single case study, such as the current research, can indeed contribute meaningfully to scientific development.

Applying the arguments of Walsham (1995, p.79), it should be noted that the case study described in this thesis may indeed have the potential to be generalised, since the implications of business model innovation in a traditional bank within the FinTech ecosystem are clearly relevant to other traditional organisations and contexts. Furthermore, a single-case study can be considered as a unique exemplar (Weick, 1993; Yin, 2018) through which to explore a significant phenomenon such as FinTech. Due to the strict set of selection criteria and the difficulties of access, it would clearly not be feasible or resource-efficient to investigate a large range of separate organisations to the same level of detail.

Having explained why a single case study is the most suitable method for this research, it is now necessary to establish the case study selection criteria and the means used to gain access to a large traditional bank.

5.2.1 Case study selection criteria

The quality of a body of research can be assessed in terms of generalisability, reliability and validity (Silverman, 2014; Yin, 2018; Creswell and Poth, 2018; Denzin and Lincoln, 2018). To optimise these factors, it is important to focus on the case study selection process, especially – as with this thesis – when the research depends on a single-case study. As prescribed by many qualitative researchers (Silverman, 2014; Yin, 2014; Denzin and Lincoln, 2018) purposive sampling is the most suitable way to select the case that best fits the aims of a particular study. For the current research the case study selection criteria have been defined as follows:

1. The bank is a large traditional UK retail bank that consists of many business units (such as consumer banking, corporate (or entrepreneurial) banking and wealth management).
2. The bank has a relatively long history with established business models.
3. The bank's business models are currently affected by FinTech innovations.
4. The bank is within a dynamic ecosystem in which the rapid development of FinTech innovations is noticeable.
5. The bank is increasing its digital presence in response to FinTech innovations.

A retail bank in the UK, as defined by Gourlay and Pentecost (2002, p.190), "must have a 'large' branch network in the UK and has to participate in the UK clearing system". In September 2016, when the current research project commenced, there were at least fourteen established banks operating in the UK, meaning that fourteen possible choices of bank could have been used as the case study organisation. The UK financial regulator, the Competition and Market Authority (CMA), has compiled a retail banking report (CMA, 2016) according to which the five largest UK banks are HSBC Group (HSBCG), Barclays plc, Royal Bank of Scotland Group (RBSG), Lloyds Banking Group (LBG) and Santander UK plc. HSBCG, Barclays, RBSG and LBG have had UK-wide presence in retail banking for more than a century. Santander UK, however, is part of the Spanish banking group Banco Santander SA and entered the UK market just over a decade ago as a result of the acquisition of Abbey National plc (CMA, 2016; Santander, 2017).

Based on the selection criteria, only four of these banks were shortlisted to be the potential subject of the case study: HSBCG, Barclays, RBSG and LBG. These are the largest traditional UK retail banks, they are currently affected by FinTech innovations, have well-established business models, *and*, unlike Santander UK, have been present for more than a century in the UK (criterion 2 in the list above). It should be noted that the banking sector is widely known as the most regulated part of the financial services industry (Wehinger, 2012) and, due to their size, this is particularly true of the four shortlisted banks. The presence of such a high level of regulation is a potential issue in gaining access to these organisations for research purposes, and needs to be taken into account.

5.2.2 Gaining access to a large traditional UK bank

After the commencement of this study in September 2016, a list of potential *gatekeepers* was identified in order to facilitate access to one of the four largest traditional UK banks (HSBCG, Barclays, RBSG, and LBG). A gatekeeper, as described by Creswell and Poth (2018, p.156), is “an individual who is a member of or has insider status” within a group or organisation. The gatekeeper is the initial point of contact for the researcher and leads the researcher to other participants (Creswell and Poth, 2018). In simple terms, the gatekeeper facilitates access to the bank and is the point of reference for other participants. Potential gatekeepers for this study were identified from three reliable resources as follows:

1. Individual and professional contacts derived from 20 years’ experience in the financial sector, with more than 15 years as a chartered certified accountant (FCCA).
2. Contacts obtained via networking at multiple UK banking and FinTech conferences.
3. References from the online professional social network platform, LinkedIn.

Upon gaining approval from the University Research Ethics Committee in June 2017, the potential gatekeepers were formally approached. In order to build rapport for gaining access, communication with the potential gatekeepers included emails, telephone conversations, letters of introduction, and face-to-face meetings with the senior managers of the banks. However, due to the highly regulated and large organisational structure of the banks, potential gatekeepers then had to convene internal meetings and discussions in order to gain approval for participation in this study. This process took six months and the access to the selected case study subject was finally obtained in December 2017. The case study subject or the focal organisation, referred to henceforth as ‘Bank A’, is one of the four largest traditional banks in the UK and meets all the selection criteria listed above.

This section has described the case study method adopted for the current research. Next, it is important to explain the data collection methods, and this is done in the following section.

5.3 Data collection methods

This study employs a set of data collection methods to ensure that a sufficient body of valid and reliable data is obtained (Creswell and Poth, 2018; Yin, 2014). It relies on multiple sources of evidence, such as semi-structured interviews, focus groups and documentary evidence (summarised in Table 5.1 below), all gathered in order to investigate the same phenomenon - business model innovation in a traditional UK bank.

Sources of evidence	Descriptions
Interviews - case study bank	Ten semi-structured interviews with the executives and senior managers of the case study subject, Bank A.
Interviews	15 semi-structured interviews with the executives and senior managers of the key stakeholders within the FinTech ecosystem (excluding individual end-users).
Focus Groups	Two focus groups with ten individual end-users of banking and FinTech products and services.
Documentation	Documents related to the case study, Bank A, and the other three largest banks in the UK.
	Industry reports, consultancy reports and regulatory reports.
	Publicly available articles and documents from the internet.
	Video recordings and interviews from the public domain.

Table 5.1: Data collection methods

The primary data comprises semi-structured interviews with 25 individual research participants and two focus groups (one group of six, and one group of four participants). The documentary evidence is a form of secondary data which are related to the case study bank, the FinTech ecosystem and the UK banking sector

in general. The following three sub-sections provide brief descriptions for each of the data collection methods shown in Table 5.1.

5.3.1 Semi-structured interviews

An interview is a conversation that “has a structure and a purpose” (Kvale and Brinkmann, 2009, p.3). The primary component of data collection in this study is mostly comprised of multiple semi-structured qualitative research interviews. Kvale (2007, p.11) describes a semi-structured interview as “neither an open everyday conversation nor a closed questionnaire”, and adds that it attempts to understand a described phenomenon from the interviewees’ points of view. In the current study this method of data collection aims to obtain the perspectives of research participants in order to understand the issues around business model innovation in a traditional bank and the FinTech ecosystem. In-depth, one-to-one semi-structured interviews are an effective means of collecting such primary data since the researcher can steer the conversations to focus on business model innovations in the bank, while allowing the participants some flexibility to share insights based on their individual perspectives and professional roles within the ecosystem. Several qualitative researchers (Brinkmann and Kvale, 2015; Denzin and Lincoln, 2018) agree that the use of semi-structured interviews can help to optimise knowledge-producing potentials by allowing this kind of flexibility in the interactions between researcher and research participants.

Moreover, this data collection strategy fits the interpretivist approach set out in the philosophical background to the research in Chapter 4. In this study, a semi-structured interview is as an active process in which the researcher (as interviewer) and the participant (as interviewee) interact in a conversation to obtain a valid, shared understanding about business model innovation in a traditional bank as a response to FinTech innovations. The interpretation of meaning and context is based on the prior knowledge of the researcher, informed by the contextualised descriptions and additional relevant details from the interviewees.

In this study, there were a total of 25 semi-structured interviews which took place over a period of ten months from October 2017 to July 2018. Each interview was conducted according to an interview schedule consisting of a set of open-ended questions, as described below.

Interview schedule

Prior to conducting the interviews an interview schedule (presented in full in Appendix A) was prepared. This schedule, also known as an interview protocol (Brinkmann and Kvale, 2015), consists of a set of open-ended questions designed to explore the interviewee's understanding of business model innovation in Bank A, within the wider FinTech ecosystem. The questions were developed from a combination of an initial analysis of available documentation and of the existing literature of business model innovation and FinTech in order to align with the underlying research question. As the study progressed, experience gained from completed interviews was used to refine and improve the interview schedule to better meet the needs of the research (see Appendix B). The open-ended questions were based on themes drawn from dynamic capabilities theory and the ecosystem perspective. For example:

“Can you tell me about your role in the FinTech ecosystem?”

“How does Bank A realign the existing capabilities and invest in new capabilities? Can you explain more of these?”

The interviews were ‘semi-structured’ so that, although the interview schedule contains a list of themes and key questions to be covered, the questions themselves were designed to be flexible in order to probe further into participants’ perspectives and hence to elicit richer, in-depth data.

It is important to note that in each semi-structured interview the actual questions presented to each participant were adjusted based on their professional roles and the time they could contribute to the research. This ensured that the participants felt more at ease and able to share stories, opinions, and recollections derived from their actual experiences.

Managing the interviews

The initial part of an interview is crucial for building rapport and creating a common understanding (Brinkmann and Kvale, 2015). In particular this allows the participants to build trust with their interviewer before they speak freely about their professional experiences and perspectives on business model innovation in the banking sector. Thus, prior to the commencement of each interview, participants were asked whether they had read the Participant Information Sheet (Appendix C) and had provided informed consent (Appendix E) before being given an introduction to the research project and the purpose of the interview itself. They were also briefed about their rights in the interview process and given the opportunity to raise and clarify any doubts about the research or interview process.

The semi-structured interviews were conducted via a mix of face-to-face, telephone and Skype video interactions, with each lasting on average around 45 minutes. Most of the face-to-face interviews took place in the research participants' offices and also at Bank A. These settings were intended to help the participants feel more comfortable and able to speak candidly, as in normal conversation (Denzin and Lincoln, 2018).

During the interviews, an audio recorder was used to facilitate the data collection process; as explained by Kvale (2007), recording the interview frees the interviewer to concentrate on the topic and the dynamics of the interview. Digital tools such as a computer tablet and a smartphone were also used during interviews to record field notes, containing general observations and the researcher's personal understanding of the interview conversations. At the close of the interviews, the participants were asked to raise any issues that they considered important but which were not covered during the interview. Together, this information forms a set of emergent data for the study, which is presented and discussed in Chapters 6 to 8 of this thesis. After the interviews, the recorded audio files were uploaded to the University's Google Drive for transcribing and safekeeping.

In order to explain why the research participants were chosen and who they are, the sampling strategies are described in more detail in Section 5.4. The process of data collection through these semi-structured interviews and the analysis of the interview data are discussed in Section 5.5.

5.3.2 Focus groups

In addition to the semi-structured interviews two focus groups were strategically conducted in November 2018 as the final stage of data collection process. This timing allowed the researcher to have already carried out an initial analysis of the data obtained from the semi-structured interviews. Focus groups, sometimes referred to as 'group interviews' (Silverman, 2014), provide opportunities to collect data drawn from group dynamics – an element which is not present in one-to-one interviews. Unlike the semi-structured interviews, whose participants were industry professionals, the participants of the focus groups were intended to represent a broad cross-section of the end-users of financial products and services, in other words the 'customers' or 'the general public'. For the purposes of this study, such end-users are key stakeholders in the FinTech ecosystem. However, interviewing an individual end-user cannot represent the wide range of perspectives present across the rich diversity of all end-users. In order to obtain a reliable set of data a focus group is therefore a more appropriate method. Indeed, Creswell and Poth (2018) argue that, as a collective, a focus group can build on and create ideas that yield robust and relationally grounded data.

In order to ensure that data collected from the focus groups are unbiased, factors such as the age, background and computer literacy of the participants have to be taken into consideration. As a result of these considerations two focus groups were conducted. The first group comprises six undergraduate students from Oxford Brookes University, aged between 18 and 25 years old. They are 'digital natives' with excellent understanding and full adoption of computer and mobile applications. The second group consists of four individuals aged between 50 and 65 years old. This group have first-hand knowledge and experience of the evolution of

banking products and services over the past few decades. By drawing on group dynamics instead of inferring meaning from one or two individuals, data collected from these two focus groups give a more diverse representation of the range of end-users of UK banking products and services within the FinTech ecosystem.

As with the semi-structured interviews, the focus groups were briefed and provided with a Participant Information Sheet (Appendix D) and a consent form (Appendix F) before the discussion commenced. Each focus group meeting took about one hour and involved the exchange of opinions in multiple directions between the participants. The face-to-face group conversations focused on the experience and perspectives of participants as individual end-users of banking and FinTech products and services, and each was audio recorded. At the end of each focus group, the researcher corroborated the conversations by providing a brief summary of the group discussions and asked the participants if they agreed or had different opinions. This concluding strategy is useful in order to articulate the initial meanings of the discussions and also to uncover new ideas that were not anticipated in the focus group.

5.3.3 Documentation

The data collection process began with the acquisition of various documentary evidence in order to gain a preliminary understanding of business model innovation. In this study, the documents are *context specific*, meaning that they are related to the case study, the FinTech ecosystem and the overall UK banking sector. The documentation includes archival records, annual reports, company webpages, industry reports, regulatory publications, public domain published materials such as online interviews and videos (YouTube and TedTalk), public posts on the social networking platform LinkedIn, and periodicals. This secondary data collection process involved an ongoing process of gathering documentation from the internet and conferences. Additional documents were also referred to or provided by the research participants after interviews. Secondary data such as documentation has both strengths and weaknesses (see Table 5.2), with the latter including biased

selectivity, retrievability and access. In order to mitigate these weaknesses, the researcher has attended four FinTech and banking conferences to obtain access to the most recent and up to date documents. These conferences (see Appendix K) were focused exclusively on FinTech and banking, with attendance limited to banking sector professionals.

Figure 5.2 has been removed from this version of the thesis due to copyright restrictions

Table 5.2: Strengths and weaknesses of documentation (adapted from Yin, 2018, p.114)

In this study, such secondary data is useful for the following five purposes:

1. To understand the case study subject, Bank A, and the wider UK banking sector.
2. To understand emerging issues in the context of the UK FinTech ecosystem.
3. To augment the in-depth interviews, especially in designing the interview schedule (see Appendices A and B).
4. To understand the background of the interview participants and formulate a tailored set of semi-structured interview questions for each interview.
5. To aid in triangulation of the data.

Given the above, it is worth noting that documentation was continually collected and analysed from the commencement of the study in September 2016 until the end of the data validation process (see Section 5.5) in March 2019.

5.4 Sampling strategies: purposive and snowball sampling

Given the focus of the current study, the ideal research participants are people who are either familiar with FinTech innovation in the UK banking sector or have a direct interest in and knowledge of business model innovation in a traditional bank. Hence, non-probability sampling techniques are most appropriate for this study, two of which have guided the whole data collection process. These are purposive sampling and snowball sampling. The majority of the research participants were selected using purposive sampling because “they can purposefully inform an understanding of the research problem and central phenomenon of the study” (Creswell and Poth, 2018, p.158). Additionally, some participants were recruited via snowball sampling. These participants were referred to the researcher either by the gatekeeper or by other interview participants with an understanding of who would be able to provide additional relevant information (Creswell and Poth, 2018, p.159).

In qualitative research, as Kvale (2007) highlights, there is always the possibility that the sample size will be either too large to be manageable or too small to be meaningful. In order to mitigate this, the current study began by approaching the relatively large number of 64 individuals (40 individuals for the semi-structured interviews and 24 individuals for the focus groups) on the assumption that not all of them would be both willing and able to participate. This was indeed the case and the eventual sample size for the study was 35 individuals. These participants are classified into two data clusters as shown in Figure 5.2.

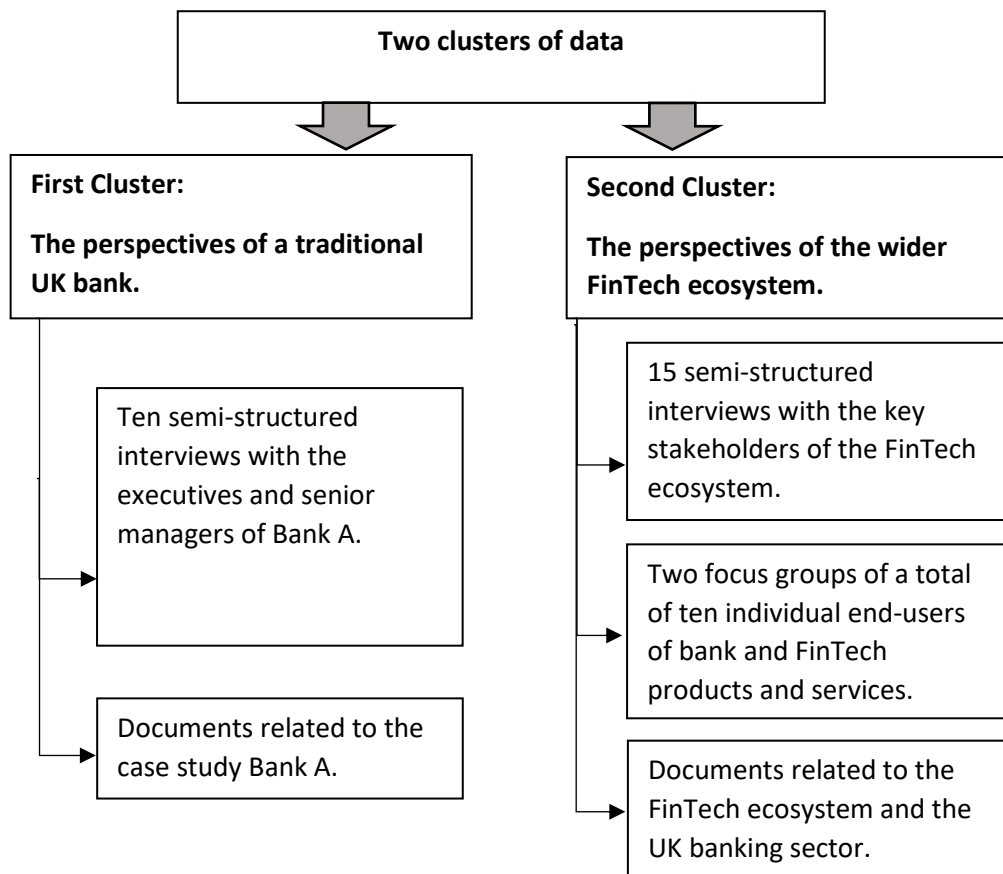


Figure 5.2: Two clusters of data

The first cluster of data comprises interviews from a total of ten research participants from the case study subject, Bank A, and documents related to the bank. The participants are the *executives* and senior managers of Bank A, with expertise in various banking innovations, especially in FinTech innovations. The term ‘executives’ refers to senior managers who are “expected by virtue of their position or their knowledge to make decisions that have impact on the performance and results of the whole” (Drucker, 2008, p.148). Hence, these participants are from the senior management level of the bank and know the bank reasonably well. Also, most of them were directly involved in the process of business model innovation. The interviews with these participants resonate well with what Kvale (2007, p.70) refers to as ‘elite interviews’, in which obtaining access to the participants is a potential issue. Data from this cluster represents the bank’s perspectives and provides greater insights into the bank’s business model innovation in response to the FinTech phenomenon.

The second cluster of data represents the perspectives of the wider FinTech ecosystem, and looks beyond the focal case study. This cluster comprises:

1. A total of 15 research participants drawn from the key stakeholders of the FinTech ecosystem. These participants include two senior managers of other traditional UK banks (Bank B and Bank C), an executive director of a challenger bank (Bank X), two senior managers of technology companies, two executive directors of payment processing and payment provider companies, an entrepreneur who worked as senior manager in a UK regulator, two consultants, an investor who is also a senior manager of an accelerator, two co-founders of start-up companies and two executive directors of corporate end-users. 14 of the research participants in this group were recruited via purposive sampling from professional contacts obtained from the researcher's own career in finance, and also from contacts obtained from networking at FinTech and banking conferences. One of the participants (a co-founder of a start-up company, participant E11) was recruited via snowball sampling, in which the participant was referred to the researcher by the gatekeeper of Bank A.
2. A total of ten research participants divided between two focus groups. The first focus group comprises six undergraduate students from various faculties of Oxford Brookes University, aged between 18 and 25 years old. These participants were recruited via a combination of purposive and snowball sampling. One of the participants was previously a student in a module taught by the researcher in the University. This participant then referred the other five participants to form the first focus group. The second focus group comprises four individuals aged between 50 and 65 years old. As with the first focus group, the participants of this group were also recruited via purposive sampling and snowball sampling. In this case, one of the participants in this focus group is a colleague in Oxford Brookes University, with a career in economics and finance, who then facilitated introductions to three other personal contacts who are interested in UK banking to form the second focus group.

3. A collection of documents related to the FinTech ecosystem and the UK banking sector. As described in Section 5.3.3, most of these documents were obtained from the internet and conferences, with some additional documents provided by the research participants after interviews.

Data from the 25 semi-structured interviews and the two focus groups were collected over a period of 14 months (October 2017 to November 2018). Table 5.3 shows a summary of primary data collection and gives the roles of the participants along with the date, duration and mode of each interview.

Having discussed the data collection methods and the sampling strategies, the next section describes the process of data collection and data analysis used in this study.

Data Table				
		Date	Duration	Mode
<u>Case study Bank A: Semi-structured interviews</u>				
A1	Bank A: Director of Group Innovation	18-Jan-18	75 minutes	Telephone
A2	Bank A: Head of Group Innovation	22-Jan-18	69 minutes	Telephone
A3	Bank A: Director of Digital Innovation	24-Jan-18	71 minutes	Telephone
A4	Bank A: Head of Card Innovation	31-Jan-18	55 minutes	Face-to-face
A5	Bank A: Director of Group Strategy	31-Jan-18	51 minutes	Face-to-face
A6	Bank A: Director of Digital Strategy and Innovation	06-Feb-18	52 minutes	Telephone
A7	Bank A: Head of FinTech	07-Feb-18	29 minutes	Telephone
A8	Bank A: Head of Innovation and Partnership	21-May-18	53 minutes	Face-to-face
A9	Bank A: Head of FinTech Accelerator-Incubator Platform	29-May-18	56 minutes	Telephone
A10	Bank A: Strategic Transformation Director	04-Jun-18	23 minutes	Telephone
			534 minutes	
<u>Semi-structured interviews with multiple key stakeholders of the FinTech ecosystem</u>				
E1	Challenger Bank X: Chief Operating Officer	20-Nov-17	46 minutes	Face-to-face
E2	UK and International Payment Provider Company: Head of Innovation	26-Oct-17	34 minutes	Face-to-face
E3	UK and International Payment Processing Company: Head of Innovation	09-Nov-17	55 minutes	Face-to-face
E4	Consultant: Co-founder of a training provider for incubators and accelerators	23-Jan-18	37 minutes	Face-to-face
E5	Consultant: Legal Advisor for FinTech companies and also an incubator mentor	18-Apr-18	16 minutes	Face-to-face
E6	Technology company: Director of Business Development	26-Mar-18	77 minutes	Skype video
E7	Technology company: Chief Customer Officer and the founder of FinTech Start-up Company 1	27-Apr-18	52 minutes	Telephone
E8	Worked with UK Regulator and also the founder of FinTech Start-up Company 2	17-Apr-18	36 minutes	Telephone
E9	Angel investor and Director of a UK accelerator for UK FinTech start-up companies	27-Apr-18	57 minutes	Telephone
E10	FinTech Startup Company 3: Co-Founder	18-May-18	31 minutes	Face-to-face
E11	FinTech Startup Company 4: Co-Founder, also an angel investor	30-May-18	31 minutes	Telephone
E12	UK Bank B: Director of Digital Innovation	21-May-18	32 minutes	Face-to-face
E13	UK Bank C: Director of Digital Innovation	13-Jun-18	16 minutes	Telephone
E14	Corporate end-user: Innovation Director of an international car manufacturer	10-Jul-18	40 minutes	Face-to-face
E15	Corporate end-user: Owner of a small established chain of restaurants	03-Jul-18	27 minutes	Face-to-face
			587 minutes	
<u>Focus Groups</u>				
FG1	Individual end-user group of 6 undergraduate students (aged 18-25 years old)	09-Nov-18	69 minutes	Face-to-Face
FG2	Individual end-user group of 4 individuals (aged 50-65 years old)	22-Nov-18	60 minutes	Face-to-Face
			129 minutes	
<u>Summary of primary data</u>				
	Total of 35 participants			
	Total of 1250 minutes of data			
	Total of 127,855 words of 27 verbatim transcripts			
	Total of 14 months period of data collection			

Table 5.3: Primary data collection

5.5 Four phases of data collection and data analysis

In the current study the processes of data collection and data analysis were conducted in tandem and took place over four phases. The activities during these four phases of data collection and data analysis are summarised in Table 5.4 below.

Phase 1: exploring and establishing a pre-understanding of FinTech and business model innovation in UK banking • Collection of documents relating to the FinTech ecosystem and UK banking sector. • Conducting three pilot interviews with key stakeholders of the ecosystem. • Transcribing the interviews. • Preliminary analysis to establish a pre-understanding of FinTech and business model innovation in UK banking. • Obtaining confirmation of the relevance of the research question. • Acknowledgement of some anomalous forms of terminology from the perspectives of research participants. • Improvement of the interview schedule.
Phase 2: conducting active interviews and commencing thematic analysis • Conducting seven interviews with the research participants from the case study, Bank A. • Conducting seven interviews with the research participants from the key stakeholders of the ecosystem. • Collecting documents relating to the case study, Bank A, and other large traditional UK banks. • Commencing thematic analysis with transcription and initial coding.
Phase 3: conducting extra interviews and focus groups, and analysing data with active coding • Conducting three interviews with the research participants from the case study, Bank A. • Conducting five interviews with the research participants from the key stakeholders of the ecosystem. • Conducting two focus groups with the research participants representing individual end-users. • Conducting thematic analysis with complete coding (NVivo12) and developing emergent themes.
Phase 4: interpreting and validating findings • Developing a preliminary findings document. • Conducting five data validation conversations with the research participants (two from Bank A, two from the key stakeholders, and one from the focus group). • Reviewing themes and finalising analysis.

Table 5.4: Data collection and data analysis process

Phase 1: exploring and establishing a preliminary understanding of FinTech and business model innovation in UK banking

The initial phase began with the collection of documentary evidence and pilot interviews. As described in Section 5.3.3, the documents are related to the FinTech ecosystem and the UK banking sector. A description of the pilot interviews, their purpose and related issues, is given below.

Pilot interviews

The empirical investigation of FinTech in the banking sector began with a series of three pilot interviews that took place between October and November 2017. The purpose of these pilot interviews was to test the relevance of the study and the feasibility of the interview schedule. At the same time, the pilots helped to refine the interview questions and to hone the interview skills of the researcher: as Yin (2014) recommends, a pilot test is a means of enhancing the data collection strategy.

The pilot interviews were conducted face-to-face in the offices of the three participants, all of whom were executives and senior managers of key stakeholders in the FinTech ecosystem. Specifically, they were the Chief Operating Officer of the challenger Bank X (participant E1), the Head of Innovation of the UK and International payment provider company (participant E2) and the Head of Innovation of the UK and International payment processing company (participant E3). The participants were prompted to share their perspectives on the issues surrounding FinTech in UK banking, the effect of FinTech innovations on traditional bank business models, and how UK banks are responding to these innovations.

The three pilot interviews were audio-recorded for a total of 135 minutes. Then, as recommended by Kvale (2007, p.137), these interviews were transcribed by the researcher before progressing to further interviews. The verbatim transcriptions produced approximately 19,590 words of data, using standard word processing

software (Microsoft Word). This process enabled the researcher to improve the quality of the subsequent interviews and to develop interview skills through reflection on the processes and problems of transcribing and interviewing (ibid.). As Eisenhardt (1989, p.539) suggests, overlapping the data analysis with the data collection allows both flexible data collection and earlier data analysis. Furthermore, the data collected from the three participants confirmed that the research question is indeed highly relevant and timely in the UK banking sector. The preliminary data analysis also enabled the improvement of the interview schedule (refer to Appendices A and B) as described in Section 5.3.1.

It is worth noting that the data obtained from the pilot interviews indicated that the understanding of some terminology (such as ‘business models’ and ‘FinTech’) was different for each participant. In response to this finding, the next sub-section describes the way the research has been conducted in order to reduce the potential for conceptual misinterpretation.

Reducing the potential for conceptual misinterpretation

As discussed in the literature review (Chapters 2 and 3), there are various definitions and interpretations for the core concepts in this thesis. In order to ensure the reliability and validity of the data collection method it is important to reduce the potential for conceptual misinterpretations by “applying communicative validation” (Kvale and Brinkmann, 2009, p.243). This involves conversations and the negotiation of meanings between the researcher and the participants regarding their understanding of core concepts such as ‘the FinTech ecosystem’, ‘business model’, and the different usage of concepts concerned with innovation, including ‘financial innovation’, ‘platform innovation’ and ‘business model innovation’.

This intersubjective agreement and reasoning, reached through active conversation and the construction of meanings between the researcher and interview participants, was conducted before each interview. As discussed in Chapter 4, this highlights the relevance of hermeneutics as an approach to the current research. It

also confirms the relevance of social constructionism, allowing the participants to construct their own reality, in this case based on their personal understanding of the core concepts.

Phase 2: conducting active interviews and commencing thematic analysis

As mentioned in Section 5.2, the access to the case study subject, Bank A, was obtained in December 2017. At this stage the interview schedule was revised and interview skills were honed. The second phase began with active semi-structured interviews involving participants from Bank A and key stakeholders from the FinTech ecosystem. Specifically, the empirical investigation of business model innovation in Bank A began with telephone interviews with three executives from the bank. These were the Director of Group Innovation (participant A1), the Head of Group Innovation (participant A2) and the Director of Digital Innovation (participant A3). On average these interviews lasted around 70 minutes, and allowed for the topics of FinTech and business model innovation in Bank A to be explored in detail by taking advantage of the semi-structured interview approach described above (Kvale and Brinkmann, 2009).

Thereafter, based on snowball sampling strategies, another four senior managers of the bank were interviewed (see Table 5.3). At the same time, seven additional interviews were conducted with participants from the wider FinTech ecosystem. In general, the research participants were asked to reflect on their current and previous roles in the bank or the FinTech ecosystem, their perspectives on the impact of FinTech innovation on traditional banks' business models and on how Bank A is innovating its business models. Some research participants also provided additional documents relating to the case study bank and the FinTech ecosystem, which were not easily accessible from the public domain.

Although the semi-structured interviews progressed smoothly with the seven participants from Bank A, after the seventh interview it was decided that the data

collection should be paused temporarily. This was because it was clear that the seventh interview was not producing any new information, and the pause therefore allowed some reflection and data analysis to take place. It is worth noting that during this phase of the research the number of interviews was not limited by the sample size. It was intended that interviews with new participants could be conducted until a *point of saturation* had been reached (Saunders and Townsend, 2016), where “further interviews yield little new knowledge” (Kvale, 2007, p.44). In order to establish that a point of data saturation had indeed been reached, data analysis was therefore begun in tandem with the data collection process.

This study employed thematic analysis with the aim of interpreting the meanings inherent in the data through a systematic approach, identifying patterns and themes across the data set (Braun and Clarke, 2013). At this phase of the study, the thematic analysis involved transcription, data familiarisation and the initial stage of coding, all of which are described below.

Transcription and data familiarisation

The data analysis process began with transcribing the audio recorded interviews. As with the pilot interviews, all fourteen of these interviews were transcribed verbatim using Microsoft Word software. Transcription was carried out solely by the researcher, ensuring confidentiality and enabling familiarisation with the data (Braun and Clarke, 2013). This familiarisation process involved an extensive period of transcribing, repeated listening to the recorded audio files, anonymising identities and sensitive content, and repeated reading of the transcriptions.

Data condensation and coding

For the next stage of the data analysis, the whole dataset went through a process of *data condensation* (Miles *et al.*, 2014, p.12). This was done by selecting, focusing, simplifying, abstracting, and transforming the data that appear in the full corpus of field notes, interview transcripts, documents and other empirical materials (*ibid.*). During the data condensation process, *coding* of the data also commenced. Coding

is “a process of identifying aspects of the data that relate to the research question” (Braun and Clarke, 2013, p.206). Indeed, coding is a fundamental part of data analysis because it allows the perspectives of the research participants to be processed into a form which directly illuminates the questions being asked by this study (Braun and Clarke, 2013; Saldana, 2016). Coding and condensation provide structure and give an overview of the extensive set of interview transcriptions (Kvale and Brinkmann, 2009, p.201). They also constitute a “deep analysis and interpretation of the meanings of the data” (Miles *et al.*, 2014, p.72).

During this phase, the anonymised interview transcripts were broadly sorted into eight initial codes, as shown in Table 5.5 below. Different types of data were identified within each transcript and labelled with one of the eight codes (in the form of a Microsoft Word sub-heading). This enabled the data to be organised and managed according to the themes identified in the literature review. The first code relates to the participants’ self-descriptions of their organisation or their personal roles in the FinTech ecosystem. The second code relates to the participants’ perspectives on the impact of FinTech innovations on banks’ business models. The third code relates to technology and the fourth code relates to regulations. Dynamic capabilities theory applies in the fifth, sixth and seventh codes. The final code relates to the key strengths and challenges that a traditional bank faces when innovating its business models.

It is important to emphasise that this initial coding process condensed and reorganised the data without reducing or omitting any information. The whole dataset was sorted and reorganised into these eight codes (see Table 5.5) in order to facilitate further analysis.

Initial codes
Broad Code 1: Roles in the ecosystem. Broad Code 2: How FinTech innovations are affecting the traditional bank's business models. Broad Code 3: The role of technology such as AI, big data and machine learning. Broad Code 4: Responses to new regulations such as Open API, GDPR and PSD2. Broad Code 5: Sensing the opportunities and threats. Broad Code 6: Seizing the opportunities. Broad Code 7: Transforming the business models. Broad Code 8: Key strengths and challenges.

Table 5.5: Eight initial codes based on themes identified from the literature review

Phase 3: conducting extra interviews and focus groups, and analysing data with active coding

From the initial analysis and the wealth of data collected from the seven participants from Bank A and ten participants from the key ecosystem stakeholders, new lines of inquiry emerged, for example, the desirability of obtaining more data relating to accelerator and incubator platforms. It was therefore at this point that the gatekeeper was contacted for further access to participants who could provide information related to accelerator and incubator platforms. The semi-structured interviews then continued with an additional three participants from Bank A and five more participants from the FinTech ecosystem. At this point, data saturation was reached (Saunders and Townsend, 2016; Kvale, 2007), and it was inferred that conducting further interviews would produce only limited new information of relevance to the research topic.

It was also during this phase that the two focus groups representing the individual end-user groups (described in Section 5.3.2) were conducted. Again, the data analysis was carried out in tandem with the data collection. The datasets collected from the eight interviews and two focus groups in this phase were transcribed and coded with the same method as in Phase 2.

First-level interpretation of data

A first-level interpretation of the data was carried out by examining the condensed data classified under the first two codes of Table 5.5, looking at interview statements about the roles of the participants and their perspectives on the impact of FinTech in traditional banks' business models. This process of interpretation led to the *identification of twelve key stakeholders in the FinTech ecosystem*, the findings on which are presented in more detail in the next chapter. However, in themselves, the findings derived from these initial codes were not sufficient to address the research question. The data analysis therefore progressed to a more structured and complex coding process using the NVivo12 software package, described below.

Complete coding with NVivo12

The next stage of the data analysis made use of the computer assisted qualitative data analysis software NVivo12. The dataset, comprising verbatim transcripts in the form of Microsoft Word files, was uploaded into the software package. As well as analysis, NVivo12 is also a powerful tool for organising data and this was a useful feature as the coding process became more complex, enabling a systematic analysis by breaking down the chunks of data into an array of individual codes.

The initial coding process used in Phase 2 was greatly enhanced by NVivo12. Here, the initial classification of the transcript data by adding sub-headings representing the eight codes into the Microsoft Word files proved particularly useful. The software was able to extract the eight different data types from the 27 separate transcripts and aggregate them, so that all the data under each code could be viewed together on a single screen in NVivo12. This feature is known as 'automated coding' (Bazeley and Jackson, 2013).

The entire dataset was then analysed with NVivo12 using a *complete coding* approach. Complete coding is a pattern-based form of qualitative analysis that aims "to identify *anything* and *everything* of interest or relevance to answering the

research question” (Braun and Clarke, 2013, p.206). The complete coding in this study involved two stages.

The first stage, also known as ‘first order concepts’ (Corley and Gioia, 2004) or ‘first cycle’, draws upon the coding methods of Saldana (2016) and involves assigning codes to the data chunks. At this stage data from each interview were analysed line by line and given codes based on code types from Saldana (ibid.) such as ‘attribute’, ‘descriptive’, ‘*in vivo*’, ‘process’ and ‘structural’, to reflect the information content of the data. This first cycle coding produced 37 codes (Appendix G), all of which are data-derived codes based on the semantic meaning in the data (Braun and Clarke, 2013). These codes segmented the data chunks but still required further analysis in the next stage.

The second stage of the complete coding, also known as ‘second cycle’ (Saldana, 2016) or ‘second order concepts’ (Corley and Gioia, 2004), involved looking at the data holistically in order to identify the interconnectedness of the phrases that emerged from the entire dataset and from the first cycle codes. This second cycle coding produced 18 ‘focused codes’ or sub-categories. The data structure table presented in Appendix H shows the development of the 37 codes into these 18 sub-categories.

Developing emerging themes

During the process of complete coding, there was also a continuing engagement with the literature, re-listening to the recorded audio files, and reviewing of the 37 first-cycle codes and 18 sub-categories, in order to ensure that the coding process had been as comprehensive as possible. Some of the ideas generated were recorded as memos, a feature within NVivo12 which links to a particular segment of text within the dataset. Appendix I gives an overview of the entire coding process in the form of multiple screenshots captured from NVivo12.

At this stage, the synthesis of codes, coded data and ideas in memos, combined with the researcher's own pre-existing understanding of the research topic, allowed meaning and relevance to be interpreted from the data. From the 18 sub-categories the analysis progressed to identify broader patterns or themes. Referring back to the literature then helped to facilitate various iterative cycles of interpretation to extract the meanings embedded in these 18 sub-categories. This eventually allowed them to be grouped together into four main categories, built around the theory of dynamic capabilities, which encapsulate and express the underlying meanings present in the data.

However, this phase was not the end of the process. While organising the concepts represented by the four categories, it was found that the categories displayed overlapping patterns and relationships from one to another, which in turn lead to a further round of analysis. Thus, the process took longer than anticipated because it eventually involved multiple revisits to the coded data, to the whole dataset and also to the literature. Ultimately, this process of data analysis led to two overarching themes which linked all the data together in a way that meaningfully addressed the research question. These two themes were interpreted as being the twin approaches to business model innovation used by Bank A and they will be presented in full in Chapter 7 as the main findings of this study. The development of the themes is also captured within the data-structure table in Appendix H.

Phase 4: interpreting and validating findings

The data collection was already completed when the final phase began. During this phase the data analysis produced a set of findings, which included some emergent themes. In February 2019, these findings were collated into a document containing an integrated summary along with a preliminary conceptual framework, developed from data analysis. This document (Appendix J) was then shared with several research participants so that they could respond to the findings and check the interpretation. This provided an important level of validation for the analysis and acted to 'triangulate the data'.

A total of 12 participants were contacted by email from February to March 2019 to provide such a validation or 'member check' (Schwartz-Shea and Yanow, 2012; Miles *et al.*, 2014). These participants were selected randomly from the full participant set and comprised of five senior managers from Bank A, five senior managers from the key stakeholders and two individuals from the focus groups. The member check process was conducted no earlier than February 2019 in order to test whether the research had remained relevant and contemporary since the data collection phase in 2017 to 2018.

However, in the period between data collection and data validation, several of the research participants had left their roles and were not able to provide any feedback. In the end a total of five participants took part in the validation process. They were two senior managers from Bank A (participants A4 and A10), two senior managers from the key stakeholders (participants E11 and E14) and one individual from a focus group (FG2). The summary document (Appendix J) was forwarded to these five participants, who then provided feedback via a combination of email, telephone and face-to-face conversations.

This process of member checking provided useful validation and support for the findings of this thesis, based on the member check document (see Appendix J). The feedback from the two participants from Bank A helps to validate the findings of this study with regard to the bank itself while the other three participants validate the findings in relation to the FinTech ecosystem. As a result of the data validation process the concepts and the preliminary conceptual framework of this study have been further refined, which in turn feeds into the findings and discussion chapters of this thesis. Furthermore, all five of these participants not only validated the findings, but also strongly agreed that the findings would be applicable in other industries. The details of the data validation will be discussed in the findings and discussion chapters of this thesis.

5.6 Ethical considerations

This section explores the research ethics of the current study. A variety of ethical considerations inform the research methodology, some of which have already been highlighted in Sections 5.3 (the data collection method) and 5.4 (the process of data collection and data analysis) above. Several additional ethical issues also emerged as the research progressed.

This study obtained approval from the University Research Ethics Committee (UREC) on 26 June 2017, with the UREC registration number 171120. A minor amendment for the recruitment of focus group participants, which now allowed participation from students of Oxford Brookes University, was approved on 25 July 2018.

Independent research

It should be noted that the current research project is a fully self-funded study and is therefore independent from the case study subject and all the research participants. Since the case study subject and some of the research participants were accessed via personal and professional contacts of the researcher there is inevitably a small but non-zero potential for bias to be introduced to the study. However, this potential is mitigated by the validation and feedback process described above, which involved a general cross section of participants. It should also be noted that the researcher is not directly related to any of the research participants.

Participant information Sheets and Consent Forms

Prior to data collection, each potential interview participant was provided with a copy of the Participant Information Sheet (Appendix C) and a Consent Form (Appendix E). The Participant Information Sheet explains the nature of the research project, the requirements and implications of participation, the participant's right to withdraw from the interview and how the data will be analysed and be stored.

A total of 40 potential participants were approached but some of these were reluctant to participate. Overall, there were 25 participants, and all provided informed consent prior to the interview conversations.

A similar process applied to the focus group participants, but with a different Participant Information Sheet (Appendix D) and Consent Form (Appendix F), both modified to better fit the purpose of the focus groups. A total of 24 potential participants was approached. Eventually, there were ten participants, forming two focus groups, the first group comprising six undergraduate students of Oxford Brookes University, aged between 18 and 25 years old, and the second group comprising four individuals aged between 50 and 65 years old.

Confidentiality issues

Due to the sensitive nature of the banking sector, a major priority was maintaining the confidentiality of the case study bank and the identities of the research participants. Although some participants were not concerned about confidentiality, it was decided that the study should uniformly represent all participants' and their organisations' identities via pseudonyms. The case study bank is renamed 'Bank A' and multiple codes are used to replace the identities of the participants and their organisations, as seen in Table 5.3. Other forms of information have also been paraphrased to maintain anonymity. The process of anonymisation in this study, in particular the identity of Bank A, has been carried out carefully to ensure that the quality of the research is not compromised. For example, in Chapters 6 and 7 data relating to Bank A are reviewed alongside similar data on the three other largest UK banks – not only helping to give a more representative view of large traditional UK banks but also helping to conceal the specific identity of Bank A.

As this study seeks to understand the participants' professional perspectives on business model innovation and their involvements in the FinTech ecosystem, no significant physical or emotional risks were posed to them. The participants were given the option to reject or refrain from answering any of the interview questions that they did not wish to answer. Although none of the participants made use of

this option, three participants from Bank A (participants A1, A6 and A7) and two participants from the FinTech ecosystem (participants E8 and E12) expressed a lack of precise knowledge and expertise when answering certain questions, thus their responses for those interview questions were genuinely their own perspectives. All 35 participants provided consent for the interviews and focus groups to be audio-recorded, and permission to use direct quotations. Only anonymised and paraphrased quotes are presented in this thesis and, to further preserve the anonymity of the participants, the thesis adopts the convention of using “their”, “they” and “them” as gender-neutral singular pronouns (except in Section 7.7, where gender diversity is explicitly discussed).

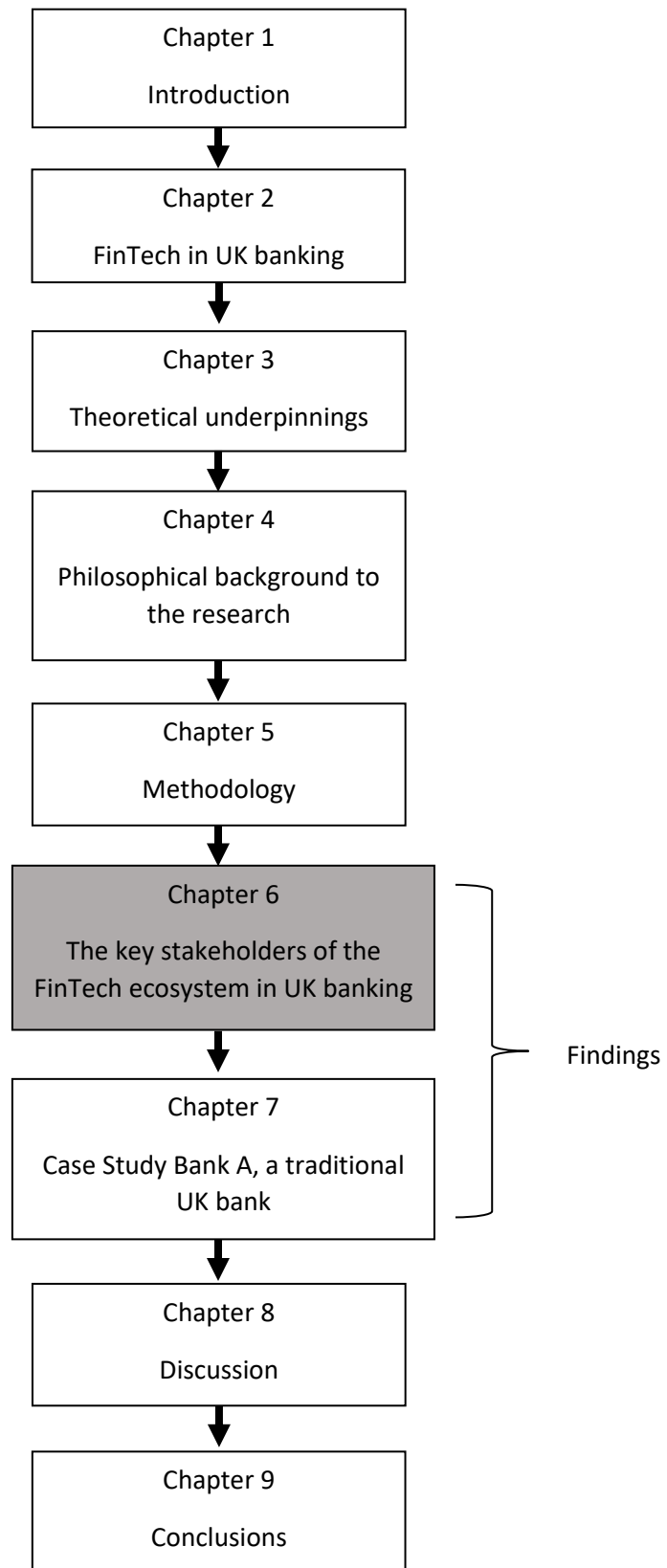
Data management

At all times, all data were managed and kept securely on Oxford Brookes University’s Google Drive. These included immediate uploads and regular back-ups of recorded audio files, field notes, transcriptions, memos, analysis and findings to the Google Drive, for which the University has a security agreement. The research tools, which comprise a computer notebook, a tablet, and a smartphone were also encrypted with biometric finger print and password protections.

5.7 Chapter summary

Following on from the discussion of the research philosophy in Chapter 4, the current chapter has detailed the methodology chosen to achieve the aims and objectives of this study. Having justified the adoption of the case study method alongside an array of data collection methods, this chapter has explained the process of data collection and data analysis, including the data validation strategies that have been adopted. The ethical considerations involved in undertaking this study have also been discussed. The next two chapters will now detail the findings of this study.

Structure of this thesis



Chapter 6

The key stakeholders of the FinTech ecosystem in UK banking

6.1 Introduction

The findings of this study are presented in this chapter and the next (Chapter 7), which together aim to answer the central research question of the thesis:

In the face of digital technology innovation, how do traditional organisations innovate their established business models to adapt and stay competitive within a dynamic industry ecosystem?

As explained in Chapter 1 (Section 1.4), in answering this question the thesis aims to provide a better understanding of how traditional organisations understand and approach the issues bound up with business model innovation, with a particular focus on the UK banking sector.

The current chapter is concerned with the context of the FinTech ecosystem in UK banking. The purpose of this chapter is two-fold. Firstly, it *identifies the key stakeholders in the UK FinTech ecosystem* and presents evidence which can be used to understand their roles and relationships within the ecosystem. Secondly, because the interconnected nature of the ecosystem means these stakeholders are directly and indirectly affecting traditional banks' business models, this chapter *sets the scene for understanding the empirical findings in the context of business model innovation in a traditional bank*, which will be discussed in Chapter 7.

Thus, the findings from the current chapter are used to aid the interpretation of the findings in the next chapter, in order to construct a comprehensive framework through which to understand the concept of business model innovation. Figure 6.1 below shows how the presentation of findings is structured in this part of the thesis.

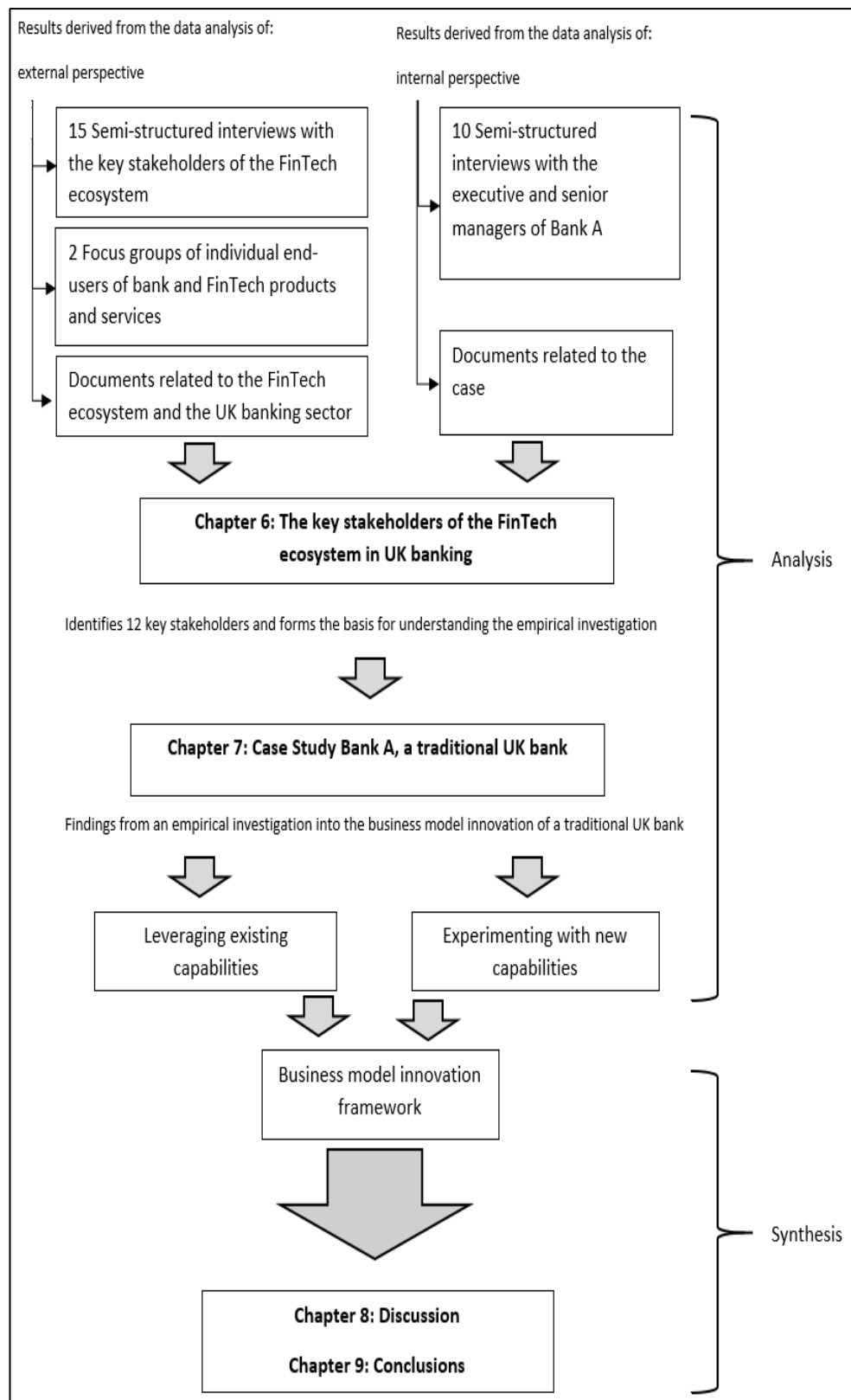


Figure 6.1 Structure for the presentation of findings

As described in Chapter 5 (Section 5.5), this study employed thematic analysis with the aim of interpreting the meanings of the data through a systematic approach, by identifying patterns and themes across the data set (Braun and Clarke, 2013). Using this method, the initial step of the data analysis involved a data condensation process in which all anonymised interview transcripts were broadly sorted into eight initial codes. The findings presented in this chapter were largely derived from the data organised within two of these eight codes (see Table 5.5): *'roles in the ecosystem'* and *'how FinTech innovations are affecting the traditional bank's business models'*. Therefore, it is important to note that, unlike the next chapter, the findings presented in this chapter are based on the initial phase of data analysis only, without a thorough and complete thematic analysis utilising NVivo12 software.

This chapter comprises seven sections and is organised as follows. The next section (Section 6.2) provides the rationale for how the researcher interprets the FinTech ecosystem. The following section (Section 6.3) explains the usage of the term 'key stakeholders' and describes the technique of identifying key stakeholders. Section 6.4 provides a summary of the research participants. Section 6.5 identifies twelve key stakeholders of the FinTech ecosystem and also presents the mutual perspectives of these key stakeholders concerning roles and relationships in the FinTech ecosystem. The complex relationships among these key stakeholders are presented in the form of a sociogram in Section 6.6 and the chapter concludes in Section 6.7 with a brief summary of findings.

6.2 Rationale behind the FinTech ecosystem perspective

The concept of an ecosystem was introduced and discussed in the literature review (Chapter 3, Section 3.4). To recap, the nature of an ecosystem means that there are constant interactions among the ecosystem stakeholders. This section aims to explain the way in which the researcher conceptualises the 'FinTech ecosystem' in order to understand the findings presented in the current chapter.

As mentioned in Chapter 3, a business ecosystem is formed by large and complex networks that connect entities such as 'stakeholders' or 'actors', which are interdependent on each other for survival (Moore, 1993; Iansiti and Levien, 2004a; Cusumano *et al.*, 2019). This conceptualisation of an ecosystem views it as complex and dynamic.

However, Adner (2017) points out that there are two general approaches to conceptualising an 'ecosystem':

1. Ecosystem as affiliation.
2. Ecosystem as structure.

According to Adner (2017, p.41), the 'ecosystem as affiliation' perspective places emphasis on the breakdown of traditional industry boundaries and on increasing the number of stakeholders or actors that link to the focal actor or platform. This view is consistent with the studies of Moore (1993), Iansiti and Levien (2004a; 2004b), and Cusumano *et al.* (2019). However, from a distinctively different perspective, some studies (Adner, 2017; Ritala and Almpanopoulou, 2017) suggest a rigorous conceptualisation of 'ecosystem' in the form of an alignment structure, which led Adner (2017) to suggest that ecosystem should be viewed from this 'ecosystem as structure' perspective that focusing on the activities and then the alignment of the actors.

As discussed in the literature review (Chapter 2), in the context of the UK banking sector, FinTech can be seen as a complex ecosystem in which the key stakeholders of the financial industry intersect with the technology industry to create innovative products, services and business models. The process of data collection and the initial stage of data analysis leads to the findings that, consistent with the Global FinTech report (PwC, 2016), the FinTech ecosystem is *complex* and *dynamic* because of new players coming in and out, and particularly because some of these players also belong to other industry ecosystems. For example, technology companies belong to the technology industry but at the same time these companies play an important role in the FinTech ecosystem.

It is important to note that this thesis adopts the view of Moore (1993), Iansiti and Levien (2004a; 2004b), and Cusumano *et al.* (2019), by conceptualising the FinTech ecosystem as complex and dynamic, and as an environment in which the key stakeholders are interconnected, as presented in Section 6.5. Indeed, this research finds that the FinTech ecosystem is not well characterised in terms of an alignment structure, in the sense advocated by Adner (2017). As described towards the end of this chapter, it is not possible to conceptualise the FinTech ecosystem as a structure in the form of a 2D-diagram that clearly shows the activities of each stakeholder in the ecosystem. Instead, the relationships of the key stakeholders in the FinTech ecosystem can only be properly displayed in a complex network sociogram in Section 6.7 of this chapter.

6.3 Rationale behind the term ‘key stakeholders’

The term ‘stakeholder’ has been introduced in Chapter 1 (Section 1.1), with the definition by Freeman (1984, p.46):

A stakeholder in an organisation is “any group or individual who can affect or is affected by the achievement of the organisation’s objectives”.

Building on Freeman’s definition, the term ‘key stakeholders’ in this thesis refers to individuals or organisations with an interest in FinTech within UK banking, and who can either affect or be affected by the collective actions of the FinTech ecosystem.

In the field of IS, specifically in a study of the concept of business models, Al-Debei and Avison (2010, p.368) posit that a stakeholder network encompasses “actors (organisational actors and customers), roles, relationships, channels, flows and communications and governance”. Therefore, care has been taken in this thesis to use the term ‘key stakeholders’ instead of ‘key players’ or ‘key actors’ because the viewpoint of stakeholders in a digital ecosystem demonstrates the roles and value created in the ecosystem more clearly than players or actors.

In order to identify the key stakeholders in the FinTech ecosystem, this study adopts one of Bryson's (2004) fifteen stakeholder identification and analysis techniques: the '*process for choosing stakeholder analysis participants*'. According to Bryson (2004, p.28), this particular technique is initiated "by doing a preliminary stakeholder analysis", and "after reviewing the results of this analysis, a larger group of stakeholders can be assembled". Therefore, applying the technique in the context of this research, the 'preliminary stakeholder analysis' is the existing list of key stakeholders of the FinTech ecosystem identified in the Global FinTech Report (PwC, 2016). The list is then expanded based on the criteria of power and interest, which help to determine which other players in the ecosystem should also be considered a key stakeholder. This chapter does not intend to present a comprehensive stakeholder approach (Freeman, 1984; Bryson, 2004) because the purpose of identifying the key stakeholders of the FinTech ecosystem is to form a basis for understanding the findings in the next chapter and the discussion in Chapter 8.

The identities of the key stakeholders are presented in Section 6.5 but, prior to revealing these findings, a summary of the research participants is described in the next section.

6.4 Research participants

As mentioned in the literature review (Chapter 2), when this study began in September 2016 the existing academic literature had not successfully mapped the digital ecosystem of FinTech in the banking sector. However, in 2016 a Global FinTech report was published by the international consultancy company, PwC (PwC, 2016). The report suggests that there are eight key stakeholders within this ecosystem: financial services institutions, start-up firms, technology companies, infrastructure players, the regulators and government, the investors, incubators and accelerators, and the consumers (ibid., p.3). Hence the findings of this industry report are used as the baseline for the current research. In the light of this report it can be seen that the data collection for this study, as described in Chapter 5 (Section

5.4), began with purposive sampling, with only a few individuals representing this list of stakeholders. The data collection then progressed to snowball sampling. The iterative process of data collection and data analysis with hermeneutic interpretation (Section 5.5) eventually led to a clearer view of the key stakeholders and their roles in the FinTech ecosystem.

The findings presented in this chapter and the next will be supported with anonymised quotes from the participants. Anonymisation, as explained in Chapter 5 (Section 5.6), is used to maintain confidentiality, with pseudonyms assigned to replace the identities of the participants and their organisations.

Table 6.1 summarises the research participants, their pseudonyms and their roles in the ecosystem. As shown in Table 6.1, each pseudonym uses an alphanumeric coding. The prefixed letter 'A' denotes participants from Bank A, a prefixed letter 'E' denotes participants from the FinTech ecosystem and the prefixed letters 'FG' stand for 'focus group'. The numbers following the prefixes 'A' and 'FG' are in chronological sequence of the data collection. For example, A1 represents a senior manager from Bank A who was the first participant interviewed, A7 represents a senior manager of the bank who was the seventh participant interviewed, and FG1 represents the first focus group conducted. However, that is not the case for the participants from the FinTech ecosystem, because the participants were organised according to the key stakeholder grouping. Therefore, the numbers following the prefix 'E' are not in chronological sequence of the data collection.

Pseudonym	Role in the ecosystem
A1	Bank A: Director of Group Innovation
A2	Bank A: Head of Group Innovation
A3	Bank A: Director of Digital Innovation
A4	Bank A: Head of Card Innovation
A5	Bank A: Director of Group Strategy
A6	Bank A: Director of Digital Strategy and Innovation
A7	Bank A: Head of FinTech
A8	Bank A: Head of Innovation and Partnerships
A9	Bank A: Head of FinTech Accelerator-Incubator Platform
A10	Bank A: Strategic Transformation Director
E1	Challenger Bank X: Chief Operating Officer
E2	UK and International Payment Provider Company: Head of Innovation
E3	UK and International Payment Processing Company: Head of Innovation
E4	Consultant: Co-founder of a training provider for incubators and accelerators
E5	Consultant: Legal advisor for FinTech companies and also an incubator mentor
E6	Technology company: Director of Business Development
E7	Technology company: Chief Customer Officer and founder of FinTech Start-up Co.1
E8	Worked with UK Regulator and also the founder of FinTech Start-up Company 2
E9	Angel investor and the Director of a UK accelerator for FinTech start-up companies
E10	FinTech Start-up Company 3: Co-founder
E11	FinTech Start-up Company 4: Co-founder, and also an angel investor
E12	UK Bank B: Director of Digital Innovation
E13	UK Bank C: Director of Digital Innovation
E14	Corporate end-user: Innovation Director of an international car manufacturer
E15	Corporate end-user: Owner of a small established chain of restaurants
FG1	Individual end-user group of 6 undergraduate students (aged 18-25 years old)
FG2	Individual end-user group of 4 individuals (aged 50-65 years old)

Table 6.1: Summary of research participants

6.5 Identifying the key stakeholders of the UK FinTech ecosystem

Having provided the definition of the key stakeholders of the FinTech ecosystem in UK banking, discussed the relevant data analysis method and introduced the research participants, this section now presents the identities of the key stakeholders in the FinTech ecosystem, as suggested by the data analysis.

A primary insight, obtained from all 35 research participants, confirms the consensus view of the literature as well as the researcher's own pre-understanding: that FinTech innovations have created an ecosystem in the UK banking sector. As Bank A's Head of Card Innovation (participant A4), explains:

"So, I think FinTech fits into ... the kind of ecosystem. FinTech is a response [or] the opportunity to create new solutions... With the exponential change in technology, you can therefore create many new solutions and FinTech then emerges as a response and then becomes a trend in itself because people see opportunities [that] they could do things better... like the start-up companies ... create new solutions to challenge the existing players - the incumbents [traditional banks]." (A4)

The FinTech ecosystem has created an environment that is encouraging many key stakeholders, including traditional banks, to interact with others by providing value within the ecosystem itself. As another participant, Bank B's Director of Digital Innovation (participant E12), puts it:

"Obviously [FinTech innovations] such as Open Banking [with] Open APIs gave us the opportunity to create an ecosystem of partners around yourself and your customers to provide value for everybody." (E12)

The interactions and relationships within the FinTech ecosystem are explored further throughout this chapter, and again as part of the discussion in Chapter 8.

As mentioned in the preceding sections (Sections 6.3 and 6.4), the process of identifying the key stakeholders developed from the list of eight stakeholders identified by PwC (2016), by adopting the technique of Bryson's (2004) 'process for choosing stakeholder analysis participants'. The list is then expanded based on the criteria of power and interest, which help to determine which other players in the ecosystem should also be considered a key stakeholder. The insights obtained from the data indicate that there are in fact twelve key stakeholders within the FinTech ecosystem, illustrated in Figure 6.2 below. They are:

1. Traditional banks
2. Digital challenger banks
3. FinTech start-up companies
4. Technology companies
5. Payment provider and processing companies
6. Financial regulatory bodies and government departments
7. Investors
8. Incubators and accelerators
9. Consultancy companies
10. University-based researchers
11. Corporate end-users
12. Individual end-users



Figure 6.2: Key stakeholders of the FinTech ecosystem in UK banking

The reasons for increasing the number of key stakeholders from eight (PwC, 2016) to twelve in this thesis are as follows:

1. The current study splits the *financial services institutions* into two groups: *traditional banks* (Section 6.5.1) and *digital challenger banks* (Section 6.5.2) due to distinct differences in their business models as seen in the data.
2. The Global FinTech Report (PwC, 2016) identified *technology companies* and *infrastructure players* as two of the key stakeholders. However, during the process of analysis in the current study, it was apparent that *infrastructure players* includes some *technology companies* (Section 6.5.4) and *payment provider and processing companies* (Section 6.5.5). The data showed that technologies and payments are fundamental to the innovations in FinTech. A recent publication by the Bank of England (2019) which reviews the future of the UK's financial system lends support to the

finding of the current study that technology and payment with platform-based business models are both shaping the UK banking sector.

3. The insights from the data found that *consultancy companies* (Section 6.5.9) with professional roles such as financial, legal, research and marketing create value to many industry ecosystems, including the FinTech ecosystem. This stakeholder was previously not identified in the industry report.
4. The current study has found that *university-based researchers* (Section 6.5.10) play an important role in the FinTech ecosystem, especially in sharing knowledge across multiple domains, and therefore need to be recognised as a key stakeholder.
5. The Global FinTech Report (PwC, 2016) has identified *consumers* as a key stakeholder of the FinTech ecosystem. The findings of the current study expand on those of PwC's (2016), suggesting that consumers consist of two end-user groups: (1) *corporate end-users* (Section 6.5.11) and (2) *individual end-users* (Section 6.5.12). Section 6.5.11 explains how corporate end-users differ from individual end-users, who are essentially any individual who uses banking and FinTech-related products or services.

The twelve key stakeholders are described in more detail in the following sub-sections. Each sub-section provides a brief description of the stakeholder and their roles and relationships with other key stakeholders within the FinTech ecosystem.

In order to provide a more comprehensive understanding of the roles and relationships of each key stakeholder, this section presents anonymised quotes from the interviews and/or focus groups that illustrate the mutual perceptions of research participants on any particular key stakeholder.

6.5.1 Traditional banks

The *traditional banks* are one of the key stakeholders in the FinTech ecosystem. Traditional banks in the UK comprise three broad categories: large UK banks, national insurance-focused banks, and other banks (CMA, 2016). The large traditional banks with UK-wide presence are Lloyds Banking Group, Royal Bank of Scotland Group, HSBC Group, Barclays plc and Santander UK, and the national insurance focused banks are Allied Irish Bank, Bank of Ireland and Danske Bank (CMA, 2016). Other banks are those with limited geographical coverage, those which are product focused, customer focused or new entrants, such as TSB Bank, Virgin Money, Co-operative Bank and Metro Bank. Common features of these traditional banks include possessing established business models and offering a wide range of banking product and services.

As described in Chapter 1 (Section 1.2), the main unit of analysis in this thesis is a large traditional UK bank which is undergoing business model innovation in response to innovations in FinTech. The detailed analysis of the data obtained from the case study subject, Bank A, will be discussed in the next chapter. However, in order to avoid selective bias against the perspectives of traditional banks other than the case study, there were also two semi-structured interviews with the senior manager of Bank B (participant E12) and the senior manager of Bank C (participant E13) (see Table 6.1), both of whom hold the position of Director of Digital Innovation at their respective banks. Like Bank A (the case study), Bank B is also one of the four largest UK traditional banks, while Bank C is a smaller established UK bank. Therefore, there were a total of 12 participants from these three traditional banks (Banks A, B, and C). These participants are experts in banking and FinTech innovations, all at the level of executive and senior management within the traditional banks. As explained in Chapter 5 (Section 5.4) and briefly in Section 6.4, the research participants were selected via purposive and snowball sampling. As an additional benefit for this study, a number of these participants have direct involvement in innovating the banks' business models.

Analysis of the twelve interviews with participants from the three traditional banks suggest that FinTech innovations have indeed created new opportunities and challenges for the banks' existing business models. Therefore, in response to FinTech innovations, the traditional banks are now creating new positions and functions for people within the banks. As shown in Table 6.1, which gives a summary of research participants, there is a noticeable pattern in these banks in that they all have a group of dedicated people with the right skill sets, or *talents*, for FinTech and digital innovation. The notion of 'talent' will be discussed in more detail in the next chapter (Sections 7.4.3 and 7.5.3) however it is worth mentioning that, in this thesis, 'talent' refers to the intellectual capital of the bank, and is especially important when the bank is rethinking its business models (Chen *et al.*, 2014).

The following interview excerpts give examples of FinTech-related positions and functions, which are new to the traditional banks' structure and business models. Participant A1 shared their role in developing open application programming interfaces (APIs) for Bank A:

"I helped to develop the APIs and [allowed] third parties to [develop] new applications." (A1)

Participant A2 is the Head of Group Innovation at Bank A - an executive role that did not exist prior to the Global Financial Crisis. This is a new strategic role created by the bank in response to an increasing recognition of the need for innovation in the bank, which includes product, process and business model innovation. Participant A2 describes the role as follows:

"I'm basically the connection point between businesses, strategy and design, and the outside world, from connecting us in [Bank A] to technology firms or FinTech start-ups or partners." (A2)

As an executive of the bank, participant A2 is also actively involved in decision making for the bank's accelerator-incubator platform, a new business unit of Bank

A which will be explored in more detail in Section 7.5.1. In brief, the accelerator-incubator platform is a FinTech hub created to build a network connecting Bank A and other stakeholders in the FinTech ecosystem. As a result, the position of participant A9 as the leader of this new business unit was created.

Similarly, other traditional banks such as Bank B and Bank C have also created new positions in response to FinTech innovations. The following statements from participants E12 and E13 demonstrate that their roles in the banks are FinTech focused:

“I look after ... [Bank B]’s innovation initiatives, specifically around open banking and open APIs, and how we commercialised some of the opportunities in the [FinTech] space... I’m also involved in our [Accelerator-Incubator] platform in London, where we can engage the FinTech ecosystem more pro-actively and ... working with FinTech [start-ups] ... exploring digital receipts, payments, etc.” (E12)

“I look after the mobile apps for [Bank C] and I am also looking at innovative ways to deliver customer experience either by building it ourselves, or through partnering with FinTech companies or technology companies out there.” (E13)

Also, the backgrounds of these participants illustrate the interconnected nature of their roles within the FinTech ecosystems. Some were talents from other traditional banks: for example, participants A1 and A3 were from a large traditional bank in Australia prior to joining Bank A, while participants E12 and E13 both worked in Bank A before their current roles in Bank B and Bank C respectively. These trends indicate that there is a competition for talents within the ecosystem. The notion of *talent management* in the wider ecosystem will be discussed as one of the empirical findings in Chapter 7 (Section 7.5.3). Additionally, one of the participants (participant A10) is a university-based researcher, and many of these participants were recruited for their technical competences, such as expertise in computer science, instead of financial or banking competences. Such participants are A1, A6, A9, A10, E12, and E13.

As mentioned in Chapter 2, traditionally banks tend to be products or services focused, and were seen as the dominant components of the banking sector. However, with the evolution of FinTech, traditional banks are now operating in a dynamic ecosystem. Within the FinTech ecosystem, there are complex relationships between the traditional banks and all other key stakeholders. One of these relationships is between the traditional banks and the financial regulatory bodies and government departments (Section 6.5.6). As mentioned in the literature review (Chapter 2), in the aftermath of the Global Financial Crisis of 2007 to 2009, the banking sector has been heavily regulated by the financial regulatory bodies and government departments. The interview data from many of the participants demonstrate that the managers in traditional banks have some concerns around regulatory compliance, especially with the new *Open Banking* rule in January 2018, because these banks are operating in a heavily regulated environment that could impact the banks' business models. For example, Bank A's Head of Innovation and Partnerships (participant A8) shares their perspective on regulatory compliance:

“Yes, anything we do at the moment, that has all sorts of issues and is bounded by the regulation and has to go through the full development life cycle and testing needs to be signed off by the [regulatory] security.” (A8)

The relationships with other key stakeholders include the traditional banks' back-end processing systems. Traditional banks are using the infrastructure and payment rails provided by the technology companies (Section 6.5.4) and payment provider and processing companies (Section 6.5.5). These banks are also working closely with incubators and accelerators (Section 6.5.8), consultancy companies (Section 6.5.9) and university-based researchers (Section 6.5.10), in order to understand the latest developments in FinTech.

Undeniably, traditional banks have important responsibilities to their customers. The data analysis shows that the traditional banks are now becoming more *customer centric*, a notion which will be discussed in more detail in the Chapter 7 (Section 7.5.1). These banks are innovating to deliver value to both corporate end-users (Section 6.5.10) and individual end-users (Section 6.5.11). The relationships

with corporate end-users are complex and will be explored throughout this section. In this study, corporate end-users include all non-individual key stakeholders in the FinTech ecosystem, therefore some of these relationships are in the form of collaboration or competition, or could be both collaboration and competition at the same time.

Thus far, this section has shown that, according to participants from the three traditional banks, the FinTech ecosystem is complex and dynamic, and this has resulted in the creation of new strategic positions and roles in the banks themselves. Hence, it can be inferred that, for the traditional banks, FinTech innovations pose threats to existing business models but at the same time create opportunities for innovating those business models in order to stay competitive in the dynamic FinTech ecosystem. Overall, the data analysis of interviews with the participants from these three traditional banks is consistent with the main findings of this thesis (which will be presented in more detail as part of the empirical analysis in the next chapter).

6.5.2 Digital challenger banks

In the process of identifying the stakeholders by drawing upon the Global FinTech Report (PwC, 2016), this study expanded the category of 'financial services institutions' to 'traditional banks' and 'digital challenger banks'. Other than the traditional banks described in Section 6.5.1 above, UK financial services institutions also include a number of smaller banks, building societies, credit unions, financial advisers, mortgage lenders, life insurance providers and pension providers. Some of the smaller banks and building societies are regionally based or focus only on small medium enterprises (SMEs) or personal banking services, while others focus on digital-only services (CMA, 2016).

Digital-only banks, also known as *digital challenger banks* in the UK, are new banks that seek to compete with traditional banks by offering digital-only services, aiming

to disintermediate the traditional banks (HM Government and EY, 2016). These banks are based on digital platforms with online and mobile applications, they have UK banking licences and are operating in the regulatory environment. However, unlike traditional banks, the digital challenger banks do not have networks of physical branches, and some may focus only on certain target markets. Examples of digital challenger banks in the UK include:

1. Monzo Bank: focused on technology savvy customers.
2. Starling Bank: focused on mobile-only applications.
3. Aldermore Bank: focused on small medium enterprises (SMEs).
4. Atom Bank: focused on the mortgage and lending market.

One such example is Bank X. The interview with participant E1, who is the Chief Operating Officer of Bank X, highlighted that Bank X is operating digitally online without ‘bricks and mortar’ branches. Participant E1 implies that the role of digital challenger banks is to focus on customers that were underserved by the traditional banks, using digital platforms:

“[Bank X] is a proper bank ... we are purely online; we are disrupting the markets that traditional banks are in and identified markets where they have managed to turn their backs on those *underserved customers* ... I think we are responding in a way that means something to the customers now, so *our customers don’t actually care about their relationships with their [bank] branches*. We are offering a good service at a good rate and we are offering people the ability to make their own decisions based on the information they are giving us, not based on the same criteria the big banks have.” (E1, italics added for emphasis)

The above description from participant E1 shows that the digital challengers have extended the business models of direct banks. A ‘direct bank’ is a bank without a branch network, which offers products and services to its customers via telephone and online channels. In the UK, First Direct was the leader in telephone banking and online banking in the 1990s. It was set up by Midland Bank, which now forms part of HSBC Group (HSBC, 2019). However, unlike direct banks, the digital challenger banks use digital-only platform-based business models, and as such are highly

dependent on technology companies and payment provider and processing companies.

Although digital challenger banks aim to compete with traditional banks, the findings from the data analysis show that traditional banks, such as Bank A, in turn believe that the presence of digital challengers could present opportunities for traditional banks to innovate their business models. As Bank A's Head of FinTech (participant A7) puts it:

“Digital challenger banks are different from FinTech companies. I think they are keeping [traditional banks] on their toes ... they are making you innovate the models, so I think it is good for the industry to have digital choices available.” (A7)

The findings also indicate that, within the FinTech ecosystem, the digital challenger banks have a great power and interest in instigating multiple streams of innovations (products, processes and business models) in traditional banks. However, traditional banks, such as Bank A, do not feel threatened by the existence of digital challenger banks or their business models, because of the benefits of scale and inherent trust enjoyed by traditional banks. This view is articulated in the following interview data from Bank A's Director of Digital Strategy and Innovation (participant A6):

“When it comes to challenger banks, they seem to get that platform [business] model, there are some really interesting companies out there, but I do not think they will be able to scale up. [For example] Monzo has done really well to get to a thousand customers, but that is still a drop in the ocean compared to the big banks... because banks are still more trusted [by customers] than those challenger banks.” (A6)

In recent years, in response to the digital challenger banks, a number of international traditional banks operating in the UK banking sector have been growing their own digital-only bank brands with similar business models to the

digital challengers. Examples in the UK banking sector are 'Marcus', a digital brand of US-based Goldman Sachs Bank, and 'Yolt', a digital brand of Netherlands-based ING Bank. This has contributed to the agility of the digital challengers (digital-based operators without branches or a legacy system), as the Head of Innovation of a payment processing company (participant E3) puts it:

“they need to be quite nimble, and the mainstream banks are not generally nimble.” (E3)

The data also show that one of the reasons why digital challenger banks have nimble business models is because most of them began as FinTech start-up companies. The roles of FinTech start-up companies will be described in Section 6.5.3.

As the digital challenger banks' business models become more established and their number of customers grows, they may be advised by consultancy companies to attract large investments from venture capital investors. The investors will help these digital challenger banks to scale up – examples of this are Starling Bank and Atom Bank.

Despite being competitors, many digital challenger banks are also collaborating with traditional banks. However, some of these digital challenger banks have also ended up being acquired by large traditional banks. For the digital challenger bank's entrepreneurs, an acquisition like this could either help them to scale up their business or act as an exit strategy. For the traditional bank, acquisition like this is an investment strategy. One such example is Aldermore Bank, which was acquired by the large South African traditional bank First Rand in 2017 in order to enter the UK market.

In rare instances, well-funded FinTech start-up companies may acquire established banks in order to enter the banking sector as digital challengers. One such example in the UK banking sector is Tandem Money which obtained its banking license after

acquiring Harrods Bank (the financial business unit of the UK luxury department store) and became a digital challenger, Tandem Bank, in 2018.

In summary, this section has presented evidence that digital challenger banks have important roles in the FinTech ecosystem. The findings also show the complex relationships between digital challenger banks and other key stakeholders within the ecosystem. In a similar way to the traditional banks, these digital challenger banks are responsible to both corporate end-users and individual end-users. In the UK, all digital challenger banks possess banking licences and are accountable to the financial regulatory bodies and government departments. By operating as digital-only banks, they are heavily dependent on technology companies and payment provider and processing companies to deliver their products and services. Most interestingly, the digital challenger banks are working collaboratively with their competitors, mainly the traditional banks and the FinTech companies.

6.5.3 FinTech start-up companies

The third group of key stakeholders in the FinTech ecosystem is the *FinTech start-up companies*. The proliferation of FinTech start-up companies in the UK, as reviewed in Chapter 2, is a result of the combination of innovations in IT, advancements in IT infrastructure and the stricter regulations on UK banks post-Global Financial Crisis. As mentioned in Section 2.5, a FinTech start-up is an entrepreneurship that aims to create a new FinTech product or service under conditions of uncertainty (Ries, 2011). These IT-driven start-up companies are challenging the traditional banks by creating new business models using technology to offer new value to customers (Clemons *et al.*, 2013). In the UK, the growing adoption of technology and the changing behaviours of customers are attractive opportunities for these companies.

To provide a more comprehensive understanding of the role of FinTech start-up companies in the ecosystem, in addition to the interviews with four FinTech start-

up entrepreneurs (participants E7, E8, E10 and E11 - see Table 6.1), the findings presented in this section also include relevant perceptions from other key stakeholders.

The findings show that these four start-up companies are technology driven and were created as a result of the Global Financial Crisis in order to meet customers' expectations. The interview data and secondary data show that most FinTech start-up entrepreneurs tend to focus on solving customers' problems in specific areas where either (1) the traditional banks have not done so (such as peer-to-peer lending), or (2) the traditional banks are not providing a good customer experience (such as cross border money transfers). Some of these business models are based on advanced technology, such as artificial intelligence, augmented reality, and blockchain, that banks have yet to catch up with. The following statements describe the business models adopted by the four research participants' start-up companies:

FinTech Start-up Company 1 provides technology platforms specialising in providing cloud technology platforms to banks, digital challengers, FinTech companies, and corporate end-users. Its founder, who is also the Chief Customer Officer (participant E7) explains:

"We deliver a technology platform, which focuses on real-time payments... across the entire country. By delivering that capability to banks and FinTech companies of all sizes and different types of business models, [we will] deliver [a] significant value to their customers." (E7)

FinTech Start-up Company 2 focuses on FinTech-based regulatory technology (RegTech). Its founder (participant E8), is a solicitor who used to work for a UK regulator that specialised in FinTech and the banking sector.

"Our firm... provides regulatory intelligence. So, we take enforcement cases then we contextualise with the news and insights with some leading law firms we worked with... to enable our clients [companies that employ

FinTech solutions] to reduce costs, remove complexity and also to improve efficiency in terms of regulatory requirement... [in order to] improve their customer experience.” (E8)

FinTech Start-up Company 3 targets customers who are motivated to save money through ‘gamification’ business models. The founder (participant E10), has participated in an accelerator for FinTech start-ups.

“We are a technology enabled start-up that helps people save money. We think that gamification helps people save money faster because of positive social interaction, so... we are a lot more customer focused than banks.” (E10)

FinTech Start-up Company 4 is a small-scale payment provider company which was nurtured via Bank A’s Accelerator-Incubator platform programme. The interview with participant E11, who is the co-founder of Start-up 4, also revealed that the company has successfully raised funds from investors such as venture capitalists.

“We are an FCA regulated company, and also a [Bank A’s Accelerator-Incubator] platform entity, so we are an authorised payment institution.” (E11)

Based on the above statements, it is apparent that FinTech start-up business models are technology-driven, customer-focused and nimble. In defense of the digital challenger banks’ business model, participant E1, the executive of the digital challenger Bank X, claimed that the FinTech start-up entrepreneurs aim to create businesses that have innovative business models that are nimble because most of them are not subject to regulatory compliance:

“A lot of these FinTech start-ups *have no regulatory reporting*, because they will start on something that they do not actually have to comply with the heavy regulation [unlike banks].” (E1, italics added for emphasis)

This claim by participant E1 emphasises the importance of the *financial regulatory bodies and government departments*. It is also supported by one of the

entrepreneurs, participant E7, who acknowledges that FinTech Start-up Company 1 is not operating under the regulatory environment in order to provide their services to customers quickly:

"We are not a regulated payment service company, and we do not want to be... [because] if you are an intermediary as some start-ups are then you'll have a compliance issue. That will not only impact the intermediary, but also all their customers." (E7)

It is worth mentioning that, although the data indicate that these FinTech start-up business models are usually focused primarily on the individual end-user's experience, increasingly there are new FinTech business models that focus on corporate end-users, including the traditional banks and digital challengers. Some examples of these are the platform providers, the API management companies, payment verification companies and identity management companies. For instance, participant E7 mentions that FinTech Start-up Company 1 is providing banking technology platform services to banks, digital challengers, FinTech companies and corporate end-users. However, participant E11 mentions that FinTech Start-up Company 4 is targeting both individual and corporate end-users. Therefore, the findings provide evidence that there are interwoven relationships between the FinTech start-up companies and other key stakeholders in the ecosystem when it comes to their innovative FinTech business models.

Further analysis of the data indicates that, despite the attractiveness of their innovative business models, most FinTech start-up companies are facing challenges in scaling up their businesses. As mentioned in the literature review (Chapter 2), Clemons *et al.* (2013) posit that start-up entrepreneurs are driving innovation and are able to change the economic landscape, but that they may struggle to create profitable business logic. One executive at Bank A, the Director of Digital Innovation (participant A3), compared the degrees of agility and scale between traditional banks and FinTech start-up entrepreneurs in the following statement:

“FinTech entrepreneurs do not have the legacy... [they are] fast to move [and] changed much quicker, but they *don’t have the scale*... the big banks have the scale.” (A3, italics added for emphasis)

Some interviewees shared their perspectives on FinTech entrepreneurs and the issues encountered in achieving scale. For example, the executive of digital challenger Bank X (participant E1) implies that customers generally have primary relationships with traditional banks and do not easily switch their banking to new FinTech businesses:

“...for all the success that Atom and Monzo can create, most of their customers have a primary banking relationship with another bank, that they are not letting go... because everything that FinTech companies go after *is around features and functionality*. In the end, that is still *not enough* to get people’s primary relationships away from the banks.” (E1, italics added for emphasis)

The above statement suggests that *customers’ trust* is the root hurdle in scaling most FinTech start-up businesses. The notions of *large scale of customer base* and *trust* are explored further in the next chapter (Section 7.4.1) as part of the empirical findings of the case study into Bank A, specifically the analysis of how the bank is approaching business model innovation through leveraging existing capabilities such as customer centricity.

In addition to trust issues, the findings also suggest that a difficulty in raising funds can hinder the growth of start-up entrepreneurship. In this study, participant E10, an entrepreneur at FinTech Start-up Company 3, admitted that the business is at the brink of collapsing because of the lack of access to funding. Participant E10 sets out the reasons why FinTech Start-up Company 3 was struggling at the time of the interview:

“...reaching customers... is difficult... because... people do not really trust high street banks, but they obviously *trust high street banks a lot more than FinTech companies*, right? I have had a few conversations with angel investors with small, early stage VC [venture capital] funds, it just never

went well enough... I am probably going to try to exit..." (E10, italics added for emphasis)

This statement suggests that in order to achieve an increase in scale, these start-up entrepreneurs often require funding from investors. The roles of investors are explored in Section 6.5.6.

In this study, two participants (E7 and E11), are actively involved in scaling up their FinTech start-up businesses. FinTech Start-up Company 1 managed to raise a large fund from investors, while FinTech Start-up Company 4 is scaling up the business by taking advantage of interconnections within the ecosystem to attract investors, as participant E11 explains:

"... we raised just over £4.5mil in seed funding and we are now over 1000 active users in our platforms." (E11)

The findings from the empirical data on the case study bank, together with the interviews with FinTech start-up entrepreneurs, acknowledge that some of these products, services or business models can be integrated into the business models of the traditional banks. Examples include the use of biometric technology for identity verification and the use of machine learning to capture consumer behaviours. Therefore, as well as competition, there is an increase in collaboration between these FinTech start-up companies and the traditional banks. In the following statement, participant E11 succinctly points out the importance of the interconnectedness of the ecosystem, especially for *working collaboratively* with the traditional banks:

"... One of the main things that becomes real in FinTech, is that you *cannot operate in isolation* because so many things require traditional banking businesses or traditional economy to accept a form of change. So, you know you have to spend a lot of your time trying to demonstrate to each stakeholder. Overall, these stakeholders benefit from the change. And so that is the real struggle in FinTech, if you are too much of a disruptor then you stand in isolation, but if you want to really work with traditional bank[s] who remained the strongest, you know and will continue to do so because

they have a lot of money... is to find ways to make them feel the benefit of your services rather than try and destroy that.” (E11, italics added for emphasis)

In summary, this section has described the role of the FinTech start-up companies as one of the key stakeholders in the ecosystem. Overall, their entrepreneurial business models are innovative and nimble without the burden of regulations. However, the data also indicate that scaling up start-up ventures is the main challenge to these entrepreneurs, and that the only way of scaling up successfully is through the interconnected relationships with other key stakeholders in the FinTech ecosystem. Within the ecosystem, there are interwoven symbiotic relationships between FinTech start-up entrepreneurs and other key stakeholders. In turn it is the collaborations and competitions amongst them that are encouraging innovations in FinTech.

6.5.4 Technology companies

The fourth key stakeholder in the FinTech ecosystem is *technology companies*. As described in the literature review (Chapter 2), FinTech innovations developed as the technological innovations and their infrastructure evolved. Technology companies provide both the emerging technology and the tools (both hardware and software) that enable FinTech innovations. At the same time, they are also important for technology-related innovations in many other industry ecosystems.

Technology companies include telecommunication providers, cloud providers, platform providers, blockchain technology providers, social media companies, big data analytics companies, API management companies, technology hardware suppliers and software providers. In developing countries such as Kenya, the technology companies can play a fundamental role in bringing FinTech products and services to ‘underbanked’ communities. One example is MPesa, a mobile money service operated by the Kenyan mobile service operator Safaricom (and also

a subsidiary of the UK's Vodafone group) which, as of 2012, was serving 15 million customers – many of these drawn from poor communities (Foster and Heeks, 2013, p.297). In contrast, the role of technology companies in the UK banking sector differs from that in the developing countries. This section presents the findings of the current study on the roles of technology companies in the FinTech ecosystem in UK banking. The study involves two participants representing the technology companies:

1. Participant E6, who is a senior manager of a technology company which provides banking software and API management.
2. Participant E7, who is the co-founder of FinTech Start-up Company 1 that provides technology platforms including cloud technology platforms to traditional banks, digital challenger banks and FinTech start-up companies.

The insights from the data analysis show that the overall role of these technology companies in the FinTech ecosystem is to facilitate FinTech innovations from businesses to consumers. The facilities could be either the middle-layer for a core banking product and services, or back-end processing to improve customer service and compliance for end-users. Interview data from the two technology companies' participants suggest that, by virtue of their key roles within the same FinTech ecosystem, these technology companies are able to sense the opportunities to work together or collaborate with traditional banks to deliver better technology-driven innovation to customers.

The following statement from participant E6 suggests that the traditional banks are slow in responding to technology-related innovations such as FinTech, and therefore present opportunities for participant E6's company to provide banking software and API management to the banks.

“The big banks have set up innovation departments, they are looking at how to make it a seamless experience [for] customers... but they are still so slow... I don't think they've really tapped into the big innovation.” (E6)

Similarly, in the following interview data, participant E7 expressed the opinion that the IT strategy in traditional banks is presently not aligned with FinTech innovations, and therefore creates opportunities for FinTech Start-up Company 1 to provide technology platforms such as cloud technology to the traditional banks, digital challenger banks and other FinTech companies.

“The big banks have just realised that their models are not sustainable, so I see them innovating slowly, at their own speed... They are mostly going in a common direction with cloud technology... But you cannot put old technology in the cloud - you’ve got to have native cloud technology that will bring agility, lower cost, and faster innovation to any big bank.” (E7)

Besides recognising that the technology companies play a pivotal role in delivering the ‘Tech’ component of FinTech innovations, analysis of the findings also shows that the four giant international technology companies - Google, Apple, Facebook and Amazon (GAFA) - are highly influential and could be powerful competitors with the potential to displace banks by virtue of their technological superiority. Recent studies in business model innovation (Afuah, 2019, p.3) and platform-based ecosystems (Cusumano *et al.*, 2019, p.8) have also highlighted that these GAFA companies are the world’s most valuable firms (in terms of market value) in late 2018 and are highly influential in the digital ecosystems in many industries.

New FinTech innovations are created by these technology companies. For example, by using near field communication (NFC) technology innovatively, they are able to provide applications such as mobile wallets (for instance, Google Pay and Apple Pay) so that customers can use their smartphones and smartwatches to make payment transactions. Also, the increasing use of artificial intelligence, robotic voice assistants and the internet of things is now making payment transactions much easier and quicker. For example, Amazon’s Alexa assistant can place online orders for purchase in Amazon, Facebook allows payment via social media accounts and Google’s Voice Assistant can send or request payment to people stored as contacts in a Google account.

Many participants express their concern at the roles of the giant technology companies in the UK banking sector. For example, the executive of the Digital Challenger Bank X (participant E1) predicts competition from the technology companies:

“I see more threats are coming from regulation, and also [from] some of the big players out there, like Amazon and Google... because they have got that spread and that reach... So, the bigger challenges will come from these, but not the FinTech start-ups.” (E1)

The above concern is based on the possibility that these technology companies could use their technological superiority to cross the industry border, with new FinTech innovations to further disrupt the banking business models.

However, further analysis of the data shows that the traditional banks, such as Bank A, do not feel threatened by the presence of these companies in the FinTech ecosystem. For example, Bank A’s Director of Group Innovation (participant A1) does not believe that the technology companies would disintermediate the banks, due to the power of UK financial regulatory bodies and government departments:

“So, I think the tech giants like Amazon probably have the benefit of not having to operate in such tough regulatory constraints... [like] a bank.” (A1)

Being part of the ecosystem, senior managers at traditional banks see the giant technology companies as partners for new opportunities rather than threats. One senior manager at Bank A, the Head of Card Innovation (participant A4), describes this type of competitive and collaborative relationship as follows:

“We [are] partnering with Apple with ApplePay, we also have *collaborations* with Google, Amazon, and Facebook. So, I think this is part of the *new business model trend* right... Definitely all of those GAFA [are] operating in big ecosystem, and ... we *want to be in their ecosystems* too, because we want to be able to deliver our services in their ecosystems. So, our task is to be able to have our services in those ecosystems because

that's where our customers are going to be too." (A4, italics added for emphasis).

These interview data further support the earlier findings that the FinTech ecosystem is complex and dynamic, with the key stakeholders collaborating and competing at the same time within the ecosystem. One such collaboration between the technology companies and traditional banks took place in 2019 in the US banking sector when the technology giant Apple Inc. launched Apple Card in partnership with a traditional US bank, Goldman Sachs.

In summary, the findings presented in this section provide evidence that technology companies play superior 'tech' roles, and that they are therefore key stakeholders in the FinTech ecosystem. These companies facilitate FinTech innovations from businesses to consumers. Inevitably, in the FinTech ecosystem these technology companies work collaboratively with other key stakeholders, mostly with the traditional banks, digital challengers, FinTech start-up companies and corporate end-users.

6.5.5 Payment provider and processing companies

As explained in Section 6.3, this study adopts Bryson's (2004) stakeholder identification and analysis technique: the 'process for choosing stakeholder analysis participants'. Bryson's method stipulates that the analysis should begin with "a preliminary stakeholder analysis" and that "after reviewing the results of this analysis, a larger group of stakeholders can be assembled" (Bryson, 2004, p.28). Applying this method, it became clear that the *payment provider and processing companies* are a group of key stakeholders in the FinTech ecosystem, extending the preliminary key stakeholder list from that of the Global FinTech Report (PwC, 2016). In terms of the categories of the Global FinTech Report, these stakeholders could be considered both as *technology companies* and *infrastructure companies*, but with their focus on payments. The data analysis indicates that all payment

transactions are facilitated by the payment technology provider companies and the payment processing companies. The current study therefore proposes that payment provider companies and payment processing companies should jointly be considered as another of the key stakeholders of the ecosystem.

This section highlights the importance of payments and presents evidence to justify the classification of payment provider and processing companies as a key stakeholder in the ecosystem. It also describes their roles and relationships within the FinTech ecosystem.

Both the literature review (Chapter 2) and a recent publication by the Bank of England (2019) have highlighted the significance of payments in the development of FinTech. Previous studies (PwC, 2016; HM Treasury, 2016) have shown that, other than consumer banking, the emerging trends in FinTech innovation are payment and fund transfer, with a number of start-up entrepreneurs flourishing via the use of new business models that involve creative payment technology solutions. For example, TransferWise's business model allows cross border money transfers with lower fees and faster transactions than traditional banks, and Ripple uses blockchain technology to process and encrypt payment transactions. Another important payment-based FinTech company is PayPal, with its platform-based business models that allow individuals and businesses to make and receive payments. The findings of this study confirm that technologies and payments are indeed fundamental to innovations in FinTech. For example, the senior manager of a technology company (participant E6) says:

“the minute the payments change, your whole banking scenario changes”.
(E6)

This view is further supported by the interview data with Bank A's Head of Card Innovation (participant A4), who provided the traditional bank's perspective on the importance of FinTech innovations in payments:

“The ability to pay people to exchange value is fundamental to everything we do in our lives. Anything, whether I'm buying things as small as a coffee or as big as a house, it involves *a payment transaction*. And if you think then

about that, the payment, that therefore being a need, and then that framework that describes technology that [is] enabling us to create solutions, then you must be able *to create many solutions in payment*. I think payment has absorbed a large portion of venture capital investment in FinTech. Payment is like the cutting edge of innovation driven by FinTech.” (A4, italics added for emphasis)

This study involves two participants representing this key stakeholder:

1. Participant E2, who is the Head of Innovation in a payment provider company that has both UK and global presence.
2. Participant E3, who is the Head of Innovation in a payment processing company that has both UK and global presence.

Insights from the interview data with the two participants from the payment provider and processing companies suggest that their role in the FinTech ecosystem is to collaborate with banks and other key stakeholders in the area of creative payment technology solutions, which is currently affecting the business models of traditional banks. This can be seen from the following statements by the participants:

“The banks are disrupting themselves, so there is no reason why banks cannot innovate, that is what we help them to do. So, our job is to see how we can open up our APIs and third-party APIs and to allow the banks to become nimbler, become more agile to address customers’ needs. Our job is to *make sure payment works across the world*. And that every part of systems of the payment ecosystem has access to payment platforms that we have and that we can use it to develop solutions.” (E2, italics added for emphasis)

“The innovation in FinTech, such as payments, is probably *accelerating innovation in banks* more than it disrupts... In the UK, we have two-factor [identity] authentication for pretty much on all banking apps... the biggest disruptive technology in the UK or in Europe will be the move to APIs at the

front end, which opens up a lot more customers' data and the ability to initiate payments." (E3, italics added for emphasis)

In the FinTech ecosystem, the main role of payment processing and provider companies is to provide the payment platforms (also known as payment rails) that facilitate monetary transactions from the payment initiator (payor) to the receiver (payee), whether these are businesses or individuals. Globally, the largest payment technology provider and processing companies are Visa Inc. and MasterCard Inc. Both Visa and MasterCard partner with all traditional UK banks, digital challenger banks and some payment-focused FinTech start-up companies. Both Visa and MasterCard have their own incubator and accelerator platforms, and also technology companies that create their own APIs to encourage third parties to develop new payment-related applications. In a two-year period (2017 to 2018), these companies increased their investment in FinTech through the acquisition of many FinTech start-ups and established companies. For example, Visa invested in Sweden's largest FinTech company Klarna, while Mastercard acquired Vocalink in the UK, which in turn allowed them to launch PayByBank App. Vocalink is the main UK payment processing company that enables the Faster Payment System, initially owned by a consortium of 18 traditional UK banks and building societies. The acquisition of Vocalink by Mastercard was approved by the UK Payment Systems Regulator (PSR) in order to stimulate payment innovations. These interrelationships within the ecosystem are further supported by the data analysis. The interview data from the participants from this key stakeholder articulate the importance of interconnections with other key stakeholders in the ecosystem:

"... not that we favour [a particular FinTech company] or a traditional bank, but we work with every player in the ecosystem... we remain agnostic and we make sure that everyone has access to our platforms in the same way."
(E2)

"The challenger banks, they are small... [but] we deal with quite a lot [of them] now, they have very good technology platforms and they are very responsive." (E3)

The following statement from the interview with the Head of Card Innovation of Bank A (participant A4) helps to triangulate this finding, confirming that there are existing relationships between the traditional bank and international payment provider and processing companies:

“Both Visa and MasterCard are obviously big partners for us, and we actively use both Visa and MasterCard networks, and we also make use of some of... the technologies that they developed... [We have] always been [in] partnerships and will continue to be [in] partnerships.” (A4)

In summary, the data presented in this section demonstrate that payment is one of the key areas of focus for FinTech innovation, and that payment processing and provider companies play a significant role as a key stakeholder in the FinTech ecosystem.

6.5.6 Financial regulatory bodies and government departments

Another group of key stakeholders of the UK FinTech ecosystem is the *financial regulatory bodies and government departments*. Regulatory bodies include the Financial Conduct Authority (FCA), Prudential Regulatory Authority (PRA), Bank of England (BoE), Competition and Market Authority (CMA), and Payment Systems Regulator (PSR), while the government departments include the Financial Policy Committee and the HM Treasury Office. The functions of regulatory bodies such as the UK’s FCA are to protect consumers, to promote competition and to enhance the integrity of UK financial systems (Financial Conduct Authority, 2018). Participant E8, who has formerly worked as a FinTech specialist in one of the financial regulatory bodies, described the functions of regulatory bodies as follows:

“The main function of the regulators is financial stability and consumer protection... And then the conduct requirement landed on the FCA... because of... the need to ensure consumer protection. I do not think they are interested in protecting the banks, the only thing they are protecting them [from] so far is how likely [they are] to be stable...” (E8)

As described in the literature review (Chapter 2), post Global Financial Crisis the financial regulatory bodies and government departments have imposed stricter regulations on the traditional banks for the purpose of consumer protection. However, the period of 2007 to 2009 coincided with the technological innovation of both IT and IT infrastructure, which in turn enabled innovation in FinTech (Chapter 2, Section 2.3). Further detail comes from the interview with participant E8, who expressed the view that the increasing amount of regulation since 2007 also coincided with technological innovation:

“...post financial crisis, there have been a lot of new regulations issued since 2007 and also the regulator catching up with the implication of increasing [innovation] in the technological world... So, [the] technology innovation occurs and the regulatory [system] catches up with it.” (E8)

The literature review (Chapter 2) highlighted the fact that, in the UK, the financial regulatory bodies and government departments are pivotal to the banking sector. In response to FinTech innovations, they have enforced new rules for consumer protection such as GDPR and Open Banking. GDPR aims to enhance the privacy protection of consumer data while Open Banking is a new regulation enforced by the UK financial regulator, the Competition and Market Authority (CMA), on the UK's nine largest banks in order to encourage innovation and competition. These banks are HSBC Group, Barclays plc, Lloyds Banking Group, Royal Bank of Scotland Group, Santander UK plc, Bank of Ireland, Allied Irish Bank, Danske Bank and Nationwide Building Society (Financial Conduct Authority, 2018). The Open Banking regulation which took effect from 13 January 2018, put the onus on customers as to whether they would like their data to be shared through open APIs. These regulations influence and encourage the approach to business model innovation in traditional banks like Bank A, and this is explored in more detail in the next chapter.

In brief, the new regulations brought in in response to FinTech innovations aim to encourage competition, as suggested by the Director of a UK accelerator for FinTech start-up companies (participant E9):

“... I think the regulators have been trying to drive competition in the market place.” (E9)

As mentioned in the literature review (Chapter 2, Section 2.4), the UK FCA also have several initiatives to stimulate innovation in FinTech. One of these is the ‘FCA Regulatory Sandbox’, where the traditional banks, challenger banks, FinTech start-up entrepreneurs or technology companies can experiment with their new innovative FinTech products, services or business models in a secure, live environment but outside of the regulatory limitations.

The findings of the data analysis suggest that, within the FinTech ecosystem, the financial regulatory bodies and government departments work closely with other key stakeholders, including the traditional banks, digital challenger banks, FinTech start-up companies, consultancy companies and university-based researchers, in order to exchange knowledge prior to any policy or regulation changes. In some areas, for instance blockchain technology and crypto-currency, the regulators are keen to learn from the stakeholders, including start-up entrepreneurs, in order to understand the implications of these FinTech innovations. For example, the nature of their relationship with traditional banks can be seen from the interview with Bank A’s Director of Group Strategy (participant A5):

“I wouldn’t say the relationships with the regulators have been strained over incidences in the past, but dialogue has been opened and continues to stay opened, in order to navigate some of the new space that is opened up by technology. There are a lot of questions even the regulators don’t know how to answer. The regulators will pose a question, banks will respond and then they will evaluate that and ask more questions. It is a collaborating process; it is a journey together.” (A5)

Hence, this section has shown that financial regulatory bodies and government departments are also key stakeholders in the ecosystem, with an overriding responsibility to protect the consumer.

6.5.7 Investors

In the case of *investors*, the process of identifying the key stakeholders has led this study to agree with the preliminary list of key stakeholders in the Global FinTech Report, in which investors are key stakeholders in the FinTech ecosystem. The investors include *venture capitalist firms* (VCs) and *angel investors*. They can be classified based on their different investment models and values. In general, venture capital is a type of private equity investment where VCs, as institutional investors, are taking a higher risk by investing in companies or start-ups in return for equities. Venture capital funding is a powerful source for growing and scaling up businesses, in particular IT-related businesses (Dos Santos *et al.*, 2011).

Although this study was not able to gain direct access to any of the venture capital companies, two of the interview participants, participants E9 and E11, are also 'angel investors' to FinTech start-up businesses. Angel investors, unlike VCs, are usually affluent individual investors or small private investment companies, that provide 'seed' funding to start-up businesses. Some of these investments are relatively small individually: they could be the result of crowdfunding in which the funding amount snowballs to a larger investment value. Angel investors can now access the same investment opportunities as VCs through new platforms such as syndicates. For example, participant E11 described the role of an angel investor as follows:

"I am also part of angel investing to support the new start-ups. I am part of a syndicate with a few friends who work in the industry either for high growth companies or for VCs, so we invest together." (E11)

The literature shows that entrepreneurial financing of FinTech start-up companies is growing rapidly, and that the most successful IT-related businesses have depended on venture capital funding (Dos Santos *et al.*, 2011, p.57). Many start-up entrepreneurs seek financial support via funding from friends, family, alternative financing (such as peer-to-peer lending, crowdfunding and microfinancing) and angel investors for their new ventures (Bruton *et al.*, 2015; Bonini and Capizzi,

2019). Thus, investors such as VCs and angel investors are conducive to the proliferation of FinTech start-up companies. As mentioned in Chapter 2, in the UK the total amount of investment in FinTech reached £524 million in 2015 (HM Treasury, 2016, p.11), where the level of investment is an indication of strong demand for new FinTech products, services or business models. On a global scale, the funding of FinTech start-up companies more than doubled in 2015, reaching US\$12.2bn, up from US\$5.6bn in 2014 (PwC, 2016).

In the FinTech ecosystem, the investors support the entrepreneurs through capital funding in return for equities or shares in the business. However, the insights gained from the data analysis discussed in Section 6.5.3 show that it is not an easy task for FinTech start-up entrepreneurs to obtain investment. Additionally, analysis of the secondary data also shows that the investors will consider a number of factors prior to funding a venture. These include the uniqueness of the business model, the target market, the barriers to entry, and the value creation of the products and services in comparison to existing products or services offered by banks or other FinTech competitors. As such, these are the questions that FinTech start-up entrepreneurs need to consider when raising funds to help them scale up their new ventures. Participant E11 echoed this view:

“... the VCs would look at... it’s not a golden rule, but it’s how good a team [is], how likely are they going to succeed, whether [with] the right backing are they going to do it, it’s a number of these things.” (E11)

Thus far, this section has only discussed the role of investors in the FinTech ecosystem and the relationship between investors and FinTech start-up entrepreneurs. However, in order to aid the investors in making the right investment decisions, the findings also indicate that there are constant interactions between investors and other key stakeholders. For example, investors can understand the latest trends and developments in FinTech through interactions with consultancy companies and incubators. The policy documents from regulatory bodies and academic-led research reports from university-based researchers could also provide valuable knowledge to the investors. However, despite the

interactions with other key stakeholders, the data analysis could not find a direct connection between the investors and individual end-users.

One unanticipated finding of this study was that, in responding to FinTech innovations and investment scenarios, some of the large traditional banks also have their own venture capital unit with which to provide funding to new FinTech entrepreneurs. One interview participant, the Chief Customer Officer of FinTech Start-up Company 1 (participant E7) describes the experience of being a start-up entrepreneur who successfully secured funding from one of these banks' venture capital units:

“Some banks, like Santander, Barclays and Lloyds have set up their investment initiative: venture capitalist type. And we were one of the first companies that they invested in... So, they believe in our business model, they are a minority investor, but the *reason they invest* is that *we help them deliver a new real-time payments capability to their customer*. These banks get new income and happier customers as well, so it is a win-win-win for all three parties, and we are all happy.” (E7, italics added for emphasis)

This statement shows that FinTech innovation does not only affect banks' business models as a 'disruption' but that it can also provide banks with new opportunities to invest, just like any other key stakeholder in the ecosystem. Participant E7 elaborated further on the meaning of the above statement, explaining that the main reason why banks are investing in their business is that they would benefit from the investment. This gives further weight to the finding of this chapter that there are symbiotic relationships and interconnections among the key stakeholders of the FinTech ecosystem.

To summarise this section: investors can be clearly identified as a further category of key stakeholders who play an important role in the FinTech ecosystem. Their investments in FinTech companies have indirectly encouraged the FinTech innovations.

6.5.8 Incubators and accelerators

The next key stakeholder group comprises the *incubators and accelerators*. An *incubator* is an entity that “hatches new ideas by providing physical resources and support to nurture the growth of new business ventures” (Gassmann and Becker, 2006, p.20). Some incubators are specialised units of larger corporations. In the context of this study, the incubators often aim to help FinTech start-up companies to develop their business ideas by providing co-working office spaces and connecting them with people working in other start-up companies, technology companies, consultancy companies, universities, and most importantly, investors. Meanwhile, *accelerators* provide a time-bounded and intensive programme to cohorts of start-up entrepreneurs (not individual companies), mentoring these small teams to accelerate their business ideas (Kohler, 2016).

The secondary data documents suggest that the UK FinTech ecosystem has strong innovative networks that include the incubators (for example, Barclays TechStars and Accenture FinTech Lab) and the accelerators (for example, InnovateFinance, CodeBase and Startupbootcamp). The current study includes three participants who have direct involvement in and knowledge of incubators and accelerators:

1. Participant E9, the director of a UK accelerator for FinTech start-up companies.
2. Participant E4, the co-founder of a consultancy company that provides training for incubators and accelerators.
3. Participant E5, an incubator mentor for FinTech start-up companies.

Despite the distinguishing characteristics of accelerators, it is interesting to note that the data analysis points to an overlap in the of roles of the incubators and accelerators within the FinTech ecosystem. For example, participant E9 explains the role as a senior manager of an accelerator for UK FinTech start-up companies:

“My job is... to look at how we can support the interest and needs of the members... showcase what the UK is actually doing [in FinTech innovation] ... showcase the work of those membership communities... [and] to bring

[the] international community into London to share experiences with the UK FinTech ecosystem so we bring together not only banks but regulators, technology companies, FinTech start-up companies, investors, policy makers, everybody [who] shapes the future of FinTech within the UK.” (E9)

The above statement can be interpreted as implying that the accelerator also assumes the role of incubator and of a community platform that enables connections among the key stakeholders of FinTech, such as organising events for FinTech start-up companies to pitch their business ideas either to partners or investors. This makes the case for both incubators and accelerators to jointly be considered as one group of key stakeholders.

The usual process by which a FinTech start-up company becomes involved with this group of stakeholders begins with the start-up entrepreneurs pitching their business plan to an incubator. If selected, the entrepreneur can then join the incubator to access the existing FinTech community. Only if the business model is innovative, with a potential for growth and profitability, will the entrepreneur then apply for an accelerator programme, which provides a fixed period (usually 3 months or 10 weeks) of exclusive training and mentorship from the accelerator together with other start-up entrepreneur cohorts. Upon completion of the accelerator programme, the FinTech start-up entrepreneur should be ready to grow the venture and could potentially secure investments from investors. However, in some instances, the FinTech start-up companies will have to pay a membership or subscription fee to be part of the FinTech community of an incubator or an accelerator.

The findings show that, in order to sense opportunities and threats from the ecosystem, most traditional UK banks have their own accelerator and incubator platforms (for instance, Santander’s InnoVentures, Barclays’ Rise and Lloyds’ LBG Innovation Labs). Participant E3, the executive of the payment processing company, provides this perspective on traditional banks’ business strategy:

“Most of the banks have start-up accelerators to incubate many FinTech start-ups, and that is one of the ways that they protect themselves against

that. Then, they will acquire a thoroughly good one so the start-up company will not be able to compete in the market.” (E3)

The traditional banks’ accelerator and incubator platforms are places where the banks facilitate an environment similar to co-working spaces in order to interact with the FinTech start-up entrepreneurs by experimenting, testing and proofing new technologies or new product features in banking. For example, Bank A’s Head of Card Innovation (participant A4) provides a brief background to the bank’s Accelerator-Incubator platform:

“In the [Accelerator-Incubator] platform networks, we host the accelerator... accelerator is one way that we bring engagement into that start-up... community... it provides space for participants to come in and also stay after they’ve been to the accelerator. Some of the companies that we have brought through then based themselves in [Bank A’s Accelerator-Incubator] platform building, then it becomes like a hub.” (A4)

The phenomenon of the traditional banks’ accelerator and incubator platforms, and particularly the Accelerator-Incubator platform at Bank A and its relationship to the bank’s business model innovation, will be discussed in more depth in the next chapter (Section 7.5.1).

A common view amongst the participants in this study is that the accelerators and incubators are providing banks and other key stakeholders of the ecosystem with access to people with talent in FinTech. As mentioned, the accelerators and incubators are communities of people who have an interest in FinTech or skills for FinTech innovations, which includes all the key stakeholders identified by the current research in this chapter. For example, Bank A’s accelerator-incubator platform provides an environment for many FinTech stakeholders to get together, including the recruitment of talented volunteers, to mentor the new FinTech start-up entrepreneurs in various areas. One such mentor is participant E5, a legal professional who became involved with Bank A’s Accelerator-Incubator platform:

“I had to be interviewed to be a mentor. They got to see that you are going to add some value, because I had advised a lot of companies in that respect, I know a lot of people and I know a lot of businesses.” (E5)

Additionally, the interview with participant E4, a training consultant for incubators and accelerators, revealed that the role of the accelerator includes an ‘intrapreneurial’ programme that encourages entrepreneurship from within the organisation. The concept of an intrapreneurial programme will be explored further in the next chapter (Section 7.4.3).

In brief, the incubators and accelerators are increasingly popular and important as a medium for harvesting new innovative ideas from many key stakeholders within the FinTech ecosystem, and to access people with talents in FinTech. However, it is worth pointing out that the findings of this study do not show that incubators and accelerators are a key stakeholder group exclusive to the FinTech ecosystem.

Indeed, some large traditional organisations in other industries also have their own accelerator-incubator platforms. The current study was motivated by the fact that digital innovations are affecting the existing established business models of traditional organisations, which lead to the phenomenon of business model innovation in these organisations. The secondary data showed that some traditional organisations including international consultants such as EY and Accenture, large retail stores such as John Lewis and water companies such as United Utilities, have created their own accelerator-incubator platforms, also known as ‘innovation labs’, in response to these digital innovations. The interview with the Innovation Director of an established international car manufacturer (participant E14, representing the corporate end-user), supports the finding that these corporate ‘innovation labs’ are a common feature:

“We also have our innovation lab like other UK banks. Our lab is very much focused around seed funding and being able to do kind of commercial contracts of what we see the prospects of FinTech... and technology will change the future.” (E14)

Further interpretation of the above statement by participant E14 supports the view that FinTech innovation does not only affect the business models of traditional banks, but also the business models of other established industries such as car manufacturing. The data relating to this interpretation is presented in Section 6.5.11 below.

In summary, the findings presented in this section demonstrate that incubators and accelerators play a significant role in the FinTech ecosystem. In many instances, they are assuming overlapping functions and thus they are collectively considered as a single group of key stakeholders in the FinTech ecosystem. It is also noticeable that the incubators and accelerators have good connections to every key stakeholder within the ecosystem.

6.5.9 Consultancy companies

In the process of identifying key stakeholders, the insights from the data analysis show that *consultancy companies* are another key stakeholder in the FinTech ecosystem. This expands the preliminary list of key stakeholders since consultancy companies were not identified as key stakeholders in the Global FinTech Report (PwC, 2016). This section presents the findings that explain the importance of consultancy companies in the FinTech ecosystem.

Consultancy companies provide professional services in areas such as financial, legal, research, marketing, training and management. These consultants facilitate their specialisms for economic benefits. In the context of this study, consultancy companies play important roles in the FinTech ecosystem but these companies are also important to other ecosystems and innovative contexts. For example, a financial consultancy company such as KPMG provides financial advisory services to FinTech startup companies and traditional banks, but could also provide similar services to an agricultural firm or a biomedical organisation.

In the current study, two research participants represent consultancy companies in the FinTech ecosystem:

1. Participant E4, a co-founder of a consultancy company which provides training for incubators and accelerators.
2. Participant E5, a legal advisor for FinTech start-up companies.

When the participants E4 and E5 were asked for their perspectives on how FinTech innovations are affecting the business models of traditional banks, both participants highlighted how FinTech innovation brings new opportunities for themselves as consultants, in providing niche expertise to other key stakeholders in the FinTech ecosystem.

FinTech innovation provides opportunities for new niche areas of expertise because it is a contemporary phenomenon and many key stakeholders, including traditional banks, therefore do not have a deep understanding of many aspects of FinTech innovations - including business models. This study suggests that consultancy companies are in the best position to seize these opportunities since they are experts in their areas. For example, as a legal consultant, participant E5 has an understanding of the rules and regulations for FinTech-related businesses:

“I provide regulatory advice, and I help with terms and conditions and with the legal contracts for both financial services and FinTech companies... I think lawyers are traditionally not so quick to pick up something... but I’d like to think that I am. I understand their businesses, whether FinTech or not FinTech entrepreneurs.” (E5)

Another participant, E4, who is a co-founder of a consultancy company providing training for incubators and accelerators, indicates that the need for their expertise is created as part of the business model innovation of established companies, such as Bank A.

“[Bank A] had set up an internal fund which was focused on social innovation... to create profitable new businesses which also created social

impact from their business models... it demanded intrapreneurial innovation... So, we are involved in Bank A to help with their intrapreneurial programme in their [accelerator-incubator] platform.” (E4)

This statement also suggests that participant E4 fits into the requirement of Bank A’s intrapreneurial programme in order *to leverage their existing talent management capability*. This approach to Bank A’s business model innovation is explored further in the next chapter (Section 7.4.3).

From the perspective of another traditional bank, the Director of Digital Innovation at Bank B (participant E12), provides support for the idea that paid consultants are important key stakeholders in the ecosystem because their niche expertise allows them to scan the dynamic environment and then provide necessary information for the bank:

“I believe [Bank B]’s strategy... going forward, but there is still a lot... to consider of what’s happening around the wider market, maybe use the consultants to see what competitors are doing etc [can] always help.” (E12)

The above statement suggests that there is a relationship between consultancy companies and traditional banks. Traditional banks, digital challenger banks and technology companies can engage with consultancy companies for parts of their business units, such as KPMG, PwC, Deloitte or McKinsey, to provide an industry research report.

Also, FinTech start-up companies may lack specific experience and skills, and they could benefit from engaging with these consultants who can tailor advice to their needs. For example, a new business will need its intellectual property (IP) registered through a legal consultant, its business finances registered with an accountant, and advertising on social media with a marketing consultant.

Based on the findings presented in this section, it is apparent that there are interconnected relationships between consultancy companies and other key stakeholders in the FinTech ecosystem, and these consultancy companies have

expert knowledge in many areas that are important to the FinTech ecosystem. Therefore, consultancy companies should be recognised as a key stakeholder.

6.5.10 University-based researchers

University-based researchers are academics working in universities and assuming roles in research, where they tend to focus on knowledge contributions. As with the consultancy companies, university-based researchers were also not included in the Global FinTech Report as key stakeholders. The importance of universities to industry and government is not new and was highlighted in the ‘triple helix model’ that links the three (Leydesdorff, 2000). Additionally, based on the data analysis, this study finds that university-based researchers have power and influence in the FinTech ecosystem, and they have therefore emerged as a key stakeholder in the FinTech ecosystem in their own right. This section presents the findings of the analysis: that university-based researchers are regarded as people with highly valuable talent, have a set of transferable skills across a range of disciplines, and that they are playing important roles in the FinTech ecosystem.

In the current study, there were two university-based researchers amongst the interview participants (Table 6.1). Participant A10 is the Strategic Transformation Director of the case study Bank A and participant E6 is the Director of Business Development in a technology company. Both of these participants have PhD qualifications and, at the same time as their other roles, have academic involvements with UK universities.

In response to the interview question about the effect of FinTech innovation on traditional banks’ business models, both participants indicate that knowledge sharing with all stakeholders in the FinTech ecosystem is important. These participants possess *interdisciplinary roles* and aim to share knowledge about both financial and technological topics with other key stakeholders in the ecosystem. In the following statement participant A10 explains how, in addition to an executive

position in Bank A, the role also involves educating the bank's employees and the public about digital technology:

"One of my responsibilities is... around making sure the teams can thrive and grow within the bank... and educating the bank staff as to what the possibilities, dangers and opportunities that AI can bring... [through] a series of events... both for our colleagues and the general public... we [also] invite a lot of external companies and academics." (A10)

The data analysis provides the insight that, in the UK banking sector, some university-based researchers (such as participants E6 and A10) are increasingly assuming corporate roles either in financial regulatory bodies and government departments, traditional banks, digital challenger banks, FinTech start-up companies, technology companies or consultancy companies. They are able to do this because they possess more than one branch of knowledge and are 'interdisciplinary', and this in turn affords them a better understanding of the FinTech phenomenon. This view is supported by the following interview data from participant E6 who has an affiliation with a UK university:

"... banks or FinTech companies need a person like... an interdisciplinary, like me, or you, ... who has that overview... doing everything from a little bit of tech, to a little bit of customer facing roles, to a little bit of research, so they're getting the whole idea but not really stuck in one department ... because [that] is a very old-fashioned way to do [it]." (E6)

As a university-based researcher and also a senior manager in a technology company, participant E6 believes that university-based researchers possess interdisciplinary skills that are competitive in the FinTech ecosystem. This view is consistent with the empirical findings of the case study which will be presented in the next chapter (Section 7.5.3). It is worth noting that many traditional UK banks, such as Bank A, have a number of university-based researchers working with them in a range of operational functions of the bank, including artificial intelligence and data analytics.

The findings suggest that university-based researchers could potentially provide highly influential contributions to the FinTech ecosystem. This thesis, for example, aims to provide a better understanding of financial technology and business model innovation and thus contribute to both theory and practice. Other academic research may contribute to policy changes and potentially help to shape the regulation of the UK banking sector.

In summary, this section shows that university-based researchers are one of the key stakeholders in the FinTech ecosystem. Taken together, the findings suggest that there are interconnected relationships between all ten key stakeholders identified thus far. The next two sections are concerned with the end-user groups.

6.5.11 Corporate end-users

In the process of identifying key stakeholders, the data analysis has expanded the preliminary list of key stakeholders identified in the Global FinTech Report (PwC, 2016). In that report, the final key stakeholder is the 'consumers' group. However, based on their distinctive roles in the FinTech ecosystem, this study suggests that consumers in fact consist of two groups, corporate end-users and individual end-users, and that these should be regarded as two different key stakeholders.

Corporate end-users are organisations (not individuals) who ultimately use banking and FinTech products or services within their businesses. Corporate end-users come from any industry and can be of any size. In this study, other than the individual end-users, all other key stakeholders in the FinTech ecosystem are corporate end-users. This section focuses on corporate end-users, who have different roles and perspectives in the FinTech ecosystem compared with individual end-users (who are discussed in the next section, 6.5.12).

Corporate end-users can be established organisations in other industries whose existing business models are also affected by the dynamic digital ecosystem. As

mentioned in Section 6.5.8, some of these traditional organisations have their own ‘innovation labs’ as part of their approach to business model innovation. This study includes two participants representing the corporate end-users:

1. Participant E14, the Innovation Director of an established international car manufacturing company.
2. Participant E15, the owner of a small established chain of restaurants.

These two participants recognised that the traditional banks are responding to FinTech innovations in order to meet the changing needs of customers. But they also echoed the findings from other key stakeholders that the speed of innovation in banks is slow. For example, participant E15 says:

“...I think the traditional banks [are] changing, [there] is less need for the physical bank these days... but obviously, they’ll have to catch up...” (E15)

In the context of the UK banking sector, corporate end-users are dealing with front-end banking and the effect of FinTech innovations when monetary transactions are involved. While reflecting on their roles in the FinTech ecosystem, the two participants from this key stakeholder group also focus on the impact of FinTech innovations on their own business models. The interview data show that corporate end-users have to adapt to FinTech innovations because their own customers’ behaviours are changing. They must therefore proactively meet their customers’ expectations by providing them with ease of payment. For example, the owner of a small chain of restaurants (participant E15) says:

“When customers consume in our restaurants, contactless payments are convenient for them to make payment... easier and faster. For us, if there is something convenient for [customers], it’s good... for [our] business... but, card payment sometimes somehow it could be charged back... [if] customers [do] not [have] enough money in their bank [accounts]... so, we still prefer cash.” (E15)

The above statement indicates that, from a business standpoint, participant E15 is reluctant to adapt to the FinTech payment solutions.

The corporate end-users are increasingly adapting to FinTech innovations to meet the changing behaviour of their own customers. Also, these corporate end-users - especially the traditional organisations - have business models that are currently affected by technological innovations. As participant E14 explains:

“... our leaders realised that actually the customer expectations are changing, and the competitive landscape is changing... dramatically over the past 10 years... So, we are always having a gap between what a customer expects and what we can deliver... and the way the technological advancement... we need [to] kind of be pro-active in this, as opposed to... wait till it happens to us.” (E14)

The above statements suggest that, as with the banking sector, the car manufacturing industry is dynamic, due to rapid developments in technology, and the leaders of E14's organisation have an intention to innovate in order to stay competitive. Such statements enhance the relevance of the research question at the heart of the current study and support the possibility that the findings of this thesis could be transferable to other industries, such as car manufacturing.

6.5.12 Individual end-users

The final key stakeholder group in the FinTech ecosystem (already introduced briefly in the previous section), are the *individual end-users* of banking and FinTech products or services. Although every interview participant of this study including the researcher is an individual end-user, to represent this group of end-users, as described in Chapter 5 (Section 5.3.2), this study collected data from two focus groups. The rationale for using focus groups is that the data are drawn from group dynamics and are considered to be less biased than data obtained from interviews with a few selected individuals. The first focus group comprises six undergraduate students from Oxford Brookes University, aged between 18 and 25, who represent the younger, 'digital native' generation. The second focus group comprises four individuals aged between 50 and 65, who represent the mature end-users who have experienced the evolution of banking but may be less technology-savvy than

the first focus group. The method of recruiting these participants has been discussed in Chapter 5 (Section 5.4).

The primary role of the individual end-user is clear: they are customers who ultimately use banking or FinTech products or services. To be more precise, customers are the reason businesses exist (Drucker, 2008). This section highlights the power and influences of individual end-users in the FinTech ecosystem. The data presented here are not limited to the perspectives of focus groups but also include secondary data and the mutual perceptions of participants from other key stakeholder groups, which are relevant to the roles of individual end-users in the FinTech ecosystem.

The secondary data suggested that, in making payments, customers are quick to adopt mobile application-based payment rather than writing traditional cheques, and that cashless transactions are becoming ubiquitous. For example, in public transportation, Transport for London (TfL) are now accepting cashless payment, not just via contactless payment cards but also via a mobile wallet that is stored in users' smartphones or smartwatches.

Analysis of the focus group transcripts shows that there has been an increase in the adoption of FinTech products and services by individual end-users but that their banking experience and level of confidence in banks have also changed because of the developments in FinTech innovation. The following statements demonstrate that the participants of both focus groups are embracing FinTech innovations, especially in payments:

“... mainly, I’m using contactless... it’s so fast, sometimes you’ll just buy more stuff but really, it’s just incredibly convenient.” (FG1)

“... I have several accounts with the same bank that I had for 40 years ... I have credit cards, debit cards, I use online banking... I [also] have a personal banking manager, a person that I can ring up to, if... I can’t do [some

banking operations] myself online... And I pay using contactless, and I also use PayPal.” (FG2)

These statements support the findings from the secondary data that individual end-users are increasingly enjoying the convenience and usefulness of FinTech innovations such as mobile banking, contactless payments, money transfers, and crowdfunding.

Technological innovation and the proliferation of new FinTech business models have certainly provided individual end-users with options for obtaining products or services from traditional banks, digital challenger banks, FinTech companies and technology companies. In many industries, customers now expect fast and seamless products and services. For example, customers get rides from Uber by clicking on the mobile application on their smartphones and the payments happen in the background when they exit the vehicle, or customers order food from restaurants via the Deliveroo mobile application and expect the food to reach them wherever and whenever they are hungry. These changes in customer behaviour and expectation are summed up in the following statement from the Head of Innovation of a payment provider company (participant E2):

“... if [we] look at the world now, it’s becoming an expectation economy... [which] means people want it now... they don’t really want to wait for something.” (E2)

These changes in customers’ expectations challenge the traditional banks because their existing business models, unlike those of FinTech companies, have often not provided customers with fast services. This is supported by the data analysis. For example, one focus group participant recalls the experience of opening a traditional bank account:

“... to set up my account... [the process] kind of took a while to book an appointment, but when we got there, [there was] a lot of paperwork to look through...” (FG1)

In contrast, the secondary data show that opening an account with a digital challenger bank or a FinTech company would require just few clicks on a computer or a mobile phone.

The most surprising aspect of the data obtained from the first focus group is that these young and technology-savvy end-users still prefer the physical presence of banks to pure digital banking. These university students are all from Generation Z, born in the years ranging from the mid-1990s to the mid-2000s. They are 'digital natives', meaning that they were born into a world in which digital technology was ubiquitous, and they exhibit full mobile technology adoption. Yet, the data analysis from the focus group shows that these young users still prefer bank branch networks where they can talk to a bank employee rather than being solely dependent on the use of digital technology features such as chatbots. For example, one participant from this focus group said:

“... I think it is easier to speak to people rather than just online or through the phone, especially if they work in the bank, they'll know what I'm talking about...” (FG1)

The data further indicate that the single overriding factor behind this preference for traditional banks amongst the younger end-users is the level of comfort and confidence implicit in dealing with their existing banks. All focus group participants declared that they trust banks more than the FinTech companies or technology companies, as shown by the following statement:

“... we trust them because we have that personal connection with them, we can see them in the branch... because you can trust banks more than [companies like] Facebook... I don't know if we could trust bank[s]... it's because we don't have another option to put [our money safely] anywhere else... it is basically picking the lesser of two evils.” (FG1)

There is also recognition among the first focus group participants that traditional banks have legacy technology systems that makes the young end-users perceive the banks as being vulnerable to IT-system breakdown or online security hacking. But one of the focus group participants explains their confidence in banks as follows:

“... I know the banks' systems are very old and give way to constant hacks. But I'll be more comfortable if they were like, ok, we get hacked but they

will immediately patch it so that is why it will make me more comfortable..." (FG1)

Similarly, data from the second focus group also show that FinTech innovations are causing them to be more concerned about their personal data and their relationships with banks. These individual end-users, aged between 50 and 65, have all witnessed and experienced the evolution of UK banking first hand. They recall how banking used to be 40 years ago and have seen how the Global Financial Crisis affected UK banking. The following statement from a participant in FG2 reveals a similar attitude to the FG1 data in terms of their preference for traditional banks, especially in regard to human relationships versus technology:

"...obviously the need to go to a branch [is] removed almost altogether... I think we want personal relationship. I think it's good to have someone you can actually talk to, who isn't in the call centre, who can deal with things you can't deal with through online, the non-routine stuff. That person must be knowledgeable and empowered." (FG2)

This group of individual end-users are concerned about digital data privacy as shown by their recollections of the UK banking crisis:

"... we are concern[ed] of [our personal and financial] data... being shared without permission... We remember Bob Diamond, Fred Goodwin, these are not our imagination, they rise to the top... The thought [of] someone like that at the top of large firm in charge of [a banking] IT system... is horrifying." (FG2)

Overall, despite the diversity in age and gender of the participants, both focus groups unanimously assert that they trust traditional banks, especially those with physical branches, more than the technology companies or FinTech companies, regardless of the attractiveness of new FinTech business models. However, the business model innovation of banks is not well communicated to the end-users: for example, many end-users would like to have personal engagement with their banks but do not understand why many bank branches in the UK are closing. Therefore, the traditional UK banks are increasingly becoming more customer-centric,

focusing on creating value for this group of end-users when innovating their business models to stay competitive in the dynamic FinTech ecosystem. The notion of *customer centricity* as one of the capabilities of a bank will be explored in more depth in the next chapter (Sections 7.4.1 and 7.5.1).

6.6 The relationships among the key stakeholders

The UK banking sector, as reviewed in Chapter 2, had a dynamic landscape even before the innovations in FinTech arrived. But the advent of FinTech has led to the creation of an ecosystem within the sector that consists of twelve key stakeholders, identified and described throughout this chapter.

The FinTech ecosystem perspective reveals that there are *interconnections* and relationships among key stakeholders within the ecosystem, consistent with the findings of Iansiti and Levien (2004a; 2004b) as explained in Section 6.2. The findings presented in this chapter provide evidence that the dynamics of the FinTech ecosystem are characterised by symbiotic and complex relationships created through constant interaction, competition and collaboration with others within the environment. For instance, the traditional banks, digital challenger banks, FinTech start-up companies and even technology companies are now *competing* with new innovative business models, and at the same time *collaborating* with other key stakeholders within the ecosystem. Therefore, as explained in Section 6.2, the current study is unable to characterise the FinTech ecosystem as an easily defined 'structure' in the sense advocated by Adner (2017).

Instead, based on the data analysis of the 25 semi-structured interviews, two focus groups and secondary data in the form of documents presented in this chapter, Table 6.2 has been constructed to illustrate these interconnected and multi-sided relationships within the dynamic FinTech ecosystem.

The relationship between the key stakeholders	Traditional banks	Digital challenger banks	FinTech start-up companies	Technology companies	Payment provider and processing companies	Financial regulatory bodies and government departments	Investors	Incubators and accelerators	Consultancy companies	University-based researchers	Corporate end-users	Individual end-users
Traditional banks	2	2	1, 2, 3 & 4	1, 2, 3 & 4	1, 3 & 4	5	4	1, 4 & 5	1, 3 & 5	1 & 5	3 & 4	3 & 4
Digital challenger banks	2	2	1, 2, 3 & 4	1, 2 & 3	1 & 3	5	4	1, 4 & 5	1, 3 & 5	1 & 5	3 & 4	3 & 4
FinTech start-up companies	1, 2, 3 & 4	1, 2, 3 & 4	1 & 2	1, 2 & 3	1, 2, 3 & 4	1 & 5	4	1, 3, 4 & 5	3 & 5	1 & 5	3 & 4	3 & 4
Technology companies	1, 2, 3 & 4	1, 2 & 3	1 & 2	1 & 2	1, 2 & 3	2	4			1 & 5	3	3
Payment provider and processing companies	1, 3 & 4	1 & 3	1, 2, 3 & 4	1, 2 & 3	5	1 & 5			1, 3 & 5	1 & 5	3	5
Financial regulatory bodies and government departments	5	5	1 & 5						1, 3 & 5	1 & 5	5	
Investors	4	4	4	4			1, 2 & 4	1, 4 & 5	1, 3 & 5	1, 4 & 5	4	
Incubators and accelerators	1, 4 & 5	1, 4 & 5	1, 3, 4 & 5				1, 4 & 5	1, 2 & 5	1, 3 & 5	1 & 5	1	
Consultancy companies	1, 3 & 5	1, 3 & 5	3 & 5				1, 3 & 5	1, 3 & 5	1, 2, 3 & 5	1 & 5	3	
University-based researchers	1 & 5	1 & 5	1 & 5	1 & 5	1 & 5	1 & 5	1, 4 & 5	1 & 5	1 & 5	1 & 5	1 & 5	1 & 5
Corporate end-users	3 & 4	3 & 4	3 & 4	3	3	5	4	1	3	1 & 5	1, 2, 3, 4 & 5	3 & 5
Individual end-users	3 & 4	3 & 4	3 & 4	3	3	5				1 & 5	3 & 5	3, 4 & 5

Key:

- 1 A collaboration between the two key stakeholders.
- 2 A competition between the two key stakeholders.
- 3 A flow of sales from one key stakeholder to another.
- 4 A flow of finance from one key stakeholder to another.
- 5 A flow of knowledge from one key stakeholder to another.

 No evidence of relationships.

Table 6.2: The relationships among the key stakeholders of the FinTech ecosystem in UK banking

The relationship between the key stakeholders, as described in this chapter, can be one of the following:

1. A collaboration between the two key stakeholders.
2. A competition between the two key stakeholders.
3. A flow of sales from one key stakeholder to another.
4. A flow of finance from one key stakeholder to another.
5. A flow of knowledge from one key stakeholder to another.
6. A mixed relationship of either two or more of the above (1 to 5).

However, as illustrated in Table 6.2, not all key stakeholders have relationships with every other key stakeholder. In such instances, the cells connecting these key stakeholders are shaded to indicate that there is currently no evidence of an active relationship. For example, there was no evidence found in the data analysis of a direct connection between investors and individual end-users, or between financial regulatory bodies and government departments and technology companies.

6.7 Chapter summary

This chapter set out to identify and understand the perspectives of the key stakeholders in the UK FinTech ecosystem. Analysis of the research data has revealed that there are 12 key stakeholders in the FinTech ecosystem:

1. Traditional banks
2. Digital challenger banks
3. FinTech start-up companies
4. Technology companies
5. Payment provider and processing companies
6. Financial regulatory bodies and government departments
7. Investors
8. Incubators and accelerators
9. Consultancy companies
10. University-based researchers
11. Corporate end-users

12. Individual end-users

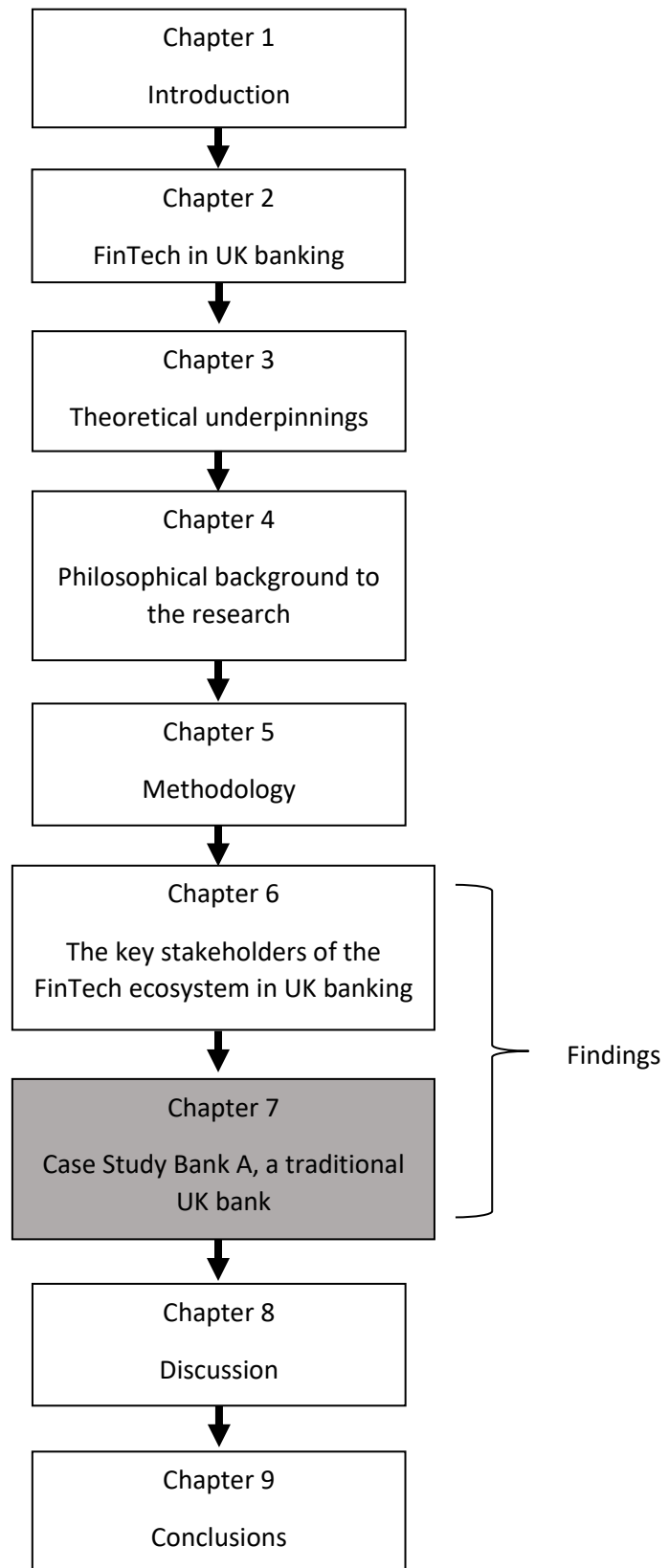
Based on the data analysis, the perspectives of these key stakeholders have been explored within this chapter, and the study finds that there are interconnected relationships amongst them consistent with the concept of an ecosystem, as described at the beginning of this chapter.

In summary, this chapter provides the first main finding of the thesis (which will be discussed further in Chapter 8):

There are 12 key stakeholders of the FinTech ecosystem in the UK banking sector, all of whom are interconnected through a dynamic process of collaboration and competition.

As such, this chapter sets the scene for the main findings of the thesis which will be presented in the following chapter, in which the empirical investigation of business model innovation is developed through the analysis of findings from the case study research carried out into Bank A.

Structure of this thesis



Chapter 7

Case Study Bank A, a traditional UK bank

7.1 Introduction

The preceding chapter presented twelve key stakeholders of the UK FinTech ecosystem along with the perspectives of the various research participants on the relationships that exist within the ecosystem. The findings presented in Chapter 6 thus form the basis from which to interpret and understand the findings offered in the current chapter.

The purpose of this chapter is to extend the existing concept of business model innovation and dynamic capabilities theory via the empirical investigation of a traditional UK bank in the context of the FinTech ecosystem. This chapter presents the main findings of the thesis, showing how the case study subject, Bank A, is innovating its established business models in order to adapt and stay competitive in a dynamic ecosystem.

As described in Chapter 4, the thesis bases its interpretation on the paradigm of social constructionism, with some aspects of hermeneutics applied to the interpretation of meanings. Chapter 5 (Section 5.5) noted that the iterative process of data collection and data analysis informs the development of the interpretation of the findings. Thus, the findings presented in this chapter are interpretations of the multiple perspectives of the research participants, and are affected by the existing academic theories and the researcher's own pre-understandings of the financial services industry. These interpretations lead on to the development of new theoretical understandings of the concept of business model innovation.

The research participants were asked for their perspectives on how a traditional bank such as Bank A is innovating its established business models when faced with

FinTech innovations. Building on the dynamic capabilities theory, as described in Chapter 5, the data collected were the participants' opinions on, and recollections of their experiences of the bank's "abilities to integrate, build and reconfigure internal and external competences to address rapidly changing environments" (Teece *et al.*, 1997, p.516). The participants from Bank A shared their perspectives on how the bank is sensing the opportunities and threats arising from FinTech innovations and how it then seizes these opportunities and transforms its business models. However, as the identity of the case study Bank A remained confidential throughout the study, all non-Bank A participants were necessarily only able to share more general perspectives on how large traditional UK banks are sensing, seizing and transforming their established business models.

The empirical research reported in this chapter derives from the same data sources used for the findings in Chapter 6, but with a deeper level of analysis and with the addition of the information derived from the data validation conversations that were subsequently conducted with a subset of the research participants (see also Section 5.5). This is therefore a combination of data obtained from:

1. Case Study Bank A: 10 semi-structured interviews.
2. Case Study Bank A and other traditional UK banks: document analysis.
3. Key stakeholders of the FinTech ecosystem: 15 semi-structured interviews.
4. Individual end-users: two focus groups.
5. Five data validation conversations.
6. Secondary data: additional documentation related to the wider FinTech ecosystem in the UK banking sector.

As explained in the chapter on methodology (Chapter 5), the analysis of 1,250 minutes of recorded audio data from a total of 25 interviews and two focus groups, adopted the thematic data analysis method (Braun and Clarke, 2013). The initial process involved sorting the anonymised transcripts into eight initial codes based on themes identified from the literature review (see Table 5.5), where the first two codes produced findings for Chapter 6 (which identified the key stakeholders of the FinTech ecosystem). However, at this stage of the data analysis the data classified under the other six codes, largely related to the dynamic capabilities theory, were

not yet in a suitable form from which to make any analytical claims. The study therefore made use of the qualitative analysis tool NVivo12 to support the coding process of the entire dataset to facilitate a deeper level of the thematic analysis.

As presented in Chapter 5 (Section 5.5), the ‘complete coding’ process with NVivo12, which adopts the coding method of Saldana (2016), initially uncovered 37 ‘first cycle’ codes (see Appendix G). The ‘second cycle’ coding then produced 18 semantic sub-categories, as shown in the data structure table (see Appendix H). These sub-categories represent the perspectives of the research participants on the approaches of a traditional UK bank towards innovating its business models. Some of these are directly related to Bank A while others involve the ecosystem stakeholders. The last phase of the thematic analysis involved interpreting the meanings embedded in these 18 sub-categories in relation to the existing theories - discussed in Chapters 2 and 3 – by identifying characteristic patterns in the different approaches to business model innovation, revealing four latent categories. These categories were interpreted as the *key capabilities for business model innovation of Bank A* at both the organisational level and the ecosystem level:

1. Customer centricity.
2. Data analytics.
3. Talent management.
4. Leadership mindset.

Further analysis of the patterns and relationships that link all the data together within these four capabilities, in relation to the research question, eventually led to two overarching themes. These themes were interpreted as the approaches to business model innovation of Bank A:

1. Leveraging existing capabilities.
2. Experimenting with new capabilities.

These themes are discussed in detail throughout this chapter. As with the findings presented in Chapter 6, in order to maintain the confidentiality of the case study

subject, Bank A, and the identities of all the research participants (see Table 6.1), anonymised quotes from the interviews and/or focus groups are used as part of the data visualisation in this chapter.

This chapter is structured as follows in order to present the findings of the empirical investigation into business model innovation in Bank A. Section 7.2 describes the background to the case study. Section 7.3 gives an overview of findings in the form of a matrix. Section 7.4 presents the findings relating to the first theme at the organisational level, showing how Bank A is leveraging its existing four key capabilities in innovating its business models. Section 7.5 presents findings relating to the second theme at the ecosystem level, to show how Bank A is experimenting with new capabilities obtained through its interactions with other key stakeholders within the FinTech ecosystem. Section 7.6 traces the theoretical development of a conceptual framework for this study. The chapter concludes in Section 7.7 with a short summary of the overall findings, which will be discussed further in the next chapter.

7.2 Background to the case study

The literature review (Chapter 2) provided a definition for a retail bank in the UK: it must have a 'large' branch network within the UK and participate in the UK clearing system (Gourlay and Pentecost, 2002). As explained in Chapter 5 (Section 5.2), when the study commenced in 2016 there were four large retail banking groups in the UK and the case study subject, Bank A, was one of these. The four largest retail banking groups are HSBC Group, Barclays plc, Royal Bank of Scotland Group and Lloyds Banking Group (CMA, 2016).

Based on multiple sources of secondary data, Table 7.1 presents background information for these four banking groups (in alphabetical order) which includes the year the banking group was established, total assets as of the year ending 2018 and the average number of employees (averaged over the calendar year 2018). The information collated in Table 7.1 shows that these four banking groups retain their

leading positions in the UK banking sector as of December 2018 because of their historical presence, significant value of assets and significant numbers of employees.

Banking Group (in alphabetical order)	Year established	Total assets as of 31 December 2018	Average number of employees in December 2018	Sources
Barclays plc	1690	£1,133 billion	80,000	Annual Reports and Accounts 2018 (Barclays, 2019)
HSBC Group	1865	US\$2,558 billion	235,000	Annual Reports and Accounts 2018 (HSBC, 2019)
Lloyds Banking Group	1765	£797.6 billion	75,000	Annual Reports and Accounts 2018 (LBG, 2019)
Royal Bank of Scotland Group	1727	£694.2 billion	71,000	Annual Reports and Accounts 2018 (RBSG, 2019)

Table 7.1: Background information on the four largest UK banking groups

Being one of the four banking groups shown in Table 7.1, the case study subject, Bank A, has more than a century of presence in the UK, with a physical retail branch network throughout the country. To fit with the *case study selection criteria* stipulated in Chapter 5 (Section 5.2):

1. Bank A is a large traditional UK retail bank that consists of many business units (such as consumer banking, corporate (or entrepreneurial) banking and wealth management).
2. Bank A has a relatively long history with established business models. At the time of writing, in 2020, Bank A still maintains a strong presence in the UK and in the international market.
3. Although the existing business models of the bank are well established, they are currently affected by FinTech innovations.
4. Bank A is within a dynamic ecosystem in which the rapid development of FinTech innovations is noticeable.

5. Bank A is also noticeably increasing its digital presence, reducing the number of existing physical ‘bricks and mortar’ bank branches, and is innovating its business models in response to FinTech innovations.

In order to understand business model innovation in Bank A, a secondary data analysis was carried out. This analysis supports the assertion that there have been changes in the business models of all the four largest banking groups in response to FinTech innovations. As stated in Chapter 1 (Section 1.1), this thesis assumes the definition of a *business model* to be as follows:

“a construct that mediates the value creation process” (Chesbrough and Rosenbloom, 2002, p.550) that “consists of four elements: (1) customer value proposition, (2) profit formula, (3) key resources, and (4) key processes, that, taken together, create and deliver value” (Johnson *et al.*, 2008, p.52).

Building on this definition, Table 7.2 shows the overall business models of the four banks in the years 2006 and 2018. The year 2006 was chosen to be representative of the ‘old’ business models prior to the Global Financial Crisis of 2007 to 2009 because, as suggested by the literature review in Chapter 2, the proliferation of FinTech innovations is one of the effects of the Global Financial Crisis. The year 2018 was chosen to represent the updated business models. By comparing and contrasting these two columns in Table 7.2 it is evident that some business model innovation activities have taken place over this 12-year period.

The information in Table 7.2 is organised according to the ‘four elements’ - customer value proposition, profit formula, key resources, and key processes - of the business model definition of Johnson *et al.* (2008, p.52). Data related to the ‘customer value proposition’ were extracted from the published Annual Reports and Accounts of these four banks for the financial years 2006 and 2018. It should be noted that the individual business models of each of these banks are unique so, in order to maintain the confidentiality of Bank A, the information relating to the ‘profit formula’, ‘key resources’ and ‘key processes’ is simplified based on a combination of multiple secondary data sources and the researcher’s own pre-understanding of the common features of all the four banks.

Business model elements	Banking groups	2006 (the year before the Global Financial Crisis)	2018 (the most recent year with published annual reports and accounts)
Customer value proposition	Barclays plc	Earn, invest and grow: "Barclays is a major global financial services provider engaged in retail and commercial banking, credit cards, investment banking, wealth management and investment management services... We move, lend, invest and protect money for over 27 million customers and clients worldwide." (Barclays Annual Reports and Accounts 2006, p.2).	Creating opportunities to rise: "Our business model enables us to leverage resource[s] and relationships to produce long-term sustainable outputs for our stakeholders. These outputs provide combined value for our stakeholders, helping people to rise." (Barclays Annual Reports and Accounts 2018, p.14).
	HSBC group	The world's local bank: "HSBC is one of the largest banking and financial services organisations in the world... HSBC provides a comprehensive range of financial services to more than 125 million customers through four customer focus groups and global businesses: personal financial services; commercial banking; corporate, investment banking and markets; and private banking." (HSBC Annual Reports and Accounts 2006, p.1).	Connecting customers to opportunities: "Our purpose is to be where the growth is, connecting customers to opportunities... To achieve our purpose, we need to build strong relationships with all of our stakeholders – including customers, employees and the communities in which we operate." (HSBC Annual Reports and Accounts 2018, p.22).
	Lloyds Banking group	Building long-term relationships: "We are building our business by deepening customer relationships, enhancing product capabilities, improving processing efficiency and working capital harder. The total shareholder return is 24.8%." (LBG Annual Reports and Accounts 2006, p.2).	Helping Britain prosper: "We are a simple, low-risk, customer focused UK financial provider. Our success is interwoven with the UK's prosperity and we aim to help Britain prosper through creating a responsible business that focuses on customers' needs, and delivering long-term sustainable success." (LBG Annual Reports and Accounts 2018, p.10).
	Royal Bank of Scotland group	Make it happen: "We are building a group whose diversity, scale, distribution capacity and operational excellence can deliver superior, sustainable income growth, controlled risk and strong returns. Our 2006 results demonstrate once again the success of this model." (RBS Annual Reports and Accounts 2006, p.7).	Building a simple, safe and more customer focused bank: "Our purpose is to serve customers well. We are building a safe, simple and customer-focused bank. To do so we are doing business in a way that aligns with our values and considers the longer-term impacts of our decisions and actions. Underpinning that ambition is our blueprint for lasting success." (RBS Annual Reports and Accounts 2018, p.2).
Profit formula	All four banking groups	1. Transaction-based fees. 2. Interest income. 3. Sales commissions. 4. Investment income.	1. Transaction-based fees. 2. Interest income. 3. Sales commissions. 4. Investment income. 5. Revenue share with service providers. 6. Licence and maintenance fees for APIs. 7. Membership fees for accelerator and incubator platforms.
Key resources and key processes	All four banking groups	1. The scale, size and composition of the customer base. 2. Traditional IT system that enables connectivity for banking processes. 3. Main organisation structure includes Finance, Marketing, IT, Human resources, R&D and Customer service departments. 4. Marketing communication channels: a. Physical branches. b. Telephone banking. c. Limited function of internet banking.	1. Key resources are customers, data, employees and leaders. 2. IT-system that facilitates the relationships with other key stakeholders in the FinTech ecosystem. 3. Main organisation structure includes Finance, Customer experiences, Data analytics, Talent management, Innovation and Strategy departments. 4. Marketing communication via 'omni-channels': a. Physical bank branches. b. Telephone banking. c. Internet banking (desktop and mobile). d. Real-time banking platforms. e. Ecosystem partners' platforms, such as those of Amazon and Facebook.

Table 7.2: Business models of large traditional UK banks in 2006 and 2018

As can be seen in Table 7.2, in 2018, the overall message presented via the published statements from each bank has shifted towards a customer-focused approach, with new ways to create and deliver value to the stakeholders instead of the shareholder-focused approach prevalent in 2006. In addition to their existing profit formula these banks are utilising new ways of creating value as a result of FinTech innovations, including revenue share with service providers, accelerator fees and licence and maintenance fees for allowing third parties to use their APIs. The key resources and processes have also evolved and expanded, mainly due to the dynamism of the ecosystem. For example, in 2018, banks were now able to reach existing and new customers via 'omni-channels' such as chatbots and through partners' digital platforms, and were therefore no longer limited to physical bank branches and telephone banking. An omni-channel approach provides customers with access to banking products and/or services "across multiple channels, including physical and digital channels, delivering greater choice and a seamless experience" (Weill and Woerner, 2018, p.47).

In September 2016, the Competition and Markets Authority (CMA) introduced new regulations in the form of 'Open Banking', which is the UK version of the European Payment Service Directives 2 (PSD2). Open Banking, set up by the CMA on behalf of the UK government, aims to bring competition and innovation to financial services (Open Banking, 2018). From 13 January 2018 the nine largest banks and building societies in the UK were mandated by the regulator to implement Open Banking, which means that these banks were required to share customers' data using open APIs, if consented to by the customers. The nine banks are HSBC Group, Barclays plc, Lloyds Banking Group, Royal Bank of Scotland Group, Santander UK plc, Bank of Ireland, Allied Irish Bank, Danske Bank and Nationwide Building Society (Financial Conduct Authority, 2018). Thus, as one of these nine banks, Bank A is affected by this new regulation and has to comply with the mandate put forward by the CMA.

While the traditional banks are preparing to comply with the regulatory changes, the innovations in FinTech are constantly developing. As discussed in the literature review chapters, previous studies (Tushman and Anderson, 1986; Henderson and

Clark, 1990; Bower and Christensen, 1995; Tripsas, 1997) have provided evidence that some established organisations failed in the face of rapid technological change, suggesting that it could be fatal for traditional UK banks to either ignore or wait for clarity on all FinTech related issues. Therefore, leaders in Bank A have taken action to respond to developments in FinTech through business model innovation, by embracing the opportunities of, and managing the risks posed by, FinTech innovations. In summary, the case study provides empirical evidence on the unfolding of business model innovation in a large traditional UK bank.

7.3 Overview of findings

Having explained the background to the case study, this section aims to provide a brief overview of the research findings in the form of a matrix. Data visualisation in this type of matrix format (Miles *et al.*, 2014, p.228) helps to illustrate the narratives of the findings and it is an effective way to explain the changing nature of business model innovation in Bank A within a dynamic FinTech ecosystem.

The business model innovation matrix of Bank A, as presented in Figure 7.1, is set out as a 4x2 grid, in which the four *key capabilities for business model innovation in Bank A* are positioned as columns, and the two main themes are positioned as the rows of the matrix. The descriptions within the matrix are the 18 sub-categories established from the data analysis (see data structure table, Appendix H), representing the various ways in which Bank A is innovating its business models.

CASE STUDY BANK A		Key capabilities for business model innovation			
		Customer centricity	Data analytics	Talent management	Leadership mindset
Approaches to business model innovation	Leveraging existing capabilities	Maintaining scale with a strong customer base Prioritising an understanding of customers' intents, needs and experiences Retaining trust by providing financial and data protection	Leveraging existing big data by using artificial intelligence and machine learning to understand customers	Offering motivation and creative working arrangements Harvesting internal ideas with new methods	Endorsing the urgency of business model innovation Recognising the need for a change in legacy management thinking
	Experimenting with new capabilities	Creating an accelerator and incubator platform Collaborating and partnering with other FinTech ecosystem players Engaging with new customers throughout the ecosystem	Seizing new opportunities from Open Banking Experimenting with new use cases, with technology as an enabler	Finding the right people to optimise FinTech capabilities Recognising the emergence of multiple roles in talented people	Rethinking the roles of the bank and its strategic intentions Being agile in governance and management Having a vision for invisible banking

Figure 7.1 Business model innovation matrix of Bank A

In the following two sections the two main themes derived from the data analysis (depicted as the two rows of the matrix in Figure 7.1) will be described and interpreted. The insights gained from the data analysis indicate that business model innovation in Bank A involves *two simultaneous approaches*: **leveraging existing**

capabilities and **experimenting with new capabilities**. The first theme, *leveraging existing capabilities*, was identified at the organisational level, and the analytical claims will be presented in Section 7.4. The second theme, *experimenting with new capabilities*, emerged from analysis at the ecosystem level, which will be explained in Section 7.5. Although these two themes are distinct in terms of the level of analysis, the relationships between them are the simultaneous approaches involving four key capabilities for business model innovation: customer centricity, data analytics, talent management, and leadership mindset.

7.4 Business model innovation at the organisational level: leveraging existing capabilities

This section presents the findings relating to the first theme derived from the data analysis: *leveraging existing capabilities*. These findings indicate that Bank A is innovating its existing business models by leveraging capabilities that it already possesses. Here, the term *leveraging* is used to convey the sense, based on the interpretation of the data, that Bank A is enhancing and maximising the impact of its existing capabilities when innovating its business models. After careful consideration this study has concluded that ‘leveraging’ is a more appropriate term in this context than the more formal term ‘exploiting’. This study takes the view that ‘exploiting’ could be regarded as an insensitive or controversial term because it may suggest that Bank A is making use of its existing capabilities regardless of considerations such as fairness or the willingness of other parties. This is especially true when those capabilities draw upon human-related resources such as customers, employees and leaders. However, since this theme emerged from the data analysis, the prior literature relating to the concepts of ‘leveraging’ and ‘exploiting’ will only be discussed in Chapter 8 (Section 8.4).

The findings indicate that in order to achieve sustainable competitive advantage, the bank is learning to create value by leveraging its existing internal capabilities. The following sub-sections discuss the four existing capabilities: customer centricity, data analytics, talent management and leadership mindset, that are

instrumental to business model innovation in Bank A. Each sub-section explores and interprets the data from *all* research participants in order to understand how Bank A is leveraging each capability to innovate its business models.

7.4.1 Leveraging an existing capability: customer centricity

The data analysis identified *customer centricity* as one of Bank A's capabilities. Customer centricity in the UK banking sector is consistent with Schumpeter's (1939) arguments as to the role of bankers:

“the banker must not only know what the transaction is which he is asked to finance and how it is likely to turn out, but he must also know the customer, his business, and even his private habits, and get, by frequently ‘talking things over with him’, a clear picture of his situation.” (Schumpeter, 1939, p.116)

The notion that customers are important is not new. In 1974, Peter Drucker wrote in his book ‘Management, Tasks, Responsibilities, Practices’ that “the purpose of business is to create a customer” (Drucker, 2008, p.15). Traditionally, banks’ business models have focused on delivering their products and services to their customers in order to maximise their profitability and shareholders’ return. However, with the advent of technology innovation, consumer preferences and expectations are rapidly changing. Thus, large UK banks, as shown in Section 7.2 and Table 7.2, are now innovating their business models to focus on customers, as one of Bank A's executives, the Head of Group Innovation (participant A2) says:

“[Bank A] is transforming from the old arrogant way to now [be] more *customer centric* and to move forward to stay relevant due to the technology innovations.” (A2, italics added for emphasis)

The interviews with all ten senior managers of Bank A indicate that customer centricity is an existing capability that the bank already possesses and it is also a capability that the bank is building from its interaction with other key stakeholders

in the ecosystem (discussed further in Section 7.5.1). This capability is important for business model innovation as it includes strategies both to retain existing customers and to acquire new customers. In order to be a more customer centric bank rather than product or services centric, the data indicate that Bank A has three ways of leveraging this capability while innovating its business models from within. These are as follows:

Maintaining scale with a strong customer base

As a traditional bank with a history of more than a century in the UK, Bank A has a large existing customer base. This is consistent with the Bank of England's quarterly report (Burrows and Low, 2015) that shows that the four largest traditional UK banks possess a significant market share. Further evidence for this comes from the participants from Bank A, who collectively articulate that the main competitive advantage to being a traditional bank, as opposed to other newer entrants, is the large scale of its customer base. For example, the Director of Group Strategy (participant A5) says:

"As a big bank, we have *scale*, we have reach, we have the balance sheet and most importantly we also have the regulatory compliance." (A5, italics added for emphasis)

This perception that the incumbent banks' scale must confer a significant advantage over potential new entrants also appears to be shared among the individual end-user focus group, FG2:

"The trouble is, if they come into the market, they haven't got scale whereas the incumbents obviously have massive scale. So, I mean that would be a big barrier for such companies." (FG2)

Unlike participant A5, these individual end-users are obviously not experts in banking. However, even a perceived advantage of this kind can clearly be a factor in retaining customer loyalty. When innovating its business models, it is important for the bank to retain its existing customer base and reduce customer attrition in order to ensure a sustainable competitive advantage. For Bank A, this is achieved by prioritising its understanding of the customers' intents, needs and experiences, which is explained next.

Prioritising an understanding of customers' intents, needs and experiences

When the participants were asked for their views of what Bank A has discovered in terms of sensing the threats and opportunities arising from FinTech innovations, one of the responses shed light onto the driving force behind the trend of new FinTech business models. Analysis of the interview data indicated that the increasing number of digital challenger banks and FinTech start-up entrepreneurs is attributed to *changes in consumer behaviour*, and the fact that the new business models of these players focus on users' experience. For example, Bank A's Head of Card Innovation (participant A4) suggests that the new business models are driven by customers' expectations around user-friendly features:

"I think ... one of the drivers is customers [are] demanding ever more convenient solutions." (A4)

Building on the strength of its customer base, the leaders of Bank A made strategic decisions *to prioritise an understanding of its existing customers' intents, needs and experiences* when innovating its business models, as described in the following quotes from the Strategic Transformation Director (participant A10) and the Head of the FinTech accelerator-incubator platform (participant A9):

"We need to *understand* what [customers'] needs are." (A10, italics added for emphasis)

"We [Bank A] have to change our business models to be able to serve our customers better and [to meet] *our customers' expectations*. Because the customers expectation can change so much quicker now than five to ten years ago." (A9, italics added for emphasis)

However, the long history of the bank has enabled it to build an established relationship with customers regardless of their experience of its products or services. As the Head of Innovation in a payment provider company (participant E2) puts it:

"Typically, once the customers joined the bank, they tend to stay until they die, they seldom move bank unless it is absolutely necessary." (E2)

The above quote reinforces the finding that there is an inherent trust in traditional banks.

Retaining trust by providing financial and data protection

Other than maintaining the scale of the strong customer base, and prioritising an understanding of its customers, interpretation of the findings shows that *trust* is one of the key resources of Bank A, and that the bank has the benefit of trust from its existing customers. The following quotes provide further evidence from multiple interviews and focus groups showing that customers are placing trust in the traditional banks such as Bank A, which increases their level of confidence in banking:

“I think trust is still the biggest asset the banks have, because you know the bank is secure and insured and you know your money is safe in the banks.” (E2)

“[What] we found really strongly from our research is that even though people don’t necessarily like banks, they trust them.” (E3)

“I like...having [an account with] a traditional bank, the impression it gives is [that] it is such a safe environment that everyone can go to and your money will be there.” (FG1)

Some participants, such as A6, E1 and FG2, suggest that customers’ trust in banks is associated with the customers’ reluctance to change:

“Customers don’t really want to change, ... you know it’s hard for someone to get their money, which helps reinforce the trust banks have, because banks are still more trusted than those challenger banks.” (A6)

“People get divorced more than they change their banks. So, they are happier to actually get rid of their partners than they are [with] their bank accounts.” (E1)

“I [have] still got the current account that I opened as a student 40 years ago.” (FG2)

Data analysis also indicates that, despite the negative impact of the Global Financial Crisis and given new choices such as challenger banks, FinTech companies and other technology companies, customers still trust the traditional banks such as Bank A more than new entrants. One of the reasons for this is that customers are increasingly aware of and concerned about the issue of data privacy. This finding is supported by the following excerpts from an interview with a corporate end-user (participant E15) and the focus groups of individual end-users (FG1 and FG2), that show how existing relationships and the physical presence of a traditional bank strengthen their trust in its ability to protect both their money and data:

“I don’t think [a] digital bank is suitable for my business because it’s quite a new technology, no branch... new banks like this might be unreliable.” (E15)

“I don’t know if I can fully trust [new FinTech companies or digital banks] in case something happens to my money. [Now] I can reach my bank by phone or by email, I [can] to go to the physical branch and see someone. But if it’s just online, it’s kind of hard to trust what they are actually doing with my money.” (FG1)

“Personally, probably not the FinTech or technology companies... I don’t like my data being shared without my permission... I don’t want people knowing what I’m spending my money on and then bombarding me with marketing.” (FG2)

There is a clear implication that perhaps Bank A chooses to innovate its business models in a way that retains the trust of customers that it already possesses because, if the bank chooses to ignore this, it may risk not only losing its customers’ trust, but also losing the customers themselves. It is therefore a strategic approach for Bank A to innovate its business model by focusing on its customers. The data analysis also suggests that the capability of customer centricity at the organisational level needs to be supported by its existing *data analytics* capability, which is discussed in the next sub-section.

7.4.2 Leveraging an existing capability: data analytics

The second existing capability that Bank A possesses is its expertise in *data analytics*. As supported by the findings in Section 7.4.1, with more than a century's presence in the UK, Bank A has a strong customer base and thus possesses a significant amount of data relating to its customers. These customer datasets include personal and business bank accounts information. Some examples of customer data are as follows:

1. Names, addresses, dates of birth and their occupations.
2. Types of banking products or services used.
3. Their banking transactions (such as incomes and expenses).
4. Their major life events (such as purchasing a house or car, or starting a family).
5. Their relationships with other customers.

The bank's recognition of this asset is encapsulated by a short and concise quote from Bank A's Director of Digital Innovation (participant A3):

"At [Bank A], we have [a] fairly big wealth of data." (A3)

Inevitably, with the advent of digital innovation *customer data* are increasingly considered to be one of the most valuable resources or assets of traditional banks. These banks understand the importance of making sense of 'big data' in the form of their large existing customer data sets. Consistent with prior studies (McAfee and Brynjolfsson, 2017; Wamba *et al.*, 2017), 'big data analytics' is an important organisational capability that leads to sustainable competitive advantage in a dynamic environment such as the banking sector. Big data analytics is defined by Wamba *et al.* (2017, p.356) as:

"a holistic approach to managing, processing and analysing data-related dimensions (volume, variety, velocity, veracity and value), to create actionable ideas for delivering sustained value, measuring performance and establishing competitive advantage".

An important insight gained from Bank A indicates that the bank is effectively leveraging its internal capability of data analytics in innovating its business models, in order to understand its customers and find solutions to their problems. This is achieved by using advanced analytical technology such as artificial intelligence (AI) and machine learning (ML), described below.

Leveraging existing big data by using artificial intelligence and machine learning to understand customers

The participants from Bank A shared their views that Bank A is actively utilising its data analytics capability in order to understand its customers. For example, the Director of Digital Innovation (participant A3) provides the information that advanced analytics are deployed in daily operations within the bank to understand its customers:

“In different parts of [Bank A], ... data analytics are being used in the innovation in the day-to-day operation... the innovation around AI and machine learning is kind of helping us and the consumer make better sense with the data.” (A3)

One practical example of the augmenting of customer data in banking is that of analysing customers’ transactional current account data and credit card data. Through its data analytics capability, the bank can develop customer profiles which will allow an overall understanding of customer behavioural trends, identify profitable customers, offer products or services to match the needs of customers and at the same time prioritise them accordingly.

The approach of business model innovation through data analytics helps the bank to be more customer centric in three directions: understanding the historical data, making predictions of the future and guiding strategic decision making. This interpretation is based on the interviews with the three executives who are directly involved with data analytics at the bank. Firstly, the Director of Group Innovation (participant A1) states:

“... because of [Bank A]’s size, ... there are enough historic data ... to [analyse] the patterns. So, if you can *look at historical data* then you can *predict* those things better. These sorts of AI engines certainly, for a bank like us, are very useful.” (A1, italics added for emphasis)

This is further supported by the Director of Digital Strategy and Innovation (participant A6), who believes that data analytics could provide opportunities for the bank in innovating its business models:

“... to be able to use [an AI or ML] approach to understand [customer] datasets in new ways and the restricted data we have had, I think it *brings new opportunities* in the back-end processing and ... also in the front-end customer service.” (A6, italics added for emphasis)

Finally, the Strategic Transformation Director (participant A10), who is responsible for AI deployment in Bank A, explains succinctly that the strategic purpose of data analytics in the bank is to create value for customers:

“[Bank A] is doing that in an intelligent way ... so that it is clear [about] what is the *value to customers*.” (A10, italics added for emphasis)

The findings thus far show that business model innovation in Bank A is enabled by applying insights from data analytics with a focus on customers, which in turn indicates that *customer centrality* and *data analytics* are interdependent. By doing so, Bank A is also able to innovate products or services to meet customer demands. However, in order to innovate business models, the empirical analysis also shows that the two existing capabilities can only be leveraged with a further capability involving the people within the bank itself. This third capability is identified as *talent management*, and is discussed in the next sub-section.

7.4.3 Leveraging an existing capability: talent management

Interpretation of the findings indicates that Bank A is also leveraging its existing capability of *talent management*, which involves the skilled workforce in the bank. The term ‘talent’ has been introduced in the previous chapter (Section 6.5.1). Chen *et al.* (2014) argue that intangible resources such as intellectual capital (henceforth referred to as ‘talent’) are important when banks rethink their business models. As mentioned in the literature review (Chapter 2), FinTech innovations have created a demand within the banking sector for people with new sets of skills, such as data analysts, machine learning specialists, web developers and people working in strategic innovation.

The secondary data in Table 7.1 show that the four largest traditional UK banks had a combined total of 461,000 employees in 2018, with each bank having more than 70,000 employees. This number indicates that Bank A, has a significant number of employees with established human resource (HR) practices. Although the exact number of people with FinTech talent among these employees is not determined, the importance of FinTech innovations in the bank’s workforce cannot be ignored. For example, the Head of Group Innovation of Bank A (participant A2) suggests that FinTech innovations provide new opportunities for its employees to deliver new products and services, and to interact with its customers:

“With FinTech innovations, our staff now see new opportunities and rethink how we deliver product and to engage with customers.” (A2)

The above statement is especially true for the front-line customer-facing employees, because they understand the customers’ expectations and their experiences. This is further supported by the bank’s Director of Digital Innovation (participant A3):

“Our staff in operation, on a day-to-day basis, they see the customers are not satisfied and they see the opportunity to provide a better service to the customers.” (A3)

Despite the bank's existing capability in *data analytics* as shown in Section 7.4.2, the bank's employees are still playing an important role in customer engagement. From an individual end-user perspective, one focus group participant suggests the importance of customer engagement and surmised that it would enhance career satisfaction for a banker to have a good customer relationship:

"I think we want [a] personal relationship. I'm sure if you work in a bank, you know, to have personal relationships with the customers would make for a more fulfilling job." (FG2)

This section presents the findings that Bank A is leveraging its existing capability of talent management, which goes beyond traditional HR practices. The interpretation is that the capability to manage the people with the right skill-sets within the bank is important for innovating the bank's business models. Through talent management, which extends the HR practices (Höglund, 2012), the bank now has the opportunities to develop new sets of FinTech-related skills among its existing employees. Effective talent management enables the bank to attract and retain the employees with the skills required for the bank. This is achieved in two ways, discussed below: (1) offering motivation and creative working arrangements, and (2) harvesting internal ideas with new methods.

Offering motivation and creative working arrangements

Analysis of secondary data shows that the four largest traditional banks now offer flexible working agreements to their employees and invest in empowering them through various training and development programmes. This is further supported by data from interviews with the participants from Bank A, which show that the bank provides a range of personal and career development programmes as part of its talent management capability. One such example is illustrated by the Head of Card Innovation (participant A4):

"... it is [a] combination of up-skilling and re-skilling some of the people we already have..." (A4)

Traditionally, most banks have rigid working arrangements such as workwear uniforms and standard working hours from 9 a.m. to 5 p.m. on weekdays. In contrast, Bank A is providing options for flexible working arrangements, including smart-casual working attire and flexible working hours, in order to create work-life balance for its employees - most importantly to retain its top FinTech talent. This is echoed by one of the bank's executives, the Head of Group Innovation (participant A2):

“... to get the *right talent* is not how much we pay people, *is what we offer* them... if we can get enough really talented managers who want to lead a very flat team, I'm happy for them to be only in the office [for] two or three days a week and the rest of the time they [will either] sit in the coffee shop or [be] sitting on an island in the middle of the Mediterranean but they are still working.” (A2, italics added for emphasis)

Like other traditional organisations with long historical presence, Bank A has silos which may inhibit effective communications within the bank and also can be obstacles to business model innovation. For example, a bank teller in a branch cannot easily communicate with a bank marketing manager, and a machine learning specialist cannot interact directly with the bank executives without going through their respective superiors. As such, in order to break down the existing silos, Bank A is using new methods to harvest internal ideas.

Harvesting internal ideas with new methods

The interview data show that Bank A is implementing new methods internally to harvest new ideas from its existing employees. These methods include an internal innovation forum and intrapreneurial programme.

Internal innovation forum

For Bank A, an internal innovation forum is a means of constant communication via an internal mobile platform on which any staff member across the bank can post a problem or suggest solutions. This mode of communication can break the

organisational silos through knowledge sharing, regardless of the roles of the employees within the bank. The following hypothetical example is intended to illustrate the rich variety of potential interactions that can be facilitated by an internal innovation forum:

A Scotland-based branch manager who communicates directly with customers posts a problem to the internal innovation forum. The post is related to a recent complaint from a customer concerning the time taken and fees involved in transferring foreign currencies to an international account. Through the internal forum, which is a real-time platform, a London-based Innovation Director suggests a solution for the problem. The forum thread also gives an idea to a junior Digital Product Developer based in Liverpool to develop a new product which can potentially provide a better experience for customers to transfer foreign currencies in the future.

The above illustration shows that, besides facilitating as a mode of internal communications, the internal innovation forum may also lead to creative ideas for a new product or service which, if an idea is plausible, will be considered for further testing. This interpretation is supported by the interview with the bank's Head of Innovation and Partnership (participant A8):

"As an innovation team, the ideas come through our innovation forum, we then decide... [whether] it can be run for the proof of concept." (A8)

Intrapreneurial programme

Another way of harvesting new ideas from within Bank A is through an intrapreneurial programme, which means entrepreneurship from within the organisation. An intrapreneurial programme is similar to an accelerator programme except that it is designed for employees of the bank itself, rather than external partners or collaborators. The role of an accelerator was described in Chapter 6 (Section 6.5.8). For Bank A, the intrapreneurial programme provides opportunities for the bank's existing employees to develop their innovative FinTech ideas into private ventures and further empowers them to develop their entrepreneurial

skills. The idea could be a new product, service or business model, which is usually inspired when the employee attempts to solve a customer's problem. The right ideas can potentially be transformed into initiatives in which the bank sees the potential for growth and investment. Of the employees who participate in the intrapreneurial programme, only a few are selected to join external FinTech communities in the bank's Accelerator-Incubator platform. The role of the bank's Accelerator-Incubator platform will be explained further in Section 7.5.1 as it involves the FinTech ecosystem.

The selected employees were given time off from their work at the bank to explore new opportunities, and to assess the viability of their new ventures. Participant E4, a co-founder of a consultancy company, is involved in providing training for Bank A's intrapreneurial programme and provides a deeper insight into how this arrangement is implemented:

"... we work with [Bank A's] internal teams that have got very early stage ideas, which are innovative, and can open up a new market and create opportunities for their organisation... for a period of time, normally about 3 months to develop out that early stage idea into a business concept to see whether it is viable for that organisation. To invest and take forward, ... in 99% of the cases, the entrepreneur remains a full-time employee of the [bank]." (E4)

Therefore, through an internal innovation forum and intrapreneurial programme, Bank A is able to harvest new ideas much more effectively from any employee within the bank. Combining this approach with training and development programmes and creative working arrangements, the bank is empowering the existing workforce. The above findings emphasise that the bank's talent management capability is more than simply the skill-enhancing role of traditional HR management.

Thus far, this section has provided evidence that *talent management* is an existing capability that is essential for business model innovation in Bank A. It also shows

that effective talent management can leverage other existing capabilities of the bank: *customer centricity* (Section 7.4.1) and *data analytics* (Section 7.4.2). At the same time, it indicates that the existing capabilities of *customer centricity*, *data analytics* and *talent management* are inter-dependent on each other. However, these capabilities are also dependent on strategic decisions made by leaders at the executive level. This highlights the importance of leveraging the existing *leadership mindset* capability in order to accelerate the bank's business model innovation in the desired direction, and this is discussed in the next sub-section (Section 7.4.4).

Additional insights gained from the data analysis also show that the relationships of Bank A with other key stakeholders in the ecosystem can be used in order to leverage its talent management capability. The bank's approach to business model innovation at the ecosystem level will be explored in Section 7.5.

7.4.4 Leveraging an existing capability: leadership mindset

Based on the findings so far it is apparent that leaders play an important role in advocating *customer centricity*, *data analytics* and *talent management*. The leadership team, which largely comprises the bank's executives and senior managers, is responsible for leading change, shaping culture, and making other strategic decisions. As explained in the methodology chapter (Section 5.4), the term 'executives' refers to senior managers who are "expected by virtue of their position or their knowledge to make decisions that have impact on the performance and findings of the whole" (Drucker, 2008, p.148). It is worth reiterating that the current study is privileged to have access to a total of ten of Bank A's executives and senior managers, who are directly involved in multiple aspects of innovation at the bank, including FinTech and business model innovation. In other words, all the research participants from Bank A are part of the leadership team.

The interviews with the participants from Bank A demonstrate that it is easier to articulate the essential requirements for their business model innovation than it is

to execute them. Many of the participants mention the word 'culture', in contexts which include corporate culture and changes to existing culture. However, based on the collective data, the findings of this study indicate that *leadership mindset* is the main influence in shaping the culture, and not the other way around. Thus, leadership mindset is one of the key capabilities of the bank, but is perhaps also one of the key challenges to business model innovation because the strategic decisions to change its business models need to be initiated and executed through leadership.

The analysis of secondary data and documentation shows that the four largest UK banks all have a long and successful history and possess a large pool of assets (Table 7.1), which suggests the strength of the existing leadership mindset capability in those traditional banks. Additionally, as seen in Table 7.2, these banks have been innovating their business models during the 12-year period from 2006 to 2018, and these strategic decisions were initiated and executed by the leadership teams. Therefore, it can be inferred that Bank A (along with the three other banks in the table) has also been innovating its business models by leveraging its existing capability of leadership mindset.

The research participants who form part of Bank A's leadership team were generous in sharing their perspectives on Bank A's approach to making strategic decisions in business model innovation. This has led to the finding that Bank A is following two approaches in order to strengthen its existing capability of leadership mindset:

Endorsing the urgency of business model innovation

Despite the evidence of business model innovation activities presented in Table 7.2, several participants from Bank A recognised that the long history of the bank has resulted in a set of legacy systems which inhibit the speed of innovation in its business models. For example, the Head of Group Innovation (participant A2) and the Director of Group Strategy (participant A5) are both critical of traditional

banking technology and infrastructure because these are slowing the implementation of business model innovation:

“We are left with a legacy technology that is hard to unravel ourselves from.” (A2)

“Banks are very slow in terms of adopting new ideas and we have these sort of very old infrastructure, legacy systems. It’s very hard for us to make sudden change of our business models” (A5)

In parallel with the above statements, the bank’s Head of FinTech (participant A7) also recognises the challenge of the legacy system, and suggests other traditional banks are also faced with a similar challenge:

“I say we have been reasonably successful, but we still have problems in terms of legacy systems, but that is *a problem across the industry*. And [also the] problem of legacy thinking.” (A7, italics added for emphasis)

In contrast, new entrants such as digital challenger banks and FinTech start-up companies do not have the traditional banks’ legacy systems, and their multi-faceted business models are constantly changing the landscape of the banking sector. Therefore, the findings suggest that the leaders of Bank A are *endorsing the urgency of business model innovation* because they want to ensure that the bank will continue to stay relevant in the dynamic ecosystem. The following quote from the Head of FinTech Accelerator-Incubator Platform (participant A9) describes the reason for Bank A being ‘on the front foot’ in terms of innovating its business models:

“We are proactively trying and make sure that we stay active and relevant... because so many of our *business models* are not *relevant* anymore, and every day they are becoming less and less relevant. And if we don’t set [our mind] that we have to change, then there are parts of the bank that will die quite quickly.” (A9, italics added for emphasis)

However, as described by the Director of Digital Innovation (participant A3), due to the size of the bank, not all of Bank A's leaders share a similar sense of urgency to lead a transformational effort such as business model innovation:

"... like in any large organisation, one part of the organisation has one view and another part has another view." (A3)

The above finding is further supported by the interview with the Head of Group Innovation (participant A2):

"Now, [BankA] is really, honestly trying very hard... but there are some very traditional pockets of management that can't handle that ... and that is going to be, honestly, the biggest challenge." (A2)

It can be inferred that, although *leadership mindset* is one of the Bank A's existing capabilities, a shift in the existing *leadership mindset* can accelerate the bank's efforts in innovating its business models.

Recognising the need for a change in legacy management thinking

The findings highlight that despite, or even because of, the fact that some of the executives are reluctant to change their mindsets, others in Bank A recognise the need for a change in legacy management thinking. As the Head of Group Innovation (participant A2) says:

"... because they still want to execute things in the old ways of doing, it was the 1980s way of doing stuff." (A2)

One key word which appears with high frequency (59 times) across the data set is 'culture'. As derived from the interviews with the bank leaders, culture refers to the way of doing things in the bank. Data associated with culture point towards a recognition that the leadership mindset needs to evolve in order to initiate a change in organisational culture within the bank, especially when it comes to FinTech and business model innovation. For example, the Head of Group

Innovation (participant A2) perceives that the FinTech ecosystem challenges the existing culture and creates a need for a change in the legacy mindset:

“It’s an interesting challenge because I don’t think you can separate *cultural change* from ecosystems evolution, should I? And I think the challenge that we have in [Bank A] ... is historically what we have done is we’ve taken product, process and kept people separate from that... But the ways that the world works now, we need all those things to work harmoniously at the same time, and so that brings us different challenges.” (A2, italics added for emphasis)

The Director of Group Innovation (participant A1), gives an example of the need for change in leadership mindset using the financial innovation of the credit card as an illustration:

“... the mindset... look at how credit cards [evolved]. When [the] credit card came out, no one in the bank would have really backed it... today it is a highly profitable business. But the first 10-15 years, it would have been in the drain, and no one would have thought about it... [leaders] need to be the risk takers sometimes... but take calculated risks.” (A1)

Thus far, the findings indicate that, despite challenges such as legacy systems and legacy management thinking, Bank A is leveraging its existing capability of *leadership mindset* for strategic decision making in order to enable business model innovation. In addition, the findings also suggest that this capability can be further strengthened by drawing on the FinTech ecosystem. The bank’s Director of Digital Strategy and Innovation (participant A6) highlights the importance of interactions in the FinTech ecosystem:

“... to innovate, you need to bring in what, in investing culture, we called ‘reboot’, and so that was why we started partnering with the FinTech ecosystem, and companies within that ecosystem, and so that, [by] having that, what it provides [and] what it means to [Bank A is] ... opportunities.” (A6)

Bank A's approach to business model innovation at the ecosystem level will be explored in Section 7.5.

In summary, this study found that, at the organisational level, Bank A is leveraging its existing capabilities of customer centricity, data analytics, talent management and leadership mindset as one of its approaches to business model innovation when faced with FinTech innovations. Based on these findings, the following section provides an initial conceptual framework for this case study.

7.4.5 Development of initial conceptual framework: at the organisational level

The preceding four sub-sections (Sections 7.4.1, 7.4.2, 7.4.3 and 7.4.4) have presented the findings relating to the first of the two themes that emerged from the thematic analysis. They show that, at the organisational level, Bank A's approach to business model innovation is by leveraging its existing capabilities, namely: customer centricity, data analytics, talent management and leadership mindset. The interpretation of the data also indicates that these four existing capabilities of the bank are mutually interdependent and are equally important in the business model innovation of the bank.

Figure 7.2 illustrates the relationships between these four capabilities with the interdependencies between them represented by the bi-directional arrows. These interdependencies between the capabilities will be discussed further in Chapter 8 in relation to the existing literature.

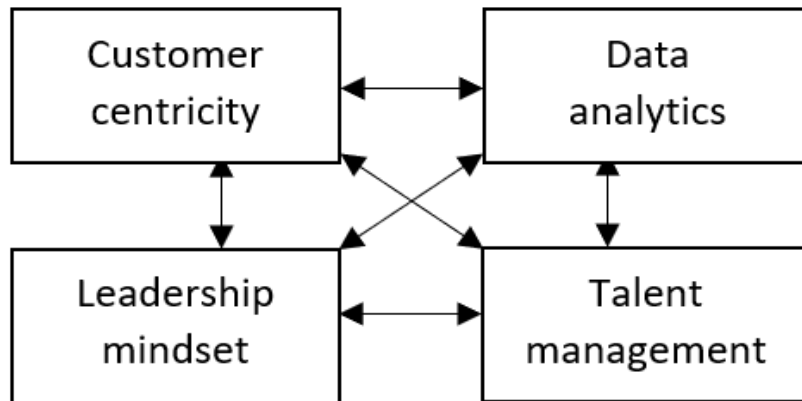


Figure 7.2: Four key capabilities for business model innovation in Bank A

Therefore, based on the interpretation of findings derived at the organisational level, an initial conceptual framework can be constructed, and this is depicted in Figure 7.3 below. The framework aims to illuminate the dynamic capabilities' perspective of the bank in approaching its business model innovation. As shown in Figure 7.3, Bank A is leveraging its existing four interdependent capabilities - customer centrality, data analytics, talent management and leadership mindset - when innovating its business models.

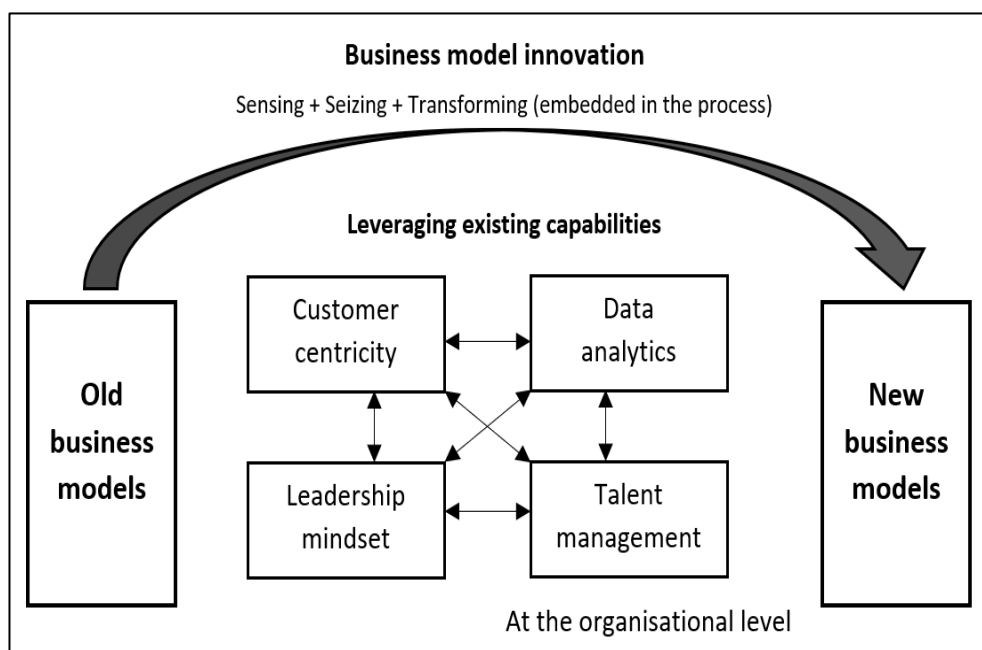


Figure 7.3: Initial conceptual framework: at the organisational level

Thus, the initial framework shown in Figure 7.3 forms the basis for the conceptual framework of this study, which is developed further in this chapter. The next section explores the second theme of the data analysis: experimenting with new capabilities.

7.5 Business model innovation at the ecosystem level: experimenting with new capabilities

So far, this chapter has provided insights into how the case study subject, Bank A, is innovating its business models by leveraging its existing capabilities. However, as in Chapter 6, this study also investigates business model innovation beyond the boundary of the organisation, by looking at the FinTech ecosystem level. This section presents the findings relating to the second theme derived from the data analysis: *experimenting with new capabilities*. As shown in the business model innovation matrix at the beginning of this chapter (Figure 7.1) the new capabilities under considerations are once again customer centricity, data analytics, talent management and leadership mindset. However, unlike in the previous section (7.4), the knowledge, expertise and ideas behind them are now being sourced from outside the bank by engaging with other key stakeholders in the FinTech ecosystem.

The findings from the data analysis indicate that Bank A is innovating its existing business models by experimenting with new capabilities that have been obtained from its engagement with the wider FinTech ecosystem. This approach builds on the recognition that the bank is participating in a dynamic FinTech ecosystem and thus looks beyond the organisation itself. The term *experimenting* has been selected to best describe the ways that Bank A is trialling and testing new capabilities that it has obtained from the ecosystem, evidence of which emerges strongly from the data. After careful deliberation, this study considers *experimenting* to be a more appropriate description than terms such as *exploring*, which may erroneously suggest that Bank A is indiscriminately searching for

undetermined new capabilities. The literature relating to both these terms, 'experimenting' and 'exploring', will be discussed in Chapter 8 (Section 8.4).

Drawing upon the empirical findings from both Bank A and the wider ecosystem, the following sub-sections discuss the four capabilities - customer centricity, data analytics, talent management and leadership mindset - obtained from Bank A's participation in the FinTech ecosystem. The sub-sections explore how Bank A is experimenting with each of these new capabilities in order to innovate its business models.

7.5.1 Experimenting with customer centricity

As presented in Section 7.4.1, *customer centricity* is an existing capability of Bank A, which the bank leverages by maintaining its customer base, by understanding its customers and by retaining those customers' trust. The approach to innovation of the bank's business models at the organisational level focuses on retaining its existing customers. An important insight gained from the data analysis is that *customer centricity* is also a new capability that the bank obtains from its participation in the FinTech ecosystem, in order to acquire new customers and to strengthen the existing capabilities discussed in Section 7.4. This sub-section presents a set of interpretations of the data that show how Bank A is innovating its business models by experimenting with new capabilities in the area of customer centricity.

Creating an accelerator and incubator platform

When participants were asked for their perspectives on the ways in which a traditional UK bank, such as Bank A, is sensing the opportunities and threats from new FinTech business models at the ecosystem level, every participant from Bank A mentioned the bank's Accelerator-Incubator Platform. The leaders of Bank A made the decision to create this experimental unit within the bank in order to learn

about recent developments in FinTech and emerging business models that focus on customers' needs.

In order to protect the identity of the bank, the term 'Accelerator-Incubator Platform' is a pseudonym used throughout this thesis to replace the actual name for the platform. Secondary data confirms that the four largest UK banks all have their own accelerator and incubator platforms, which are listed in Table 7.3 below.

Banking Group	Source	Name of Accelerator and Incubator Platform
Barclays plc	Corporate website (Barclays, 2019)	Rise
HSBC Group	Corporate website (HSBC, 2019)	Data and Innovation Lab
Lloyds Banking Group	Corporate website (LBG, 2019)	LBG Innovation Labs
Royal Bank of Scotland Group	Corporate website (RBSG, 2019)	Entrepreneur Accelerator

Table 7.3: List of accelerator and incubator platforms at the four largest UK banks

The roles of 'incubators and accelerators' in the wider FinTech ecosystem have been described in Chapter 6 (Section 6.5.8), where they were introduced jointly as one of the key stakeholders. In the same way, the banks' own accelerator and incubator platforms, listed in Table 7.3, play similar roles, ranging from an incubator for start-up companies to a co-working site (or hub), and offering accelerator programmes. However, one common feature that stands out among all the accelerator and incubator platforms is that each appears to bring many of the key stakeholders of the FinTech ecosystem together to deliver value to customers. For example, Bank A's Accelerator-Incubator Platform involves representatives from the bank, FinTech start-up companies, consultancy companies, corporate end-users, investors, university-based researchers and professional mentors.

This study has the advantage of interviewing participants among the leadership team of Bank A, who are directly involved in making strategic decisions for the

Accelerator-Incubator Platform. Specifically, these participants are the Director of Group Innovation (participant A1) and the Director of Digital Strategy (participant A6), both of whom helped the bank to launch the Accelerator-Incubator Platform initiative, and participant A9 who is the present leader of the platform.

One of the rationales for creating the Accelerator-Incubator Platform is to develop banking solutions for customers through collaboration with FinTech companies within the platform, as participant A6 explains:

“The [Accelerator-Incubator platform] lives as a platform, an innovation platform that we created in order to allow [Bank A] *to collaborate effectively with FinTech companies...* to work with those companies to develop solutions, whether it was an experiment, a pilot, or scale by scale inclusion into [Bank A].” (A6, italics added for emphasis)

The above statement indicates that the accelerator and incubator platform is a special-purpose vehicle via which the bank can make connections with other key stakeholders in the FinTech ecosystem. Meanwhile the Head of Accelerator-Incubator Platform (participant A9) explains that the role exists due to FinTech innovations:

“I am the Head of [the Accelerator-Incubator Platform] of [Bank A]. My role is set up for the bank to stay close to the FinTech start-up ecosystem and to the businesses that are transforming the financial industry.” (A9)

This statement suggests that the Accelerator-Incubator Platform itself and the role of participant A9 (Head of Accelerator-Incubator Platform) were created as a result of strategic decisions made by the bank in order to sense trends and developments in the FinTech ecosystem. This interpretation is further supported by the following quote from the Director of Group Strategy (participant A5):

“Through our [Accelerator-Incubator] platform, we start to know from network connections to ideas of what general themes are out there, the

companies that are out there, and this allows us *to have a very good grip* of UK FinTech.” (A5, italics added for emphasis)

However, three participants from the bank (participants A1, A2 and A6) point out that the Accelerator-Incubator Platform was initially created as a separate unit outside of Bank A and it was not integrated into its organisational structure. For example, the Head of Group Innovation (participant A2) suggests that the reason that the Accelerator-Incubator Platform was initially set up as an experimental unit separated from the bank was because it was not aligned with the bank’s business models at that juncture:

“... They have done an amazing job of creating the [Accelerator-Incubator platform] ... [but] what happened was ... whilst it was funded by [Bank A], they did it without [Bank A] being involved, because it *was different from* the bank’s business models.” (A2, italics added for emphasis)

Perhaps, as mentioned in the literature review (Chapter 3, Section 3.5) previous studies (Beccalli, 2007; Harris, 2001; Tallon, 2010) found that banks are cautious in their investments in IT because those investments may not necessarily improve the profitability of a company. By comparing with a bank branch, the Director of Group Innovation (participant A1) agrees that the Accelerator-Incubator Platform is a non-profitable business unit of the bank, but further explains the importance of the Accelerator-Incubator Platform as a value-creation unit for the bank:

“... running the [Accelerator-Incubator] platform is... not a profitable business to the bank. It’s a high cost, it doesn’t go like the typical bank branch, [for example,] a branch is opened, and they said you need to have the X [number of] accounts in this branch by such a date, or the branch is not profitable. But that is not how [the Accelerator-Incubator] platform works. [The Accelerator-Incubator] platform is not measured against the dollar value, it’s about what it is generating. It’s about branding, value out of it, there are innovation ideas have come out of it, there are opportunities for the organisation to take the strategic step in [Bank A].” (A1)

All ten participants from Bank A have confirmed that the bank's Accelerator-Incubator Platform is now a strategic business unit of the bank, enabling it to be more customer centric by connecting with other key stakeholders within the FinTech ecosystem. It can be inferred that Bank A is experimenting with new customer centricity capability in innovating its business models. The analysis of interview data from participants across the wider ecosystem also supported the interpretation that connecting together the FinTech ecosystem stakeholders was the general idea and purpose of the Accelerator-Incubator Platform.

Collaborating and partnering with other FinTech ecosystem players

There is a mutual recognition among all participants in this study that traditional banks like Bank A are collaborating and partnering with other key stakeholders in the FinTech ecosystem, ultimately in order to create value for their customers and thus to ensure their own survival. Through collaboration the bank can draw upon the strength of its partners to innovate its business model. The findings from the data analysis indicate that new partnerships and collaborations are built upon a network of symbiotic relationships and interconnections within the FinTech ecosystem, consistent with the findings presented in Chapter 6.

Some of the collaborations and partnerships, especially those between Bank A and the FinTech start-up companies, began with the bank's Accelerator-Incubator Platform. The following statement from the Director of Digital Strategy and Innovation (participant A6), as one of the creators of the Accelerator-Incubator Platform, describes the internal and external approach to business model innovation through the Accelerator-Incubator Platform and the collaboration with partners within it:

“So, whenever we run these collaborations, we have two ways of doing so. First, we will run a *collaboration*, as in we have an interest in these companies or business models or technology. And we will go to our superiors and say, ‘look, there’s an interesting model I think we should work with, maybe we should work with these companies’, and ... we have the *outside-in approach*. But equally, we also have the ‘what problems do

we have with our model', and then we'll *try to find companies in the ecosystem that can help us solve our issues...* So, it's a two-way approach. Both look at the probability of the bank solving its problems, and also pitching our ideas to the management based on the ideas we've seen from the ecosystem." (A6, italics added for emphasis)

This statement suggests that in innovating its business models, Bank A is harvesting new ideas by experimenting with the new customer centricity capabilities through collaboration with the key stakeholders in the ecosystem, and at the same time leveraging its existing capabilities (as described in Section 7.4). An important insight gained from this finding is the *simultaneous* approach of the bank in leveraging its existing capabilities and experimenting with new capabilities, which helps in developing the conceptual framework in Section 7.6. This also highlights the *ambidextrous approach* to business model innovation, the concept of which will be central to the discussion in Chapter 8.

Some examples of collaborations and partnerships with other FinTech ecosystem players are useful at this point to highlight the way Bank A is innovating its business model through experimenting with new customer centricity capabilities. As discussed in Chapter 6, there are interconnections between the twelve key stakeholders in the FinTech ecosystem. Hence, the collaborations and partnerships are multi-sided and experimental, with the focus on customers. Examples of collaborations include (but are not limited to) the following:

1. Bank A and FinTech start-up companies form a new business model that may solve a particular problem for customers.
2. Bank A and technology companies deliver new technology solutions through a digital platform ecosystem.
3. Bank A and payment service provider and processing companies create new customer propositions in payments.
4. Bank A and university-based researchers collaborate on research projects that may potentially impact on regulation or value creation.

5. Bank A and consultancy companies collaborate on industry reports such as consumer trends.
6. Bank A, financial regulatory bodies and government departments work together on initiatives such as financial education for the general public.

Engaging with new customers throughout the ecosystem

Another approach to experimenting with the capability of customer centricity at the ecosystem level is to test new ways of customer engagement. Interpretation of the findings from the data analysis shows that this approach involves not only focusing on the bank's existing customers but also on how the bank experiments with its ability to create new customers.

Bank A's approach to being customer centric by looking beyond its own organisation enables it to engage with new customers via the wider ecosystem. The interview data show that Bank A combines other existing capabilities such as talent management, data analytics and leadership mindset by offering an *omni-channel* approach. The concept of 'omni-channel' was introduced in Section 7.2 as an approach that can provide both existing and new customers with access to banking products and/or services through multiple channels such as physical bank branches and digital channels, including mobile banking and chatbots, which can deliver choices and a seamless experience (Weill and Woerner, 2018, p.47). In the following statement, Bank A's Head of Card Innovation (participant A4) gives an example of offering customers omni-channel payments, or the ability for customers to pay via bank cards, mobile contactless payments, and the internet of things:

"One trend we have in payment is around *omni-channel*... we as consumers ... want to be able to just access services, buy things, with whatever channel that we want ... we are very good at mobile but what about new channels like chats, voices, you know like the Amazon's Alexa's. How can we offer solutions?" (A4, italics added for emphasis)

The findings relating to experimenting with the customer centricity approach are also validated by both the corporate end-users and the individual end-users. For

instance, in the following verbatim quotes from the focus groups, the individual end-user groups endorsed the convenience of FinTech innovation via the omni-channel approach:

“I feel like it is a lot easier for people to buy things, because it’s now quicker to put your card on the reader.” (FG1)

“I think in certain aspects, [banking services] are much better. The fact that I can look at the bank account online 6 months back, I can transfer money online very quickly, you know that used to take a long time.” (FG2)

Riding on the benefits of the ecosystem, Bank A is able to reach the wider community through non-profit initiatives. The main purpose of doing so is not for the acquisition of new customers but instead is to engage with the wider community by providing them with financial and technology education. By doing so, existing customers and potential new customers (who are part of the wider community) are better equipped and educated in FinTech. The Strategic Transformation Director of Bank A (participant A10) shares an example of such an approach in the following statement:

“... we think about what we want to do in the future in a different way from other people... So, we thought why wouldn’t we *help our customers* cope with the *digital revolution*, start using some of the spare branches space... where we also can help members of the public get online, run coding sessions and cyber-security events.” (A10, italics added for emphasis)

This approach provides benefits to communities who are not currently technology-savvy. One of the corporate end-user participants, the owner of a small established chain of restaurants in London (participant E15), vouched for the traditional bank’s omni-channel approach and provision of technology education.

“So, overall, for my business, *online banking* is quicker than to go to the bank. I am now not so often visiting the bank branches as I used to. Also, when my business needed to change to accept contactless payment, the

bank does help, they came to install and to *train us how to use the technology.*” (E15, italics added for emphasis)

The findings shown in this sub-section indicate that, in experimenting with this new capability of becoming more customer centric, Bank A has created its own accelerator and incubator platform and is now collaborating and partnering with other FinTech ecosystem players, and eventually engaging with new customers through the ecosystem. An implication from this finding is that experimenting with the customer centricity capability is not an isolated approach: this capability is dependent on other capabilities. This is consistent with the discussion in Section 7.4. One of these other capabilities is *data analytics*, and this is discussed in the next sub-section.

7.5.2 Experimenting with data analytics

Section 7.4.2 showed that Bank A possesses a large set of existing customer data, and that it now has the capability in *data analytics* that makes use of artificial intelligence (AI) and machine learning (ML) to understand its existing customers. Additional insights gained from the empirical data indicate that, at the ecosystem level, the bank is also experimenting with *new data analytics capabilities* in innovating its business model to go beyond its existing capability in this area. This new data analytics capability involves new sources of banking consumer data that are available within the ecosystem, and also new FinTech-related ideas or skills obtained through multiple interactions in the ecosystem.

The findings indicate that there are two ways in which Bank A is experimenting with its new data analytics capability. In the first approach both the research participants from Bank A and those from the wider ecosystem suggest that this new capability is enabled by the access to customer data authorised by the new Open Banking regulation. In the second approach Bank A is experimenting with new ‘use cases’

based on developments in FinTech innovation. These two approaches are discussed next.

Seizing new opportunities from Open Banking

In 2018, large UK banks such as Bank A were mandated with new banking regulations such as Open Banking and PSD2, as discussed in Section 7.2. Open Banking requires banks to open their application programming interfaces (APIs) to allow third parties to access customer data (only if consented to by those customers) in order to provide customers with financial options. As explained in the literature review (Chapter 2), an API is a set of protocols that connects different software. Although Open Banking regulation aims to create value for customers, it may seem to put traditional banks into a vulnerable position because competitors such as digital challenger banks, FinTech companies and technology companies can now access data on the banks' existing customers and potentially entice these customers with better products or services than their current banks.

However, when analysing the interview data with participants from Bank A, Open Banking is instead seen as an agent that provides opportunities for Bank A to innovate its business models. One reason for this is because, by sharing large customer datasets with other traditional banks, Bank A can understand the UK banking consumer better. The Head of Group Innovation (participant A2) describes the thought process via which the bank creates a new value proposition, and can thus potentially acquire new customers, by being able to access the customer data of other large UK banks:

“... [in terms of] regulatory response... we have to have our APIs ready and reviewed by the date that [is] set out by the regulator... Then, we move to the ‘actually, if they have access to our customer data, ... we [can also] have *access to theirs!*’, so well it gets quite interesting. So, how can we develop our product proposition, who have a more interesting *value proposition for our customers*, or is that how can we access to new customers?” (A2, italics added for emphasis)

Through Open Banking, it is therefore apparent that the dataset available to Bank A is now larger than its own customer dataset. Bank A now can have access to much more UK banking consumer data such as personal information, the financial information of current accounts, credit cards and online e-money accounts (Open Banking, 2018). In order to process such enormous amounts of banking consumer data, Bank A cannot depend on its existing data analytics capability, which may not be technically sufficient. Instead, the findings indicate that Bank A is experimenting with this new capability through collaborations with other key stakeholders within the ecosystem. In the following verbatim quote, the Director of Digital Innovation (participant A3) shares an example of how Bank A is collaborating with FinTech companies to explore new customer propositions, by experimenting with data analytics:

“The FinTech companies that we work with are quite interested in helping us look at the data and work out... what more we can do with the data. The bank is interested in looking at... how we can help customers get better value from the data, even about themselves, right?” (A3)

Through data analytics using advanced technology such as AI and ML, sourced from (and also worked on collaboratively with) the other key stakeholders in the FinTech ecosystem, Bank A will be able to understand the overall UK banking consumer behaviour and trends, and prioritise the consumer needs. One example of the application of Open Banking is *financial data aggregation*. This is a process that enables customers to view all their financial data or bank account details in one place. The ‘place’ can be an online banking page or a mobile banking application of a particular bank (that offers Open Banking), for which the customer has provided consent (Open Banking, 2018). For customers, financial data aggregation can help them to manage their finances and to make better financial decisions.

The banking sector is heavily regulated but with Open Banking it is inevitable that data sharing occurs across the whole FinTech ecosystem due to its interconnected nature. As discussed in Section 7.4.2, many participants, including the end-user focus groups, expressed their concerns around data privacy. It is therefore

important for Bank A to have good data governance with a set of guidelines on what data can be shared, how they are shared, and by whom, in order to manage the integrity and security of the data used within the organisation and across the ecosystem.

An implication of this finding is that the new capability of data analytics is intertwined with the new capability of customer centricity (Section 7.5.1) at the ecosystem level. It is also related to Bank A's existing capabilities, as discussed in Section 7.4.

Experimenting with new use cases, with technology as an enabler

By experimenting with new data analytics capabilities, Bank A is open to many opportunities to innovate its business models. Interviews with participants from Bank A suggest that the bank is experimenting with *use cases* using advanced data analytics techniques such as artificial intelligence and machine learning in innovating its business models. As described by the participants, a 'use case' is an experimental method to show how an idea can potentially be realised, also known as a 'proof of concept'.

When elaborating Bank A's approach to innovation with data analytics at the ecosystem level, two participants (participants A5 and A10) mentioned the experimental method. The Director of Group Strategy (participant A5) describes the approach as follows:

"This can take [the] form of the proof of concept or an experiment." (A5)

The Strategic Transformation Director (participant A10) believes such an approach to innovation aims to provide value not only for customers but for its employees too:

"We decided to do a series of experiments trying to drive the digital transformation both for our customers and our colleagues." (A10)

At the ecosystem level, the bank needs new capabilities to process such an enormous amount of data. Through interactions with other FinTech key stakeholders, Bank A can try to test the new data analytics capability before committing to it. The following statement from Bank A's Head of Card Innovation (participant A4) explains the bank's approach to business model innovation through experimenting with new use cases:

"... we use experiments to *test out new business models*... if we find there is traction in those things, we [then] seek to take [them] from pilot-approved concept out into a real product... we use customer test, colleague test, and a number of those things... so, there is a clear pathway of testing things, piloting things and to actually delivering new features to product and services." (A4, italics added for emphasis)

The above statement also implies that the bank is experimenting with other capabilities, such as *customer centricity* and *talent management*, when it comes to data analytics in the ecosystem. The insight gained from this particular finding is that experimentation is an effective way of innovating business models, hence the significance of the concept of 'experimenting' in the current study and the naming of this theme as 'experimenting with new capabilities'.

However, experimenting with new use cases when innovating its business models with data analytics capability drawn from the ecosystem is not an approach that is unique to Bank A. In fact, other traditional UK banks also take similar approaches, as shown by the interview data with Bank C's Director of Digital Innovation (participant E13), who raises the idea of co-creation with other key stakeholders in the ecosystem through experimenting with use cases:

"... a lot of stuff that we do is around proof of concepts... to see if there's something valuable that we can *create* or *co-create* and then *test* with smaller sub-steps... before pushing out to the wider stream." (E13, italics added for emphasis)

As mentioned in the literature review (Chapter 2, Section 2.4), the UK banking sector is dynamic, especially with the proliferation of new FinTech start-up companies with innovative business models. The UK financial regulatory bodies, such as the Financial Conduct Authority (FCA), have several initiatives that help banks and FinTech companies to experiment with their innovative business models before release to the public, one of which is the 'FCA Regulatory Sandbox'. However, the interview data from an entrepreneur at FinTech Start-up Company 4 (participant E11) points out that only highly innovative business models are considered for the FCA Regulatory Sandbox, which inhibits the experimentation process with real consumer data:

"FCA sandbox... is great, but... you have to give something very, very, very innovative in order to get into that. So, what would be great is if we have a halfway house, a testing sandbox rather than the FCA sandbox, where you could test assumptions, that do that before within a particular business model that is accepted by the FCA" (E11)

Additionally, all participants agree that business model innovation in a traditional bank, such as Bank A, is not driven by technology. Instead, the role of technology is as an enabler for changes in the business models. For example, the Head of Innovation of a payment processing company (participant E3) holds the view that the business model (not technology) is the yardstick when assessing the viability of partnerships with any FinTech company to develop new use cases:

"So, our filter for that is 'what is the business model, don't tell me about the technology, tell me *about the business model*'. If I've seen this before, I'm not interested." (E3, italics added for emphasis)

It is becoming apparent that, in experimenting with its new data analytics capability, Bank A is deploying technology as an enabler for innovating its business models. For example, using artificial intelligence to augment human skills and take on time-consuming repetitive tasks will allow its talented employees to use their time on more strategic tasks. Therefore, this finding suggests that the capability of data analytics needs human cognitive skills, such as those embodied

in teams of data scientists and financial analysts, to effectively transform the big data (both existing and new customer data) into new insights that will aid in strategic decision making by the leadership team. This relates to a further approach to business model innovation, experimenting with another new capability that Bank A has obtained from the FinTech ecosystem: talent management. This is discussed in the next section.

7.5.3 Experimenting with talent management

As discussed in Section 7.4.3, in approaching business model innovation as a response to FinTech innovations Bank A is implementing ways to enhance its existing talent management capability. In Section 7.2 the secondary data (Table 7.1) show that Bank A has more than 70,000 employees, and those internal talent management capabilities therefore aim to motivate and retain the current skilled workforce, which is a subset of the existing employees of the bank.

However, at the same time, the findings show that through interactions and active participation in the FinTech ecosystem, the bank is also experimenting with new *talent management* capability. Similar to the ‘new customer centricity capability’ (Section 7.5.1) and ‘new data analytics capability’ (Section 7.5.2), this aspect of ‘talent management’ is new because it is not the pre-existing ability that Bank A already has when it attempts to innovate its business models.

At the ecosystem level, the new talent management capability involves more than managing existing talented employees, instead it is about having access to the right talent sourced from the wider FinTech ecosystem. This maximises the FinTech capabilities of the bank, and also recognises that a person with FinTech talent can now possess multiple roles within the ecosystem. These two approaches for experimenting with new talent management capabilities are elaborated below:

Finding the right people to optimise FinTech capabilities

In 2016 the UK Government department, HM Treasury, reported that there is strong availability of FinTech talent in the UK, including technical talent, financial services expertise and, entrepreneurial and leadership know-how (HM Treasury, 2016, p.10). However, the analysis of both primary and secondary data shows that there are two main challenges for traditional banks such as Bank A in managing FinTech talent:

1. Retaining existing employees with skills in FinTech.
2. Finding the right people to optimise FinTech capabilities.

The challenge of retaining the right people within Bank A was addressed in Section 7.4.3, where the findings show how Bank A is leveraging its existing talent management capability by offering motivation and creative working arrangements, and harvesting internal ideas with new methods. As with any large organisation, traditional banks have siloed organisational structures which inhibit effective communication between employees and also discourage internal ideas from being communicated in a bottom-up way (for example, communication between customer-facing employees and top executives). This finding is corroborated by interview data from Bank A's Director of Group Strategy (participant A5):

"I mean it is hard enough to get [the right] people into [Bank A] and we cannot afford for them to leave, just because of red tape and silos." (A5, italics added for emphasis)

Bank A has its existing talent management in place, but it has a history of rigid working arrangements. Perhaps this has made it difficult for the bank to retain its top employees with FinTech capabilities, and has also posed a challenge for the bank in recruiting the right people with FinTech talent. The findings also show that other key stakeholders in the FinTech ecosystem, such as other traditional banks, challenger banks, FinTech companies and technology companies are all hunting for FinTech experts within the same talent pool in the UK banking sector. The following statements from three participants demonstrate that there is competition for people with FinTech talent in the ecosystem:

“If I’m a tech genius, I’m not going to work for [BankA], I’m going to work for Amazon or Google... completely a different lifestyle, conducive of innovation...” (A5)

“... if [people have] got amazing talent, ... are they going to go to [a] design agency that worked for [BankA] at Facebook for 4-day-week, or are they going to work for [BankA]? I know which one I would choose.” (A2)

“You can always get better talent, but really good talent rather works for the FinTech companies than the banks.” (E11)

Traditionally, banks need talent with banking knowledge, but FinTech innovations have created the need for top talent with either financial or technology skills. As Bank A’s Director of Group Strategy (participant A5) puts it:

“It is not a secret for banks [that] we need top tech talent, [but] it is hard to recruit [someone] in the best light.” (A5)

This is further supported by the following statement from Bank A’s Director of Group Innovation (participant A1) showing that the bank is increasingly hiring top talent who come from non-banking backgrounds, such as data scientists and management consultants from international consulting companies:

“... we have a very large data analytics team and most of them have PhDs and also come from multi areas and backgrounds... [Bank A’s] strategic teams are regularly hiring people from the McKinsey’s and all of that, you know they are always bringing in the new blood into the bank.” (A1)

In relation to the bank’s talent management capability at the ecosystem level, interview data from the Head of FinTech Accelerator-Incubator Platform (participant A9), suggest that one of the methods of finding the right people to optimise FinTech capabilities for the bank is through its Accelerator-Incubator Platform, because the platform already has a community of FinTech experts from the ecosystem:

“... we work very closely with our [Bank A] Head of Group Innovation who identifies the problem statements and opportunities from FinTech

innovations... and then asks me *who do we have* in our [Accelerator-Incubator platform] *ecosystem* that fits [the job].” (A9, italics added for emphasis)

The findings suggest that the leaders of Bank A are becoming aware of the challenges of talent management especially in finding the right people to optimise its FinTech capability. An implication of this finding is that there is a relationship between talent management at the organisational level and talent management at the ecosystem level.

Recognising the emergence of multiple roles in talented people

Chapter 6 showed that there are currently 12 key stakeholders in the FinTech ecosystem, and found that some of the research participants from these stakeholder groups simultaneously assume multiple roles within the ecosystem. Further analysis of the data indicates that only people with broad experience and responsibilities in FinTech tend to have these multiple roles. The following is a list of research participants who possess multiple roles within the FinTech ecosystem:

1. Participant A9 is the Head of FinTech Accelerator-Incubator Platform at Bank A and also personally involved in a FinTech start-up company.
2. Participant A10 is the Strategic Transformation Director of Bank A and also personally involved in an academic research project at a university.
3. Participant E5 is a legal advisor of a consultancy company and also a mentor in Bank A’s Accelerator-Incubator Platform.
4. Participant E6 is a senior manager of a technology company and also a personally involved in an academic research project at a university.
5. Participant E9 is an angel investor and also a senior manager in a UK accelerator for FinTech start-up companies.
6. Participant E11 is the co-founder of a FinTech start-up company and also an angel investor.

It can be inferred that talent management at the ecosystem level involves Bank A increasingly recognising that those of its employees who are expert in FinTech, for

instance participants A9 and A10, can assume multiple roles at the same time within the FinTech ecosystem.

The findings from the data analysis also suggest that on leaving their current roles some of these FinTech experts will usually move to new roles within the ecosystem. This indicates that there is a blurring of boundaries between the key stakeholders, which can be seen from the examples of three of the research participants:

1. Participant E12 is the Director of Digital Innovation in Bank B and has formerly worked for Bank A.
2. Participant E13 is the Director of Digital Innovation in Bank C and has formerly worked for Bank A.
3. Participant E8 is the founder of FinTech Start-up Company 2 and has formerly worked as a FinTech specialist in one of the UK financial regulatory bodies.

Further support for this finding arose from the data validation or 'member check process' (Miles *et al.*, 2014) which took place between February and March 2019. It emerged that during the period between data collection and data validation several of the research participants had already left their former roles and assumed new roles, while remaining within the FinTech ecosystem (they were therefore not able to provide any feedback).

In summarising this sub-section, the following interview quote from Bank A's Director of Digital Strategy and Innovation (participant A6) serves three useful purposes. Firstly, it represents the perspective of a FinTech expert. Secondly, it shows that there are challenges in effective talent management and, finally, it illustrates Bank A's *ambidextrous approach* to leveraging its existing capability and experimenting with new capabilities in terms of talent management:

"We need people who understand how a big company works, get the frustrating processes and the cumbersome risk models and everything that comes with that that [Bank A] has. Whilst also understanding how a small company, like a start-up or a FinTech company will operate, and be able to

bridge the gap between those. Quite often you get the internal [Bank A] candidate who will get how [Bank A] as a big company works but does not understand the small company and how they operate and the differences between them and [Bank A]. On the other side, we also get some great people who have worked in small companies like start-ups into [Bank A] and work with [Bank A], but they just get frustrated really quickly with the big processes a bank like [Bank A] will have, and they'll want to move faster, but they couldn't. They get really frustrated with that, and weren't able to influence in the right way, and create the change they wanted to create because they were, well they just got frustrated and didn't quite understand how it worked." (A6, italics added for emphasis)

In the next section, further interpretation of the findings shows that, in order to effectively experiment with new capabilities such as customer centricity, data analytics and talent management, Bank A is also experimenting with new capabilities in leadership mindset obtained via its interactions in the FinTech ecosystem.

7.5.4 Experimenting with leadership mindset

As mentioned throughout this chapter, strategic decisions such as business model innovation are made by the leadership team of the bank, comprising the executives and senior managers. In Section 7.4.4, this study showed that Bank A possesses a strong *leadership mindset* capability, and that the bank is leveraging this capability alongside other capabilities (customer centricity, data analytics and talent management) in innovating its business models.

This section describes various approaches to business model innovation in which the bank is learning and experimenting with a new leadership mindset at the ecosystem level. The section also describes how the leaders are testing these new

capabilities, acquired and learnt through the bank's interactions with other key stakeholders in the wider FinTech ecosystem.

Rethinking the roles of the bank and its strategic intentions

The main outcome of Chapter 6 was the identification of 12 key stakeholders in the FinTech ecosystem and the mapping of the complex relationships between them. In the light of these findings, it is clearly important for the leaders of Bank A to rethink the roles of the bank and its strategic intentions in order to stay competitive within this dynamic ecosystem.

In recent years, there has been an increasing number of bank branch closures across the UK, but the actual reasons for this are not explicitly made known to the public by the banks. Due to the fact that the bank branches are physical and visible, it is unsurprising that UK banking consumers are increasingly expressing concern at this development. For example, one of the focus groups (FG2) speculates that traditional banks such as Bank A may not have a clear idea of their social role:

“... as an end-user, I see the mainstream banks responded by cutting costs, by closing branches, by looking to the technology to cut cost rather than saying ‘ok, what’s our role?’. I don’t see any of that, from what I’ve read, I don’t see any of the banks saying, ‘oh what’s our role now?’ (FG2)

This perception from a member of the end-user group suggests that there is a lack of communication from the banks which then leads other key stakeholders to guess or infer the role that the banks intend for themselves.

However, the interviews with the bank executives, especially with the Head of Group Innovation (participant A2), show that Bank A is experimenting with ways to shift the leadership mindset in order to rethink the overall roles of the bank in the ecosystem, which are based around creating value for customers or communities:

“What we probably need to do is [to] have a very *clear role* in those groups so that we make [Bank A] still relevant, and banking has a role in a way, and

helped form the way those *communities* are going to evolve because they don't really know how to evolve yet." (A2, italics added for emphasis)

This statement affirms the earlier findings that there are interrelationships between the leadership mindset capability and customer centricity, and that the bank has a role and responsibilities towards its customers.

In rethinking the bank's business models and the roles of the bank inevitably there will be changes in the leadership team's strategic functions. The interview with participant A2 further reveals that, prior to business model innovation, the strategy team was not as important as it is at present:

"In the past, say about 10 years ago, *strategy team* is much more... of the enabler than the decision [maker] ... now they are... *in the driving seat*... making sure that senior management are being told very clearly where they are missing... In a way, I think 10 years ago... that didn't really happen, they didn't go and say, 'hey guys, wake up, you are missing this, you think you are not missing in a way, and I'm going have to challenge you and this is why'. So, I think that *change is so positive*." (A2, italics added for emphasis)

This finding highlights the importance of the strategy team among the leadership teams in the bank. It also implies that the bank has to be clear with its strategic intentions.

Additionally, based on the researcher's own experience and knowledge of the financial services industry, all UK banks are required under the Companies Act 2006 to comply with strategic report disclosure requirements. Secondary data analysis confirmed that all the four largest UK banks have published their strategic reports in the respective corporate webpages. The purpose of the strategic report is listed in the 'Guidance on the Strategic Report' published by the Financial Reporting Council (2018, p.4) as:

"to provide information for shareholders and help them to assess how the directors have performed their duty, under section 172, to promote the success of the company and, in doing so, had regard to the matters set out

in that section. This includes considering the interests of other stakeholders which will have an impact on the long-term success of the entity.”

By rethinking the role of the bank and its strategic intent, the leadership team has to implement changes to the bank’s governance, such as finance processes and data governance (mentioned in Section 7.5.2). However, implementation of such change is not a simple task, as can be seen from the following verbatim quote. Here, the bank’s Head of Innovation and Partnerships (participant A8) perceives that the change in governance is more complex than the change in technology, perhaps due to the poor understanding of the complexity behind the issue of governance by its leaders:

“... we need to understand what the risks are... if we can do it on a technology basis, that’s the easy bit. The hard bit is all the governance that goes with it. Because those models aren’t understood... all those governance concepts are behind the technology curve of what is going on.”
(A8)

This statement also helps to explain the need for Bank A to be more agile in both governance and management, and this is discussed next.

Being agile in governance and management

In Section 7.4.4, the analysis of findings suggested that Bank A is leveraging its existing capabilities, especially its leadership mindset, when innovating its business models. At the organisational level the leadership mindset focuses on having the sense of urgency to innovate its business models and also on the need for a change from the old management style. It was also pointed out that Bank A, being established for over a century, has a rigid structure and a set of legacy systems which have become obstacles for the bank’s leaders in terms of implementing change in both governance and management.

Through interactions with other key stakeholders in the FinTech ecosystem the leaders of the bank are becoming aware of new threats and opportunities posed by FinTech innovations. As such, the existing leadership mindset capabilities may not

be sufficient for the bank to survive and thrive in the ecosystem. Analysis of the findings shows that, in shifting its leadership mindset at the ecosystem level, Bank A's leadership teams are promoting agility in governance and management by driving the bank's pace of innovation to be closer to the pace of FinTech start-ups. For example, the bank's Director of Group Strategy (participant A5) recognises that there is an increasing need for Bank A to be more agile in order to stay relevant in the face of competition:

"We need to operate at... the pace that the industry is moving." (A5)

This finding is further supported by two other participants from the bank's leadership team (participants A6 and A9) who are not satisfied with the current pace of governance and management and who are promoting agility as an imperative for the bank to stay competitive:

"... [Bank A] is still moving very slowly... at that pace of a big organisation..."
(A6)

"... we might have to try to learn a bit quicker, for us as a bank not to become obsolete." (A9)

The findings also demonstrate that the existing leaders are showing a sense of urgency in their attitude towards business model innovation (as discussed in Section 7.4.4). This in turn implies that there are inter-relationships between the existing leadership mindset capability and the new leadership mindset capability obtained from their interactions with other key stakeholders in the FinTech ecosystem. An implication of this finding is that Bank A is using an ambidextrous approach to business model innovation, by leveraging its existing capabilities and experimenting with new capabilities at the same time.

However, it is important to note that the interviews with several participants from the wider ecosystem suggest that these stakeholders do show an understanding of the slower pace of innovation in the traditional banks such as Bank A. For example, this interview data from a FinTech start-up entrepreneur (participant E11) appears to validate the approach of the bank:

“You know, it’s very difficult to move a big beast like [BankA]... but the team is good, they are pushing on a number of other things we are doing now... so, it does happen, it takes a lot longer than you would like or think, but it does happen [eventually].” (E11)

The interview with participant E2, the Head of Innovation of an international payment provider, also refers to the degree of agility of the traditional banks, and is supportive of the strategic decisions of the banks:

“... in the UK ... it’s sort of six banks dominate the market ... they are strong [with] ... [a] very *good customer base* and so they are responding... they *can’t suddenly change* [and] have the customers going somewhere else... all of them are looking at how they *keep relevant*, and *all of them are looking at business model innovation*... and how to utilise their service, how to make sure that the new upstarts don’t suddenly [start] taking over the entire business... I think the UK banks are among the more progressive in the world.” (E2, italics added for emphasis)

This finding highlights the interconnections between the capabilities of leadership mindset and customer centricity. It can also be inferred that the key stakeholders from the FinTech ecosystem validate this study’s finding that the traditional banks are experimenting with (rather than exploring or even executing) new leadership mindset capability at the ecosystem level, for business model innovation.

Having a vision for invisible banking

Another insight gained from these findings is that, through active participation in the FinTech ecosystem, leaders of Bank A are experimenting with new leadership mindset capabilities such as a visionary leadership mindset, which aims to influence the way customers use banking products or services. As digital technology continues to evolve, it creates a vision of what banks will be like in the future and how they might meet the needs of customers. The following statements from three

members of Bank A's leadership team (participants A1, A2 and A4) show that the leadership mindset is shifting towards a vision of seamless and invisible banking:

"... being more invisible... [and]... more everywhere, if we get that piece right... we will be in Amazon, we will be on Google, you know when you need it, we will be there... the whole customer experience is almost invisible... and how we make that relevant to... or solving the financial need of customers." (A2)

"... it's seamless... you don't have to go to the bank to make a payment... that API platform is what we have in the UK." (A1)

"... the payment will happen in the background..." (A4)

This can be interpreted as implying that the bank's vision of invisible banking involves a strategic plan to offer platform-based business models that leverage the technology and the ecosystem, and which are similar to those of FinTech or technology companies. For example, the business model of the ride sharing company Uber allows payment to occur seamlessly in the background, so that customers do not physically have to pay the driver after arriving at their destinations. Another example in the retail industry is the technology giant Amazon, which offers an advanced shopping technology known as AmazonGo stores. At these stores customers do not pay for their groceries at a checkout: instead the payment occurs seamlessly when customers walk out of the physical stores with their 'purchased' groceries.

This finding shows that the visionary leadership mindset is obtained through symbiotic relationships and interactions with other key stakeholders in the ecosystem. In line with this experimental leadership mindset several other research participants from across the ecosystem gave their own speculative visions of how the future of banking will be:

"Banks as we know them today will not exist in the future. If you look at what's behind that, it's much more things like open banking, what the

regulators are pushing us towards. Those are the things that will have a bigger change capability than anything a FinTech [company] is doing.” (E1)

“...payment to happen as frictionless as possible.” (E3)

“...I would say embedded. It’s not like that today.” (E7)

“I think it is going to be less branches... [but] I don’t think physical branches are going to die out completely, it’s a bit like cash, right?” (E10)

“... [a bank] doesn’t have to be a place to go, but you need to have a certain quality, types of service.” (FG2)

An implication from the findings presented in this sub-section is that in order for Bank A to innovate its business models, it is experimenting with a new leadership mindset capability that looks beyond the bank and into the wider ecosystem. This will be discussed further in the next chapter. Also, the leadership mindset capabilities are dependent on the three other new capabilities – customer centricity, data analytics, talent management – obtained from the FinTech ecosystem. These relationships suggest that the initial conceptual framework presented in Section 7.4.5 can be developed to depict the business model innovation at the ecosystem level. This will be discussed in the next sub-section.

Another important insight gained from the overall findings of this study is that the concepts of ‘sensing’, ‘seizing’ and ‘transforming’ of the dynamic capabilities theory are not a clear process in innovating the business models of the bank. Instead, the findings show that sensing the threats and opportunities of FinTech innovations, seizing the opportunities and transforming the business models takes place at both the organisational level and the ecosystem level simultaneously, and that the process of sensing, seizing and transforming is embedded in Bank A’s approaches to business model innovation. Chapter 8 will discuss both the ‘embedded process’ and the ‘ambidextrous approach’ in relation to the existing literature.

7.5.5 Development of initial conceptual framework: at the ecosystem level

In Section 7.4.5, an initial conceptual framework (Figure 7.3) was constructed to understand the findings presented in the first theme, *leveraging existing capabilities*. Building on Figure 7.3, a similar framework can now be constructed to illustrate the findings relating to the second theme, *experimenting with new capabilities*, as presented in the preceding four sub-sections. This framework is shown in Figure 7.4 below.

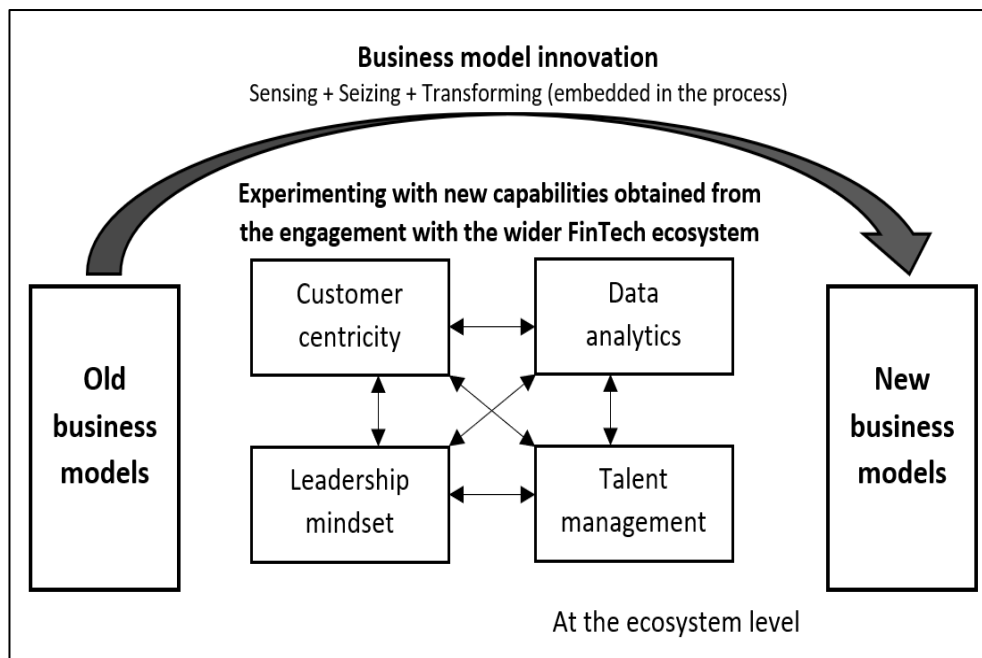


Figure 7.4: Initial conceptual framework: at the ecosystem level

As seen in Figure 7.4, Bank A is innovating its business models by experimenting with four new capabilities - customer centricity (Section 7.5.1), data analytics (Section 7.5.2), talent management (Section 7.5.3) and leadership mindset (Section 7.5.4) – that it obtains through engagements with other key stakeholders in the FinTech ecosystem, looking beyond the boundary of the organisation itself.

As with the framework for the first theme, shown in Figure 7.3, the conceptual framework in Figure 7.4 indicates a similar pattern: that the four new capabilities

obtained from the FinTech ecosystem are mutually interdependent. This interdependency is represented by the bi-directional arrows in the diagram.

However, the framework is not conclusive, since the interpretation of the data suggests that the two approaches to business model innovation – *leveraging existing capabilities* and *experimenting with new capabilities* are also not independent of each other. The framework will therefore undergo further development in the next section.

7.6 Development of the overall conceptual framework of this study

The literature review (Chapter 2) provided evidence that the UK banking sector is a highly regulated environment, a situation which raises obstacles to accessing a UK bank for an in-depth study such as this one. Despite these challenges, this study has managed to investigate business model innovation from the perspective of the dynamic capabilities of the bank and also from that of the key stakeholders within the FinTech ecosystem.

The findings presented throughout this chapter suggest that business model innovation is not a straightforward approach because no one single approach or theory can explain how Bank A is innovating its business model in response to FinTech innovations. Instead, a set of interpretations of multiple sources of data suggests that Bank A takes an *ambidextrous approach* to business model innovation, by *simultaneously* leveraging its existing capabilities and experimenting with new capabilities. For example, while focusing on creating value for its existing customers, Bank A is also experimenting with new ways of creating value for both existing and new customers. This may include collaborations with other key stakeholders in the FinTech ecosystem, using advanced data analytics on both existing customer data and on other UK banking consumer data obtained from the FinTech ecosystem.

Thus, by integrating the two initial conceptual frameworks developed at the organisational level (Section 7.4.5, Figure 7.3) and at the ecosystem level (Section 7.5.5, Figure 7.4), an overall conceptual framework for the study can be constructed, and this is depicted in Figure 7.5 below.

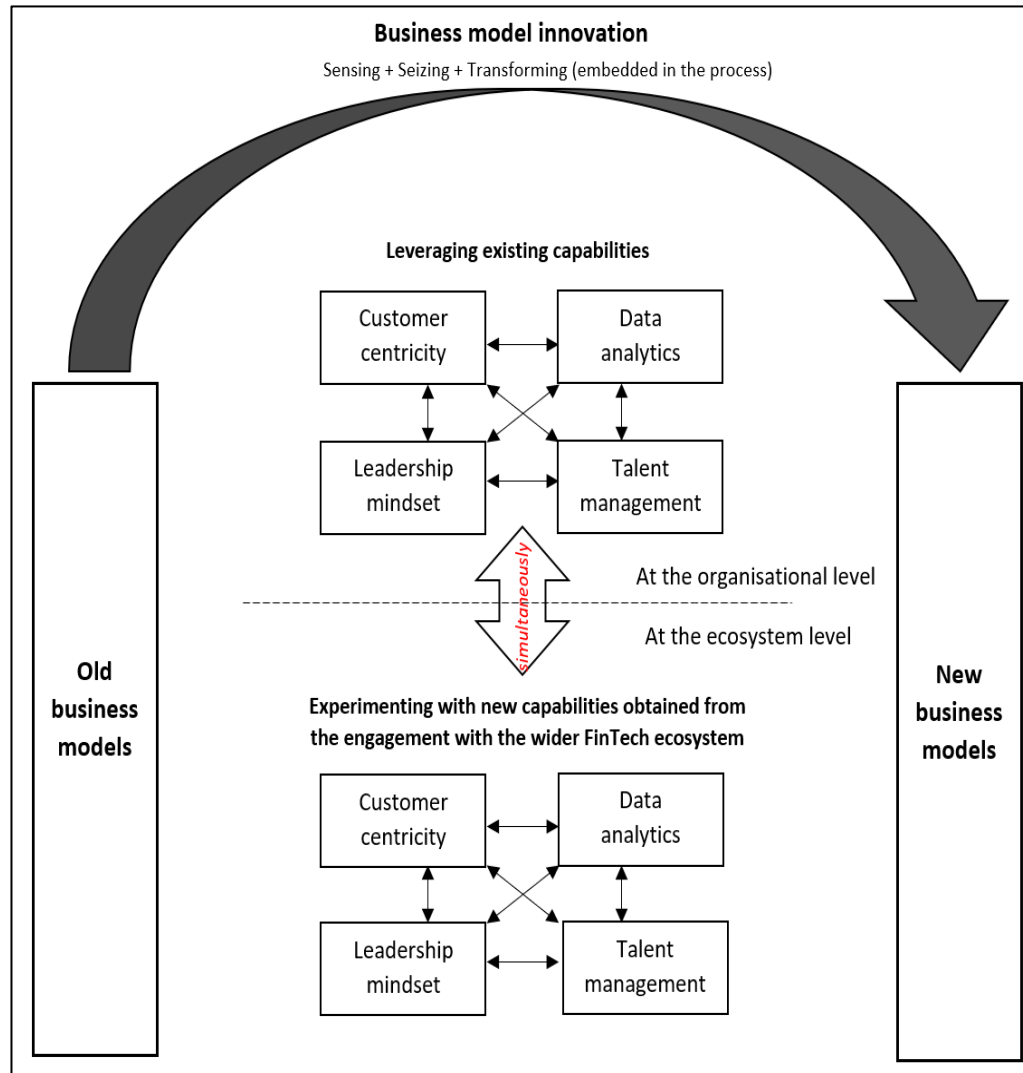


Figure 7.5: The overall conceptual framework of this study

The purpose of this framework is to illustrate the overall findings presented in this chapter, summarising how a traditional UK bank innovates its business models in response to FinTech innovations. All the main components of Figure 7.5 have been discussed in this chapter. As seen in this framework, business model innovation involves making changes to the old business models. By using the theoretical lens of dynamic capabilities (as described in Section 7.5.4) this study has found that the

micro-foundations of the theory – sensing, seizing and transforming – are embedded in the process of innovating the business models.

The framework illustrates the two themes of this study: (1) leveraging existing capabilities, and (2) experimenting with new capabilities. These two themes are in turn derived from two levels of analysis: the organisational level and the ecosystem level.

1. The first theme is based on findings presented in Section 7.4, showing that at the organisational level, Bank A is leveraging its existing capabilities of customer centricity, data analytics, talent management and leadership mindset. The study shows that the bank is already in possession of these four capabilities, and that it is now leveraging them to innovate its business models.
2. The second theme is based on findings presented in Section 7.5, showing that at the ecosystem level, Bank A is experimenting with a set of new capabilities of customer centricity, data analytics, talent management and leadership mindset. In contrast with the first theme, here the study shows that these four capabilities are new to the bank, that these capabilities were learnt and acquired from an engagement with other key stakeholders in the FinTech ecosystem, and that the bank is now testing these capabilities in the ecosystem in order to innovate its business models, and at the same time integrate them with its existing capabilities.

A significant insight gained from the overall findings of this study is that the two themes are not independent at the level of the analysis itself. The study suggests that while Bank A is leveraging its existing capabilities for its business model innovation it is also experimenting with new capabilities at the same time. Therefore, this conceptual framework also illuminates the main finding of this study by which the bank takes simultaneous approaches to business model innovation. This will henceforth be referred to as an ‘ambidextrous approach’ (represented by the thick bi-directional arrow - labelled ‘simultaneously’, in the centre of the diagram). It is important to reiterate that this notion of an *ambidextrous approach* was not present in the literature review in Chapters 2 and 3: rather it has emerged

from the interpretation of the findings of this study. Existing literature on the concept of a simultaneous ambidextrous approach, and its relevance to the findings of this study, will be discussed in Chapter 8.

7.7 Chapter summary

This chapter set out to present the empirical findings derived from the investigation into business model innovation in a traditional UK bank. It also aimed to extend the existing concept of business model innovation and dynamic capability theory in the context of the FinTech ecosystem, using multiple sources of data obtained from within Bank A and from other key stakeholders in the wider FinTech ecosystem.

To summarise, the chapter has presented the two main findings of the thesis in terms of understanding how the case study organisation, Bank A, innovates its established business models in order to adapt and stay competitive in a dynamic ecosystem (shown in the conceptual framework of Figure 7.5):

1. Customer centricity, data analytics, talent management and leadership mindset are the key capabilities of Bank A in sensing change, seizing opportunities and transforming the bank's business model.
2. To adapt and stay competitive in the dynamic FinTech ecosystem, Bank A is innovating its established business models through an ambidextrous approach: while leveraging its existing capabilities, the bank is also experimenting with new capabilities obtained from its engagement with the wider FinTech ecosystem.

The insights gained from both Chapters 6 and 7 will be discussed further, in relation to the existing literature, in the next chapter. However, before proceeding to this discussion it should be noted that there is also an additional and unexpected finding, which is described below.

Unexpected finding

It should be noted that in analysing the data this study has also revealed an unexpected finding relating to *gender diversity*. As described in detail in Chapter 5, this study uses purposive and snowball sampling techniques and hence it does not intentionally address attributes such as gender, age, nationality, or education level. Nevertheless, the interview data from two participants (A2 and E10) does address the issue of gender diversity and inequality both within Bank A and across the UK banking sector as a whole. The finding is further supported by secondary data obtained from the banks' corporate websites, which confirms that, as of 31 July 2019, the chief executive officers (CEOs) and the chair persons (Chairmen) of the four largest UK banks were all male.

In Bank A the Head of Group Innovation (participant A2) states that its existing leaders are aiming for female inclusion but that gender imbalance does exist at the senior management level of the organisation, and acknowledges that female managers work hard to get to their positions:

“The balance we have got now is that we have a management system that the average age of anyone in the management is over 45 and, in some areas, over-50s, typically male. [The management of Bank A] try as hard [as possible] to attract some female diversity even if you look at ethnicity or religion or whatever. But the women that I worked with in the organisation are amazing because they have to fight to be in the system.” (A2)

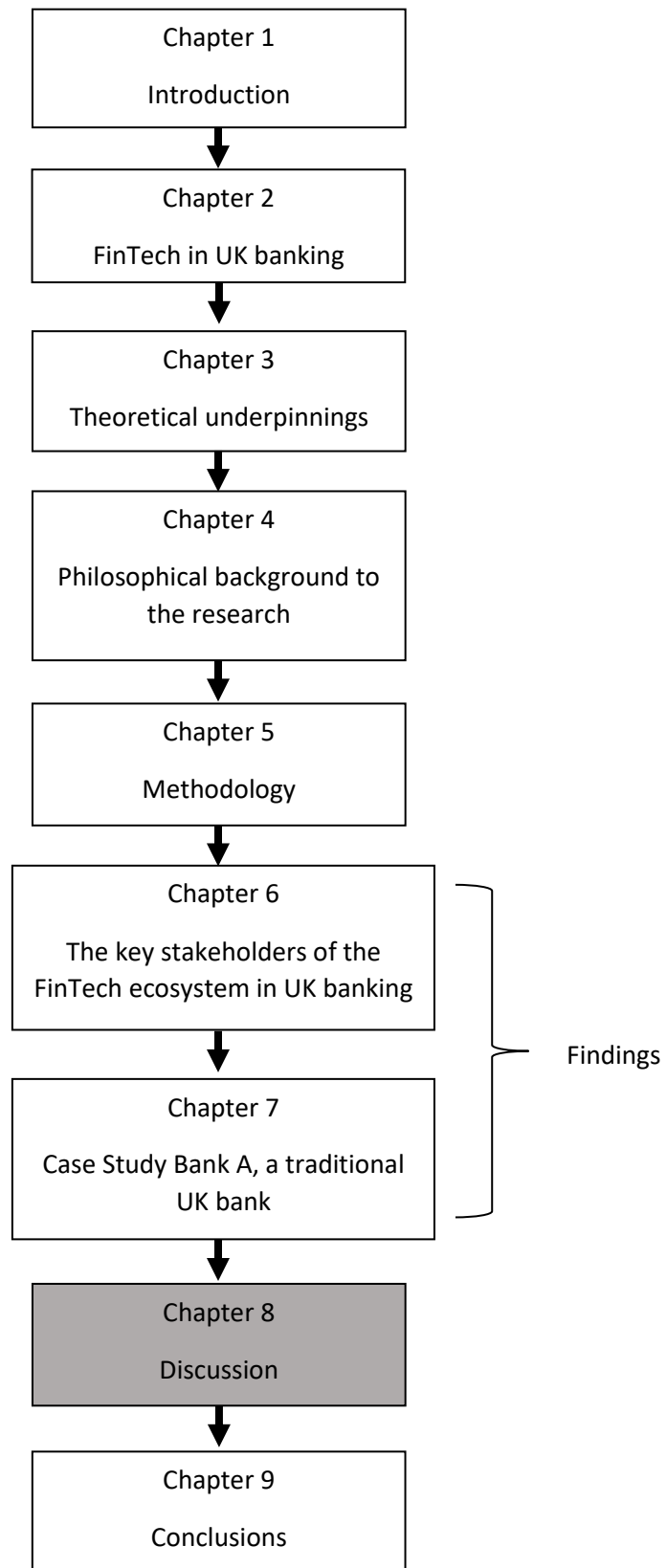
At the ecosystem level, participant E10, the co-founder of FinTech Start-up Company 3, shared a personal experience of gender inequality, from her meeting with a group of investors to obtain funding for her new start-up business:

“From my point of view as a woman, there [are] not that many women in FinTech, so maybe it is just me being a bit sensitive ... in a [meeting] room usually full of men, some [turn] their head away. So, in a way, finance and technology [are] two industries that are very male driven [and] male dominated.” (E10)

Although the identities of all 35 participants have been anonymised, it should be stressed that this study does include diversity in terms of age, gender, nationality and level of education. Particularly relevant to this unexpected finding, there are four female participants from Bank A, four female participants from the key stakeholders in the FinTech ecosystem, and four female focus group participants. However, the sensitive issue of gender diversity, especially the imbalance between males and females in UK banking, is not the focus of this thesis and, although it clearly merits additional research in its own right, it will not be discussed further here.

In the next chapter, the main findings of this study, presented in Chapters 6 and 7, will be discussed in detail in order to form a better understanding of the issues surrounding business model innovation in a traditional UK bank.

Structure of this thesis



Chapter 8

Discussion

It is not the strongest of the species that survives, nor the most intelligent, but the one most responsive to change. - Charles Darwin

8.1 Introduction

The purpose of this thesis was to analyse how a traditional bank is innovating its established business models in response to financial technology. By doing so, the research aims to provide a better understanding of business model innovation in traditional organisations such as banks, to enable them to adapt and stay competitive within a dynamic industry ecosystem. The empirical research, carried out on a traditional UK bank, made use of prevailing theoretical concepts - business model innovation and dynamic capabilities - and looked at two levels of analysis: at the organisational level and at the wider ecosystem level.

This investigation into financial technology and business model innovation in the context of the UK banking sector was intended to be exploratory in nature, with the aim of elaborating existing theories of business model innovation and dynamic capabilities. By integrating these theories with the empirical context, the interpretation of the data and findings has led to two overarching themes and four categories which, in turn, were conceptualised into a framework to create new knowledge in the field of IS. This thesis proposes that the conceptual framework (Figure 7.5) can be useful for other traditional organisations in order for them to understand and formulate their own approach to business model innovation in a dynamic digital ecosystem.

The preceding two chapters have presented the main findings and a conceptual framework. However, so far this conceptualisation has not been discussed in the context of the existing theoretical concepts - business model innovation and

dynamic capabilities - in order to answer the research question. The current chapter therefore aims to reflect on the findings presented in Chapters 6 and 7 by contextualising them in relation to the existing body of literature pertaining to the research question. By doing so, it contributes to our understanding of how business model innovation in a traditional bank is interpreted and articulated in the UK banking sector.

This chapter discusses the main findings of this study in three areas by bringing the conceptual and empirical investigations together (as summarised in Table 8.1). The implications of this study for theory and practice will be summarised in the next chapter.

Main findings of this thesis	Areas of discussion	Key insights for discussion
1. There are 12 key stakeholders of the FinTech ecosystem in the UK banking sector, all of whom are interconnected through a dynamic process of collaboration and competition.	The interactions within the FinTech ecosystem (see Section 8.2).	The FinTech ecosystem is a dynamic and complex system of interrelations among the 12 key stakeholders. The relationships are characterised as symbiotic and mutually dependent, involving constant interaction, competition and collaboration with others within the environment. There is a blurring of industry boundaries in the FinTech ecosystem which makes it important for Bank A to innovate its business models.
2. Customer centricity, data analytics, talent management and leadership mindset are the key capabilities of Bank A in sensing change, seizing opportunities and transforming the bank's business model.	The interrelation between dynamic capabilities and business model innovation (see Section 8.3).	Key capabilities that enable business model innovation in Bank A: 1. Customer centricity. 2. Data analytics. 3. Talent management. 4. Leadership mindset. Dynamic capabilities are embedded within Bank A in innovating its business models.
3. In order to adapt and stay competitive in the dynamic FinTech ecosystem, Bank A is innovating its established business models through an ambidextrous approach: while leveraging its existing capabilities, the bank is also experimenting with new capabilities obtained from its engagement with the wider FinTech ecosystem.	The approach to business model innovation in a traditional UK bank (see Section 8.4).	The concept of organisational ambidexterity. The approaches to business model innovation in Bank A: 1. Leveraging existing capabilities. 2. Experimenting with new capabilities. A simultaneous ambidextrous approach to business model innovation in Bank A.

Table 8.1: Summary of main findings

8.2 The FinTech ecosystem

Chapter 6 presented the following main finding:

There are 12 key stakeholders of the FinTech ecosystem in the UK banking sector, all of whom are interconnected through a dynamic process of collaboration and competition.

The key stakeholders of the FinTech ecosystem in the UK banking sector are individuals or organisations with an interest in FinTech in UK banking, who can either affect or be affected by the collective actions of the FinTech ecosystem. Using Bryson's (2004, p.28) 'stakeholder identification and analysis technique', this finding has primarily built upon and extended *The Global FinTech Report* published in 2016 by the international consultancy company PwC (PwC, 2016, p.3). That report identified only eight key stakeholders (financial services institutions, start-up firms, technology companies, infrastructure players, regulators and government, investors, incubators and accelerators, and consumers) within the ecosystem.

As presented in Chapter 6, the current study has identified 12 key stakeholders in the FinTech ecosystem, and has also set out the reasons why they have been chosen. These key stakeholders, illustrated in Figure 6.2, are:

1. Traditional banks.
2. Digital challenger banks.
3. FinTech start-up companies.
4. Technology companies.
5. Payment provider and processing companies.
6. Financial regulatory bodies and government departments.
7. Investors.
8. Incubators and accelerators.
9. Consultancy companies.
10. University-based researchers.

11. Corporate end-users.

12. Individual end-users.

In a recent publication Lee and Shin (2018, p.37) present a FinTech ecosystem model with only five elements or key stakeholders. These are FinTech start-ups, technology developers, government, financial customers, and traditional financial institutions. Lee and Shin (ibid.) claim that the element of FinTech start-ups is the centre of the ecosystem, whereas in the current study all the key stakeholders are given equal importance because of the roles and values they create in the FinTech ecosystem, as described in detail in Chapter 6.

Similarly to PwC (2016), Lee and Shin (2018) classify both individual and corporate end-users as 'financial customers', whereas the current thesis suggests that almost every individual or company in the UK is an end-user of banking or FinTech products or services, even though they may not be the customer of a particular bank or FinTech company yet. Thus, it is more appropriate to classify these individuals as 'end-users' rather than 'customers'. Also, this thesis makes a clear distinction between individual end-users and corporate end-users because the corporate end-users are affected by and are increasingly adapting to FinTech innovations to meet the changing behaviour of their own customers.

Chesbrough (2003) asserts the importance of universities and venture capitalists (VCs) in applying the concept of open innovation. For Chesbrough (2003) the knowledge created within universities can be applied in commercial organisations in order to stimulate research and innovation. Also, investment decisions made by VCs help start-up companies to commercialise technology in a dynamic environment, and many VCs make such decisions as an investment in business models (ibid., p.89). This study therefore recognises that the university-based researchers and investors play important roles in the FinTech ecosystem. However, these two key stakeholders were not included in Lee and Shin (2018), suggesting that these authors do not agree with the concept of open innovation.

Although the data for the current study had been collected and analysed prior to the publication of Lee and Shin (2018), this thesis supports their findings that all the key stakeholders “sybiotically contribute to innovation, stimulate economy, facilitate collaboration and competition in the financial industry, and ultimately benefit consumers in the financial industry” (ibid., p.37). These relationships are discussed next.

8.2.1 Symbiotic relationships

This thesis has revealed the symbiotic relationships between the key stakeholders in the FinTech ecosystem, which are described in detail in Chapter 6. Consistent with the work of Iansiti and Levien (2004a; 2004b), this study shows that the digital ecosystem is not static; in fact it is dynamic and evolving rapidly, even over the short time span of two years from 2016 (the date of the PwC report) to 2018 (when the data for the current study were collected).

The findings presented in Chapter 6 show that the symbiotic relationships are characterised by *collaborations* and *competitions* among the key stakeholders in the ecosystem. These relationships are based on the existence of mutual interests among the key stakeholders within the FinTech ecosystem. As an example, consider the relationship between traditional banks and FinTech start-up companies. The FinTech start-up companies are competing with traditional banks to provide a better experience to the end-users by having agile business models and technology expertise, but they lack customers and experience. Therefore, many of these FinTech start-up companies are also increasingly collaborating with traditional banks to gain access to the banks’ accelerator and incubator platforms and customers, and to experiment with the banks’ customer datasets. Meanwhile, by collaborating with their competitors, the traditional banks can experiment with the technical expertise of the FinTech start-up entrepreneurs and at the same time explore new FinTech innovations, including products, services and business models, before investing large amounts of time and money to develop their own FinTech solutions. Although this finding is consistent with the findings of Liu *et al.* (2015)

that collaboration and competition among industry firms encourages mobile payment-related innovations, it extends the boundary of mobile payment to include most FinTech innovations. The concept of combining both collaboration (or cooperation) and competition, also known as 'co-opetition', helps to increase the performances of both the collaborators and the competitors, and thus promote innovation (Nalebuff and Brandenburger, 1997). This concept is also supported by Afuah (2000) and Adner and Kapoor (2010) as an approach to value creation in an innovation ecosystem.

The findings of the current study support those of Ceccagnoli *et al.* (2012), which show how these key stakeholders may thrive through innovation networks in which other stakeholders are deployed to strengthen their own capabilities, and demonstrate that the interactions between all stakeholders can create value. In the FinTech ecosystem, the networks formed among these key stakeholders are interwoven. For example, this interconnection may involve both front-end applications, such as customer-facing products and services, and back-end processing infrastructure, such as payment networks and technology platforms. In common with the findings of Selander *et al.* (2013) and Hedman and Henningsson (2015), the findings presented in Chapter 6 also provide evidence that the dynamics of the FinTech ecosystem are characterised by symbiotic relationships created through collaboration with others within the environment.

This thesis shows that business model innovation in a traditional bank involves multiple relationships outside the boundary of the organisation which, as reviewed in Chapter 3 (Section 3.4), can be seen in the digital platform ecosystems (Tiwana *et al.*, 2010; Ceccagnoli *et al.*, 2012; Selander *et al.*, 2013; Gawer and Cusumano, 2014; Hedman and Henningsson, 2015; Cusumano *et al.*, 2019). Consistent with the recent findings of Cusumano *et al.* (2019, p.59), the relationships in the FinTech ecosystem are similar to the multi-sided network effects formed by connecting different market actors to users. Furthermore, the profit formula of platform-based business models is by facilitating these connections and associated innovations (*ibid.*).

This thesis supports the findings of Moore (1993, p.85-86) that, in a business ecosystem, it is essential that the competition among the key stakeholders is “fierce and fair – and that the fittest survive”, and that “business communities are unlike biological communities of co-evolving organisms, are social systems”. The FinTech ecosystem is a social system that is made up of real people who make decisions about their roles and their participation within the system. These symbiotic relationships of competition and collaboration are *complex* and *dynamic*.

The UK banking sector, as reviewed in Chapter 2, had a dynamic landscape even before the innovations in FinTech arrived. But the advent of FinTech, and the many key stakeholders of its ecosystem, has made the landscape of the banking sector more competitive. Gomber *et al.* (2018) labelled this phenomenon the ‘FinTech revolution’. For instance, the traditional banks, digital challenger banks, FinTech start-up companies and even technology companies are now competing with new innovative business models to meet the needs of end-users. Furthermore, the financial regulatory bodies and government departments are playing active roles in stimulating competition through new legislation related to FinTech, while at the same time protecting UK banking consumers. The ecosystem perspective also reveals that there are interconnections and relationships among key stakeholders within the ecosystem, consistent with the findings of Iansiti and Levien (2004a; 2004b).

By identifying the key stakeholders, the current research has attempted to map the relationships among them. However, as described in Chapter 6 (Section 6.6), this study has found that the FinTech ecosystem is complex and dynamic and therefore it is not possible to fully characterise the FinTech ecosystem in the form of structural diagram as advocated by Adner (2017). Adner (2017, p.42) is adamant that the ecosystem is an ‘alignment structure’ of actors and activities, and the “members of an ecosystem have defined positions and activity flows among them”. By using an illustrative case of Michelin’s PAX run-flat tire ecosystem, Adner (2017) was able to neatly map out the relationships within the tire ecosystem in a structural diagram. But the current study finds that the relationships among the key stakeholders in the FinTech ecosystem are not well defined, and are therefore

better presented in the form of a 12x12-cell table (Table 6.2). This table illustrates the interconnected and multi-sided relationships within the FinTech ecosystem, based on the data analysis of the 25 semi-structured interviews, two focus groups and documents presented in Chapter 6. Perhaps surprisingly, and lending additional support to this finding, the existing studies on the FinTech ecosystem (PwC, 2016; Lee and Shin, 2018) also do not attempt to show the FinTech ecosystem as a structure.

One of the characteristics of the FinTech ecosystem is its dynamism, meaning that the key stakeholders and their roles in the ecosystem are constantly evolving. Therefore, this thesis does not suggest that the number of key stakeholders in the FinTech ecosystems will remain static: it is likely that the contents of Table 6.2 will cease to be complete or accurate in the near future simply because the ecosystem is so dynamic. Iansiti and Levien (2004b, p.71) state this explicitly:

“drawing the precise boundaries of an ecosystem is impossible ... Each ecosystem typically encompasses several domains, which it may share with other ecosystems.”

The dynamism of the FinTech ecosystem in UK banking provides evidence of blurred boundaries, and this is discussed next.

8.2.2 Blurring of boundaries

The concept of open innovation, as reviewed in Chapter 3, suggest that organisations can combine both internal and external ideas when innovating the current business using technology (Chesbrough, 2003). This study is therefore in agreement with the concept of open innovation (ibid., p.88), and assumes that business model innovation in Bank A cannot be restricted to the bank’s internal capabilities. Instead it can and should use external ideas drawn from other key stakeholders in the FinTech ecosystem. This thesis has extended the findings of Chesbrough (ibid.) into the context of the UK banking sector, in the sense that the bank’s leaders are now involving other key stakeholders in the FinTech ecosystems

when innovating its business models. This in turn implies that the traditional focus of R&D within the rigid boundary of the organisation is no longer sufficient.

Figure 8.1 illustrates Bank A's place within, and integration with, the FinTech ecosystem. The diagram shows two concentric circles, with the inner circle representing Bank A and the larger, outer circle representing the FinTech ecosystem, consisting of the 12 key stakeholders. The diagram shows how Bank A, as a traditional bank, is just one organisation among the 12 different groups of key stakeholders within the ecosystem, and it is interdependent on other key stakeholders to operate in the ecosystem. The circumference of the inner circle is dotted and overlaid with all the key stakeholders in the FinTech ecosystem to indicate both the interdependencies between all the different entities and that there is no clear boundary that separates the bank from the other key stakeholders in the ecosystem. As discussed in Chapter 6, the reason for this is that the roles of each key stakeholder are no longer distinctive, and also some talented individuals are now assuming more than one role within the same industry ecosystem (Section 7.5.3). Indeed, some of the key stakeholders, such as university-based researchers and incubators and accelerators, can exist both within and outside the structure of the bank itself.

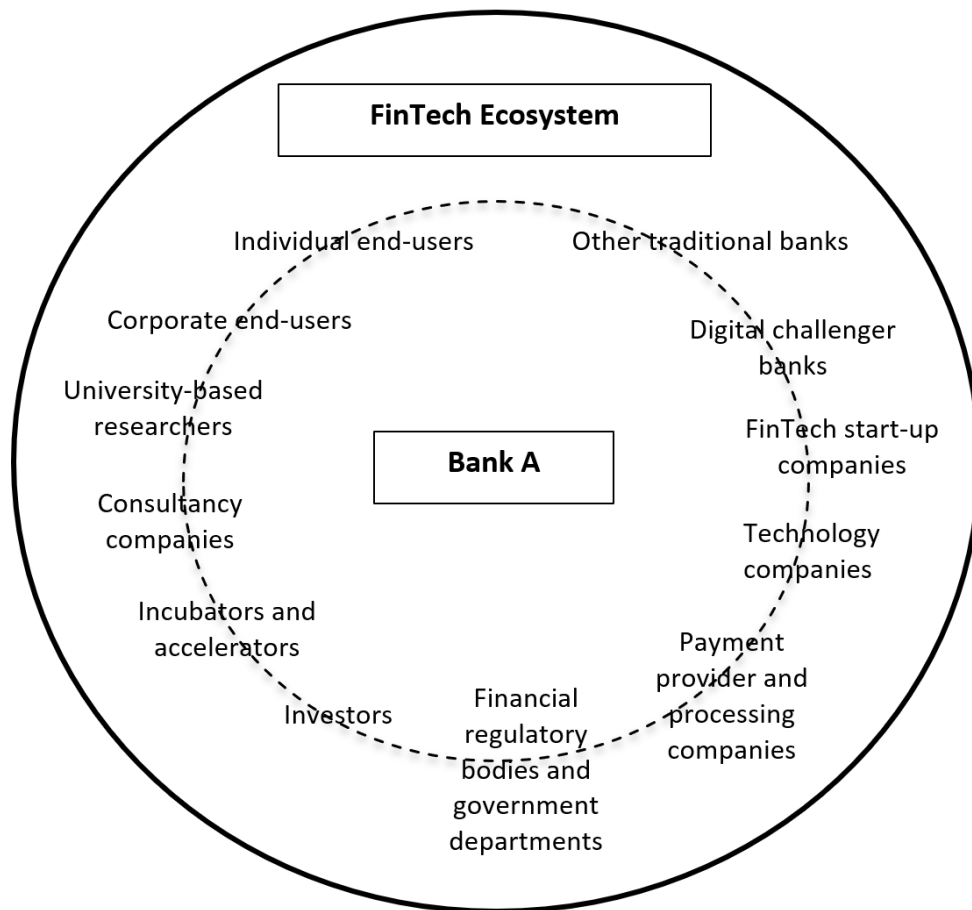


Figure 8.1: Case study Bank A and the key stakeholders of the FinTech ecosystem

Digital technologies increase the bank's connectivity, not just with its customers and employees but also with other key stakeholders in the FinTech ecosystem. The interconnections and the interwoven network effects between Bank A and the 12 key stakeholders are enabling business model innovation in Bank A through continuous competition with other FinTech ecosystem stakeholders as well as collaborations with them. These symbiotic relationships highlight the blurring of boundaries in a digital ecosystem, which is consistent with the findings of Yoo *et al.* (2010, p.730), Tilson *et al.* (2010, p.750) and Berman and Marshall (2014, p.9) in the sense that digital technologies and digital infrastructures have facilitated the interconnections (collaborations and competitions) among the stakeholders in the ecosystem, and in turn the boundaries have become less defined.

All 35 research participants in the current study, drawn from across the 12 key stakeholder groups, have provided evidence that FinTech innovations, including products, services, processes and business models, are exerting pressure on the existing business models of traditional banks. These innovations, along with the FinTech ecosystem itself, provide opportunities for value creation and thus trigger business model innovation in Bank A in response. In a study of digital ecosystems, Weill and Woerner (2015) lend support to the findings of the current study by citing examples from the traditional banks in the United States. They find that digitisation compels banks to transform their business models by providing not only their own banking products or services but also complementary products or services from others in the ecosystem, such as those of Amazon and Facebook (ibid.).

8.2.3 Significance of business model innovation

The literature reviewed in Chapter 2 shows that banks are traditionally slow in adopting innovation (Mention and Torkkeli, 2014; Yip and Bocken, 2018), an insight which in itself highlights both *the challenge to* and *the need for* business model innovation. The findings of the current study show that innovations in FinTech, especially the new business models of FinTech start-up companies, constitute disruptive innovation (Christensen, 2000). As advocated by Charitou and Markides (2003), when faced with the disruptive innovations of FinTech, Bank A, as a traditional organisation, has to respond strategically. Hence, the bank is proactive in innovating its business models by adopting changes in FinTech such as platform-based business models in order to survive and thrive in the increasingly competitive digital ecosystem. However, the dynamic characteristic of the ecosystem has demanded a faster pace of innovation which, the current findings show, is a challenge to such a large, traditional bank, in turn supporting the findings of Enders *et al.* (2006) and Sia *et al.* (2016). Similarly to Bank A, Swedish Nordea Bank (Enders *et al.*, 2006) and Singaporean DBS Bank (Sia *et al.*, 2016) are large traditional banks, and they both found it challenging for banks to stay competitive in an increasingly digital marketplace.

Consistent with the findings of Chesbrough (2003), Johnson (2010) and Amit and Zott (2012), this thesis suggests that business model innovation is a strategy for achieving competitive advantage but, as Christensen *et al.* (2016) note, it is also a difficult task. This thesis set out to explore the approaches to business model innovation adopted by Bank A but did not necessarily intend to attest or confirm the bank's approach as a well-executed strategy. The current study takes the view that business model innovation in the context of the UK banking sector is enabled by sensing the opportunities and threats posed by rivals (who can take the form of many of the key stakeholders in the FinTech ecosystem), and also by seizing the opportunities that come with the innovations and interactions within the FinTech ecosystem, as with the concept of open innovation (Chesbrough, 2003). The capabilities that are essential for the bank to transform its business models will be discussed in Section 8.3.

It is important to note that business model innovation, as per the empirical findings of this study, is not necessarily the discovery or creation of an entirely new business model. Instead, in order to create and deliver value to its customers, business model innovation in Bank A primarily involves changing and reinventing one or more elements of the existing business models using both the bank's existing capabilities and also its new capabilities obtained through its engagement with other key stakeholders within the FinTech ecosystem. This interpretation therefore mirrors the definition of business model innovation by Amit and Zott (2012, p41):

“business model innovation can consist of adding new activities, linking activities in novel ways or changing which party performs an activity”.

Having discussed the main findings of this thesis in relation to the FinTech ecosystem, the next section will contextualise these findings in relation to the theory of dynamic capabilities.

8.3 The dynamic capabilities perspective on business model innovation

One of the main findings presented in Chapter 7 of this thesis is:

Customer centricity, data analytics, talent management and leadership mindset are the key capabilities of Bank A in sensing change, seizing opportunities and transforming the bank's business model.

Using dynamic capabilities theory as a foundation, together with the empirical findings of the thesis as presented in Chapter 7, the current section now reflects on the literature reviewed in Chapter 3 to understand and expand upon the relationships between dynamic capabilities and business model innovation. The purpose of this section is to discuss how Bank A is responding to FinTech innovations from the perspective of dynamic capabilities theory and to explore how these findings have extended the theory in the context of the UK banking sector.

As explained in Chapter 3 (literature review) and Chapter 5 (methodology), the current study addresses business model innovation from the theoretical perspective of *dynamic capabilities* (Teece *et al.*, 1997; Eisenhardt and Martin, 2000; Helfat *et al.*, 2007; Wang and Ahmed, 2007; Ambrosini and Bowman, 2009). The definition of dynamic capabilities in the seminal paper of Teece *et al.* (1997, p.516) is as follows:

“the firm’s ability to integrate, build and reconfigure internal and external competences to address rapidly changing environments.”

To recapitulate, the micro-foundations of this theory (see also Section 3.6) are “distinct skills, processes, procedures, organisational structures, decision rules, and disciplines - which undergird enterprise-level sensing, seizing and reconfiguring capabilities” (Teece, 2009, p.3). Dynamic capabilities can be disaggregated into:

1. Sensing: the capacity to sense and shape opportunities and threats.
2. Seizing: the capacity to seize the opportunities.

3. Transforming: the capacity to maintain competitiveness through enhancing, combining, protecting, and when necessary, reconfiguring the business enterprise's intangible and tangible assets.

Having built on the micro-foundations of dynamic capabilities, Chapter 7 provided evidence that Bank A is innovating its established business models with four key capabilities:

1. Customer centricity.
2. Data analytics.
3. Talent management.
4. Leadership mindset.

It should be noted that these four capabilities are *not* assumptions based on the existing literature prior to data collection; instead, they were identified during the thematic data analysis process. The capabilities are the four categories that emerged from the data analysis of the case study, the multiple semi-structured interviews and the document analysis (Chapter 5 and Appendix H). In addition, Chapter 7 critically investigated how these four capabilities are developed from within the organisation and how they are also acquired from the wider FinTech ecosystem. This will be discussed further in the current chapter.

This thesis suggests that business model innovation using these four capabilities is a strategic response to achieve competitive advantage for Bank A when facing disruptive innovations in FinTech. The interrelations between dynamic capabilities, business models and business strategy are further explored in Section 8.3.2. However, prior to discussing each capability in relation to business model innovation in Bank A it is essential to understand the characteristics of these four capabilities. This is the subject of the next section.

8.3.1 Distinguishing dynamic capabilities from resources and core competences

In Chapter 3, the review of the literature on dynamic capabilities highlighted the connections between the dynamic capabilities theory and the resource-based view (RBV) theory. Teece (2009, p.53) acknowledges that the dynamic capabilities theory builds on the RBV approach, but notes that the RBV approach is ‘inherently static’. Teece (ibid.) also points out that the RBV approach only focuses on the organisation-specific assets.

Note that in this study the four capabilities – customer centricity, data analytics, talent management, and leadership mindset - should not be confused with (and are not the same as) the *key resources* from the RBV theory. The RBV theory, according to Barney (1991, p.105), insists that an organisation’s resources of sustained competitive advantage “must possess” the four ‘VRIN attributes’: valuable, rare among the organisation’s current and potential competition, imp perfectly imitable and non-substitutable. These resources may take both tangible or intangible forms.

In RBV terms, Bank A’s key resources for sustained competitive advantage include (but are not limited to) its *customer base*, *customer dataset*, *human resource* and *organisational culture*, which are then ‘recombined’, in Schumpeter’s terminology for innovation (Section 3.1), and further developed into the four capabilities: customer centricity, data analytics, talent management, and leadership mindset. These four VRIN resources can enable the bank to achieve a competitive advantage, but, consistent with Ambrosini and Bowman (2009), without the use of Bank A’s dynamic capabilities the benefit of business model innovation may be short-lived, especially when banks are operating in a rapidly changing digital ecosystem.

Instead of using the term ‘resources’, the original definition of dynamic capabilities uses the term ‘competences’ (Teece *et al.*, 1997, p.516). This definition highlights the importance of internal and external competences in the dynamic environment and states that those competences that define the organisation’s fundamental

business are its 'core competences' (ibid.). However, the current study argues that the approach of Teece *et al.* (1997) in defining an organisation's *core competences* is not clear because the authors (ibid.) seem to imply that as long as any competences are important to the business these are then considered to be core competences. According to Prahalad and Hamel (1990, pp.83-84) there are three tests to identify core competences in a company. The tests are:

1. A core competence provides potential access to the wide variety of markets.
2. A core competence should make a significant contribution to the perceived customer benefits of the end products.
3. A core competence should be difficult for competitors to imitate.

This thesis suggests that the four capabilities of Bank A are also its *core competences* because they fit the criteria set by Prahalad and Hamel (1990). For Bank A, all of the four capabilities - customer centricity, data analytics, talent management, and leadership mindset - enable a wider access to the market through the FinTech ecosystem, making significant contributions for the benefits of end-users. Furthermore, each capability is unique to the bank and is difficult for competitors to imitate.

So far much of the discussion relating to core competences has focused on Bank A, but this thesis suggests that that core competences shift from Bank A's own strategic decisions to collaborating with others across the ecosystem with platform-based business models. It has been three decades since the publication of Prahalad and Hamel's criteria and the findings of the current study, which take into account the more recent impact of digital technology innovation, could therefore be used to refresh the literature of *core competences*.

8.3.2 Interrelations between dynamic capabilities and business model innovation

The findings presented in Chapter 7 showed how the subject of the case study, Bank A, is approaching business model innovation with its four capabilities - customer centricity, data analytics, talent management, and leadership mindset – when faced with FinTech innovations. These findings are built upon the theoretical foundations of Schumpeter (1934), Nelson and Winter (1982), Teece *et al.* (1997), Chesbrough (2003) and Teece (2018).

The purpose of this section is to discuss the interrelation between dynamic capabilities and business model innovation, an aspect that has been poorly theorised in previous IS research, particularly with reference to the UK banking sector. As reviewed in Chapter 3, currently there is an inextricable link between business model innovation and dynamic capabilities. In a recent article, Teece (2018, p.40) asserts that business models, dynamic capabilities and strategy are interdependent, and implies that business model innovation is a combination of business strategy and dynamic capabilities, a position which supports the findings of the current study. The essence of business strategy is to achieve competitive advantage (Porter, 2001). Business model innovation, as shown in this thesis and consistent with a number of previous studies (Amit and Zott, 2012; Afuah, 2014; Christensen *et al.*, 2016), is seen as an important strategy formulation, innovating business models in order to enable Bank A to survive and thrive in the FinTech ecosystem. Teece (2018) further suggests a multidisciplinary model by which a company can innovate, designing and refining its business models by combining business strategy and dynamic capabilities, and specifically calls for more empirical research into business model innovation - a call which the current study answers in the context of UK banking.

In explaining the micro-foundations of the theory of dynamic capabilities, Teece (2009) highlights the importance of business models. Teece (*ibid.*, p.25) insists that the ability to develop, refine, and, if necessary, replace business models is

“foundational to dynamic capabilities” and also acknowledges that the tasks involved in designing, implementing and validating business models are not straightforward. Thus, in the perspective of dynamic capabilities, in order to innovate its business models, Bank A is able to sense the opportunities and threats from FinTech innovations by constantly scanning its dynamic environment using its existing resources and capabilities, including the utilisation of its accelerator and incubator platform. For Bank A, in line with the open innovation concept (Chesbrough, 2003), ‘sensing’ also involves other key stakeholders in the FinTech ecosystem such as end-users, university-based researchers, investors, and financial regulatory bodies and government departments. This study shows that, in ‘seizing’ the opportunities from FinTech innovations, Bank A commits its resources, leverages its existing capabilities, and experiments with new capabilities in order to innovate its business models, which ultimately create and deliver value to its customers, and that this finding is consistent with the suggestion of Teece (2018). ‘Transforming’ involves the implementation of the new business models, whether this is a change to an element of the existing business models or an entirely new business model. However, Bank A also faces challenges in innovating its business models, such as legacy technology systems, retaining its customers and its talented employees. Furthermore, the leaders of Bank A also face a dilemma when making new strategic decisions in relation to business model innovation, in the sense that they cannot be certain whether their decisions on new business models might have the unintended consequences of cannibalising the bank’s traditional revenue streams.

A close examination of the case study reveals the key insight that business model innovation is indeed not a straightforward task since, as explained in Chapter 3 and also supported by Teece (2018, p.45), any changes in the external business environment and the internal processes of the bank will also affect changes in the existing business model elements of customer proposition, profit formula, key resources and key processes. This in turn leads to changes in other elements of the ‘new’ business models. In other words, business model innovation involves a continuous innovation journey. However, this thesis could not provide a clear delineation between ‘incremental innovation’ (Tushman and Anderson, 1986) and ‘radical innovation’ (Hill and Rothaermel, 2003), because the business model

innovation in Bank A involves constant evolution both within existing business models (for example, upgrading the banking platform to cloud banking) and also through the introduction of completely new business models (for example the introduction of new products or services through the ecosystem partners' platforms).

Consistent with previous studies of dynamic capabilities (Wang and Ahmed, 2007; Teece, 2018), this thesis takes the view that dynamic capabilities are not strictly routines (Zollo and Winter, 2002) or processes (Eisenhardt and Martin, 2000). Instead, in this study of business model innovation, dynamic capabilities are *embedded in processes* (Wang and Ahmed, 2007, p.35). As seen in Chapter 7, this study could *not* conceptualise the dynamic capabilities theory – sensing, seizing and transforming – as an explicit process that can clearly identify every specific activity of Bank A at each phase. The main reason for this, as revealed by the empirical findings of this study, is that the four capabilities of Bank A - customer centricity, data analytics, talent management, and leadership mindset – are *constantly* deployed (to integrate, build and reconfigure) in innovating its business models.

From the perspective of dynamic capabilities, this study suggests that it is important to know how Bank A builds or acquires new capabilities, not just at the organisational level but also at the ecosystem level. Chapter 7 set out the detailed mechanisms by which each of the four dynamic capabilities is deployed by Bank A in innovating its business models. Interpretation of the findings in Chapter 7 and the further discussion in Section 8.2 also show how Bank A is collaborating with other key stakeholders in the FinTech ecosystem in innovating its business models. In doing so Bank A builds and acquires new capabilities through its relationships within the ecosystem, which go beyond its own organisational boundaries.

This finding is similar to the findings of Helfat *et al.* (2007, p.65) that these external relationships provide access to the resources of other key stakeholders, such as customer datasets and expertise. This is further enabled through technology: for example, key stakeholders in the ecosystem can develop complementary services

in their digital platforms through open APIs. To Helfat *et al.* (2007, p.65), such complementary capabilities, based on inter-firm knowledge sharing routines among the key stakeholders within the FinTech ecosystem, are known as 'relational capabilities'. Consistent with Helfat *et al.* (2007, p.79), in this study Bank A does not rely only on the new capabilities acquired from the ecosystem level for external growth, neither does it solely build these new capabilities from scratch with its own resources. Instead, Bank A brings these new relational capabilities together with the existing capabilities that it already has in order to create synergies and promote sustainable business model innovation. This simultaneous, ambidextrous approach will be discussed in Section 8.4. However, prior to this, the following four sub-sections provide brief discussions of each of Bank A's capabilities.

8.3.3 Customer centricity

The current study finds that *customer centricity* is one of the key capabilities of Bank A. Figure 8.2 summarises the ways in which Bank A deploys this capability when innovating its business models (see also Sections 7.4.1 and 7.5.1). The findings presented in Chapter 7 show that Bank A is becoming more customer centric in order to meet the rapidly changing needs of customers.

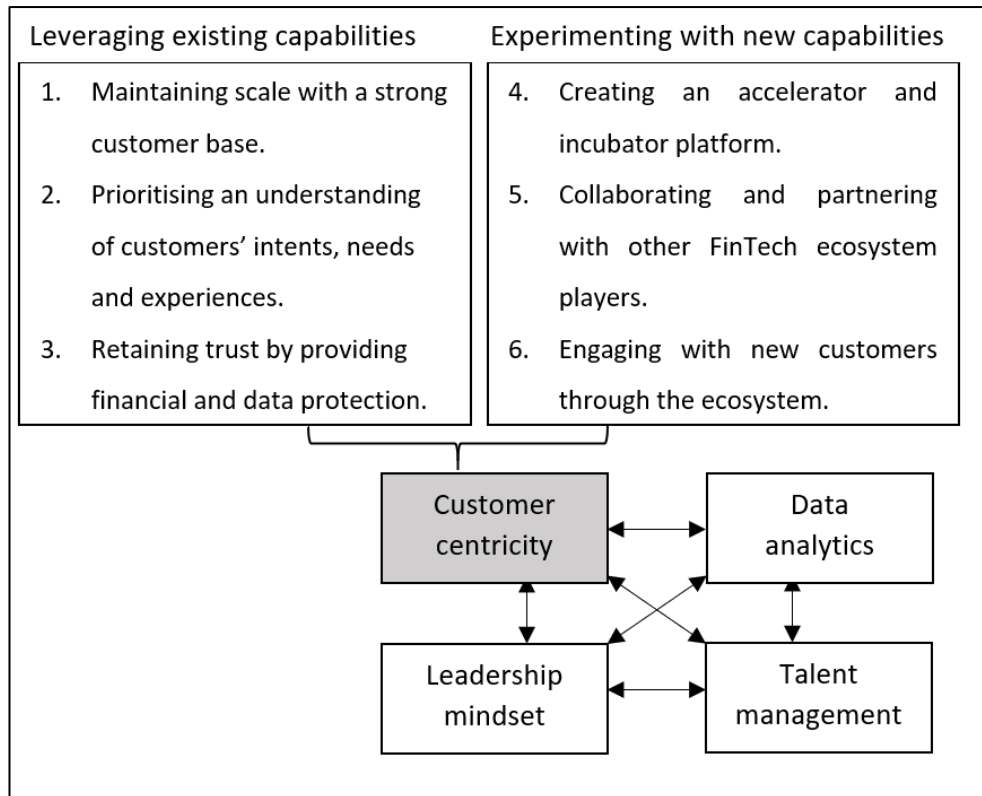


Figure 8.2: Customer centrality capability of Bank A

Customer centrality is a unique capability for Bank A, especially given its history of over a century in the UK banking sector, which fits the concept of 'path dependencies' (Teece *et al.*, 1997). In other words, the ability to achieve competitive advantage with this capability is often shaped by strategic decisions made in the past (*ibid.*). Although Bank A has possessed this capability for over a century, it has historically focused more on products and services. However, in response to the new threats and opportunities posed by FinTech innovations, the bank is now leveraging this capability to focus on its customers. At the organisational level, customer centrality is focused on the customer base, user experience and customer trust. By deploying its customer centrality capability, Bank A is developing a greater understanding of its existing customers and is able to address these customers' needs and concerns in order to deliver better customer experiences. This finding is consistent with those of Vetterli *et al.* (2016), in the case of Deutsche Bank in Germany, and Sia *et al.* (2016), in the case of DBS Bank Singapore, to the extent that the customer centrality capability within these two banks is important in their value creation processes.

At the same time, customer centricity is built from the resources available within the ecosystem, and this is therefore considered to be a new capability for the bank. As discussed in Section 8.2 the symbiotic relationships, created through participation with and contributions from all key stakeholders in the FinTech ecosystem, can provide social value for the end-user groups and the community. As such, in order to focus on customers in the wider ecosystem, Bank A has created its own accelerator and incubator platform as a mode of interaction with other key stakeholders of the FinTech ecosystem. By doing this, as well as through collaborations and partnerships, the bank is developing new capabilities based on knowledge and expertise shared within the FinTech ecosystem. These new capabilities are the 'relational capabilities' described in Section 8.3.2 and supported by Helfat *et al.* (2007).

By innovating its business model with the capability of customer centricity, Bank A can expand its customer base by attracting and acquiring new customers from the wider ecosystem via new delivery channels. Apart from traditional physical branches, by using digital channels combined with advanced data analytics banks can now provide users with options to customise their services with individual offerings. Weill and Woerner (2015, p.29) note such an application by the Commonwealth Bank of Australia (CBA). In the process of buying a house, users of CBA's smartphone app can point their smartphones at the houses they are interested in to be provided with information about the property, such as price history. This can then lead the users to getting a mortgage from the bank and eventually into becoming long-term customers of the bank. In a similar spirit, the leaders of Bank A are experimenting with several new initiatives that are currently unique to the bank, using data analytics to focus on overall end-users who may end up becoming new customers of the bank.

The current study shows that the capability of customer centricity is also dependent on other capabilities, as shown in the bi-directional arrows in Figure 8.2. This finding corroborates the findings of Shah *et al.* (2006), in which the authors suggest that a path to customer centricity involves four interrelated routes: leadership commitment, organisational realignment, systems and process support, and

revised financial metrics. However, in contrast to the findings of Shah *et al.* (2006), in the case of Bank A the customer centricity is interrelated with data analytics, talent management and leadership mindset.

8.3.4 Data analytics

As described in detail in Chapter 7 (Sections 7.4.2 and 7.5.2) the customer dataset is one of the most valuable assets of Bank A. It is therefore unsurprising that the current study finds that *data analytics* is also a key capability Bank A in its effort to innovate its business models. This finding supports previous research (Wamba *et al.*, 2017; McAfee and Brynjolfsson, 2017) in which data analytics is seen as an important organisational capability with which to establish competitive advantage. The bank's approaches to business model innovation using data analytics are summarised in Figure 8.3 below.

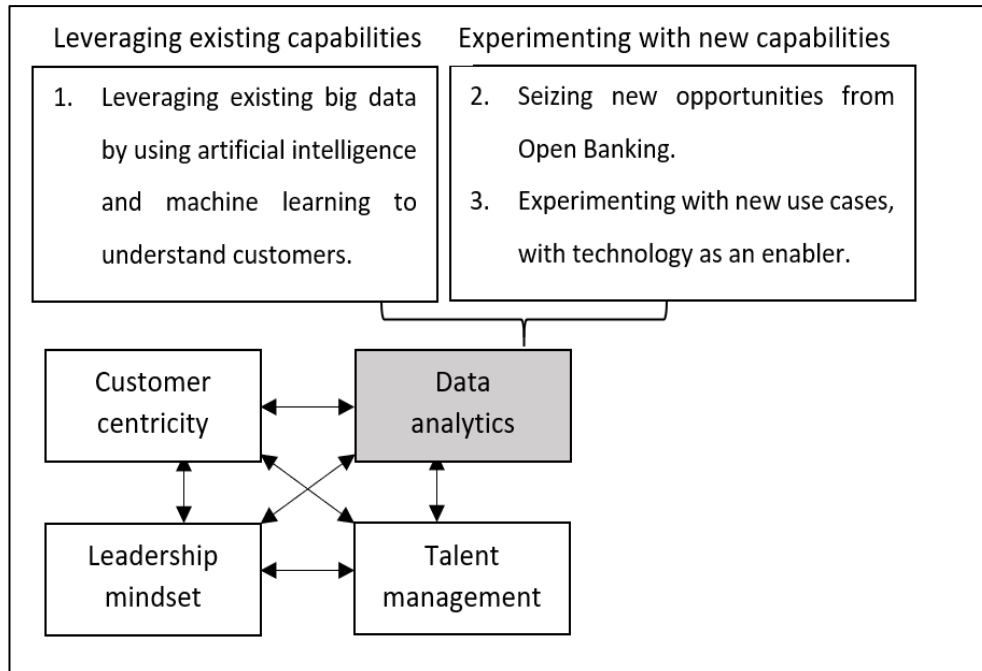


Figure 8.3: Data analytics capability of Bank A

The current study finds that Bank A is leveraging its data analytics capability, which in turn is built upon its large customer base. This finding corroborates the ideas of Porter and Heppelmann (2015), who suggested that the ability to use emerging technology such as machine learning (ML) and artificial intelligence (AI), as in the case of Bank A, can unlock the value of 'big data' in order to engage more effectively with its customers and to solve their problems.

Consistent with the concept of open innovation (Chesbrough, 2003), the data analytics capability of Bank A goes beyond the traditional R&D departments, instead engaging with many key stakeholders in the ecosystem in order to innovate its business models. The Open Banking rule is seen as an opportunity for Bank A to test the same capability of 'data analytics' at the ecosystem level. This study provides evidence that, due to the Open Banking directive, there are now more data relating to UK banking consumers available in the FinTech ecosystem that can be accessed by the bank. Therefore, in innovating its business model, Bank A is experimenting with these new data using both ML and AI to provide automation and mass personalisation for customers, and also potentially generating new revenue streams. However, this approach is not solely dependent on Bank A's own capability. Rather, Bank A is collaborating and partnering with other key stakeholders such as FinTech start-up companies and technology companies, combining their expertise and technology to find potential use cases in order to create and deliver value to customers.

It is also apparent from the study that Bank A is increasingly incorporating new technological innovations, such as smart devices with built-in connectivity, to enhance its understanding of customers and, ultimately, to innovate its business models. This finding supports the ideas of previous studies (Charitou and Markides, 2003; Chen *et al.*, 2014; Shim and Shin, 2016; Teece, 2018) that technology is an enabler for business model innovation, but it is not *the way* to innovate the bank's business models. Effective use of data analytics provides Bank A with a competitive advantage over its rivals such as digital challenger banks and FinTech start-up companies, because it enhances the bank's digital offerings with customer

personalisation while at the same time improving the customer experience in physical bank branches.

However, in order to amplify the data analytics capability of the bank, this study has shown that other capabilities – customer centricity, talent management and leadership mindset – are also instrumental for business model innovation. Although an increase in automation leads to more bank branch closures, in turn causing anxiety among the bank’s employees because of the prospect of unemployment, there is no indication in any part of the study that technology is superior to or is replacing humans, which confirms the findings of McAfee and Brynjolfsson (2017) that technology - machines and platforms - is complementary to the attributes of human minds - intuition, judgement and fast thinking.

Thus, this study could not find any evidence which indicates that the shift to platform-based business models using data analytics is superior to its talent management or leadership mindset capabilities. Instead, these capabilities are mutually dependent, as illustrated in Figure 8.3.

8.3.5 Talent management

The current study also finds that Bank A possesses a unique capability in *talent management*, which it uses when innovating its business models. Consistent with the findings of Chen *et al.* (2014), intellectual capital or talent is a vital resource to the bank in business model innovation. The concepts of ‘talent’ and ‘talent management’ were described in Chapter 7. Figure 8.4 summarises the findings presented in Sections 7.4.3 and 7.5.3, showing four ways in which Bank A deploys this capability when innovating its business model.

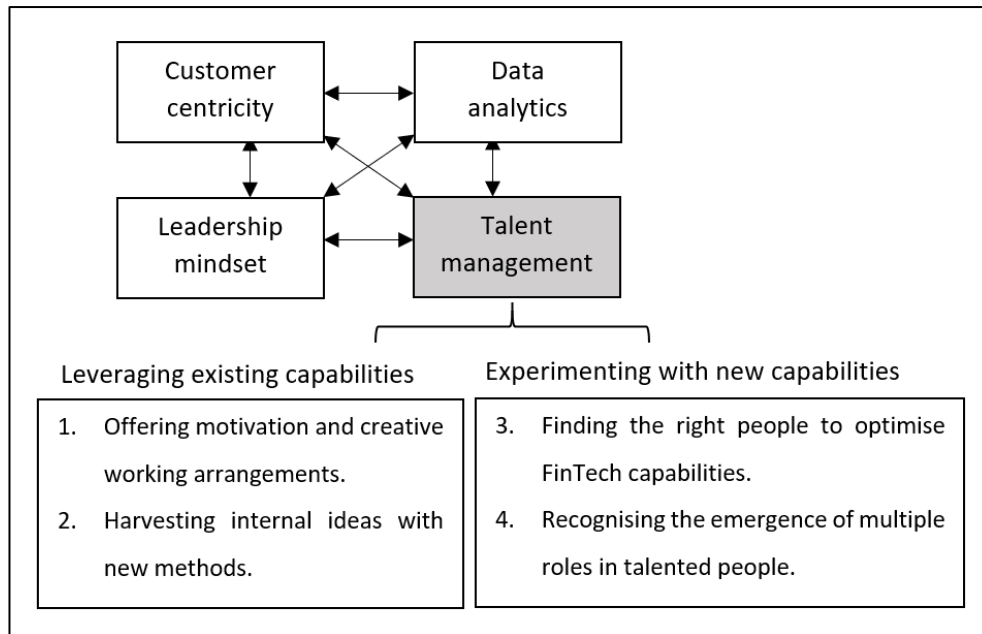


Figure 8.4: Talent management capability of Bank A

Chapter 7 provided evidence that talent management in Bank A goes beyond the 'recruitment and selection' of traditional HR management processes. At the organisational level this capability focuses on retaining existing employees with skills and expertise in FinTech. Bank A therefore invests in empowering its existing workforce and offers flexible working arrangements for its talented employees. In order to improve communication, the bank also has internal forums which allow ideas to flow in real-time from people at all levels within the bank. Additionally, the bank has its own intrapreneurial programmes to nurture talented employees with entrepreneurial skills. These findings can be compared to the research on talent management by Höglund (2012) which shows that talent inducement can have positive effects on the motivation of employees and lead them to feel empowered to develop skills and apply these in the organisation.

The current study shows that the talent management capability of Bank A involves recognising that people are part of the ecosystem and making them feel proud of their work. Chapter 2 described how the innovations in FinTech have created the need for people with new skillsets. Indeed, in the case study the leaders of the bank acknowledge that people (including the bank's existing employees) with such

skillsets and experience can have multiple roles within the ecosystem at any given moment. This is one of the consequences of interconnectedness in the ecosystem and the blurring of industry boundaries, as discussed in Section 8.2.2.

While it may be tempting to think that technical talent is most important in enabling the bank to compete in the FinTech environment, this study finds that the bank also values people with skillsets and experience in various business functions including finance, operations and marketing, and especially those people who possess knowledge and understanding in the field of FinTech. In a similar sense to the concept of “borrowing talent” described by Porter and Heppelmann (2015, p.107), Bank A is actively searching for people from the wider FinTech ecosystem to ‘work with’ or ‘work for’ the bank. This is pursued through multiple engagements within the ecosystem, especially via the bank’s accelerator and incubator platform, in order to optimise its FinTech capabilities. This highlights the importance of talent management in innovating the bank’s business models.

8.3.6 Leadership mindset

Chapter 7 (Sections 7.4.4 and 7.5.4) identified and described *leadership mindset* as one of the key capabilities of Bank A. The concept of ‘mindset’ according to Dweck (2017) can be categorised into ‘fixed mindset’ — in which intelligence is viewed as static - and ‘growth mindset’ — where intelligence can be developed. The findings of the current study presented in Chapter 7 resonate well with Dweck’s (ibid.) concept of growth mindset in leadership, in the sense that most of Bank A’s leaders are changing the way they are engaging with their employees, customers and other stakeholders in making decisions to innovate the bank’s business models. Figure 8.5 summarises five ways in which Bank A is deploying this capability in its business model innovation as a response to innovations in FinTech.

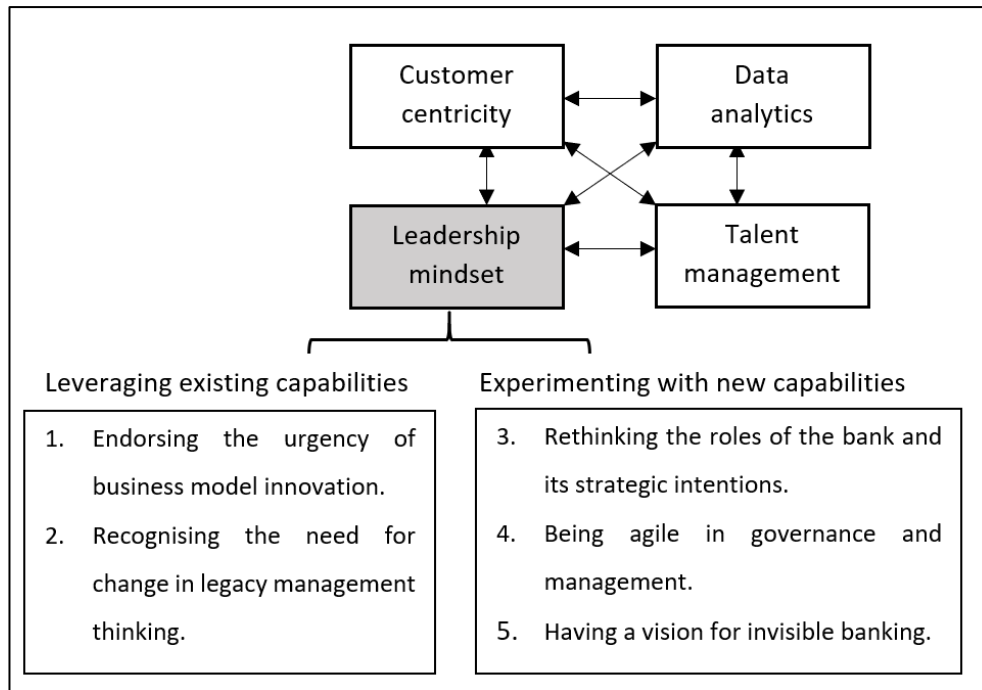


Figure 8.5: Leadership mindset capability of Bank A

At the organisational level this existing capability focuses on shifting the leadership mindset when faced with FinTech innovations rather than maintaining the status quo. This is consistent with Kotter's (2007) leading change model that insists that leaders should have a sense of urgency towards change management. Leaders of Bank A are shifting their mindset from product or services focused to customer focused with the use of a digital platform. There is wide recognition among the leaders of the bank that interactions with many key stakeholders in the FinTech ecosystem creates both opportunities and threats, and these can be both from and for the bank.

However, at the ecosystem level, when engaging with other key stakeholders, Bank A's leadership mindset capability faces increasing challenges, as shown in studies such as Chesbrough (2007), in that many leaders are more comfortable executing existing business models, since these are more familiar and reassuring. As a new capability obtained from engagement within the FinTech ecosystem, leadership mindset shifts towards an adaptive and visionary mindset. The routes to business model innovation with this new capability include rethinking the roles of the bank, being agile and having a vision for invisible banking. Rapid developments in FinTech

place pressure on the pace of innovation in a traditional bank. Furthermore, as this study finds, the FinTech ecosystem has cross-connectivity with other industries and therefore provides an opportunity for the bank's leaders to 'think bigger' and to pursue the vision of invisible banking, offering seamless products or services to customers through a partner's ecosystem as well as through its own. As a strategic response to disruptive FinTech innovation, leaders of the bank are seen to be making themselves comfortable to experiment with capabilities obtained from the wider ecosystem, rather than simply exploring new capabilities and inventing new business models on their own. This study suggests that the leadership mindset capability of Bank A corresponds to Christensen's (2000) description of the 'innovator's dilemma', in the sense that the leaders are struggling to convince themselves whether their decisions on business model innovation are right or wrong in the light of disruptive innovations.

Almost all the strategic decisions of the bank are made by its leadership team, so it is unsurprising that many studies, such as those of Eisenhardt and Martin (2000), Helfat *et al.* (2007) and Ambrosini and Bowman (2009), have emphasised leadership as crucial in shaping the dynamic capabilities of an organisation. However, as discussed in the preceding sub-sections and as illustrated by the multiple bi-directional arrows in Figure 8.5, the capability of leadership mindset has to be combined with the other three capabilities when innovating the business models of Bank A. For example, it is through a combination of customer centricity, data analytics, and talent management, that employees of the bank can use technology to create and deliver value to customers. It is important for the leaders of Bank A to adjudicate the deployment of all these capabilities so that they do not compromise the value created by the bank's own efforts towards business model innovation. Thus, the findings do not suggest that leadership mindset is the overarching capability among the four capabilities of Bank A in innovating its business models.

8.3.7 Extending dynamic capabilities theory in the context of UK banking

Previous studies (Eisenhardt and Martin, 2000; Zollo and Winter, 2002; Ambrosini and Bowman, 2009) have insisted that dynamic capabilities do not directly contribute to the performance of an organisation. Similarly, based on the empirical findings of this study, there is no evidence that the dynamic capabilities alone will produce a sustainable business model. It is important to reiterate that Bank A does not rely solely upon a single dynamic capability and, as shown in Figures 8.2, 8.3, 8.4 and 8.5, all four capabilities discussed in this section are interdependent.

This thesis finds that the interdependence of the dynamic capabilities creates opportunities (but not assurances of success) for the overall business model innovation of the bank. For example, customer centricity will not be efficient without data analytics and a customer-centric leadership mindset, while talent management is needed to obtain people with appropriate skills for data analytics and for engaging with the customers. Although leadership mindset may seem overarching, the current study suggests that this is not the case because it is still dependent on the other three capabilities in order for the leaders to make any strategic decision. Thus, as with Section 8.3.2, having illuminated some of the reasons why business model innovation is not a straightforward task, this study shows that balancing the four key capabilities is indeed difficult. However, it is not an impossible task, and this thesis is able to illuminate how Bank A accomplishes it.

In summary, this section has discussed how the recombination of the four capabilities of Bank A is essential to business model innovation in response to disruptive FinTech innovations. The degree to which these capabilities are embedded in innovating the bank's business models represents an extension of dynamic capabilities theory in the context of UK banking, helping to achieve the theoretical aim set out at the beginning of this study.

So far, the findings and discussions of this chapter have developed from having identified the 12 key stakeholders and their relationships within the FinTech ecosystem (see Section 8.2) to the mapping out of four capabilities of Bank A which are embedded in enabling its business model innovation. The next section discusses *how* Bank A is innovating its established business models using an ambidextrous approach.

8.4 Business model innovation in a traditional UK bank: an ambidextrous approach

The third and final main finding of this thesis is:

In order to adapt and stay competitive in the dynamic FinTech ecosystem, Bank A is innovating its established business models through an ambidextrous approach: while leveraging its existing capabilities the bank is also experimenting with new capabilities obtained from its engagement with the wider FinTech ecosystem.

This section discusses the significant insight gained from the overall findings of this study that the two overarching themes of this thesis - *leveraging existing capabilities* and *experimenting with new capabilities* – are not independent at the two levels of analysis (the organisation level and the wider FinTech ecosystem level). This thesis suggests that while Bank A is leveraging its existing capabilities for its business model innovation it is simultaneously experimenting with new capabilities, henceforth to be referred to together as an ‘ambidextrous approach’. This finding corroborates the concept of open innovation (Chapter 3, Section 3.2) of Chesbrough (2003), who asserted that open innovation builds upon the connection of both internal and external innovations, while also focusing on the concept of the business model. Chesbrough (2003, p.90) explains metaphorically that “the business model is a ‘double-edged sword’ for the corporation” in order to unlock the potential value of innovation.

Chapter 7 produced a business model innovation framework (depicted in Figure 7.5) that is conceptualised from the overall empirical data of this study. In order to facilitate the discussion in the current chapter, Figure 8.6 reproduces the same conceptual framework shown in Figure 7.5, but now mapped to the relevant sections of this thesis. The figure also illuminates the main finding of this study: that the bank adopts a simultaneous, ambidextrous approach towards its business model innovation at both the organisational and the ecosystem levels. This ambidextrous approach is represented by the thick bi-directional arrow, labelled 'simultaneously', in the centre of Figure 8.6 below.

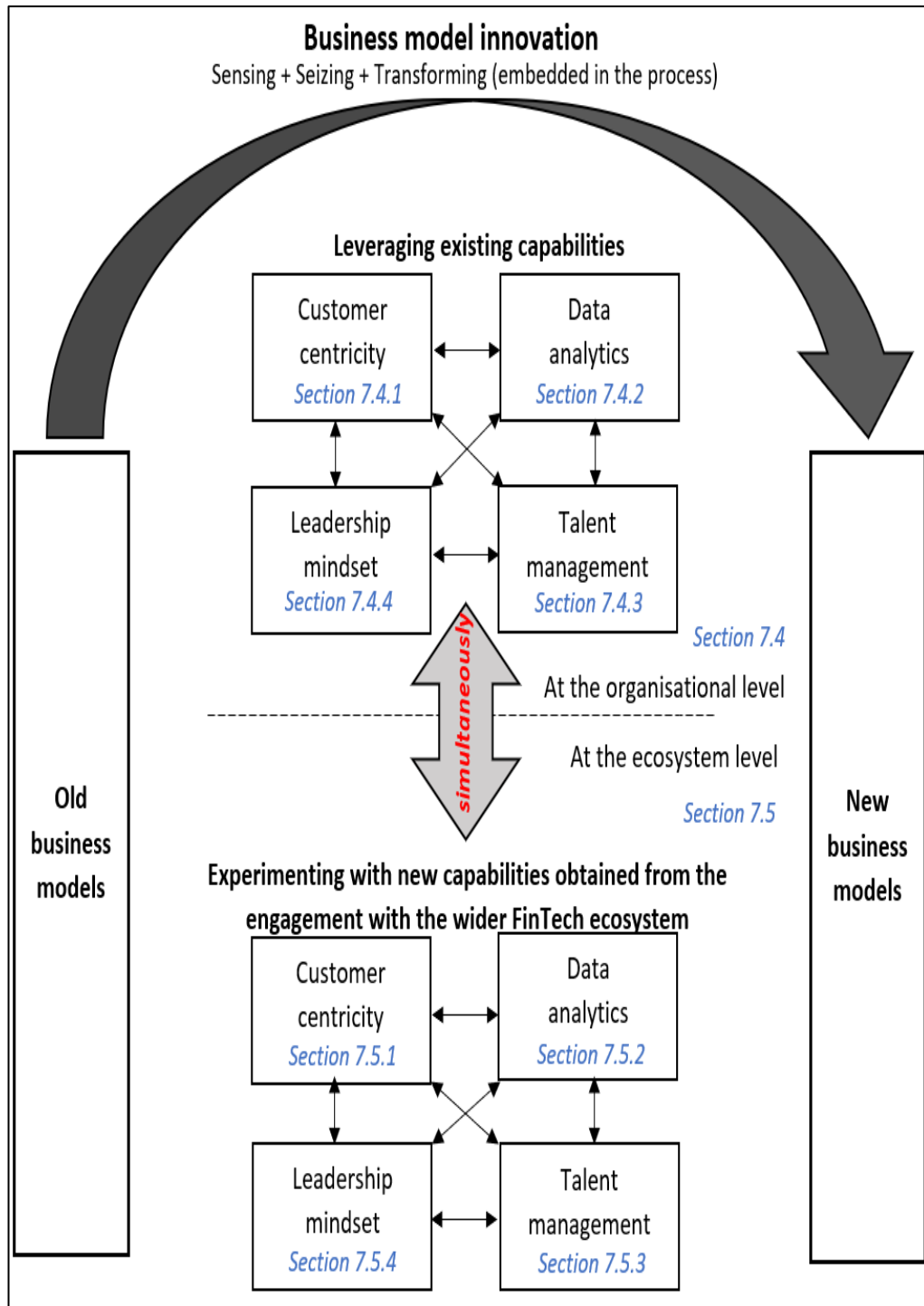


Figure 8.6: Business model innovation framework mapped to the relevant sections in the thesis

The literature relating to the notion of an *ambidextrous approach* was not reviewed in Chapter 3 since its relevance only emerged later in the study from the interpretation of the empirical findings of this research. It is therefore appropriate to explore the background to the concept of organisational ambidexterity in the next section, before continuing the discussion of the current research findings.

8.4.1 The concept of organisational ambidexterity

In the domain of organisation studies *organisational ambidexterity* is a concept that refers to the ability of an organisation to both explore and exploit in order to avoid becoming irrelevant in the face of changes in markets and technologies (March, 1991; Tushman and Anderson, 2004; O'Reilly and Tushman, 2013; Birkinshaw *et al.*, 2016). As suggested by the definition, the concept of organisational ambidexterity places emphasis on 'exploration and exploitation'. March (1991) explains that *exploration* is about searching, discovery and innovation, whereas *exploitation* is about efficiency, control and the improvement of existing assets and capabilities. After many years of reviewing how organisations managed to survive, O'Reilly and Tushman (2013) argued that organisational ambidexterity is essential for the long-term survival of a company.

Interestingly, among the studies on organisational ambidexterity, some have explored the relationships between this concept and the theory of dynamic capabilities (O'Reilly and Tushman, 2011; Birkinshaw *et al.*, 2016). O'Reilly and Tushman (2011, p.6) suggest that organisational ambidexterity is a dynamic capability of the organisation and further stress the importance of leadership in the simultaneous pursuit of exploration and exploitation. From a slightly different perspective, Birkinshaw *et al.* (2016, p.39-40) build a framework using the micro-foundations of dynamic capabilities, suggesting that 'exploration' is a 'sensing' capability, 'exploitation' is a 'seizing' capability, and the combination of exploration and exploitation determines the 'transforming' capability of an organisation. However, as explained in Section 8.3, the current study has been unable to delineate the specific activities of Bank A in terms of the micro-foundations of

dynamic capabilities because the four key capabilities of Bank A are interrelated and embedded in its business model innovation. The empirical findings presented in the current thesis suggest that the organisational ambidexterity and dynamic capabilities are complementary to business model innovation in Bank A.

The organisational ambidexterity as presented in the current thesis is the *simultaneous ambidextrous approach* (Figure 8.6) to business model innovation in Bank A, when faced with FinTech innovations. In common with the concepts of exploitation and exploration, Bank A's ambidextrous approach is built upon the themes that emerged from the empirical data analysis presented in Chapter 7 - *leveraging existing capabilities* and *experimenting with new capabilities*. These themes will be discussed in the following sections.

8.4.2 Leveraging existing capabilities

The empirical findings presented in Chapter 7 (Section 7.4) provide strong evidence that, at the organisational level, Bank A is leveraging its existing capabilities - customer centricity, data analytics, talent management and leadership mindset. Instead of the term 'exploitation' this study adopts the concept of 'leveraging' to suggest that Bank A is enhancing and maximising the impact of its existing capabilities. As explained in Section 7.4, the term 'leveraging' is considered to be more appropriate in the context of human-related resources because 'exploiting' could be regarded as insensitive. Apart from data analytics, the capabilities of Bank A draw upon human-related resources such as customers, employees and leaders.

The rationale of using this terminology in Bank A's internal approach to business model innovation is consistent with the findings of two previous studies (Ambrosini and Bowman, 2009; Makkonen *et al.*, 2014). Ambrosini and Bowman (2009, p.35) suggest that 'leveraging' involves "taking a process or system that is operating in one business unit and replicating it to another, or extending a resource by deploying it into a new domain". Meanwhile, one of the claims by Makkonen *et al.* (2014) is

that ‘leveraging’ is one of the subsets of dynamic capabilities. They define ‘leveraging’ as “the capability to utilise and deploy an existing resource in a new situation, allowing the firm to replicate an operational capability in a new market” (Makkonen *et al.*, 2014, p.2709).

There are obvious similarities between the theme of ‘leveraging existing capabilities’ in the current study and the concept of leveraging as described by Ambrosini and Bowman (2009) and Makkonen *et al.* (2014). In this study, Bank A is leveraging its existing capabilities in order to innovate its business models, which involves the utilisation of customer centricity, data analytics, talent management and leadership mindset in one or more elements of its business models (customer proposition, profit formula, key processes or key resources). However, this approach is not limited to a process or a system as claimed by Ambrosini and Bowman (2009) and it is also not subjected to operational capability as claimed by Makkonen *et al.* (2014).

Unlike the claims of Birkinshaw *et al.* (2016), leveraging the existing capabilities of Bank A goes beyond ‘seizing’ capabilities. In the current study, Bank A deploys its existing capabilities to sense and seize opportunities, and to transform its business models. For example, building on its large customer base (see Section 7.4.1) Bank A utilises its data analytics capability to ‘sense’ the behaviour of its existing customers (see Section 7.4.2) in order for its leaders to make strategic decisions in innovating its business models focusing on customers (see Section 7.4.4). Also, Bank A is empowering its talented employees through its ‘intrapreneurial’ programme (see Section 7.4.3), in which employees are given opportunities to create new ideas, products or services, which may in turn create new customer value propositions for the bank.

The next section discusses the ‘other side’ of the ambidextrous approach: experimenting with new capabilities. However, it is worth noting that the current study shows that it is not accurate to separate ‘leveraging existing capabilities’ from ‘experimenting with new capabilities’ since they are interdependent (see Figure

8.6). Bank A is integrating the new capabilities obtained through its engagements in the ecosystem into its business models, and it eventually leverages these new capabilities within the bank in order to create synergies for achieving sustainable competitive advantage.

8.4.3 Experimenting with new capabilities

The data analysis presented in Chapter 7 (Section 7.5) gives rise to the theme of 'experimenting with new capabilities'. The concept of experimentation is built on a process of 'trial and error' or a 'test and learn' approach. Consistent with Weissbrod and Bocken (2017), who suggest that experimentation is an approach to identify, test and learn new capabilities in pursuit of radical innovation, Bank A is no longer exploring (March, 1991; O'Reilly and Tushman, 2013) or searching for entirely new and unknown capabilities. Instead, Bank A is experimenting with the four capabilities - customer centricity, data analytics, talent management and leadership mindset - that it has obtained from the larger ecosystem, beyond the boundary of the organisation itself. For example, by creating its own accelerator and incubator platform, Bank A can now experiment with new use cases to solve the problems of UK banking end-users, and also have access to new FinTech-related technologies and talent from the wider ecosystem in order to help the bank innovate its existing business models effectively. This assertion addresses experimentation as a learning mechanism by which Bank A can adapt and survive in the competitive FinTech ecosystem (Huber, 1991, p.93).

The findings of this study also support and extend the findings of Chesbrough (2007) in the specific context of UK banking. Chesbrough (2007) suggests that it is impossible to know in the present exactly what the business model of a particular company will be in the future. Instead, "the only way forward is to conduct some experiments, gather the evidence, identify the promising direction and then run some further experiments" (ibid., p.17). Because the digital ecosystem evolves rapidly, Bank A will always need to be aware of, and learn about, such developments in order to stay competitive. Therefore, through active participation

in the ecosystem, the bank can experiment with the capabilities drawn from the ecosystem much more quickly than it can explore new capabilities on its own. In this way, the bank can create and deliver value to its customers much more rapidly.

Consistent with the findings of Cusumano *et al.* (2019), by shifting its business models to be digital platform-based, Bank A is able to acquire or 'borrow' new customers, data, talent and mindsets more efficiently from the wider FinTech ecosystem. Furthermore, through the symbiotic relationships among the key stakeholders in the ecosystem (discussed in Section 8.2) the bank is eliminating stiff competition by collaborating with its competitors while at the same time stimulating innovation in the banking sector. This finding is further supported by Kanter (2012) in the sense that collaborations among the key stakeholders can promote innovation and at the same time enrich the ecosystem as a whole.

Similarly to the discussion in Section 8.4.3, the approach of experimenting with new capabilities encompasses the 'sensing' or 'seizing' capabilities. Positive outcomes of its experiments can lead the bank to integrate these new capabilities with its existing capabilities. For example, by collaborating with FinTech companies and university-based researchers, Bank A can gain and test new knowledge from these stakeholders in order to create potential financial solutions for overall banking consumers. These solutions can take the form of new products, services or business models and, if tests show them to be viable, the bank can then recruit these talented people to work for it, or the bank can invest and further develop the ideas using its existing capabilities and resources and eventually integrate them into its existing business models. From this, it should now be apparent that the two themes of the current study are interdependent, and that Bank A does indeed adopt a simultaneous ambidextrous approach to business model innovation. The concept of a simultaneous ambidextrous approach, as it has emerged from this study, is discussed in the next section.

8.4.4 Simultaneous ambidextrous approach

The findings of the current study are largely consistent with the works of O'Reilly and Tushman (2011) and Maier (2015), suggesting that an ambidextrous organisation needs to exploit and explore *simultaneously*. However, some studies (Boumgarden *et al.*, 2012; Birkinshaw *et al.*, 2016) propose that it is sufficient to achieve a balance of exploitation and exploration through *sequential* ambidexterity (over a period of time in a sequential process) or *contextual* ambidexterity (alignment across a business unit). As shown in the business model innovation framework of Figure 8.6 the current study takes the dynamic capabilities perspective that Bank A's approach to its business model innovation involves simultaneously sensing, seizing and transforming its capabilities within the dynamic ecosystem. Sequential ambidexterity, which occurs over a longer period of time (O'Reilly and Tushman, 2013, p.327; Boumgarden *et al.*, 2012), is not effective for Bank A because both the dynamism of the FinTech ecosystem and the rapid developments in IT and IT infrastructure create an urgent need for business model innovation. Also, contextual ambidexterity, which confines its emphasis to individual leaders and a particular business unit, is not applicable in the current context because the FinTech ecosystem by its nature involves many key stakeholders.

While the bank is leveraging its existing capabilities, the current study shows that it is simultaneously experimenting with new capabilities. Chesbrough (2007, p.17) states that "business model innovation is difficult, but it can be done". Similarly, although the current study does not prove that the simultaneous ambidextrous approach to business model innovation is an exemplar of best practice, it does show that it is perhaps necessary in order to sustain competitive advantage in the rapidly changing FinTech ecosystem. The challenges which compel the bank to innovate its business models do not depend only on the balancing act of the two approaches and the four key capabilities, but are also greatly affected by the dynamism of the ecosystem as a whole.

In contrast to the study by O'Reilly and Tushman (2011), which suggests that in organisational ambidexterity the tasks of exploration and exploitation are dependent on leadership capability, the previous section of this thesis presents evidence that Bank A's ambidextrous approach to business model innovation is not focused on its leadership. Instead, it focuses on the simultaneous pursuit of the four capabilities of customer centricity, data analytics, talent management and leadership mindset (Figure 8.6). This finding resonates well with the concluding remarks of Kanter (2006, p.83) that established companies require flexibility and a great deal of attention to relationships to achieve the right balance between exploiting and exploring in their quest for innovation.

This section has examined how an ambidextrous approach to business model innovation in Bank A, from the perspectives of dynamic capability and the ecosystem, has emerged from the current empirical study. To summarise, business model innovation involves a process of continuous change in existing business models. This change can be either radical or incremental, and it can take place both internally (at the organisational level) and externally (through engagements with other key stakeholders in the ecosystem). In turn, it can provide a competitive advantage that enables the bank to survive and thrive in the dynamic ecosystem. Furthermore, because the changes are elusive and invisible from outside the organisation, these new business models are difficult to imitate. For these reasons, just as Teece (2018) posits that a business model is the 'architecture' for an organisation to create and deliver value, while Porter (2001) insists that business strategy is vital for an organisation to achieve its competitive advantage, this thesis argues that business model innovation involves both these concepts because it is a business strategy that focuses on the renewal of existing business models in achieving competitive advantage.

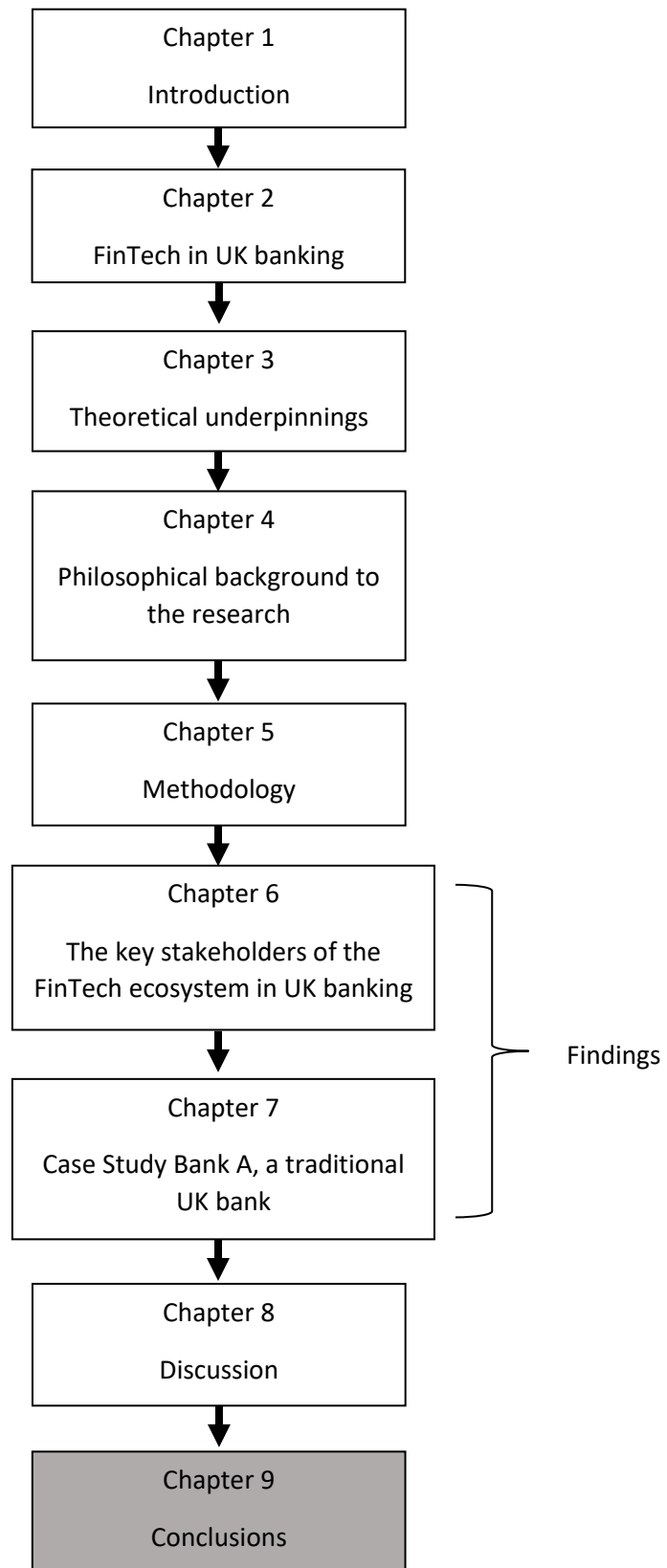
This thesis suggests a simple framework for a range of traditional organisations when innovating business models (Figure 8.6): they should leverage existing capabilities (such as customer centricity, data analytics, talent management and leadership mindset) while at the same time experimenting with new capabilities obtained through interactions with other key stakeholders in their own dynamic,

digital industry ecosystems. To conclude, perhaps a metaphor may be particularly helpful to convey the overall findings of this study to the leaders of any traditional organisation: the simultaneous ambidextrous approach is the 'new trick that old dogs can learn' in order to execute business model innovation when faced with disruptive innovation.

8.5 Chapter summary

The research question posed at the beginning of this study sought to determine the ways in which a traditional UK bank innovates its business models in order to stay competitive in the FinTech ecosystem. In order to explore this question, the current chapter has discussed the findings of the study in relation to the existing literature. The next chapter will give an overview of the research presented in this thesis and discuss its implications for theory and practice.

Structure of this thesis



Chapter 9

Conclusions

9.1 Introduction

This final chapter aims to provide an overall summary of the research and findings presented in this thesis, and to explain and justify how this work has answered the research question posed at the beginning of the study:

In the face of digital technology innovation, how do traditional organisations innovate their established business models in order to adapt and stay competitive within a dynamic industry ecosystem?

As this study predominantly focuses on financial technology (FinTech) innovations in the UK banking sector, it offers clarity in understanding business model innovation in a traditional UK bank. It shows how the bank is innovating its established business models in response to digital innovations such as FinTech in order to adapt and stay competitive within a dynamic industry ecosystem. This thesis has shown how the study meets the following research objectives:

1. To critically analyse the relevant literature on business model innovation and dynamic capabilities, particularly in the context of the banking sector.
2. To identify and understand the perspectives of the key stakeholders in the UK FinTech ecosystem.
3. To conduct an empirical investigation into business model innovation in a traditional UK bank.

This final chapter commences with a summary of the approach used in this thesis, which will recap how the research has been conducted and interpreted. A summary of key findings is then set out, followed by the main contributions to knowledge made by this thesis, focusing on both theory and practice. A discussion of the limitations of the current study and suggestions for further research follow, before the chapter concludes with a final review and summary of the work.

9.2 Summary of approach

This thesis has focused on the UK banking sector with its main unit of analysis being the business model innovation of a large traditional UK bank, anonymised as 'Bank A'. The research objectives, the choice of industry and the unit of analysis were set out in Chapter 1. Chapter 2 discussed the antecedents of FinTech in UK banking, and Chapter 3 identified the scholarly contributions of Schumpeter, Chesbrough, and Teece as the antecedents to the theoretical framework which formed the foundation of this study. Together, chapters 2 and 3 highlighted a knowledge gap arising from the limitations of existing studies into the antecedents of FinTech and a lack of research into business model innovation in the context of the UK banking sector. This in turn informed the research agenda.

Chapter 4 laid out the research philosophy that underlies the research: an interpretive approach that combines social constructionism and some aspects of hermeneutics in terms of the interpretation of meanings. Chapter 5 detailed the methodology used in conducting this study: qualitative research that comprises a case study and multiple methods of data collection. This thesis is the outcome of a rigorous analysis of 25 multiple semi-structured interviews, two focus groups and document analysis. In addition to these data sources, the study also included five data validation interviews.

Chapter 6 presented findings that identified the key stakeholders in the FinTech ecosystem and also described their relationships, which form the basis for understanding the nature of the ecosystem in this study. Chapter 7 presented the main findings of the thesis derived from a rigorous thematic analysis. This chapter describes four capabilities of Bank A and reveals the simultaneous ambidextrous approach to business model innovation that it deploys in order to adapt and stay competitive in the dynamic FinTech ecosystem. The empirical findings from both Chapters 6 and 7 were then discussed in Chapter 8 in relation to the existing body of literature.

Finally, the current chapter concludes this thesis with an overall summary of the research, highlighting its implications for both theory and practice.

9.3 Summary of key findings

This section summarises the main research findings described in the thesis. The current study has identified 12 key stakeholders within the FinTech ecosystem in the UK banking sector. These stakeholders are: traditional banks, digital challenger banks, FinTech start-up companies, technology companies, payment provider and processing companies, financial regulatory bodies and government departments, investors, incubators and accelerators, consultancy companies, university-based researchers, corporate end-users and individual end-users. The relationships among these key stakeholders can be characterised as symbiotic and mutually dependent through a dynamic process of collaboration and competition within the complex and dynamic FinTech ecosystem. The dynamism of the ecosystem blurs the industry boundaries, which in turn creates an urgent need for business model innovation in organisations such as a traditional bank.

The empirical investigation into one such traditional UK bank, Bank A, suggests that customer centricity, data analytics, talent management and leadership mindset are the four key capabilities of the bank, used in sensing change, seizing opportunities and transforming the bank's business model in the face of FinTech innovations. At the organisational level, Bank A leverages its existing capabilities of *customer centricity* to prioritise its existing customers, *data analytics* to understand its large customer dataset, *talent management* to retain its skilled employees and *leadership mindset* to recognise the need for business model innovation. However, the current study also investigates business model innovation in Bank A from the ecosystem perspective. Through its engagements with other key stakeholders across the FinTech ecosystem Bank A is experimenting with new capabilities of *customer centricity* (focused on the acquisition of new customers), *data analytics* (to understand the overall pool of UK banking consumers with technological-based use cases), *talent management* (focused on finding talented people to work with or

work for the bank) and *leadership mindset* (shifting the organisation into platform ecosystem thinking). A key insight of this finding is that all four of these capabilities are interdependent and that the recombination of these capabilities is crucial in pursuit of business model innovation.

Most importantly, the current study found that Bank A is innovating its established business models through an ambidextrous approach in order to adapt and stay competitive in the complex and dynamic FinTech ecosystem. Specifically, it is leveraging its existing capabilities while at the same time experimenting with new capabilities drawn from its engagement with the wider ecosystem. It is worth noting that this ambidexterity is a simultaneous act, and this thesis has provided an improved, more granular level of evidence as to how the bank balances its ambidextrous approach in achieving competitive advantage through business model innovation.

9.4 Contribution to knowledge

This section highlights a set of novel contributions arising from the research described in this thesis. Drawing upon the implications of the research discussed in Chapter 8, its contributions to theory and practice are laid out in following sections:

9.4.1 Implications for theory

Many of the implications for theory have been discussed at length in Chapter 8. In summary, this thesis has contributed to the literature on financial technology and business model innovation in the following ways:

The concept of innovation

The current study provides a better understanding of the concept of innovation. It suggests that business model innovation goes beyond innovation in products or services, marketing or processes, and focuses instead on change in one or more of

the elements of a business model - customer value proposition, profit formula, key resources, and key processes - in order to create and deliver value. This thesis is therefore consistent with Schumpeter's concepts of 'new combination' (Schumpeter, 1934) and 'creative destruction' (Schumpeter, 1950).

Innovation in FinTech involves many key stakeholders, notably end-users, university-based researchers, investors and financial regulatory bodies and government departments, and this elaborates the concept of 'open innovation' (Chesbrough, 2003) in the context of UK banking. Furthermore, many new FinTech business models are disruptive, and this thesis explores the traditional bank's responses to what Christensen (2000) referred to as 'innovator's dilemma'. In relation to the disruptive innovation theory (Christensen *et al.*, 2015) the current study also provides the insight that not all technology-based innovations are disruptive; instead it is the platform-based business models, which originate in low-end markets and then catch on with mainstream customers, that are disruptive innovations to a traditional organisation's business models.

Elaborating the concept of the ecosystem

The findings of the current study have also extended the literature concerning the FinTech ecosystem. Firstly, the study identifies 12 key stakeholders in the FinTech ecosystem, in contrast to Lee and Shin (2018) who identified only five groups of key stakeholders by placing emphasis on the importance of FinTech start-up companies. However, unlike the existing body of literature, the current study *does not* suggest that the specific number of key stakeholders is important, nor does it claim that this thesis has provided a comprehensive list, since the main finding is that the *FinTech ecosystem is complex and dynamic*.

The research has also revealed that there are interconnected relationships amongst the key stakeholders, which in turn supports the concept of the platform ecosystem (Selander *et al.*, 2013; Gawer and Cusumano, 2014; Parker *et al.*, 2016; Cusumano *et al.*, 2019). These relationships are characterised as symbiotic and mutually dependent, involving constant interactions, competitions and collaborations with

others within the environment, elaborating on Moore's (1993) concept of the business ecosystem in the context of UK banking. Most importantly, this thesis supports and extends the findings of Iansiti and Levien (2004a; 2004b) that the nature and characteristics of the FinTech ecosystem mean that there are no precise boundaries between the key stakeholders in the ecosystem and that no simple diagram can be drawn to comprehensively illustrate the relationships among them.

Extending the dynamic capabilities theory

A significant outcome of the research described in the current thesis is the way in which it has extended and elaborated the concept of *dynamic capabilities* (Teece *et al.*, 1997; Teece, 2018) in order to provide a better understanding of business model innovation in a traditional bank in the face of FinTech innovations, thus successfully meeting one of the original theoretical aims of the study. Focusing on the empirical context of a large traditional bank, the study has pursued its analysis into the micro-foundations of dynamic capabilities that undergird such notions as 'sensing, seizing and transforming'. This thesis is consistent with previous studies of dynamic capabilities (Wang and Ahmed, 2007; Teece, 2018) to the effect that dynamic capabilities are not strictly routines or processes but instead are *embedded in processes* and are constantly deployed in business model innovation.

The findings derived from this study explain how a traditional bank innovates its well-established business models using its four capabilities - customer centricity, data analytics, talent management, and leadership mindset - in order to adapt and stay competitive in the FinTech ecosystem. These four capabilities are already present within the organisation but are also sought and obtained from the wider ecosystem. The 'new' capabilities acquired through the engagement with other key stakeholders in the FinTech ecosystem enable inter-firm knowledge sharing routines through digital technology, which validates the concept of relational capabilities (Helfat *et al.*, 2007). Additionally, these four capabilities are mutually dependent and there is no evidence from the empirical study that any of the capabilities are more important than others in innovating the bank's business

models. Ultimately, business model innovation in Bank A involves the balancing act of deploying all four of these capabilities.

Renewal of the concept of core competences

Interestingly, the current study traces a connection to the concept of core competences (Prahalad and Hamel, 1990). The findings suggest that the four key capabilities of Bank A - customer centricity, data analytics, talent management, and leadership mindset - are also the *core competences* of the bank because they fit the criteria set by Prahalad and Hamel (1990, pp.83-84). To recapitulate, the three tests (see also Section 8.3.1) to identify core competences in a company are:

1. A core competence provides potential access to the wide variety of markets.
2. A core competence should make a significant contribution to the perceived customer benefits of the end products.
3. A core competence should be difficult for competitors to imitate.

Thus, an additional contribution of the current study is to refresh the literature of core competences in the context of business model innovation, responding to the rapid technological developments which had overtaken the previous bodies of work in this field.

Business model innovation as an ambidextrous approach

The key insight gained from this study is that in order to adapt and stay competitive in the dynamic FinTech ecosystem, the traditional bank is innovating its business models through a *simultaneous ambidextrous approach*: while *leveraging its existing capabilities*, the bank is also *experimenting with new capabilities*, obtained from its engagements with the 12 key stakeholders in the FinTech ecosystem. The bank integrates the new relational capabilities with its existing capabilities in creating synergies for sustainable business model innovation. This insight has elaborated upon the literature of organisational ambidexterity in the context of business model innovation, and it supports the argument of O'Reilly and Tushman

(2013) that organisational ambidexterity is essential for the long-term survival of a company.

Combining the literature of business models, business strategy and dynamic capabilities (for example, Porter (2001), Amit and Zott (2012) and Teece (2018)) this thesis suggests that business model innovation is in fact a business strategy that focuses on the renewal of existing business models to achieve competitive advantage. Although the strategy involves balancing the simultaneous pursuit of the ambidextrous approach and the four capabilities, it is also significantly affected by the complex and dynamic ecosystem of which it is a part.

In pursuit of extending the theoretical understanding of both business model innovation and dynamic capabilities in the context of UK banking using the case study method (Eisenhardt, 1989; Ketokivi and Choi, 2014), this study has also constructed a conceptual framework for understanding business model innovation from both the dynamic capabilities and ecosystem perspectives (Figure 7.5). It describes an ambidextrous approach of simultaneously leveraging existing capabilities and experimenting with new capabilities by deploying the recombination of the four key capabilities. The framework demonstrates how these theoretical concepts can be integrated with each other in order to better understand the phenomenon of business model innovation.

Engaged scholarship in the field of IS

Finally, in conducting this research, the current study has obtained a variety of perspectives from key stakeholders, an approach which is consistent with the method of *engaged scholarship* (Van de Ven, 2007; Rai, 2019). Engaged scholarship is a mode of research that involves obtaining a range of perspectives from key stakeholders in order to understand a complex problem such as FinTech and business model innovation (Van de Ven, 2007, p.9). Thus, it bridges the knowledge gap between theory and practice and, as Rai (2019) explains, engaged scholarship can enhance the impact of information systems (IS) through interactions with the practitioners.

Having presented the implications of this research for theory, the next section will describe the implications for practice.

9.4.2 Implications for practice

In addition to the theoretical contributions presented in the preceding section, the current study has also provided several practical contributions. From a managerial standpoint, the key insights generated from this study will be useful to practitioners across a diverse range of traditional organisations, not limited to banking, who are looking to pursue business model innovation in order to adapt and stay competitive in their own dynamic digital ecosystems. This thesis does not simply articulate why business model innovation is important: it also illuminates how it is implemented in a traditional UK bank.

This thesis presents an empirical study of a traditional bank that is operating in a dynamic FinTech ecosystem. One of the practical contributions to emerge from this is an improved understanding of the FinTech ecosystem, emphasising the fact that it is complex and dynamic, consisting of many stakeholders. There are interactions, competitions and collaborations among these stakeholders and across the ecosystem, which in turn blur the industry boundaries.

As seen in the case study, there are inherent risks and potential opportunities associated with innovating the bank's established business models. As a learning outcome of this study, a business practitioner can now understand how Bank A deploys its four capabilities - customer centricity, data analytics, talent management and leadership mindset - with a simultaneous ambidextrous approach, leveraging its existing capabilities and experimenting with new capabilities to innovate its business models. One can also learn how Bank A builds and acquires new capabilities through its engagements with other key stakeholders within the ecosystem, which it then recombines with existing capabilities within the

organisation in order to create synergies that enable sustainable business model innovation.

The findings of the research, discussed in Chapter 8 and depicted in diagrammatic form in the business model innovation framework of Figure 7.5, offer new knowledge and insights to traditional organisations in any industry by clearly showing the implications of the execution of business model innovation in pursuit of a sustainable competitive advantage when faced with disruptive innovation. Undoubtedly, these established organisations will need the capabilities to internalise and utilise the knowledge generated by this thesis and apply it in practice to their own business model innovation. With these capabilities in place, the findings of this thesis should be applicable to many other traditional organisations whose business models are also affected by technological innovation.

In order to test whether the findings presented in this thesis are indeed transferable across various industries the current study also went through the process of data validation with a research participant, E14, who is the Innovation Director of an established international car manufacturer. This face-to-face conversation took place nine months after the original semi-structured interview with this participant. Participant E14 is of the opinion that, in common with traditional banks, their organisation's established business models are also currently being affected by technological innovation. Based on the preliminary findings presented to them (see Appendix J), E14 is in agreement that the car manufacturer also has the necessary four capabilities - customer centricity, data analytics, talent management and leadership mindset - and could also replicate a similar ambidextrous approach in order to innovate its established business models in the automobile sector. Hence, there is some confidence for suggesting that a similar approach to business model innovation could also be applied in other industry ecosystems.

In addition, this thesis also suggests that there is a likelihood that the findings of the current research might map onto the contours of the 2020 coronavirus (Covid-19) pandemic, as its full implications for businesses become clearer. At the time of

writing this thesis the UK is under lockdown and, in turn, digital technology, IT infrastructure and digital platforms, are playing enormously enhanced roles in both social and economic developments. It should be noted that the technologies and services which the pandemic and associated lockdown are encouraging businesses and individuals to use are similar to many of those discussed in the current study. It seems likely that many of these changes in behaviour, particularly those involving remote access to services, information and communication, will have a permanent impact on the ways that individuals and organisations choose or are obliged to interact in the future. Clearly, many traditional organisations across a wide range of industries will be profoundly affected by the pandemic. Business model innovation based on the empirical findings presented here offers a means for these organisations to address such disruption.

9.5 Limitations of the current research

Despite the evident success of this study in addressing the research question, and the applicability of its findings to the UK banking sector and beyond, it is important to recognise a number of limitations and challenges which should be taken into consideration when looking ahead:

1. This study is conducted based on an interpretive approach that combines social constructionism and some aspects of hermeneutics in terms of the interpretation of meanings. By definition, the interpretation of the findings was therefore influenced by the pre-understandings of the researcher regarding the financial services sector. However, it is important to note that it was because of the researcher's prior understanding of the field that business jargon could be clarified, interpreted and decoded, reducing the potential for conceptual misinterpretations among the participants during interviews.

2. As always, the methodological choice of a single case study of a traditional bank may raise questions over issues of generalisability, reliability and validity. However, Bank A is one of the four largest traditional banks in the UK and thus can be considered to have some claim to being representative of the UK banking sector in a general, qualitative sense, although clearly it was not the intention of this study to achieve a statistically perfect generalisation across the entire sector. Indeed, it can be argued that by focusing intensively on a single bank and its individual research participants in all their uniqueness, this study achieves reliability and validity through the depth and detail of its engagement. Thus, although the process of gaining access to such an organisation was challenging, the data were rich and robust in providing an in-depth perspective of the phenomenon in question. It should be noted that the research participants from the bank are all executives with wide experience in FinTech and digital innovation. Furthermore, in order to reduce potential bias, in addition to the ten participants from the bank the study also included 25 participants from the wider FinTech ecosystem.
3. This study into business model innovation was analysed from the perspectives of dynamic capabilities and the digital ecosystem and clearly the findings of the study will have been influenced by the choice of these academic theories, which guided the research. Different interpretations of the findings might be reached if other theoretical perspectives were to be employed. The current study has discussed contrasting views from the existing body of literature on the applications of concepts of digital ecosystems, dynamic capabilities and organisational ambidexterity, and these may provide pointers toward possible future study.
4. By design, the scope of this thesis is limited to the context of the UK banking sector, which may differ in various ways from the banking sectors in other countries. This should be borne in mind when attempting to generalise the findings of this thesis transnationally to other banking sectors. However, despite this caveat, it is likely that the findings of this thesis are still transferable to many other geographical and industrial contexts.

5. As in any research programme, the methodological choices made in the execution of this study were constrained by limited resources such as time and money. The findings presented here are based on data collected from 2017 to 2018. As the study itself makes clear, the FinTech ecosystem is complex and rapidly evolving. It is therefore inevitable that not all of the latest changes in the ecosystem have been included in this thesis due to the time limits and finite resources under which the research was conducted. However, this research provides a firm foundation from which future studies may be able to address these new developments

9.6 Further research

This thesis indicates several directions for future research, some related more directly to the context of the banking sector and others involving applications of the concept of business model innovation to a broader context.

In the context of the banking sector, multiple case studies using a number of traditional banks in the UK could improve the findings of this thesis. This could either be done through:

1. A cross case analysis of at least the four largest UK banks, in order to obtain a more representative view of how these banks are responding to FinTech innovations, or
2. A longitudinal study of several banks to compare and contrast the effects over time of business model innovation in traditional banks.

The current study focuses on the context of the UK but, if adequate access and funding are available, future research could be extended to the FinTech ecosystems in other countries. By doing so, the research could potentially assess the similarities and differences between the UK and other countries. Referring back to the literature review, it is important to note that FinTech developments in developed countries, such as the UK or the US, are different from those in developing regions such as Africa and China.

Given that this thesis focuses on dynamic capabilities, it would be interesting for further studies to take account of other theoretical perspectives, such as complexity theory, game theory or actor-network theory. Also, as the concept of organisational ambidexterity only emerged at a later stage in the current study, one potential future study into business model innovation might focus on organisational ambidexterity, in order to further test and validate the claims made in this thesis.

Digital innovation, as explained in this thesis, has blurred the industry boundaries. Further research is needed to establish and extend the generalisability of the current findings, specifically that the approaches to business model innovation in a traditional bank can be applied to other traditional organisations in various industries, where their business models are affected by technological innovation. Thus, similar research could be carried out in other industry ecosystems, such as those of the biomedical, educational, agricultural and retail sectors to compare findings in different contexts.

As mentioned in this thesis, the proliferation of FinTech innovations and new FinTech business models over the last decade was the result of the Global Financial Crisis of 2007 to 2009. At the time of writing the world is in the midst of a new global health and economic crisis in the form of the coronavirus pandemic, whose full extent, impacts and implications are currently unknown. The research presented here was conducted before the coronavirus outbreak and it is clearly not possible to predict with certainty the innovations in FinTech or the new business models which will undoubtedly emerge in the aftermath of this crisis. Thus, there is an obvious potential for similar research to be conducted in the future, in order to understand how both business model innovation in traditional UK banks and the dynamism of the future FinTech ecosystem respond and adapt to the current unprecedented events.

9.7 Conclusion

This study set out to meaningfully address the initial research question:

In the face of digital technology innovation, how do traditional organisations innovate their established business models in order to adapt and stay competitive within a dynamic industry ecosystem?

Over the preceding chapters this thesis has set out in detail how the overall research aims have been achieved, providing a novel set of contributions to knowledge (Section 9.4) including the elaboration of existing theoretical concepts, and its implications for practice. Possible limitations and caveats to the current findings have been acknowledged and discussed (Section 9.5) and the thesis has identified potential avenues for further research (Section 9.6).

The findings presented here provide a novel and improved understanding of business model innovation in traditional organisations, specifically the ways in which a traditional UK bank innovates its established business models in response to digital innovations such as FinTech in order to adapt and stay competitive within a dynamic ecosystem. The potential exists for the knowledge created here to be transferred and extended to traditional organisations in other industries that are also affected by digital innovation and which inhabit their own technological ecosystems. This thesis provides a firm foundation from which such future work may proceed.

Appendices

Appendix A: Interview guide 1



DRAFT INTERVIEW SCHEDULE For UREC application (updated 9 MAY 2017)

Research Title: Financial Technology and Business Model Innovation: A Study of Disruption in the UK Banking Industry

- Introduction
 1. Introducing myself, thank the participant for the informed consent.
 2. Introducing the research project.
 3. Inform the estimated duration of the interview (approximately 1 hour for each interview) and/or 1 to 2 hours (for the focus group).
 4. Information regarding the confidentiality and anonymity.
 5. Information of audio-recording the conversation and the reasons
 6. Remind the participant of his/her rights – e.g. it is an option to answer or not to answer any of the interview questions.
 7. Explain my use of terminology, such as financial technology and its abbreviation FinTech, as well as digital innovation. Check these meanings are clear to the participant.
- Opening questions
 1. Can you tell me about your role in the FinTech ecosystem of Bank A / banking industry?
- Main body of the interview (sub-sets are follow-up questions)
 1. What are the most important contemporary developments in financial technology in the banking industry?
 - a. Why is this?
 2. What are your thoughts about the impact of FinTech on traditional banking business models?
 3. How is FinTech innovation disrupting the banking sector, as you see it?
 - a. What are the threats and opportunities presented by this?
 - b. Which business units are affected the most? Why is this?
 4. (Where a bank employee is being interviewed), How is your bank responding to the developments involving FinTech?
 - a. What is the bank's strategy when it comes to digital technology? Can you explain how successful has this been?
 - b. Who are making these strategic decisions? When was that?
 - c. Have these developments caused you to rethinking aspects about the bank's business model (please explain why, if so)?
 - d. Can you share with me which things have gone particularly well or not as well as expected? Why these?
 5. What are Bank A's digital platforms?
 - a. Why have these been chosen? By whom?
 - b. What were the challenges in introducing and using these?
 - c. Are these different from its competitors? (If so, why is that?)
 - d. What is next in terms of new technologies and platforms?

6. What do FinTech stakeholders need to understand about FinTech and the banks' business model, in order to prepare for the future?
7. Final question, I'd like to know what you think about the outlook of FinTech innovation in the banking industry.

- Closing the interview

1. These are all the questions that I have for the project. Is there anything else that you would like to tell me?
2. Can I contact you if I need further clarification? Is there anyone else you suggest I should interview?
3. If there is something else that you would like to know about my research, please be in contact.
4. Thank you for your time.

Michelle Yeong
PhD Student,
Oxford Brookes Business School
16035056@brookes.ac.uk or myeong@brookes.ac.uk

|

CONFIDENTIAL

INTERVIEW SCHEDULE (for Bank A plc)

Research Title: Financial Technology and Business Model Innovation: A Study of Disruption in the UK Banking Industry

- Introduction

1. Introducing myself, thank the participant for the informed consent.
2. Introducing the research project.
3. Inform the estimated duration of the interview (approximately 1 hour for each interview)
4. Information regarding the confidentiality and anonymity.
5. Information of audio-recording the conversation and the reasons
6. Remind the participant of his/her rights – e.g. it is an option to answer or not to answer any of the interview questions.
7. Explain my use of terminology, such as financial technology and its abbreviation FinTech, as well as digital innovation. Check these meanings are clear to the participant.

- Opening questions

1. What do the FinTech ecosystems mean to BankA, as you understand?
 - a. What is your involvement in this? Can you tell me about your role in BankA?

- Main body of the interview (sub-sets are follow-up questions)

1. From your perspective, how is FinTech innovation disrupting BankA's business model?
 - a. How is BankA responding to this? (i.e. what is BankA's digital innovation?)
 - b. Why? – (as in opportunities and threats presented by this?)
 - c. Where? – (as in which business units affected the most?)
2. Where do technology developments come in, as part of payment innovation process?
 - a. What about the role of machine learning and big data analytics?
3. With the dynamic ecosystems and the implementation of PSD2, Open Banking and the forthcoming Ring Fencing, can you share with me how BankA is responding to these?
 - a. Sensing: What is the process of identifying the opportunities in terms of technology innovation?
 - b. Seize: How do your corporate strategies influence the developments in BankA's business model? Can you provide some concrete examples? (the management's ability to develop and refine business models)
 - c. Transform: How does BankA realign the existing capabilities and invest in new capabilities? Can you explain more of these? Who are making these strategic decisions?
4. Are these strategies different from your competitors (the big banks, the digital challengers, tech giants)?
5. In terms of your digital transformation journey,
 - a. Can you share with me how successful this has been?
 - b. What are some of the biggest challenges you have faced during these times?

6. One last question, I'd like to know what you think about what the stakeholders need to understand about the payment innovation and banks business model, in order to prepare for the future? (In the U.K.)
- Closing the interview
1. These are all the questions that I have for the project. Is there anything else that you would like to tell me?
 2. Can I contact you if I need further clarification? Is there anyone else you suggest I should interview?
 - a. Request for documentary data, reports or slides
 - b. Quick chat in few months time
 - c. Summary of findings
 3. If there is something else that you would like to know about my research, please be in contact.
 4. Thank you for your time.

Michelle Yeong
PhD Student,
Oxford Brookes Business School
myeong@brookes.ac.uk

12 January 2018

PARTICIPANT INFORMATION SHEET

Research Title: Financial Technology and Business Model Innovation: A Study of Disruption in the UK Banking Industry

You are being invited to take part in a doctoral research study. Before you decide whether or not you wish to participate, 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 and discuss it with others if you wish.

What is the purpose of the study?

The study is a Full-Time PhD research project, which runs from October 2016 to January 2020. The research aims to analyse how the UK banking industry and its established business models are being disrupted by financial technology (FinTech) innovation through the perspective of an established UK bank. The study intends to assess the nature and context of FinTech development, with a focus of the UK banking industry and to evaluate the banks' responses in managing the disruption from FinTech.

Why have I been invited to participate?

You have been invited to participate in this study because you are one of the key personnel in an organisation that is actively involved in the FinTech ecosystem. As such you are one of about 20 to 30 [people](#) I would like to interview given your professional role in the organisation. Interview participants will include: bank employees, such as business unit managers, directors of innovation, the chief information officer and the chief operating officer; the entrepreneurs behind FinTech companies that are collaborating with or have been acquired by the bank; the representatives of FinTech incubators; the representatives of the FinTech accelerators and the representatives of the regulators, such as the Financial Conduct Authority or the Bank of England.

Do I have to take part?

The participation in the research is entirely voluntary. It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep. If you decide to take part, you are still free to withdraw at any time without giving a reason and any unprocessed data will be removed from the study.

What will happen to me if I take part?

If you have decided to take part, you will be given a set of interview questions in advance, asking for your opinion with regards to FinTech and its disruptive effects in the UK banking industry, particularly as seen from your organisation's perspective.

It is expected that the interview will take about 1 hour. The interview will only be audio recorded with your permission. In order to ensure confidentiality, all data obtained from the interview will be de-identified and be replaced with codes. All findings will only be used for academic purposes.

What are the possible disadvantages and risks of taking part?

The only disadvantage to take part in the study is your time.

What are the possible benefits of taking part?

The benefits of taking part include a better understanding of FinTech in the banking industry and how banks are responding to the disruption. The research will also identify strategic options available to banks when faced with potential digital disruption.

Will what I say in this study be kept confidential?

All information collected about and from the participants will be treated with strict confidence (subject to legal limitations). The identities of the participants will be anonymised. The data collection, storage and publication of research material will similarly ensure that anonymity and confidentiality are maintained. The research team is not interested in any competitively sensitive information of the organisations and the participants.

The research data will be kept securely at all times, especially when collected in the field before being transported back to Oxford Brookes University. The research tools, including a computer notebook, a tablet and a smartphone, will be encrypted with biometric and password protection. All data will be stored in Google Drive, for which the University has a security agreement.

Data generated by the study will be retained in accordance with the University's policy on Academic Integrity. The data generated in the course of the research will be kept securely in paper or electronic form for a period of ten years after the completion of a research project.

What should I do if I want to take part?

If you decided to take part in the study, please indicate your interest by email to the researcher at myeong@brookes.ac.uk. Thereafter, the researcher will be in contact with you to arrange for an appointment to conduct the interview.

What will happen to the results of the research study?

The results of the research will be used in the writing of thesis in fulfilment of a PhD at Oxford Brookes University. It may also be used in academic presentations in conferences and possibly contribute to various published papers in academic journals.

The summary of findings will be available to the participants by email request upon completion of the PhD. This may take the form of a brief report, or in a meeting with the representatives or management team, depending on the request in question.

Additionally, an interview transcript summary will be offered to each participant for review.

Who is organising and funding the research?

The researcher is a current PhD student in the Business School of Oxford Brookes University, United Kingdom. The research is organised and funded solely by the researcher. The research supervisors are Dr Paul Jackson and Dr Diana Limburg.

Who has reviewed the study?

The research has been approved by the University Research Ethics Committee, Oxford Brookes University.

Contact for Further Information

If you have any concerns or questions about any aspects of the study, please contact the researcher, Michelle Yeong using the details below. The contact details of the research supervisors are also included below.

Michelle Yeong
Oxford Brookes Business School
Oxford Brookes University
Headington Campus
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Email: myeong@brookes.ac.uk
Phone: 07498 304143

Research supervisors:
Dr Paul Jackson
Oxford Brookes Business School, Oxford Brookes University
Email: pjackson@brookes.ac.uk
Phone: 01865 485733

Dr Diana Limburg
Oxford Brookes Business School, Oxford Brookes University
Email: dlimburg@brookes.ac.uk
Phone: 01865 485939

If you have any concerns about the way in which the study has been conducted, you should contact the Chair of the University Research Ethics Committee on ethics@brookes.ac.uk.

Thank you for taking time to read the information sheet.

Date: 16 MAY 2017

Appendix D: Participant information sheet: focus groups

PARTICIPANT INFORMATION SHEET (for Focus Group)

Research Title: Financial Technology and Business Model Innovation: A Study of Disruption in the UK Banking Industry

You are being invited to take part in a doctoral research study. Before you decide whether or not you wish to participate, 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 and discuss it with others if you wish.

What is the purpose of the study?

The study is a Full-Time PhD research project, which runs from October 2016 to January 2020. The research aims to analyse how the UK banking industry and its established business models are being disrupted by financial technology (FinTech) innovation through the perspective of an established UK bank. The study intends to assess the nature and context of FinTech development, with a focus of the UK banking industry and to evaluate the banks' responses in managing the disruption from FinTech.

Why have I been invited to participate?

You have been invited to participate in this study because you are one of the individual end-users of the UK banking and FinTech products and services. As such you are one of 5 to 8 [people](#) I would like to invite for one of two focus group discussions based on your role either as a mature-user or a millennial user.

Do I have to take part?

The participation in the research is entirely voluntary. It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep. If you decide to take part, you are still free to withdraw at any time without giving a reason and any unprocessed data will be removed from the study.

What will happen to me if I take part?

If you have decided to take part, you will be given a set of questions in advance, asking for your opinion with regards to FinTech and its disruptive effects in the UK banking industry, particularly as seen from your perspective as an individual end-user.

It is expected that the focus group will take about 1 hour and the discussion will be audio-recorded. In order to ensure confidentiality, all data obtained from the focus group will be de-identified and be replaced with codes. All findings will only be used for academic purposes.

What are the possible disadvantages and risks of taking part?

The only disadvantage to take part in the study is your time.

What are the possible benefits of taking part?

The benefits of taking part include a better understanding of FinTech in the banking industry and how banks are responding to the disruption. The research will also identify strategic options available to banks when faced with potential digital disruption.

Will what I say in this study be kept confidential?

All information collected about and from the participants will be treated with strict confidence (subject to legal limitations). The identities of the participants will be anonymised. The data collection, storage and publication of research material will similarly ensure that anonymity and confidentiality are maintained. The research team is not interested in any competitively sensitive information of the organisations and the participants.

The research data will be kept securely at all times, especially when collected in the field before being transported back to Oxford Brookes University. The research tools, including a computer notebook, a tablet and a smartphone, will be encrypted with biometric and password protection. All data will be stored in Google Drive, for which the University has a security agreement.

Data generated by the study will be retained in accordance with the University's policy on Academic Integrity. The data generated in the course of the research will be kept securely in paper or electronic form for a period of ten years after the completion of a research project.

What should I do if I want to take part?

If you decided to take part in the study, please indicate your interest by email to the researcher at myeong@brookes.ac.uk. Thereafter, the researcher will be in contact with you to arrange for an appointment to conduct the focus group.

What will happen to the results of the research study?

The results of the research will be used in the writing of thesis in fulfilment of a PhD at Oxford Brookes University. It may also be used in academic presentations in conferences and possibly contribute to various published papers in academic journals.

The summary of findings will be available to the participants by email request upon completion of the PhD. This may take the form of a brief report, or in a meeting with the representatives or management team, depending on the request in question.

Additionally, a focus group data transcript summary will be offered to all the focus group participants for review.

Who is organising and funding the research?

The researcher is a current PhD student in the Business School of Oxford Brookes University, United Kingdom. The research is organised and funded solely by the researcher. The research supervisors are Dr Paul Jackson and Dr Diana Limburg.

Who has reviewed the study?

The research has been approved by the University Research Ethics Committee, Oxford Brookes University.

▲ **Contact for Further Information**

If you have any concerns or questions about any aspects of the study, please contact the researcher, Michelle Yeong using the details below. The contact details of the research supervisors are also included below.

Michelle Yeong
Oxford Brookes Business School
Oxford Brookes University
Headington Campus
Oxford, OX3 0BP
Email: myeong@brookes.ac.uk
Phone: 07498 304143

Research supervisors:
Dr Paul Jackson
Oxford Brookes Business School, Oxford Brookes University
Email: pjackson@brookes.ac.uk
Phone: 01865 485733

Dr Diana Limburg
Oxford Brookes Business School, Oxford Brookes University
Email: dlimburg@brookes.ac.uk
Phone: 01865 485939

If you have any concerns about the way in which the study has been conducted, you should contact the Chair of the University Research Ethics Committee on ethics@brookes.ac.uk.

Thank you for taking time to read the information sheet.

Date: 15 JULY 2018

Appendix E: Consent form: semi-structured interviews



CONSENT FORM

Full title of Project:
Financial Technology and Business Model Innovation: A Study of Disruption in the UK Banking Industry

Name, position and contact address of Researcher:
Michelle Yeong, PhD Student, Oxford Brookes Business School, Oxford OX3 0BP, U.K.
myeong@brookes.ac.uk or 07498 304143

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.	☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason, and that any unprocessed data will be deleted.	☐
3. I agree to take part in the above study.	☐

Please initial box

	Yes	No
4. I agree to the interview being audio recorded	☐	☐
5. I agree to the use of anonymised quotes in publications	☐	☐
6. I agree that my data gathered in this study may be stored (after it has been anonymised) in a specialist data centre and may be used for future research.	☐	☐

Name of Participant	Date	Signature
Name of Researcher	Date	Signature

Appendix F: Consent form: focus groups

CONSENT FORM (for Focus Group)

Full title of Project:

Financial Technology and Business Model Innovation: A Study of Disruption in the UK Banking Industry

Name, position and contact address of Researcher:

Michelle Yeong, PhD Student, Oxford Brookes Business School, Oxford OX3 0BP, U.K.
myeong@brookes.ac.uk or 07498 304143

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.
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason, and that any unprocessed data will be deleted.
3. I agree to take part in the above study.
4. I understand that the focus group will be audio-recorded.

☐☐☐☐

Please initial box

5. I agree to the use of anonymised quotes in publications
6. I agree that my data gathered in this study may be stored (after it has been anonymised) in a specialist data centre and may be used for future research.

Yes

No

☐☐☐☐

Name of Participant

Date

Signature

Michelle Yeong

Name of Researcher

Date

Signature

Appendix G: First cycle codes in NVivo12 using Saldana's (2016) coding method

	Codes in NVivo12 (in alphabetical order)	Code Type
1	Accelerator-Incubator-Platform	Descriptive code
2	Artificial Intelligence and machine learning	Descriptive code
3	Banking to be seamless and invisible	Descriptive code
4	Change in governance including finance processes and platform planning	In Vivo code
5	Change in strategy team function	In Vivo code
6	Closing branches	Process code
7	Collaboration with startups i.e. partnerships	Descriptive code
8	Community reach- financial and technology education	Descriptive code
9	Consumer behaviour and user experience UX	Structural code
10	Consumer trust	Structural code
11	Creating the platform, API, Cloud	Process code
12	Culture change	In Vivo code
13	Customer centric	Structural code
14	Data driven innovation	Structural code
15	Developing new business models- create and capture value	Process code
16	Ethics and data privacy concerns	Descriptive code
17	Experimentation	Descriptive code
18	FinTech start-ups' business models	Descriptive code
19	Idea harvesting	In Vivo code
20	Identifying the new way of working	Process code
21	Intrapreneurial programme	Descriptive code
22	Legacy system and technology	Descriptive code
23	Management mindset change is needed	In Vivo code
24	Multiple roles in the ecosystem- blurring boundary	Descriptive code
25	Omni-channel	Structural code
26	Opportunity for staff to deliver new products and engage with customer	In Vivo code
27	Quicker pace	In Vivo code
28	Relationship with customers	Descriptive code
29	Responding to the regulations and open banking	Process code
30	Responding to threats from challengers	Process code
31	Roles in the ecosystem- experience and responsibilities	Attribute coding
32	Scale and customer base	Descriptive code
33	Solving customers' problems	Process code
34	Staying relevant	In Vivo code
35	Symbiotic relationship and interconnectedness	Descriptive code
36	Talent and people	Structural code
37	Technology as enabler	Descriptive code

Appendix H: Data structure: development of themes

	Codes in NVivo12	Sub-categories	Categories	Emergent Themes	
1	Scale and customer base	Maintaining scale with a strong customer base	Customer centricity	Leveraging existing capabilities	
2	Relationship with customers	Prioritising in understanding of customers' intents, needs and experiences			
3	Solving customers' problems				
4	Customer centric				
5	Consumer behaviour and user experience UX				
6	Consumer trust	Retaining trust by providing financial and data protection			
7	Ethics and data privacy concerns				
8	Artificial Intelligence and machine learning	Leveraging existing big data by using AI/ML to understand customers	Data analytics		Leveraging existing capabilities
9	Data driven innovation	Offering motivation and creative working arrangements	Talent management		
10	Identifying the new way of working				
11	Opportunity for staff to deliver new products and engage with customer				
12	Idea harvesting				
13	Intrapreneurial programme	Harvesting internal ideas with new methods			
14	Legacy system and technology	Endorsing the urgency of business model innovation	Leadership mindset		
15	Staying relevant				
16	FinTech start-ups' business models				
17	Management mindset change is needed				
18	Culture change	Recognising the need for a change in legacy management thinking			
19	Accelerator-Incubator-Platform	Creating an accelerator and incubator platform	Customer centricity	Experimenting with new capabilities	
20	Creating the platform, API, Cloud				
21	Responding to threats from challengers	Collaborating and partnering with other FinTech ecosystem players			
22	Symbiotic relationship and interconnectedness				
23	Collaboration with startups i.e. partnerships				
24	Omni-channel	Engaging with new customers throughout the ecosystem			
25	Community reach- financial and technology education				
26	Responding to the regulations and open banking	Seizing new opportunities from Open Banking	Data analytics		
27	Experimentation	Experimenting new use cases with technology as an enabler			
28	Technology as enabler				
29	Developing new business models- create and capture value				
30	Talent and people	Finding the right people to optimise FinTech capabilities	Talent management		
31	Roles in the ecosystem- experience and responsibilities	Recognising the emergence of multiple roles in talented people			
32	Multiple roles in the ecosystem- blurring boundary				
33	Change in governance including finance processes and platform planning	Rethinking the roles of bank and its strategic intents	Leadership mindset		
34	Change in strategy team function				
35	Quicker pace	Being agile in governance and management			
36	Banking to be seamless and invisible	Having the vision for invisible banking			
37	Closing branches				

Appendix I: Multiple screenshot photos of data analysis via NVivo12

Nodes			
Name	Files	References	
Accelerator Incubator Platform	21	73	
Artificial intelligence and machine learning	18	43	
BankA	0	0	
Banking to be seamless and invisible	18	34	
Change in governance including finance processes and platform planning	14	24	
Change in strategy team function	4	6	
Closing of branches	14	35	
Collaboration with startups i.e. partnerships	21	58	
Community Financial and technology education	13	31	
Consumer behaviour and user experience UX	19	66	
Consumer trust	13	30	
Creating the platform, API, Cloud	23	99	
Culture change	21	45	
Customer centric	25	75	
Data driven innovation	19	55	
Developing new business models- create and capture value	27	144	
Ecosystem	0	0	
End-user perspectives	0	0	
Ethics and data privacy concerns	17	45	
Experimentation	18	43	
FinTech start-ups' business models	23	65	
Idea harvesting	18	48	
Identifying the new way of working	19	49	
Intrapreneurial programme	8	26	
Legacy system and technology	25	75	
Management mindset change is needed	21	46	
Multiple roles in the ecosystem- blurring boundary	12	21	
omni-channel	8	16	
Opportunity for staff to deliver new products and engage with customer	23	63	
Quicker pace	22	59	
Relationship with customers	13	40	

Interviews BankA			
Name	Codes	References	
BankA_A01		58	176
BankA-A02		54	164
BankA-A03		56	143
BankA-A04		55	166
BankA-A05		49	112
BankA-A06		57	168
BankA-A07		51	117
BankA-A08		54	152
BankA-A09		50	130
BankA-A10		45	104

Interviews Ecosystem						
Name	Codes	References	Modified On		Modified	
Ecosystem-E01		47	124	11/12/2018 20:09	MY	
Ecosystem-E02		51	148	11/12/2018 20:10	MY	
Ecosystem-E03		51	197	11/12/2018 20:10	MY	
Ecosystem-E04		40	103	11/12/2018 20:10	MY	
Ecosystem-E05		37	66	11/12/2018 20:11	MY	
Ecosystem-E06		47	87	11/12/2018 20:11	MY	
Ecosystem-E07		53	140	29/12/2018 16:24	MY	
Ecosystem-E08		46	95	11/12/2018 20:12	MY	
Ecosystem-E09		49	91	11/12/2018 20:12	MY	
Ecosystem-E10		48	123	11/12/2018 20:12	MY	
Ecosystem-E11		49	107	11/12/2018 20:13	MY	
Ecosystem-E12		52	104	11/12/2018 20:13	MY	
Ecosystem-E13		45	51	11/12/2018 20:13	MY	
Ecosystem-E14		55	122	11/12/2018 20:14	MY	
Ecosystem-E15		44	77	11/12/2018 20:14	MY	

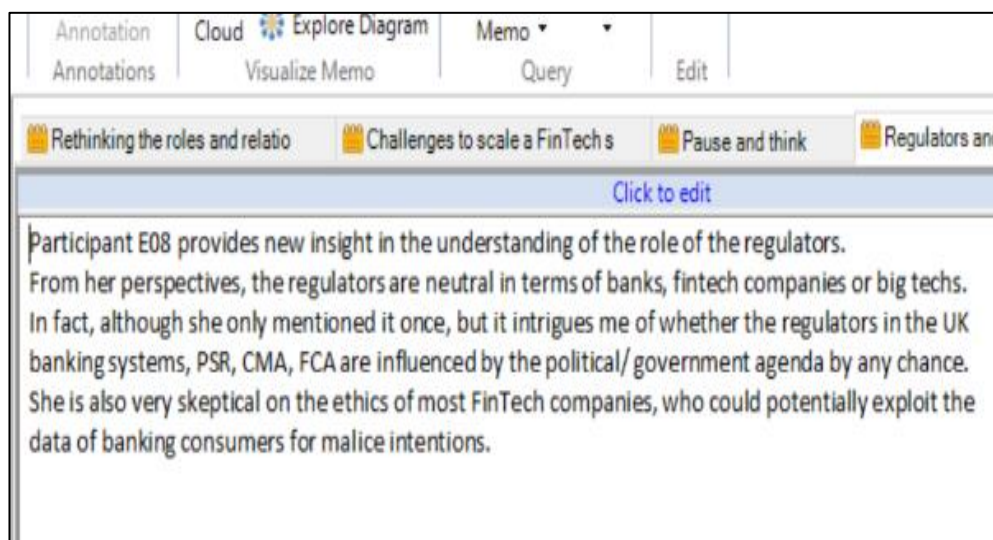
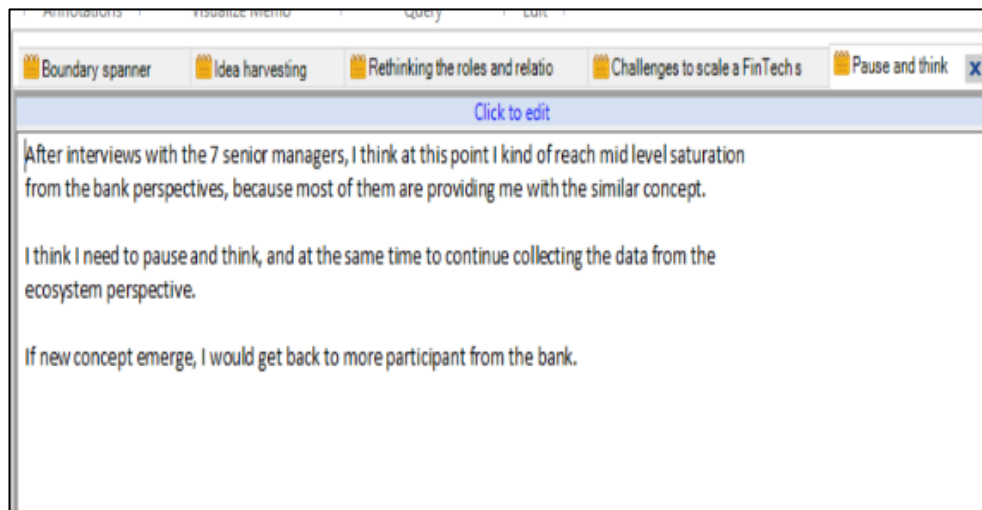
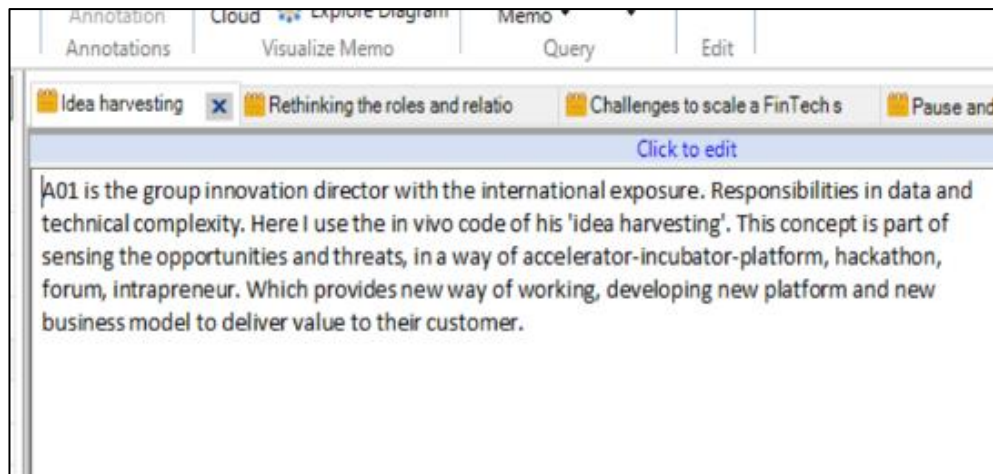
Two focus groups			
Name	Codes	References	
Focus Group 1 (University students end-users)		208	372
Focus Group 2 (Senior end-users)		196	360

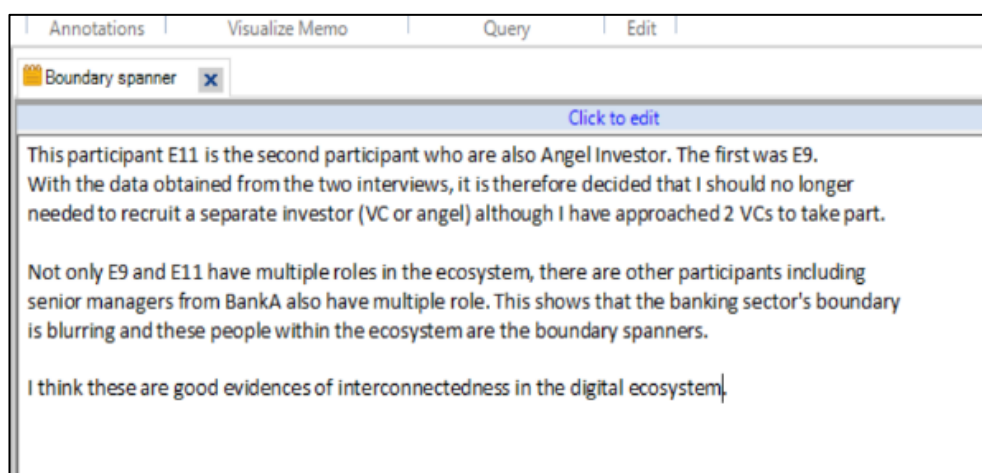
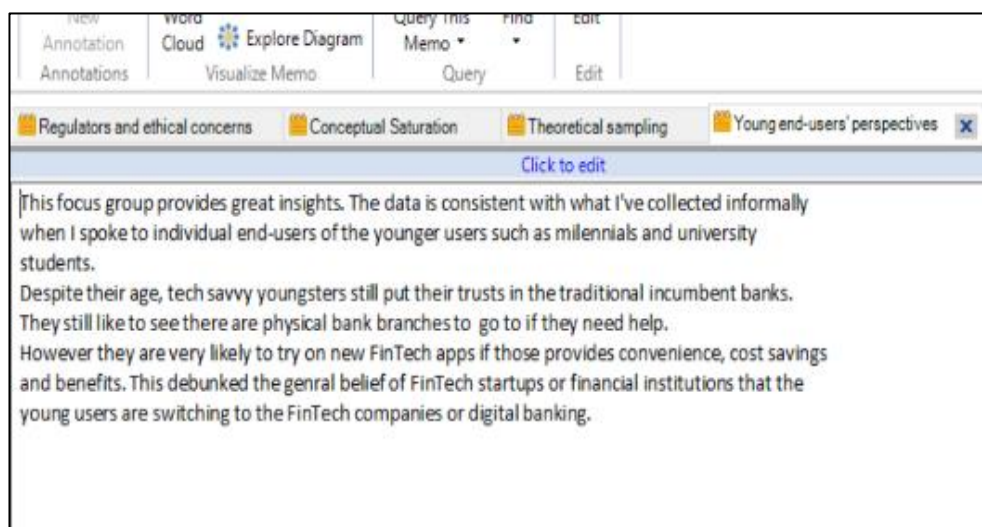
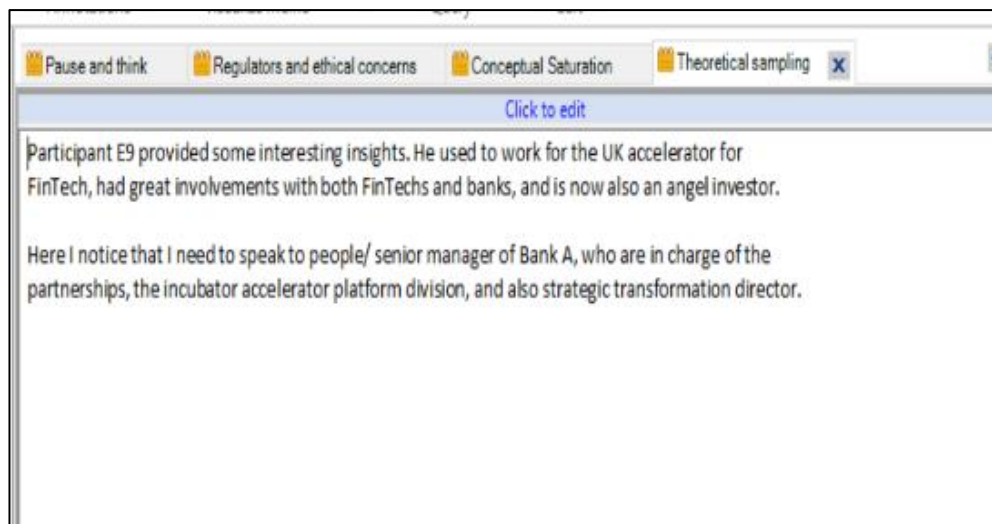
Sample of screenshots related to expanding the broad codes

[-] Ecosystem		0	0
[-] Broad Code 1 ~ Roles in the ecosystem		15	15
[-] Broad Code 2 ~ How FinTech innovation is affecting the traditional bank business models		15	15
[-] Broad Code 3 ~ Role of technology such as AI, big data and machine learning		15	15
[-] Broad Code 4 ~ Responses to new regulations such as Open API, GDPR and PSD2		15	15
[-] Broad Code 5 ~ Sensing the opportunities and threats		15	15
[-] Broad Code 6 ~ Seizing the opportunities		15	15
[-] Broad Code 7 ~ Transforming the business models		15	15
[-] Broad Code 8 ~ Key strengths and challenges		15	15
[-] End-user perspectives		0	0
[-] Broad Code 1 ~ Roles in the ecosystem		2	2
[-] Broad Code 2 ~ How FinTech innovation is affecting the traditional bank business models		2	2
[-] Broad Code 3 ~ Role of technology such as AI, big data and machine learning		2	2
[-] Broad Code 4 ~ Responses to new regulations such as Open API, GDPR and PSD2		2	2
[-] Broad Code 5 ~ Sensing the opportunities and threats		2	2
[-] Broad Code 6 ~ Seizing the opportunities		2	2
[-] Broad Code 7 ~ Transforming the business models		2	2
[-] Broad Code 8 ~ Key strengths and challenges		2	2

[-] BankA		0	0	30/10/2018 13:58	MY
[-] Broad Code 1 ~ Roles in the ecosystem		10	10	30/10/2018 13:58	MY
[-] Researcher		10	19	30/10/2018 13:58	MY
[-] Senior_Manager_A01		1	6	30/10/2018 13:58	MY
[-] Senior_Manager_A02		1	1	30/10/2018 13:58	MY
[-] Senior_Manager_A03		1	3	30/10/2018 13:58	MY
[-] Senior_Manager_A04		1	1	30/10/2018 13:58	MY
[-] Senior_Manager_A05		1	1	30/10/2018 13:58	MY
[-] Senior_Manager_A06		1	1	30/10/2018 13:58	MY
[-] Senior_Manager_A07		1	3	30/10/2018 13:58	MY
[-] Senior_Manager_A08		1	1	30/10/2018 13:58	MY
[-] Senior_Manager_A09		1	1	30/10/2018 13:58	MY
[-] Senior_Manager_A10		1	2	30/10/2018 13:58	MY
[-] Broad Code 2 ~ How FinTech innovation is affecting the traditional bank business models		10	10	30/10/2018 13:58	MY
[-] Broad Code 3 ~ Role of technology such as AI, big data and machine learning		10	10	30/10/2018 13:58	MY
[-] Broad Code 4 ~ Responses to new regulations such as Open API, GDPR and PSD2		10	10	30/10/2018 13:58	MY
[-] Broad Code 5 ~ Sensing the opportunities and threats		10	10	30/10/2018 13:58	MY
[-] Broad Code 6 ~ Seizing the opportunities		10	10	30/10/2018 13:58	MY
[-] Broad Code 7 ~ Transforming the business models		10	10	30/10/2018 13:58	MY
[-] Broad Code 8 ~ Key strengths and challenges		10	10	30/10/2018 13:58	MY

Sample of screenshots of coding memos





Appendix J: Summary of findings for respondent validation

In Confidence

Please DO NOT circulate this document 1

Michelle Yeong, PhD project 12 February 2019

Business Model Innovation in the FinTech ecosystem: A dynamic capabilities perspective

Summary of findings

The intent of this document is to produce the key insights developed from the research project, and to seek valuable feedback from the interviewed participants.

Based on the theoretical framework and empirical data obtained from qualitative case study research of "Bank A", this study seeks to unveil the approach to the business model innovation of a traditional UK bank in the FinTech ecosystem. The findings show that there are two overarching themes derived from the study: **(1) leveraging existing capabilities**, and **(2) experimenting for new capabilities**, especially through 'platform' developments. Platforms, as described by Gawer and Cusumano (2014), are products, services or technologies that serve as foundations upon which external innovators can develop their complementary innovations in an ecosystem.

The overall summary of findings is depicted in Figure 1 below in the form of framework that is conceptualised from the data relating to both Bank A and the overall FinTech phenomenon. The patterns that have emerged from the analysis (and the connections between), together with the research questions, are explained in the sections below.

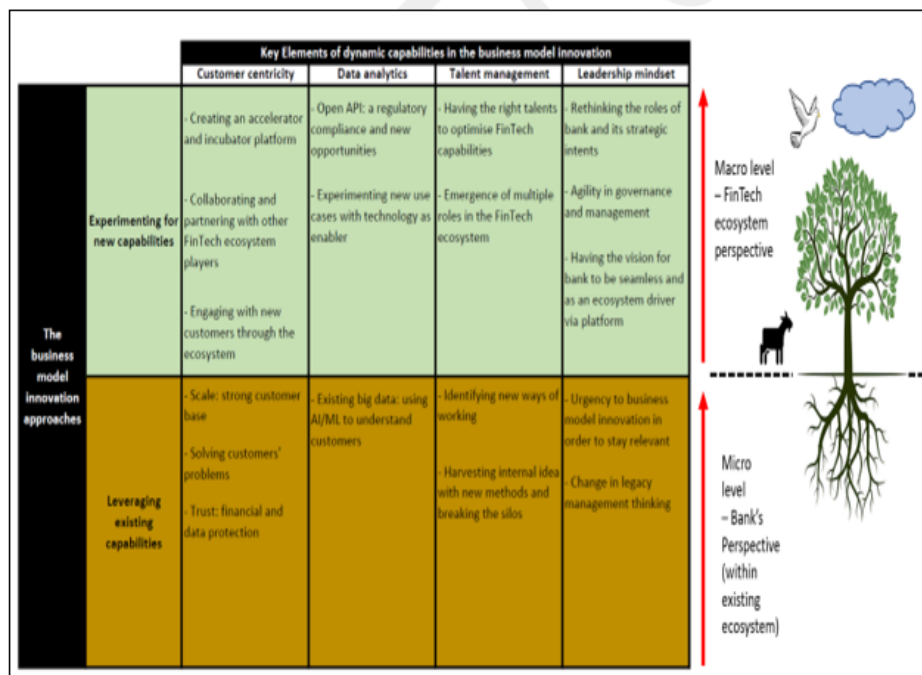


Figure 1: Conceptual framework for business model innovation of a traditional bank in the FinTech ecosystem

Michelle Yeong

The key elements of dynamic capabilities in the business model innovation of the case study

This study has discovered four key elements of dynamic capabilities in the business model innovation of Bank A: (1) customer centricity; (2) data analytics; (3) talent management; and (4) leadership mindset (Figure 2). Although these elements are not new to the bank, they are now identified as catalysts for business model innovation.

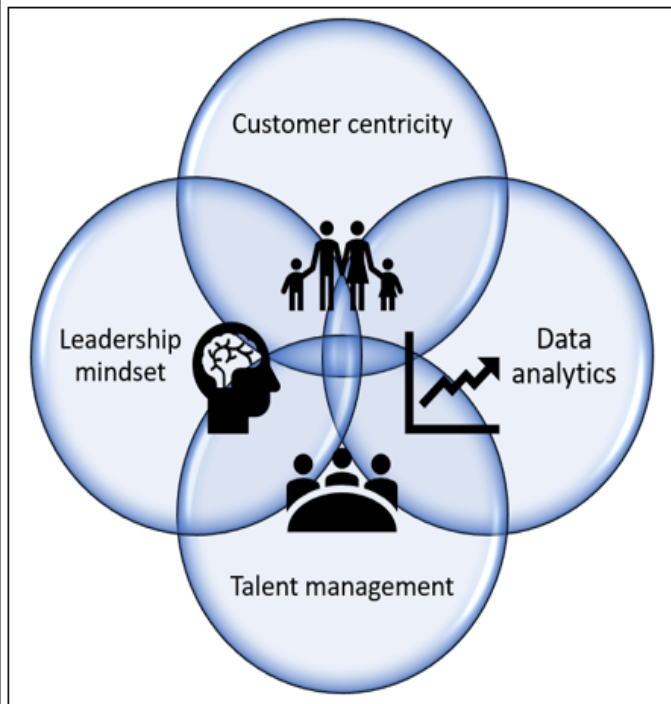


Figure 2: The interconnectedness of the key elements of dynamic capabilities in the business model innovation

1. Customer centricity

Traditionally, banks have been focusing on delivering their products and services in order to maximise their profitability. However, with the advent of digital innovation, consumer behaviours are increasingly changing. By being customer centric, the traditional bank needs to reinvent its business models to meet the demand of the customers' changing needs and create an exceptional customer experience.

2. Data analytics

Data is increasingly considered as one of the most valuable assets of the traditional bank. Traditional banks understand the importance of making sense of big data using digital technology. The key stakeholders of the FinTech ecosystem are all competing for data, to the extent that the banking regulators announced new rules, such as the European GDPR, and the UK Open Banking. The business model innovation is enabled by applying the insights of these data analytics to the banking platform.

3. Talent management

FinTech innovation has created the need for people with new sets of technical skills. Talent management is an important element in ensuring the human capital aligns with the value of business model innovation of the bank. Effective talent management will have the ability to attract and retain the right talent for the skills needed for the bank.

4. Leadership mindset

Leadership mindset is identified as one of the key challenges to the business model innovation of the bank. The leadership team is responsible for leading change, shaping culture, and making other strategic decisions. A shift of leadership mindset towards the innovation will accelerate the bank business model innovation in the desired direction.

As illustrated in Figure 2, no one element is adequate for business model innovation; their interdependence creates the opportunities for overall business model innovation of the bank. Customer-centricity will not be efficient without data analytics. Talent management is needed for getting the right talent for data analytics skills and to engage with the customer. Leadership mindset is overarching, but dependent on the other three elements for strategic decision making of the bank. Thus, balancing the four key elements is a difficult task, and the next section will explain the approaches of how Bank A is innovating its business model.

The platform business model innovation approaches

The study finds that Bank A adopts a **double-edged sword approach** towards platform business model innovation. While leveraging on the existing capabilities, simultaneously, Bank A is experimenting for new capabilities (Figure 3).

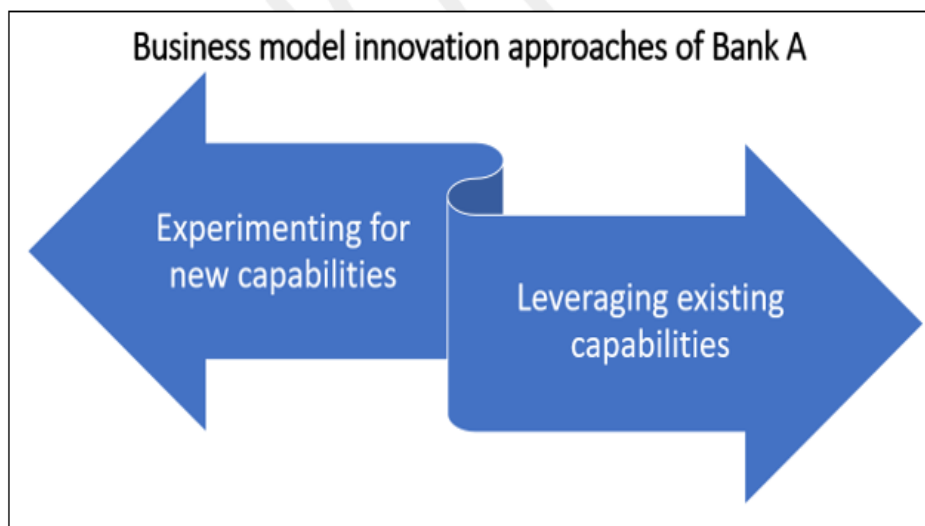


Figure 3: The approaches to business model innovation in Bank A

Referring to the conceptual framework in Figure 1 above, the relationships between these two themes (Figure 3) and the four key elements (Figure 2) are briefly explained below.

1. Leveraging existing capabilities

At the micro level of the firm's perspective, the bank is leveraging its existing capabilities, which includes but is not limited to the four elements (customer centricity, data analytics, talent management and leadership mindset) (Figure 2). By exploiting these four elements at the micro level, the bank is learning to create value from new ideas, to achieve simple and sustainable competitive advantage.

The traditional bank, with more than a century of historical presence in the financial services industry, has a large existing customer base. The majority of these customers trust the bank not just to be the protector of their wealth, but also to be the defender of their data too. Using emerging technology such as advanced analytics, open APIs (application programming interfaces), machine learning and artificial intelligence, the bank can unlock the value in big data, in order to understand its customers and solve their problems.

Through internal platforms, such as forums and intrapreneurial programmes, ideas are flowing from people of all levels within the bank in real time. These idea harvesting modes are helping in breaking the silos of the traditional organisational structure, allowing the customer-facing-employees (front-end) and back-end employees to communicate with the management levels at a quicker pace. The intrapreneurial programmes have also empowered the talent within the bank to have the opportunity to be start-up entrepreneurs whilst being employed by the bank. Through customer centricity, data analytics, and talent management, the employees will have new ways of working within the bank.

The FinTech phenomenon has disrupted the traditional banking business model. In order to stay relevant, the shift in leadership mindset of Bank A is needed to change the legacy management thinking. Within the leadership team, the Chief Innovation Officer (CIO) has exercised great responsibility to communicate the urgency of business model innovation, and the risks and opportunities associated with this strategic approach.

2. Experimenting for new capabilities

At the macro level, in the context of the platform ecosystem, based on the interconnectivity nature of the ecosystem, there is an interplay between the role of the key stakeholders in the FinTech ecosystem and the key elements of the dynamic capabilities.

By experimenting for new capabilities, the bank is acknowledging that business model innovation is part of the learning journey of being within an ecosystem, and there are risks that the experiments may not succeed.

Bank A has created an accelerator-incubator platform, commonly known as the 'innovation lab', to sense the opportunities and threats of the emerging FinTech innovations. Through this platform, Bank A is helping new FinTech start-up entrepreneurs to scale their ventures. Also, the bank is collaborating and partnering with other FinTech stakeholders to deliver the omni-channel solutions to solve customers' access problems. These new relationships have created the opportunity to engage with new customers in the ecosystem. Being customer-centric, Bank A is also assuming the role of financial educator through community events within its branches.

The newly mandated Open API (or Open Banking) regulation is seen not just as a regulatory compliant, but also an opportunity to share data from other banks to better understand consumer

behaviour. Based on the bigger set of data available through partners in the ecosystem, Bank A is constantly exploring and experimenting with new use cases, using the advanced data analytics, machine learning and artificial intelligence.

Within the ecosystem, talent management is about having the right talent to maximise the FinTech capabilities for the bank. New roles have emerged within the ecosystem, and the bank acknowledged that one talent (a given individual) can now possess multiple roles. For instance, a senior manager could be an angel investor or a start-up entrepreneur at the same time.

A shift in the leadership mindset is needed in rethinking the roles of the bank and its strategic intents in the digital presence. The governance and management of this should be more agile in order to stay relevant within the ecosystem. Indeed, Bank A leaders are envisioning a situation where banking will be seamless in the future. Banks are increasingly assuming the role of ecosystem provider where they create the platform environment that enables others, such as FinTech start-ups, to participate and collaborate, often for the benefit of themselves, the customers and other players in the ecosystem.

It is worth noting that this ambidextrous strategic approach in the business model innovation of Bank A is a great example, albeit it is difficult to be implemented. The challenges do not just depend on the balancing act of the two approaches and the four key elements, but are greatly affected by the dynamism of the ecosystem as the whole.

Conclusion: the journey continues

At the point of writing, Bank A is still reinventing its business model with this organisational ambidextrous strategic approach. The two approaches: (1) leveraging existing capabilities, and (2) experimenting for new capabilities, are made for the journey and not the destination. Likewise, business model innovation is a journey and not an end in itself, as the environment of the ecosystem is constantly changing. These findings are thus important in providing an answer to the research question driving this study as to how traditional organisations can reinvent their established business models to adapt and stay competitive within the dynamic industry ecosystem.

In conclusion, this study has elaborated the existing theories of dynamic capabilities in the context of a traditional bank in the FinTech ecosystem. The knowledge created here could, of course, be extended to traditional organisations in other industries that are also affected by digital innovation and their own technological ecosystems.

Dear Research Participants,

Please provide feedback for the following questions regarding the summary of findings presented above:

- 1. Does this make sense to you?**
- 2. Does it include the key issues and show how they relate?**
- 3. Is the framework comprehensive?**
- 4. Is there anything missing?**

Thank you.

Michelle Yeong

Appendix K: Summary of FinTech and banking conferences attended during the data collection period

Conference event	Organising body	Location	Date
Finance Disrupted 2017	The Economist	London	25 January 2017
FinTech Global Summit 2017	Innovate Finance	London	10 – 11 April 2017
Future of FinTech 2017	The Telegraph	London	28 September 2017
FinTech Connect Live 2017	FinTech Connect	London	6 – 7 December 2017

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