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Brookes, M and Becket, N (2007) Quality management in higher education: a review of international issues and practice. *International Journal for Quality and Standards*, 1 (1). pp. 1 -37. ISSN 1753-9439

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Available in the RADAR: September 2009

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**Quality Management in Higher Education: A Review of International  
Issues and Practice**

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**Abstract:**

A number of environmental forces are driving change within and across countries and their higher education. These changes have served to put this issue of quality management firmly on the agenda of many higher education institutions. Despite the fact that higher education is increasingly viewed as an international business, the majority of research conducted on higher education quality management has been undertaken within single national contexts. This paper undertakes a comprehensive review of the literature on quality management in higher education in order to identify international quality management practices. The review encompasses papers published predominantly in educational journals over a ten year period, between 1996 and 2006. The environmental forces driving change in 34 countries are identified. The paper then examines the quality management approaches adopted in higher education institutions in response to these forces. The review reveals that the most popular response is the testing or implementation of quality management models developed for industry. While there are benefits to be gained from using these models, these are related predominantly to the efficiency and effectiveness of non-academic functions. In addition, these models are reported to encourage a culture of managerialism in higher education institutions. Whereas this approach can be effective in responding to climates of accountability, the effectiveness of these models in managing quality of teaching and learning has been questioned. This review therefore begs the question of whether it is time to rethink our current approaches to quality management in higher education.

## **Quality Management in Higher Education: A Review of International Issues and Practice**

### Introduction

Higher education (HE) environments across the globe are frequently described as turbulent and dynamic. Both global and national forces are driving change within and across individual countries and their higher education institutions. These changes have served to put the issue of quality management firmly on the agendas of national governments, institutions, academic departments and individual programmes of study.

Despite the progress that has been made through research and debate, there is still no universal consensus on how to best to manage quality within higher education. One of the key reasons for this is the recognition that quality is a complex and multi-faceted construct, particularly in HE environments (Harvey and Knight, 1996; Cheng and Tam, 1997; Becket and Brookes, 2006). As a result, the measurement and management of quality has created a number of challenges. This, in turn, has led to the adoption of a variety of quality management practices within different countries and their higher education institutions (HEIs), many of which draw upon existing industry models.

Although higher education is increasingly viewed as an international business (Baker, 2002), the majority of research conducted on HE quality management practices has been undertaken within one national context and frequently within individual institutions or academic departments. While there have been some cross-national comparative studies undertaken, there appears to have been limited effort to consolidate the approaches undertaken internationally.

This paper therefore presents an extensive review of the different quality management approaches adopted across different national HE environments. The paper begins with a comparative analysis of the environmental forces driving change within higher education. It then examines the different approaches adopted for quality management in response to these forces.

The results of this analysis suggest current environmental forces are encouraging the use of quality models created for industry. While there are recognised benefits of implementing these models, their use can lead to a culture of managerialism in HEIs. This review therefore begs the question of whether it is time to rethink current approaches to quality management in HEIs.

#### Drivers of Change in HE Environments

As indicated above, much of the research on quality management in HE has been undertaken from a single country perspective. In order to develop a more global snapshot of the drivers of change an extensive review of the literature relating to quality in HE was undertaken. Through this review the current political, economic and socio-cultural forces driving change in international HE environments have been identified. In addition, an analysis of these forces has served to highlight the impact of these on HE quality management within the different national environments covered in the review. This review comprises 95 articles published in 19 journals over a ten-year period between 1996 and 2006. The majority of the articles are published in educational journals, with Quality Assurance in Education and The

International Journal of Educational Management as the main sources. In order to be as thorough as possible, searches were also conducted on industry journals that focused on service quality such as Total Quality Management and The International Journal of Quality and Reliability Management. The review also drew on recent studies undertaken by the Organisation for Economic Development (OECD) and the World Bank. While this effort yielded results on 34 countries, it must be noted that the authors were limited to articles published in English. As a result, this review was far from comprehensive, but appears to be the most extensive international review of HE quality management undertaken to date.

As most articles are set within a single national context, the environmental audit is first undertaken on a country-by-country basis. In an effort to paint a more international picture, the countries were then clustered according to three key geographic arenas; the Americas, Europe, Middle East and Africa (EMEA) and Asia Pacific. This approach facilitated a better identification of the drivers of change across the three regions and thus internationally. Table I presents the environmental forces identified and their reported impact, by geographic arena and with reference to individual countries. While the review invariably uncovered forces that were specific to particular countries and their economic and political development, it also revealed a good deal of similarity in the forces driving change across the different regions. These forces are identified include:

#### Political Forces:

1. government initiatives to widen access
2. development of more HEIs
3. government retains strict control over HE curriculum and management
4. no unified or centralised system for government control

#### Economic Forces:

1. reduced/limited funding per student
2. reliance on private sector funding
3. reliance on tuition or international student fees
4. rising cost per student
5. increase in number of private HEIs
6. increased emphasis on internationalisation

#### Socio-Cultural Forces:

1. greater demand for student places
2. more diversity of student populations
3. greater diversity of provision
4. consumer pressure for greater accountability or value for money

Each of these forces is numbered in Table I in order to facilitate comparison across the three regions. The inter-related nature and impact of these forces on higher education is discussed below.

Table I reveals that government initiatives to increase access to tertiary education appear to be the key common denominator of change in higher education environments. Increasing accessibility has resulted in 'massification' through escalating numbers of students, higher education institutions, or indeed in both. HE is reported to have 'grown dramatically with more than 17,000 higher education institutions in the world' (Giannakou, 2006:1). Table I provides ample evidence of this trend in the majority of countries under review.

Table 1: Environmental Analysis By Geographic Arena

Economic Arena	Political Forces	Economic Forces	Socio-Cultural Forces	Impact
<p><b>Asia Pacific:</b></p> <ul style="list-style-type: none"> <li>• Australia</li> <li>• China</li> <li>• Hong Kong</li> <li>• India</li> <li>• Japan</li> <li>• Korea</li> <li>• Malaysia</li> <li>• New Zealand</li> <li>• Taiwan</li> <li>• Central Asia Kazakhstan, Kyrgyz Republic, Mongolia, Uzbekistan and Tajikistan</li> </ul>	<p><b>1. Government initiatives to widen access:</b></p> <ul style="list-style-type: none"> <li>• Australia (Srikanthan &amp; Dalrymple, 2003; Dollery et al, 2006)</li> <li>• China: (OECD, 2004)</li> <li>• Hong Kong (Mok, 2004)</li> <li>• Japan (Murata, 2006)</li> <li>• Malaysia (Sohail et al, 2003)</li> <li>• New Zealand (MOE, 2006)</li> <li>• Taiwan (Ka-Ho Mok, 2006)</li> </ul> <p><b>2. Development of more HEIs:</b></p> <ul style="list-style-type: none"> <li>• Australia (Dollery, et al, 2006)</li> <li>• China (OECD, 2004)</li> <li>• Malaysia (Sohail, et al, 2003)</li> <li>• Taiwan (Ka-Ho Mok, 2006)</li> </ul> <p><b>3. Government retains strict control over HE curriculum and management:</b></p> <ul style="list-style-type: none"> <li>• central Asian countries (Tursunkulova, 005)</li> </ul>	<p><b>1. Reduced/limited funding per student:</b></p> <ul style="list-style-type: none"> <li>• Australia (Mutula, 2002; Srikanthan &amp; Dalrymple, 2004; Carrington et al, 2005; Dollery, et al, 2006)</li> <li>• China (OECD, 2004)</li> <li>• Central Asia, (Tursunkulova, 2005)</li> <li>• Taiwan (Ka-Ho Mok, 2006)</li> </ul> <p><b>2. Reliance on private sector funding:</b></p> <ul style="list-style-type: none"> <li>• Australia (Dollery et al, 2006)</li> <li>• Malaysia (Sohail et al, 2003)</li> <li>• New Zealand (MOE, 2006)</li> </ul> <p><b>3. Reliance on tuition fees or international student fees:</b></p> <ul style="list-style-type: none"> <li>• Australia (Dollery et al, 2006)</li> <li>• Cha (OECD, 2004)</li> <li>• Korea (OECD, 2006)</li> <li>• Japan (OECD, 2006)</li> </ul>	<p><b>1. Greater demand for student places:</b></p> <ul style="list-style-type: none"> <li>• Australia (Srikanthan &amp; Dalrymple, 2003)</li> <li>• China (OECD, 2004)</li> <li>• India, particularly postgraduate (Jagadesh, 2000)</li> <li>• Japan (Murata, 2006)</li> <li>• New Zealand (MOE, 2006)</li> <li>• Taiwan (Ka-Ho Mok, 2006)</li> </ul> <p><b>2. More diversity of student populations:</b></p> <ul style="list-style-type: none"> <li>• Australia (Carrgton et al, 2005)</li> <li>• Japan (Murata, 2006)</li> <li>• New Zealand (MOE, 2006)</li> </ul> <p><b>3. Greater diversity of provision:</b></p> <ul style="list-style-type: none"> <li>• Japan (Murata, 2006)</li> <li>• New Zealand (MOE, 2006)</li> </ul> <p><b>4. Consumer pressure for</b></p>	<p><b>1. Increasing concerns about quality:</b></p> <ul style="list-style-type: none"> <li>• Australia (Martens &amp; Prosser, 1998; Srikanthan &amp; Dalrymple, 2003)</li> <li>• Cha (OECD, 2004)</li> <li>• Hong Kong (Pounder, 1999)</li> <li>• India (Sahney, et al, 2004)</li> <li>• Japan (Murata, 2006)</li> <li>• New Zealand (MOE, 2006)</li> <li>• Taiwan (Ka-Ho Mok, 2006)</li> </ul> <p><b>2. Focus of quality predominately on management/non academic matters:</b></p> <ul style="list-style-type: none"> <li>• Hong Kong (Mok, 2005)</li> <li>• Malaysia (Sohail, et al, 2003)</li> </ul> <p><b>3. Increasingly</b></p>



		<ul style="list-style-type: none"> <li>• New Zealand (MOE, 2006)</li> <li>• Taiwan (Ka-Ho Mok, 2006)</li> </ul> <p><b>4. Rising cost per student:</b></p> <ul style="list-style-type: none"> <li>• China (OECD, 2004)</li> <li>• New Zealand (MOE, 2006)</li> </ul> <p><b>5. Increase in number of private HEIs:</b></p> <ul style="list-style-type: none"> <li>• Malaysia, (Sohail, et al, 2003)</li> <li>• India (Thakkar et al, 2006)</li> <li>• Japan is high proportion (Murata, 2006)</li> <li>• Taiwan (Ka-Ho Mok, 2006)</li> </ul> <p><b>6. Increased emphasis on internationalisation</b></p> <ul style="list-style-type: none"> <li>• Australia (Dollery et al, 2006)</li> <li>• Cha (OECD, 2004)</li> <li>• Hong Kong (Mok, 2005)</li> <li>• New Zealand (MOE, 2006)</li> <li>• Taiwan (Ka-Ho Mok, 2006)</li> </ul>	<p><b>greater accountability or value for money:</b></p> <ul style="list-style-type: none"> <li>• Australia (Cruikshank, 2003; Dollery et al, 2006)</li> <li>• Hong Kong (Pounder, 1999)</li> <li>• India (Sahney et al, 2004)</li> <li>• Japan (Murata, 2006)</li> <li>• New Zealand (MOE, 2006)</li> <li>• Central Asia (as related to public mistrust, Tursunkulova, 2005)</li> </ul>	<p><b>competitive environment:</b></p> <ul style="list-style-type: none"> <li>• Australia (Sharma, 2004)</li> <li>• Hong Kong (Mok, 2005)</li> <li>• Japan (Murata, 2006)</li> <li>• Malaysia (Sohail et al, 2006)</li> </ul>
<p><b>EMEA:</b></p> <ul style="list-style-type: none"> <li>• Czech Republic</li> <li>• Denmark</li> <li>• Estonia</li> <li>• Finland</li> <li>• Greece</li> <li>• Kenya</li> <li>• Iceland</li> <li>• Netherlands</li> <li>• Norway</li> <li>• Poland</li> </ul>	<p><b>1. Government initiatives to widen access:</b></p> <ul style="list-style-type: none"> <li>• Kenya (Mutula, 2002)</li> <li>• Netherlands (de Jonge &amp; Berger, 2006)</li> <li>• Norway (MOE, 2005)</li> <li>• Poland (EIU, 2004; Szeffler &amp; Pryslopska, 2006)</li> <li>• Sweden (Wiklund et al, 2003)</li> <li>• UK (Hewitt &amp; Clayton, 1999; Harvey, 2005)</li> </ul>	<p><b>1. Reduced/limited funding:</b></p> <ul style="list-style-type: none"> <li>• Czech Republic (MOE, 2006)</li> <li>• Estonia (EIU, 2005)</li> <li>• Kenya (Mutula, 2002)</li> <li>• Poland (Szeffler &amp; Pryslopska, 2006)</li> <li>• Turkey (Borohan &amp; Ziarati, 2002)</li> <li>• UK (Clark, 1997; Rodgers &amp; Ghosh, 2001, Harvey,</li> </ul>	<p><b>1. Greater demand for student places:</b></p> <ul style="list-style-type: none"> <li>• Estonia (EIU, 2005)</li> <li>• Poland (EIU, 2004)</li> <li>• Netherlands (de Jonge &amp; Berger, 2006)</li> <li>• Norway (MOE, 2005)</li> <li>• Sweden (Wiklund et al, 2003)</li> <li>• UK (Clark, 1997, Jackson, 1997; Hewitt &amp; Clayton,</li> </ul>	<p><b>1. Increasing concerns about quality:</b></p> <ul style="list-style-type: none"> <li>• Czech Republic (MOE, 2005)</li> <li>• Finland (MOE, 2005)</li> <li>• Kenya (Mutala, 2002)</li> <li>• Netherlands (de Jonge &amp; Berger, 2006)</li> <li>• Norway (MOE, 2005)</li> <li>• Poland (Szeffler &amp; Pryslopska, 2006)</li> </ul>

<ul style="list-style-type: none"> <li>• Spain</li> <li>• South Africa</li> <li>• Sweden</li> <li>• Turkey</li> <li>• United Kingdom</li> </ul>	<p><b>2. Development of more HEIs:</b></p> <ul style="list-style-type: none"> <li>• Kenya (Mutula, 2002)</li> <li>• Norway (MOE, 2005)</li> <li>• UK (Clark, 1997)</li> </ul> <p><b>4. No unified or centralised system for government control:</b></p> <ul style="list-style-type: none"> <li>• Czech Republic (MOE, 2006)</li> <li>• Norway, more devolved to institutions (MOE, 2006)</li> </ul>	<p>2005)</p> <p><b>2. Reliance on Private Sector Funding</b></p> <ul style="list-style-type: none"> <li>• Denmark (OECD, 2006)</li> <li>• Finland (OECD, 2006)</li> <li>• Greece (OECD, 2006)</li> <li>• Poland (Szeffler &amp; Pryslopska, 2006)</li> <li>• Netherlands (de Jonge &amp; Berger, 2006)</li> <li>• Norway (MOE, 2005)</li> <li>• Turkey (OECD, 2006)</li> <li>• UK (Clark, 2006)</li> </ul> <p><b>3. Reliance on tuition fees/international students</b></p> <ul style="list-style-type: none"> <li>• Kenya (Mutula, 2002)</li> <li>• Poland (EIU, 2004; Szeffler &amp; Pryslopska, 2006)</li> <li>• UK (Clark, 2006)</li> </ul> <p><b>4. Rising costs/student</b></p> <ul style="list-style-type: none"> <li>• UK (Jackson, 1997)</li> </ul> <p><b>5. Number of private HE institutions</b></p> <ul style="list-style-type: none"> <li>• Estonia (EIU, 2005)</li> <li>• Kenya (Mutula, 2002)</li> <li>• Netherlands (de Jonge &amp; Berger, 2006)</li> <li>• Norway (MOE, 2005)</li> <li>• Poland (Szeffler &amp; Pryslopska, 2006)</li> <li>• Turkey (Borohan &amp; Ziarati,</li> </ul>	<p>1999; Rodgers &amp; Ghosh, 2001; Milliken &amp; Colohan, 2004; Harvey, 2005)</p> <p><b>2. More diversity of student populations:</b></p> <ul style="list-style-type: none"> <li>• Estonia (EIU, 2005)</li> <li>• Iceland (Suppanz, 2006)</li> <li>• Norway (MOE, 2005)</li> <li>• Poland (EIU, 2004; ; Szeffler &amp; Pryslopska, 2006)</li> <li>• Spain (Navarro et al, 2005)</li> <li>• UK (Jackson, 1997)</li> </ul> <p><b>3. Diversity of provision:</b></p> <ul style="list-style-type: none"> <li>• Finland (MOE, 2005)</li> <li>• Kenya (Mutula, 2002)</li> <li>• Iceland (Suppanz, 2006)</li> <li>• Netherlands (de Jonge &amp; Berger, 2006)</li> <li>• Norway (MOE, 2005)</li> <li>• Spain (Navarro et al, 2005)</li> <li>• Poland (Szeffler &amp; Pryslopska, 2006)</li> <li>• Turkey (Borohan &amp; Ziarati, 2002)</li> <li>• UK (Jackson, 2000)</li> </ul> <p><b>4. Consumer pressure for accountability:</b></p> <ul style="list-style-type: none"> <li>• Kenya (Mutula, 2002)</li> <li>• Netherlands (de Jonge &amp; Berger, 2006)</li> <li>• UK (Clark, 1997; Jackson,</li> </ul>	<ul style="list-style-type: none"> <li>• South Africa (Blackmur, 2004)</li> <li>• Sweden (Wikund et al, 2003)</li> <li>• Turkey (Borohan &amp; Ziarati, 2002)</li> <li>• UK (Clark, 1997; McKay &amp; Kember, 1999; Jackson, 2000)</li> </ul> <p><b>2. Quality focus on non academic matters</b></p> <ul style="list-style-type: none"> <li>• UK (Jackson, 1996,1997; Harvey, 2005)</li> </ul> <p><b>3. More competitive environment:</b></p> <ul style="list-style-type: none"> <li>• Finland (MOE, 2005)</li> <li>• Norway (MOE, 2005)</li> <li>• Poland (EIU, 2004)</li> <li>• Spain (Navarro et al, 2005)</li> <li>• Turkey (Borohan &amp; Ziarati, 2002)</li> <li>• UK (Roffe, 1998; Freeman &amp; Thomas, 2005; Harvey, 2005)</li> </ul>
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		2002) <b>6. Increased emphasis on internationalisation</b> <ul style="list-style-type: none"> <li>• Finland (MOE, 2005)</li> <li>• Iceland (Suppanz, 2006)</li> <li>• Netherlands (de Jonge &amp; Berger, 2006)</li> <li>• Norway (MOE, 2005)</li> <li>• Poland (Szeffler &amp; Pryslopska, 2006)</li> <li>• UK (Clark, 2006)</li> </ul>	1997; Hewitt & Clayton, 1999; Freeman & Thomas, 2005)	
<b>Americas:</b> <ul style="list-style-type: none"> <li>• Brazil</li> <li>• Columbia</li> <li>• Canada</li> <li>• Mexico</li> <li>• USA</li> </ul>	<b>1. Government initiatives to widen access:</b> <ul style="list-style-type: none"> <li>• Brazil (World Bank, 2001)</li> <li>• Columbia (World Bank, 2003)</li> </ul> <b>2. Development of more HEIs:</b> <ul style="list-style-type: none"> <li>• Canada (Freeman &amp; Thomas, 2005)</li> <li>• Columbia (World Bank, 2003)</li> </ul> <b>4. No unified or centralised system for government control:</b> <ul style="list-style-type: none"> <li>• Canada (Knight, 2003)</li> <li>• Columbia (World Bank, 2003)</li> <li>• USA (Welsh &amp; Dey, 2002)</li> </ul>	<b>1. Reduced funding:</b> <ul style="list-style-type: none"> <li>• Canada</li> <li>• USA (Aly &amp; Akpovi, 2001)</li> </ul> <b>2. Reliance on Private Sector Funding</b> <ul style="list-style-type: none"> <li>• Canada (Pucklington &amp; Tupper, 2002)</li> </ul> <b>3. Reliance on tuition fees/international students</b> <ul style="list-style-type: none"> <li>• Canada (Pucklington &amp; Tupper, 2002; Freeman &amp; Thomas, 2005)</li> <li>• USA (Aly &amp; Akpovi, 2001, Welsh &amp; Dey, 2002)</li> </ul> <b>4. Rising costs/student</b> <ul style="list-style-type: none"> <li>• USA (Aly &amp; Akpovi, 2001;</li> </ul>	<b>1. Greater demand for student places:</b> <ul style="list-style-type: none"> <li>• Brazil (World Bank, 2001)</li> <li>• Canada (Clark, 2003; Pucklington &amp; Tupper, 2002)</li> <li>• Mexico (OECD, 2006)</li> <li>• USA (Tang et al, 2004)</li> </ul> <b>2. More diversity of student populations</b> <ul style="list-style-type: none"> <li>• Brazil (World Bank, 2001)</li> <li>• Canada (Pucklington &amp; Tupper, 2002)</li> <li>• Columbia (World Bank, 2003)</li> <li>• USA (Temponi, 2005)</li> </ul> <b>3. Diversity of provision:</b>	<b>1. Increasing concerns about quality</b> <ul style="list-style-type: none"> <li>• Canada (Pucklington &amp; Tupper, 2002)</li> <li>• USA (Aly &amp; Akpovi, 2001, Baker, 2002; Grant et al, 2002)</li> </ul> <b>2. Quality focus on non academic matters</b> <ul style="list-style-type: none"> <li>• USA (Aly &amp; Akpovi, 2001; Temponi, 2005)</li> </ul> <b>3. More competitive environment</b> <ul style="list-style-type: none"> <li>• Canada (Freeman &amp; Thomas, 2005)</li> <li>• USA (Welsh &amp; Dey, 2002; Temponi, 2005)</li> </ul>

		<p>Tang et al, 2004)</p> <ul style="list-style-type: none"> <li>• Canada (Pucklington &amp; Tupper, 2002)</li> </ul> <p><b>5. Increased number of private HE institutions</b></p> <ul style="list-style-type: none"> <li>• Brazil (World Bank, 2001)</li> <li>• Canada through foreign branch campuses (Knight, 2003)</li> <li>• Columbia (World Bank, 2003)</li> </ul> <p><b>6. Increased emphasis on internationalisation:</b></p> <ul style="list-style-type: none"> <li>• Canada (Freeman &amp; Thomas, 2005)</li> </ul>	<ul style="list-style-type: none"> <li>• Brazil (World Bank, 2001)</li> <li>• Canada (Freeman &amp; Thomas, 2005)</li> </ul> <p><b>3. Consumer pressure for accountability:</b></p> <ul style="list-style-type: none"> <li>•Canada (Freeman &amp; Thomas, 2005)</li> <li>•USA (Aly &amp; Akpovi, 2001, Baker, 2002)</li> </ul>	
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While there are clearly social and moral rationales that underpin accessibility initiatives, economic considerations also contribute to government policies. It is well recognised that 'higher education plays a vital role in driving economic growth and social cohesion' (Giannakou, 2006:1). However, in an effort to create economic growth and prosperity through university graduates, governments are first required to increase public sector spending. In many instances, the public purse is not big enough to finance the support required. This in turn, creates a 'catch 22' situation where current economic resources are not sufficient to lay the foundations for future economic growth through HE. Recent OECD (2006) reports identify that in the majority of OECD countries, the proportion of government spending on HE is actually decreasing. Even when government spending on HE increases overall, spending per student is decreasing given the growth in student numbers. At the same time, the actual cost per student is increasing in many national environments. Efficient and effective use of resources therefore has become a major priority for HE institutions (Pounder, 1999; Harvey, 2005; Mok, 2005; Dollery et al, 2006).

These economic shortfalls have unsurprisingly resulted in HE institutions seeking additional and alternative sources of income. However, reliance on private funding varies enormously by country. For example, in Australia, Japan, Korea and the US, more than 50% of funding is through private means, whereas in Denmark, Finland, Greece, Norway and Turkey, less than 5% is derived from private sources (OECD, 2006). The main sources of

private funding appear to be through research, tuition fees, international student recruitment and exporting programmes of study through franchising.

In addition, HEIs are facing increasing levels of competition. Within many national environments, particularly in lesser developed countries, private institutions are opening to meet student demand thereby creating competition with publicly funded HEIs. In some instances, national governments may encourage this practice in order to realise the immediate economic benefits of keeping students in their own country (Sohail et al, 2003). At the same time, they are speculating on the long-term benefits associated with graduates remaining in the country and contributing to the national economy (Mok, 2005; Murata, 2006). Recognising the growth in student demand for international degrees (Sohail et al, 2003; Suppanz, 2006), a number of these new institutions are importing programmes of study from internationally recognised providers. For example, a strategy adopted by the Malaysian government is to encourage students to study in domestic universities (Sohail et al, 2003) and a number of international branch campuses have been opened as a result (Mazzarol et al, 2003). Interest in cross-border tertiary education has also been driven by other initiatives such as the Bologna process, GATS and the WTO. Furthermore, there is growing recognition of the value of international education to a knowledge driven economy (Mok, 2005; Clark, 2006). However, these practices are serving to change the nature of international competition within HE. Countries that were once substantial feeder markets are now viewed as competitive markets for some HEIs, but also as potential collaborators for others. As Giannakou (2006) identifies,

cross border tertiary education has an impact on quality and for quality in higher education.

Whether competing or collaborating, HEIs are all seeking to serve the same student markets. At the same time, Table I reveals student populations within many national environments are becoming more diversified in age, culture and educational background (Jackson, 1997; EIU, 2005; Temponi, 2005), a finding supported by recent research undertaken by the OECD (2006).

Student demand for HE is driven by a number of factors, although the most important is frequently considered to be future potential earning power.

OECD (2006) estimates indicate earning power to be 8-20% higher for graduates. As such, students' expectations are that a degree will lead directly to good employment prospects, particularly where there has been a personal investment in tuition fees. However, this expectation will only be realised if they leave higher education with the requisite skills demanded by employers.

Employers therefore expect that graduates will make a significant contribution to their achievement of business objectives. Realising their objectives, will in turn, help to stimulate national economic growth. OECD (2006) research

reveals that students and their employers are becoming more sophisticated and demanding of higher education. Given the resources invested and the

impact on economic prosperity, governments are also becoming more

demanding. As such, a climate of accountability (Welsh and Dey, 2002;

Mutala, 2002; Cruickshank, 2003; Sahney et al, 2004; Freeman and Thomas, 2005) prevails across the geographic arenas investigated. As Burbules and

Torres (2000) contend, these accountability pressures have led to the

imposition of management and efficiency models within HEIs borrowed from the business sector.

### Quality Management Models in Higher Education

The research conducted for this paper reveals that a number of HE institutions have tested quality management models originally developed for industry.

This approach has yielded a number of benefits for managing quality, however, there are also a number of limitations related to the application and relevance of these models in HE. Internationally, the model most frequently drawn upon is total quality management (Motwani and Kumar, 1997; Cruickshank, 2003). Total quality management (TQM) is defined as:

‘a management approach of an organisation, centred on quality, based on the participation of all its members and aiming at long run success through customer satisfaction and benefits to all members of the organisation and to society. (ISO 8402 in Wiklund et al, 2003:99)

As the definition implies, TQM has the potential to encompass the perspectives of different stakeholders in an integrated manner and thus is a comprehensive approach to quality management that can facilitate change and innovation. Other models tested emulate TQM and concentrate on developing systematic business processes that are required to achieve measurable quality outputs. For example, the balanced scorecard requires the identification of appropriate performance indicators and the EFQM model, performance enablers and results. The one exception is SERVQUAL, a model which focuses on the assessment of quality from the consumer



perspective. Table II defines the different models that have been tested in international HE institutions.

Table II: Quality Management Models

<b>Model</b>	<b>Definition</b>
EFQM Excellence Model	Non-prescriptive framework that establishes 9 criteria (divided between enablers and results), suitable for any organisation to use to assess progress towards excellence
Balanced Scorecard	Performance/strategic management system which utilises 4 measurement perspectives: financial, customer, internal process, and learning and growth.
Malcolm Baldrige Award	Based on a framework of performance excellence which can be used by organisations to improve performance. 7 categories of criteria: leadership; strategic planning; customer and market focus; measurement, analysis, and knowledge management; human resource focus; process management; and results.
ISO 9000 Series	International standard for generic quality assurance systems. Concerned with continuous improvement through preventative action. Elements are customer quality and regulatory requirements, and efforts made to enhance customer satisfaction and achieve continuous improvement.
Business Process Reengineering	System to enable redesign of business processes, systems and structures to achieve improved performance. It is concerned with change in five components: strategy, processes, technology, organisation and culture.
SERVQUAL	Instrument designed to measure consumer perceptions and expectations regarding quality of service in 5 dimensions: reliability, tangibles, responsiveness, assurance and empathy and to identify where gaps exist.

The models listed in Table II are all applicable at either institutional or departmental/faculty level and have been tested in at least two of the three global arenas. Despite their differences, a key feature of all of the models is the requirement for self assessment against pre-defined criteria. The testing of these models has identified both benefits and limitations in their application to HE. Table III summarises the efforts of academics to implement and evaluate these models in different countries and institutional settings.

A key benefit of all the models is reported to be the requirement for institutions or departments to adopt a strategic approach to quality measurement and management (see for instance, Cullen et al, 2003; Roberts and Tennant, 2003). Furthermore, as Table III indicates, there are tangible benefits identified for the different HE stakeholders, such as improved budgeting and

Table III: Quality Management Models Applied to HE

Model Tested	Author (year), Country	Benefits/Limitations
<p>TQM models include:</p> <p>5-step programming</p> <p>Service guarantees</p> <p>Hoshin Kanri</p> <p>CQI</p> <p>QFD</p> <p>CRM</p>	<ul style="list-style-type: none"> <li>• Seeman &amp; O'Hara (2006), USA</li> <li>• Thakkar et al (2006), India</li> <li>• Popli (2005), India</li> <li>• Sahney et al (2004), India</li> <li>• Roberts &amp; Tennant (2003), UK</li> <li>• Cruickshank (2003), USA, Australia and UK</li> <li>• Widrick et al, (2002), USA</li> <li>• Aly &amp; Akpovi (2001), USA</li> <li>• Hwang &amp; Teo (2001), UK and Singapore</li> <li>• Lawrence &amp; McCollough (2001), USA</li> <li>• Pounder (1999), Hong Kong</li> <li>• Roffe (1998), UK</li> <li>• Motwani &amp; Kumar (1997), USA</li> <li>• Colling &amp; Harvey (1995), UK</li> </ul>	<p>Benefits:</p> <ul style="list-style-type: none"> <li>• Integrates TQM with strategy and links goals with processes through self assessment</li> <li>• Encourages disciplined thinking about tangible and intangible aspects of academic activities</li> <li>• Identifies key processes and operational aspects required in design and delivery of courses in line with customer voice</li> <li>• Demonstrated improvements include customer service, university processes, staff and faculty morale, course quality and personnel hiring</li> </ul> <p>Limitations:</p> <ul style="list-style-type: none"> <li>• Difficulty in transferring TQM principles developed for industry to HE environments including defining outputs; autonomy of academic staff; bureaucratic and fragmented structures; application to complex course structures; definition of student roles within HE (customer or co-producer)</li> <li>• More relevance to academic service functions than teaching quality</li> <li>• Challenges regarding leadership skills and institution-wide strategic planning</li> <li>• Lack of acceptance and application of TQM in HE</li> <li>• Less scientific control is possible in HE when compared to manufacturing</li> </ul>
EFQM	<ul style="list-style-type: none"> <li>• Calvo-Mora et al, (2006), Spain</li> <li>• Tari, (2006), Spain</li> <li>• Hides, et al (2004), UK</li> <li>• Osseo-Asare &amp; Longbottom (2002), UK</li> <li>• McAdam &amp; Welsh (2000), UK</li> </ul>	<p>Benefits:</p> <ul style="list-style-type: none"> <li>• Integrated map of management issues valued and useful to secure confidence of stakeholders</li> <li>• Useful as a basis of self-assessment</li> <li>• Tests relationship between enablers/results</li> </ul> <p>Limitations:</p> <ul style="list-style-type: none"> <li>• More relevant to service functions</li> <li>• Dilemma of applying business language to public sector</li> <li>• It can be 3 to 5 years before benefits are evident</li> <li>• Challenges regarding managerial skills and top level commitment in HE</li> <li>• Lack of integration between EFQM and national HE quality control mechanisms</li> </ul>
Balanced Scorecard	<ul style="list-style-type: none"> <li>• Chen &amp; Shiau (2006), Taiwan</li> <li>• Cullen et al, (2003), UK</li> </ul>	<p>Benefits:</p> <ul style="list-style-type: none"> <li>• Scorecard used to manage rather than just monitor performance</li> <li>• Focus on performance management and evaluation</li> </ul>

		<ul style="list-style-type: none"> <li>• Staff understand performance targets</li> <li>• Improved budgeting, resource allocation and reward systems</li> <li>• System can increase educational quality</li> </ul> <p>Limitations:</p> <ul style="list-style-type: none"> <li>• Performance indicators require careful identification specific to situation and can be dysfunctional unless grounded in strategy</li> </ul>
Malcolm Baldrige Award	<ul style="list-style-type: none"> <li>• Arif &amp;Smiley (2004), USA</li> </ul>	<p>Benefits:</p> <ul style="list-style-type: none"> <li>• Evident in operational elements; strategic and budget planning, careers, outreach and information services</li> <li>• May be immediate and long standing</li> </ul>
ISO9000 Series	<ul style="list-style-type: none"> <li>• Sohail et al (2003), Malaysia</li> <li>• Shutler &amp; Crawford (1998), Singapore</li> </ul>	<p>Benefits:</p> <ul style="list-style-type: none"> <li>• Quality certification can improve inter-departmental working condition, student enrolment, and staff/supplier satisfaction</li> <li>• Continuous improvement achieved through preventative action</li> </ul> <p>Limitations:</p> <ul style="list-style-type: none"> <li>• Scientific control less achievable in higher education than in manufacturing</li> </ul>
Business Process Reengineering	<ul style="list-style-type: none"> <li>• Sohail, et al, (2006), Malaysia</li> <li>• Welsh &amp; Dey (2002), USA</li> </ul>	<p>Benefits:</p> <ul style="list-style-type: none"> <li>• Cost effective method for accountability</li> <li>• Enables organisation to become improvement driven through re-focusing core processes to improve both productivity and service levels</li> <li>• Takes a broad number of stakeholder views into account</li> <li>• QMS 2000 at the University of Louisville has significantly enhanced the use of data for quality assurance purposes</li> </ul>
Modified (SERVQUAL)	<ul style="list-style-type: none"> <li>• Abdullah (2006), Malaysia</li> <li>• Markovic (2006), Croatia</li> <li>• Ford et al, (1999), New Zealand and USA</li> <li>• Kwan &amp; Ng (1999), China and Hong Kong</li> </ul>	<p>Benefits:</p> <ul style="list-style-type: none"> <li>• Enables assessment of internal and external customer views which is important in a competitive environment</li> </ul> <p>Limitations:</p> <ul style="list-style-type: none"> <li>• Student culture impacts upon perceived importance of different elements of HE and thus on perceptions of quality</li> <li>• Performance indicators related to management processes but do not address education quality</li> </ul>



resource allocation, improvements in customer service and faculty morale. These models also incorporate the perspective of students as customers, an issue of growing importance in an increasingly competitive environment. A final benefit is that the models all facilitate the identification of quality enhancement priorities.

However, these benefits must be reconciled with a number of limitations largely related to the dilemma of applying business models in an HE context. For example, the bureaucratic structures and lack of effective leadership are reported to undermine the application of the models (Roffe, 1998; Osseo-Asare and Longbottom, 2002; Cruickshank, 2003; Mizikaci, 2006). The effectiveness of the models also relies predominantly on a team-based approach that is proving contentious to the traditional autonomous role of academics (Srikanthan and Dalrymple, 2004). In addition, there is a continued debate on the role of the student as customer or co-producer in the higher education system and the impact this has on the measurement and management of quality (Matwani and Kumar, 1997; Shutler and Crawford, 1998; Lawrence and McCullough, 2001; Tam, 2002). Furthermore, there is an inherent difficulty in quantifying the outputs of higher education for self-assessment purposes. When assessing the outputs, the models are reported to have far greater applicability in measuring administrative functions within the HEIs rather than the quality of research or teaching and learning (Aly and Akpovi, 2001; Cruickshank, 2003; Srikanthan and Dalrymple, 2004). As the fundamental product of higher education is the learning of students (Shutler and Crawford, 1998), this would appear to be a major shortcoming.



Given these limitations, there is growing concern that management of quality needs to focus on student learning experience, especially in view of the current environmental forces impacting on higher education. As Srikanthan and Dalrymple (2002:216) advise:

‘...attempting to implement quality management models as practiced in industry across all the operations of a university is flawed in view of their tenuous fit with the core operation: education.’

In response to these concerns, there have been increasing efforts made to develop quality management models specifically for HE. Academics across the three geographic regions reviewed have attempted to develop models that reflect the unique characteristics of HE and reflect the importance of the student learning experience. Table IV provides an overview of the models developed and their key characteristics. The bulk of these have also been tested or applied within departments or institutional systems.

The majority of the models presented in Table IV still borrow heavily from industrial applications. One exception, is the model developed Srikanthan and Dalrymple (2002, 2003, 2004). These researchers have developed their model drawing solely on the educational, rather than the managerial literature. A key focus of their proposed model is that the student learning experience is firmly at the centre of quality management. While the other models developed have encompassed a range of activities, they also recognise the centrality of the student learning experience in quality management initiatives. These

Table IV: Quality Management Models Developed for HE

HE Specific Models Developed		
Model for Quality Management in Higher Education	Srikanthan & Dalrymple (2004, 2003, 2002), Australia	<ul style="list-style-type: none"> <li>• Approach is based on evidence from educational literature</li> <li>• 4 methodologies; transformative; engagement theory of programme quality; methods to develop a university of learning; strategies for achieving a responsive university</li> <li>• In teaching and research students are participants and the focus is on their learning</li> <li>• Implementation of 2002 model focusing on philosophies and approaches to student learning and methods of engendering a dynamic collaboration around student learning</li> <li>• Recommends a move from the ritual of teaching to focus on student learning, academic productivity and organisation performance</li> <li>• Radical change using student learning as the central criterion</li> </ul>
Excellence Model	Pires da Rosa, et al, (2001, 2003), Portugal	<ul style="list-style-type: none"> <li>• Based on empirical research, 9 criteria supporting self analysis and acting as a source for quality improvement and leading strategic development</li> <li>• Quality management associated with evaluation activities covering teaching and research and regarded by participants as positive</li> </ul>
Academic Award Model	Badri & Abdulla, (2004), UAE	<ul style="list-style-type: none"> <li>• Concerned with teaching, research and services to develop a more explicit approach to faculty rewards/awards</li> <li>• Model includes criteria for diversification, course development, material production, student evaluation, course files, teaching portfolio and contributions to conferences and workshops</li> </ul>
Model to Assess Quality of Student Experience and Learning Outcomes	Tam (2006, 2002), Hong Kong	<ul style="list-style-type: none"> <li>• Assessment of quality in HE should be measured in terms of student growth, this calls for attention on student outcomes, including cognitive and non cognitive aspects of learning, skills and satisfaction with university environment</li> <li>• Investigates relationship between university experience and student outcomes as a means of determining a university's success in meeting its educational goals and proposes approach oriented to this</li> <li>• Instrument designed to help understand the student experience</li> </ul>
Multi – models of Quality in Education	Cheng & Tam (1997), Hong Kong	<ul style="list-style-type: none"> <li>• Identifies 7 models of quality in education and emphasises the complexity of pursuing educational quality</li> <li>• Effectiveness and quality are concepts used to understand performance, so approach needs to be comprehensive and take account of longer term goals</li> <li>• Cross cultural issues require further investigation</li> </ul>
Performance Measures for Academic	Al-turki & Duffuaa (2003), Saudi Arabia	<ul style="list-style-type: none"> <li>• Adopts a systems approach and identifies performance measures to evaluate productivity, efficiency, effectiveness, internal structure, growth and development</li> <li>• Hierarchical performance measurement model is based on outcome measures for each category – input,</li> </ul>



Departments		process and outputs
Internal Audit	Reid & Ashelby (2002), UK	<ul style="list-style-type: none"> <li>Identifies tangible benefits from internal audits, such as: significant cultural changes which can re-enforce quality enhancement, create greater staff involvement, as well as benefits to the institutions</li> </ul> <p>Considers programme management, development and evaluation, staff development, assessment of students, external examining processes, collaborative provision and value added</p>
Internal Audit	Becket & Brookes, (2006), UK	<ul style="list-style-type: none"> <li>Model to evaluate quality management approaches in departments</li> <li>6 dimensions identified: internal/external perspective, qualitative/quantitative information, snapshot/longitudinal time span, quality dimension assessed, and system elements</li> </ul>
Quality Dimensions Framework	Owalia & Aspinwall (1996), UK	<ul style="list-style-type: none"> <li>30 different quality characteristics identified for HE using generalised dimensions defining quality drawn from manufacturing/software and service methods</li> </ul>
Programme Evaluation Model	Mizikaci (2006), Romania	<ul style="list-style-type: none"> <li>Considers HE as a system (input, processes and outputs) for programme evaluation and identifies social, technical and management systems within these</li> </ul>
Quality Management Framework	Grant, et al (2004, 2002) Widrick et al (2002), USA	<ul style="list-style-type: none"> <li>Identify dimensions of quality in HE – quality of design, conformance and performance</li> <li>Quality of performance is least likely to be considered</li> </ul>
Subject Quality Assurance System	Martens & Prosser (1998), Australia	<ul style="list-style-type: none"> <li>University-wide system of quality assurance to enable systematic review and enhancement of individual subjects, allowing for discipline-specific requirements.</li> <li>The focus is on the improvement of student learning</li> </ul>
ISO – Based TQM Model	Borahan & Ziarati (2002), Turkey	<ul style="list-style-type: none"> <li>Combine TQM, Malcolm Baldrige and ISO 9000 principles drawing on USA and UK practices to identify quality criteria</li> <li>Building blocks for quality assurance and control include: programme management and operations, curriculum design content and organisation, teaching learning and assessment, student support and guidance, and quality assurance and enhancement.</li> </ul>
5 Phase TQM Implementation Model	Motwani & Kumar (1997), USA	<ul style="list-style-type: none"> <li>Identifies the issues which institutions need to consider when implementing TQM in 5 phases: deciding, preparing, starting, expanding or integrating, and evaluating</li> </ul>

models are therefore potentially more relevant to the primary function of teaching and learning within HEIs. Furthermore, emphasis is placed on continual enhancement of teaching and learning in light of the dynamic HE environment.

These researchers therefore purport that quality models developed specifically for HE are more compatible with the primary roles of HEIs. However, the majority of quality initiatives adopted in the countries under review appear to be utilising quality models developed for industry. Given the current environmental forces presented in Table I, it is not surprising that industry models that focus on efficiency and effectiveness are being implemented. However, there are potential dangers in this approach. As Table I indicates, in many countries the focus of quality management initiatives appears to be predominantly on non-academic matters. For example, Mok (2005) reports that

‘that the University sector in Hong Kong has been shaped and managed in line with managerialism and economic rationalism .....[and that] ‘the three major aspects of effectiveness, efficiency and economy have been adopted as the primary criteria for assessment [of quality]’.

Other researchers are also reporting on the corporatisation and managerialist cultures infiltrating HEIs (Jackson, 1997; Srikanthan and Dalrymple, 2004). While this approach encourages academics to ‘do more with less’ to meet the

growing demand for HE and the accountability agenda, it fails to address the learning experience of an increasingly diversified student body. Some authors explicitly argue that the quality of teaching and learning is actually decreasing under current approaches (Srikanthan and Dalrymple, 2004; Harvey, 2005). Nevertheless, unless the quality of learning for students is maintained, the economic imperatives of many national governments will not be realised. This begs the question of whether it is time to re-evaluate current approaches to quality management in HE. As Hwang and Teo (2001) propose, the issue for HEIs is how to deliver quality education, rather than how important quality in education is. Similarly, Cruikshank (2003) advises, that management of quality should be replaced by management for quality.

## Conclusion

This paper has served to identify a number of common environmental forces in different national environments that are serving to put the issue of quality management firmly on HEI agendas. In response, many HEIs are testing or implementing quality management models developed for industry. While there are benefits to be gained from using these models, these are related predominantly to the efficiency and effectiveness of non-academic functions. In addition, these models are reported to encourage a culture of managerialism in HEIs. Whereas this approach can be effective in responding to climates of accountability, the effectiveness of these models in managing the quality of teaching and learning has been questioned. This review suggests that it may be time to rethink current approaches to quality

management in HE to ensure quality of teaching and learning is not neglected.

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