UNIVERSITY OF SOUTHAMPTON

FACULTY OF BUSINESS AND LAW

School of Management

Knowledge Management and Higher Education:
A UK Case Study using Grounded Theory.

by

Ms Desireé Joy Cranfield

(B.Sc Hon M.Sc)

Thesis for the degree of Doctor of Philosophy

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UNIVERSITY OF SOUTHAMPTON

ABSTRACT

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"Knowledge Management and Higher Education: A UK Case Study using Grounded Theory".

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Higher Education Institutions (HEIs) in general, and universities in the UK in particular, are complex organisations, each characterised by a distinctive ethos, particular history, mission, size, and shape, being highly autonomous, yet bound together by the identical challenges of massification, the emergence of greater accountability imposed by the government, sharp financial cuts, a greater emphasis on student satisfaction, globalisation, the knowledge economy, marketisation and advances in information and communications technologies. Some scholars contend that strategic management of Knowledge and the knowledge assets of a university can provide the competitive advantage that universities need, as well as provide a solution to address some of these challenges, providing many potential benefits to each area of Higher Education. However, have HEIs adopted Knowledge Management on an institutional level to enhance its competitive advantage? What are the perceptions and practices of Knowledge Management within the HEI context; what are the contributing factors that hinder or promote the use of Knowledge Management within the Higher Education context? A cursory literature review could not answer these questions and hence, this sequential, quantitative-qualitative, mixed-methodology, multi-site case study, investigated these questions within the context of the United Kingdom Higher Education universities.

The research, presented in two phases, with the first phase providing an overview of the state of Knowledge Management within the UK universities, and the second phase presenting the findings of an in-depth multi-site case study, conducted using Grounded Theory as a methodology, suggests that Knowledge Management tools and techniques were beginning to be used on an institutional level as a management tool within the Higher Education context in the UK; however, it was not being used extensively, and was implemented in pockets, with emphasis on Information Management more than Knowledge Management, and not generally in a systemic way. The research further suggests that the contributing factors that had an influence on Knowledge Management not being used extensively within this context were varying, and included: the characteristics of universities and the nature of academic work, and the perceptions of Knowledge and Knowledge Management within this context. Despite this, a number were beginning to implement Knowledge Management systemically across the university. The research, and this thesis, presents a substantive theory for Knowledge Management in Higher Education, and has contributed to the field of Knowledge Management and Higher Education by identifying the current practices and perceptions of Knowledge Management within the context of Higher Education in the UK, and the factors that hinder its use within this context.

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I, *Desireé Joy Cranfield* declare that the thesis entitled *"Knowledge Management and Higher Education: A UK Case Study using Grounded Theory"* and the work presented in the thesis are both my own, and have been generated by me as the result of my own original research. I confirm that:

- this work was done wholly or mainly while in candidature for a research degree at this University;
- where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
- where I have consulted the published work of others, this is always clearly attributed;
- where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
- I have acknowledged all main sources of help;
- where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
- parts of this work have been published as:

Cranfield, D. and Taylor, J. (2007) *"Knowledge Management Practices within Higher Education Institutions in the UK"*. KMPro, Vol.4, No.2, pp.6-15.

Cranfield, D. and Taylor, J. (2008) *"Knowledge Management and Higher Education: A UK Case Study"*. Electronic Journal of Knowledge Management.

Cranfield, D. and Taylor, J. (2009) *"Higher Ed adapts slowly to global challenges"*. *InsideKnowledge, Vol 12., Issue 5.*

With the oversight of my supervisor, Professor John Taylor, editorial advice was sought, only for Chapter 3. No changes of intellectual content were made as a result of this advice.

Signed: DJ Cranfield  **Date:** January 2011

First, and foremost, praise needs to be given to God who has enabled me to see this long and winding journey through to completion. This journey has not been without its challenges, and competing priorities often demanded my time; however, I am eternally grateful to have been given the opportunity to complete it.

One of the joys of working within Higher Education is that as an organisation, it appreciates the pursuit of higher learning, and hence, provides support to staff in their pursuit of advancing their learning. As such, I would like to thank the University of the Western Cape for providing me with the initial sabbatical of one year to pursue my PhD, and then the remaining years of leave (up until my resignation in October 2008), to take up the scholarships offered to me, which enabled me to read for the PhD.

Second, I would like to express my deepest gratitude to the National Research Foundation in South Africa, for providing partial funding to pursue the PhD at Southampton University. A friendly administrator and manager goes a long way to encouraging others, even those they do not know very well, and to this end, I would like to thank Vanessa for being that warm person on the other end of the phone, who assisted me with the management of the funds for this educational pursuit. A sincere thanks also needs to go to the School of Management at the University of Southampton, and in particular Professor John Taylor, Director of the Centre for Higher Education Management and Policy (CHEMPaS), for actively seeking additional funding, via a School of Management Scholarship, making it possible for me to travel abroad and study within the United Kingdom (UK). The School of Management, as well as CHEMPaS, also provided me with additional research funding that enabled me to conduct case studies at 7 universities spread across the United Kingdom. I am deeply grateful for this assistance and opportunity. I was also afforded the opportunity to present at 2 International Conferences, in Vienna and in South Africa, during my time as a research student. For this I need to thank the Faculty of Business and Law (previously known as the Faculty of Law Arts and Social Sciences), the School of Management, and CHEMPaS for providing the funds to enable this wonderful, life, and research enriching opportunity.

CHEMPaS, within the School of Management, was a haven for all of its students, providing the administrative, structural, and emotional support not only to myself,

but to all the students within it. As an international student, within a foreign country, how one is received and the warmth and research environment created, is absolutely paramount to a student's success and experience, for which sincere thanks needs to go to the CHEMPaS unit and staff – Professor John Taylor and Rosemary Reynolds. Firstly, a sincere thanks goes to Professor John Taylor, for having the absolute belief in me as a person and my work. He is an exemplar of a supervisor, exactly the kind of supervisor I needed to support me through this journey, and to assist me to completion – THANK YOU so much John, your continued support and absolute belief, your kind, yet resolute manner, your gentle persuasion and encouragement, was highly appreciated! I also need to thank Rosemary Reynolds, who without a doubt was also another lifeline for many of the international students, as well as for me. Professional, sincere, and always positive, always willing to assist wherever possible, she provided us with so much professional, administrative and emotional support, and often we would remark that, had it not been for the CHEMPaS unit, and in particular Rosemary and John, as students, we probably would have had a very, very different student experience within the School of Management.

I need to express my absolute appreciation and love for my late dad, Donald Basil Segers, who unselfishly and quietly, yet persistently, would encourage the love for learning and furthering our education, and pursuing our dreams and goals despite adversity. He had such an ability to understand his children and to provide the necessary support and encouragement as, and when, needed. My dad, sadly passed away while I was away on Sabbatical in the UK pursuing my PhD, and hence, I am deeply saddened that I did not have the privilege of spending quality time with him over the past 5 years, but know that he would have been an exceptionally proud dad to see the completion of my PhD. To my mom, Evelyn Segers, who unselfishly gave of her love and compassion, and relentlessly provided for us without a murmur, and in her quiet way showed that strength lies in the ability to accept things that cannot be changed, a dignified and more humble person, I know not. Thank you for your love and example mom, I love you.

My deepest appreciation is, without a doubt, reserved for my immediate family: my beloved, loving husband Hilton Paul Cranfield, my beautiful twin girls Shannon Joy and Sasha Lee, and my adorable youngest son, Liam. Doing a PhD, and especially writing it up, consumes a copious amount of time, and did consume an enormous amount of my time. Firstly, to my husband, who has consistently encouraged me,

and enabled me through his love and unselfish support, to pursue and further my education. His patient, kind, gentle support, and continuous help throughout the duration of the degree, has been unparalleled. I know that the duration of this degree has stretched his patience, I am sure, to the utmost limit; however, I am eternally grateful to him for providing me with the opportunity to pursue it. To my children, words cannot express my deepest thanks for their outstanding patience, hard work, and love; thank you my precious angels. I love each one of you dearly, and thank each one of you for your part in assisting me to complete this mammoth task. Our precious son, Liam was born during my 3rd year of the PhD, and as such I took off some time to care for him; a time that I thoroughly enjoyed. He has been such a blessing and joy to all of us; our love for him continues to grow daily. My appreciation is deep, my love is real, and everlasting, my heart is touched by each expression of love and support.

Thank you, baie dankie, nkosie!

I dedicate my thesis to:

My late father and dear mother,

Donald Basil Segers and Evelyn Ruth Segers,

&

To my loving husband,

Hilton Paul Cranfield

&

To my adorable three children,

Shannon, Sasha and Liam Cranfield

AC	Academic Capitalism
CA	Competitive Advantage
CHEMPaS	Centre for Higher Education Management and Policy at Southampton University
CI	Competitive Intelligence
EWS	Enterprise Wide Systems
HE	Higher Education
HEIs	Higher Education Institutions
IM	Information Management
IR	Institutional Research
IRUs	Institutional Research Units
KE	Knowledge Economy
KLC	a Knowledge Life Cycle
KM	Knowledge Management
KMS	Knowledge Management Systems
KT	Knowledge Transfer
SGKM	Second-Generation Knowledge Management

THESIS STRUCTURE

The research is presented in this document in four sections: Section I, Section II, Section III, and Section IV.

Section I of the research study is divided into, and includes, 3 chapters:
Chapter 1 – *The Introduction to the research*;
Chapter 2 – *The Literature Review*; and
Chapter 3- *The Research Methodology and Design.*
This section provides an introduction to the research problem and discusses the importance of the research; presents a critique of the current literature relevant to the research and the field of Knowledge Management and Higher Education; and then sets out the research design chosen.

Section II follows, also includes 3 chapters, and presents the data analysis of the research, set out in two phases:
- Phase I: *The Quantitative Phase;* and
- Phase II: *The Qualitative Phase*.

Phase I includes one chapter, Chapter 4 and describes the data collection and analysis of the survey distributed to HEIs within the UK. Phase II is divided into two chapters: Chapter 5 expounds on the historical and contextual issues of the cases, and Chapter 6 presents the analysis of the data in this phase, presenting the themes that have emerged.

Section III presents a summative argument of the two phases, the importance and significance of the research to the field, limitations of the research, and the aims and objectives of the research in relation to the analysis, in Chapter 7. Conclusions and some recommendations are presented in Chapter 8.

Appendices are included in Section IV, which provides evidentiary aspects of the research conducted.

SECTION I

INTRODUCTION, CONTEXT AND THE RESEARCH METHODOLOGY

SECTION I - OVERVIEW

Section I of the research study includes 3 chapters:

Chapter 1 provides a rationale for the research and presents the research problem, the importance of the research, and outlines the scope of the research study. This chapter concludes with the structure of the thesis as set out.

Chapter 2 provides an overview and critique of the literature on Knowledge Management and Higher Education within the United Kingdom, in particular addressing the issues of relevance of Higher Education, the changing Higher Education Landscape and the factors that have impacted on HEIs generally, and more specifically in the UK. The chapter then closes with some comments on the gap in the literature, and how this research aimed to address the gap.

Chapter 3 presents the research design which was influenced very strongly by both Crotty's (1998) four elements of research: the epistemology, theoretical perspective, methodology and methods, and Creswell's (2009) view on research design. It includes the philosophical assumptions underpinning the research, as well as the research strategy and techniques applied. Justification for the methodological choice and philosophical perspective underpinning the research, strategies to enhance the quality of the research, and a critical assessment of the research, is provided. Summative remarks conclude this chapter.

Chapter 1

INTRODUCING THE RESEARCH RATIONALE AND THE RESEARCH CONTEXT

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CHAPTER 1

1. INTRODUCING THE RESEARCH RATIONALE AND CONTEXT

1.1. INTRODUCTION

Higher Education (HE) in the UK is said to be rich, and diverse, provided by many different types of institutions, that make a valuable contribution to the UK's economic and social development (Higher Education Funding Council For England, 2009b). The Higher Education Funding Council for England (HEFCE) report (2009b) entitled, "A Guide to UK Higher Education in England", further articulates that notwithstanding the traditional roles of research and teaching, the provision of HE makes a valuable contribution to the UK's economic and social development, and suggests that Knowledge is built upon and shared, skills are developed, and social mobility, innovation and enterprise are enabled through it. The Higher Education sector in the UK consists of colleges and universities, each being very diverse, and ranging in size, mission, subject mix and history (Shattock, 2003). This view is supported by the Browne (2010) report which suggests that HEIs (HEI) in the UK are each characterised by a distinctive ethos, particular history, mission, size, and shape, and are highly autonomous, each responsible for the management and direction of its own affairs. In other respects, HEIs are bound together by similar challenges (Higher Education Funding Council For England, 2009a). What are the challenges that HEIs in the UK face in the 21st century, and how have the challenges impacted upon the way HEIs go about their daily business?

Higher Education in the UK has undergone substantial change over the past few decades, having moved from an elite system to a system that would attempt to service the masses. Coupled with this, the emergence of accountability and severe funding cuts - proposed and planned – have had a major impact on it. A more competitive and diverse higher education sector is now being encouraged, and, following the review by Lord Browne (2010), the Government announced a fundamental reform of higher education funding, to be introduced from autumn 2012. Higher Education in the UK has therefore been characterised by change in the past, and will continue to be characterised by change in the near future, with drastic suggestions to funding being imposed, which, in the view of a large number

of students and professionals, will potentially threaten the fundamentals of HE in the UK today.

1.2. REASON FOR THE RESEARCH

In the year 2000, the researcher was offered a secondment position to a project within the Institutional Planning office within a South African Higher Education Institution. This position, not only exposed the researcher to the challenges of Higher Education in South Africa during a time of national HE change, but, more specifically, the issue of managing information, in particular, was a special challenge in an environment that required continued provision of evidence of the quality and mix of programmes within the University. This intrigued the researcher, and, given the experience and practical problems faced, the researcher therefore submitted an initial proposal that addressed the issue of management information systems. However, after a literature search and review, it became apparent that more than a technological solution was required, and that concepts had moved on to include Knowledge Management (KM). The interest and research therefore shifted to address Knowledge Management within Higher Education, particularly addressing issues of perceptions and practices, and addressing the contributing factors that hindered or promoted the use of KM principles within the context of HEI given the changed landscape. The literature revealed a vast number of articles on KM; however, the literature on KM as applied in the HEI sector, was substantially lacking.

An overview of the research context, problem and the research questions follows next, with a deeper discussion of the research context and the challenges HEIs are facing and have faced, are presented in further detail in chapter 2, section **2.3** on page 27.

1.3. THE RESEARCH PROBLEM AND QUESTION

HEIs are facing unprecedented challenges; and universities within the UK have not been exempt from these challenges. Although the research was conducted before the New Coalition were elected into government - before the subsequent cuts in public funding suggested in 2010, the global recession, and the demise of the banking system in Britain - Higher Education in the UK had undergone substantial funding cuts and substantial change previously, during the period of the Thatcher government in the 1980's.

Exposure to market forces in the 1990s (Shattock, 2003), impacted on the way academics work, teach and do research within Higher Education. The relevance of Higher Education started to be questioned and no longer were academics able to do research for research's sake, and the social contribution made by HEIs was being questioned, especially during the financially constrained times. HE universities in the UK have progressed from being accessible only to the elite, to being a system for the masses, and with it, has come a number of associated challenges, including the emergence of an environment of accountability, measurements and assessment for teaching and research. The 21st century has heralded in a different set of challenges for Higher Education; the knowledge economy, globalisation, ubiquitous computing and advances in technology have made the access to knowledge and information open to everyone, as well as placing greater emphasis on the role of knowledge, and knowledge assets within institutions. As the emphasis changed from production to information management, to support HEIs within this new environment, a new form of management was required, introducing manager-academics and managerialism into the HEI sector. Given the changes and challenges HEIs were facing, the researcher was keenly interested to understand whether HEIs had adopted management tools to enhance their competitive advantage, and, in particular, a tool like Knowledge Management, used on an organisational-wide level. A cursory review of the literature had suggested that there was some evidence of implementation; however, the evidence was very limited and suggested that implementation was localised within a department or unit within a university, and not implemented on an organisational level. The literature also suggested that KM applied within an HEI could provide significant benefits to each of the areas and functions of it, and that an institution-wide approach to knowledge management could lead to exponential improvements in sharing knowledge (Kidwell et al., 2000:p.31). The researcher was, therefore, keenly interested to uncover the state of KM within HEIs in the UK, at the start of the 21st century, and to understand whether the benefits as suggested by Kidwell *et al* were being realised by the use of this management tool, KM

Given the above challenges, and the increasing importance and emphasis on knowledge within the workplace, the researcher deemed it important to gain an understanding of the current state of KM implementation in the UK, and, once that overview was understood, further in-depth interviews, at a select number of universities, would concentrate the research to establish explanations of some of the

practices and perceptions of KM in the UK, and contributing factors that hindered its use. The research therefore aimed:

> To investigate Knowledge Management practices and perceptions within the UK HEI context.

More specifically, the research aimed to investigate the following:

> Whether Knowledge Management was being used as a management tool on an organizational level within Higher Education Institutions in the United Kingdom, to enhance competitive advantage;
>
> What the contributing factors were, that hindered or promoted the implementation of Knowledge Management within the HEI context;
>
> What the perceptions and practices of KM were, within this context.

1.4. IMPORTANCE OF THE RESEARCH

In 2000, Kidwell *et al*, contended that as Knowledge Management matures as a corporate discipline, more companies would gravitate towards a more holistic approach to KM, and, although research shows that many companies have begun to develop some sort of knowledge management capability, very few (6 percent) have implemented knowledge management programs on an enterprise-wide scale (Kidwell et al., 2000:p.30).

Serban and Luan (2002a) contend that whereas Knowledge Management is not a radically new idea, it is a new way of looking at how HEIs could operate more dynamically and effectively in the 21st century, and "is poised to become a mission-critical component" (Serban and Luan, 2002a:p.1).

Kidwell *et al* (2000:p.31) further purport that Higher education was moving from the old culture that considers, "What's in it for me?" to a new culture that says, "What's in it for our customer?" They suggest that a key ingredient to an institution's readiness to embrace KM is its culture - the beliefs, values, norms, and behaviours that are unique to an organization - and propose that HEIs were developing a culture that was ready to embrace Knowledge Management. However, in the year 2008, were HEIs ready to embrace Knowledge Management? Had they embraced KM over the years to enhance competitive advantage, especially given the demands on them to be more competitive? Was KM becoming a mission critical

component as Serban and Luan suggested? A discussion of the scope of the research follows next.

1.5. SCOPE OF THE RESEARCH

Higher Education providers in the UK, include universities and colleges in England, Ireland, Scotland and Wales. Each of these HEIs have their own devolved management and their own funding bodies. For the purposes of the research, universities from all four countries were included in the study, and the colleges were excluded. The survey instrument was sent to a total of one hundred universities, of which the response rate was 46%, when taking all the email responses into account. 29% completed the surveys, either online or on the hardcopy, and returned it to the researcher.

The second phase of the research relied on universities expressing an interest in participating, by indicating as such on the questionnaire in the first phase. Seven universities, from two different countries within the UK, were able to follow through with the actual case study and the interviews. The study aimed to include all types of universities, and aimed to include a range of universities in terms of their size, and type of institution. The one private University in the UK did initially indicate that they would participate in the case study; however, were unable to participate eventually. The case study focused on four aspects of KM: Technology, Organisation, Learning, and Leadership, and addressed questions within those four areas.

1.6. OUTLINE OF DISSERTATION

The research is presented in three sections with a further section, Section IV used to contain some of the documentary evidence: Section I – Introduction, Context and Research Methodology; Section II – Analysis of the Data; Section III – Summary and Conclusions, and Section IV – The Appendices. The outline of the thesis can be viewed in Table 1. 1,on page 16.

TABLE 1. 1 THESIS STRUCTURE

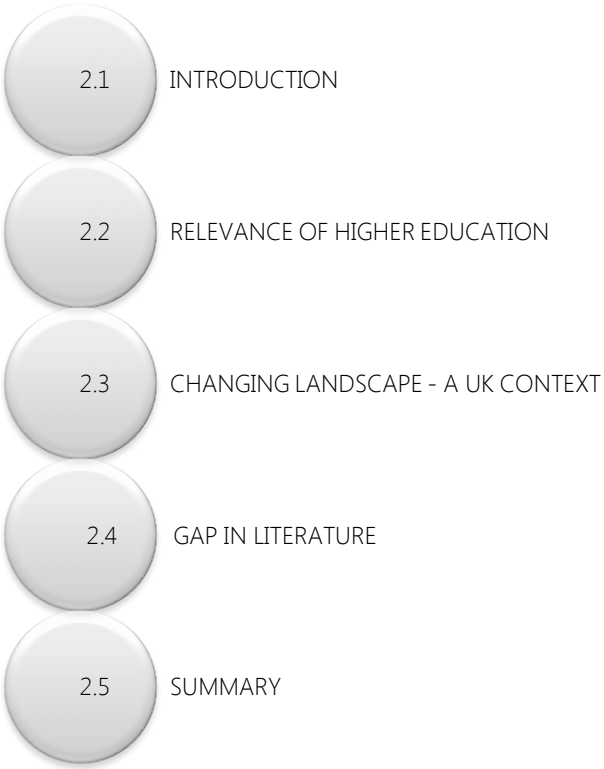
SECTION I - Introduction, Context and Research Methodology	
,	Chapter 1 – Introduction Chapter 2 - Literature Review and Context Chapter 3 - Research Methodology
SECTION II - The Data Analysis	
• Phase I: The Quantitative Phase Chapter 4 – A Survey of KM in HEIs in the UK • Phase II : The Qualitative Phase Chapter 5 – The Case Study: the contextual issues explained Chapter 6 – Emergent Themes and Concepts of KM in HEIs in the UK	
SECTION III - Summary and Conclusions	
	Chapter 7- Summary Chapter 8 - Conclusions
SECTION IV - Appendices	

A discussion of the KM and Higher Education literature follows in the next chapter, with specific emphasis on the changes and challenges that HEIs in the UK have had to face over the past few decades and will continue to face, and how KM fits into the HEI sector.

Chapter 2

A REVIEW OF HIGHER EDUCATION AND KNOWLEDGE MANAGEMENT

A REVIEW OF HIGHER EDUCATION AND KNOWLEDGE MANAGEMENT



CHAPTER 2

"Typically, the literature review forms an important chapter in the thesis, where its purpose is to provide the background to, and justification for, the research undertaken" (Bruce, 1994)

2. A REVIEW OF HIGHER EDUCATION AND KNOWLEDGE MANAGEMENT

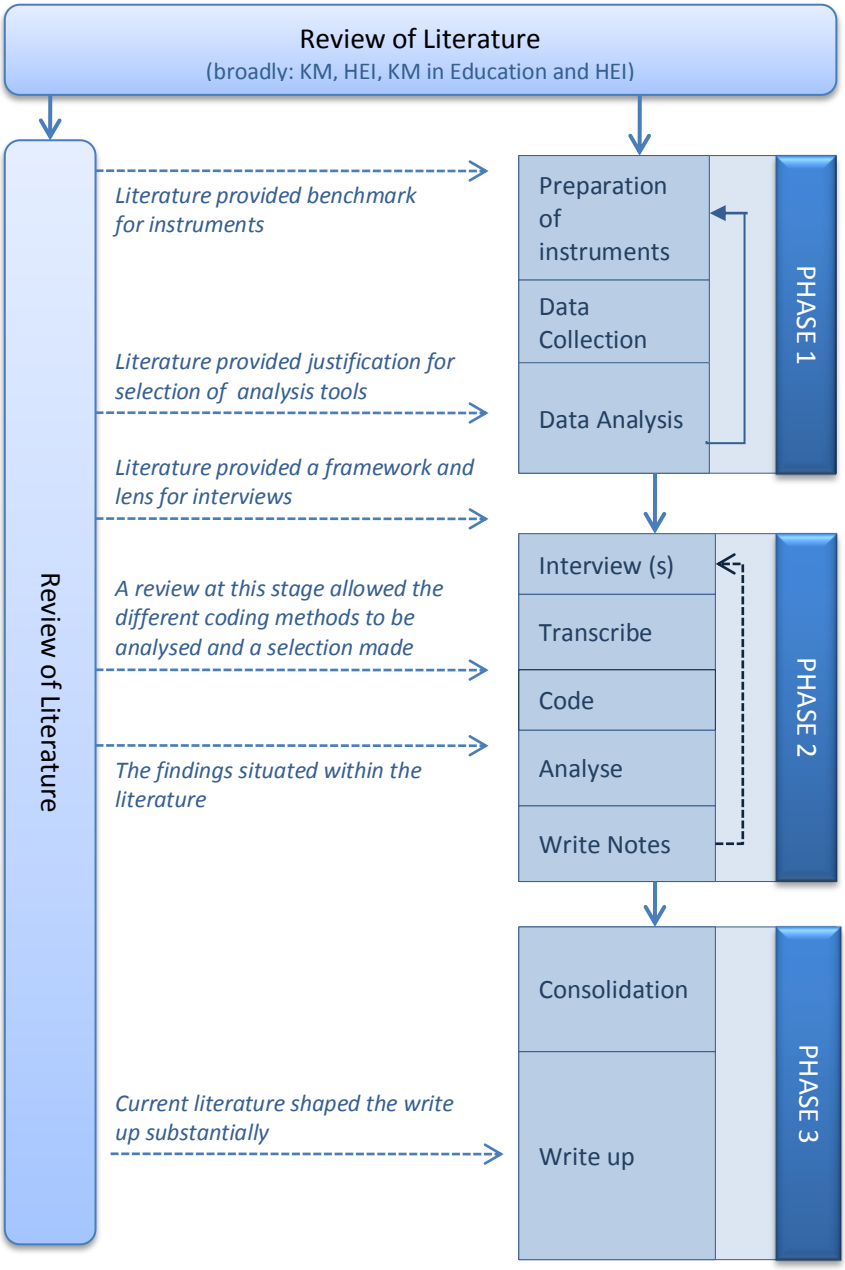
2.1. INTRODUCTION

This chapter presents a review of the KM and HEI literature as it relates to the research, highlighting the history of change and the impact on HEIs, and the impact of globalisation and the Knowledge Economy, and considers the changing landscape and the demands on HEIs. The United Kingdom is a country grappling with economic and political issues, having to acclimatise itself to a new coalition government (Conservative and Liberal Democrat), a Government that has, from the outset, applied stringent funding cuts across all services, especially public services, including Higher Education. Universities stand to face further challenges imposed by the new coalition government and their proposed and planned funding policies, as part of a strategy to reduce the country's financial deficit.

Given the nature of this research (inductive), and the choice of methodology being Grounded Theory Methodology (GTM), the aim of the literature review at the beginning stages of the research was two-fold: 1) To allow the researcher to become familiar with the KM concepts and literature generally, and 2) To identify the gap in literature for the research. There are different views, though, on when to conduct a literature review, when using the Grounded Theory Methodology. Strauss (1998) suggests that a cursive review of the literature allows the researcher to become familiar with certain concepts of interest and could provide a general frame or lens for the research. Glaser (1978, 1992), on the other hand, suggests that the researcher should not cloud the research with preconceived ideas from the initial emersion in the literature, and should approach the research with a mind free of any preconceived ideas about the research. Given these contrasting views from the originators of the GTM, and being a novice in using the methodology,

the researcher was presented with a dilemma as to the choice to make; however, chose to do a cursory review of the literature at the beginning, so as to understand pertinent issues relating to KM and HEI in the UK more generally, as well as to understand whether the research was going to be viable to pursue. The review of the literature, however, continued throughout the different phases of the research process as can be seen in Figure 2. 1, below:

FIGURE 2. 1 CONTINUAL PROCESS OF USING THE LITERATURE



Source: Author

Although the body of literature for KM was substantial, and a steady growth in the number of journals and articles is documented (Prusak, 2001:p.44), the researcher became acutely aware of the lack of research conducted in the area of KM in HEIs generally, and more specifically in the UK.

The literature of Knowledge Management, revealed an array of perspectives, frameworks, models, theories, guidelines of good practice, success factors and challenges, and case studies of application of KM; however, the literature on KM in Higher Education was substantially lacking, and especially the focus of KM in UK HEIs was surprisingly minimal. This review situates the UK University in the context of change, and aimed to provide a conceptual framework for the research, given the research methodology chosen. The findings of this research are contextualised and situated further within the literature in chapter 6.

The chapter therefore starts with a discussion and presentation of the substantial change that universities within the UK have undergone in the past few decades, addressing the impending changes suggested by the new Coalition Government as well. It then focuses on the challenges and subsequent opportunities presented that universities have needed to address, and will have to address in the 21st century. The issue of what knowledge is, addressing the different perceptions of it, and the perceptions of its management, follows. Whether HEIs are continuing about their business or have to change the way they go about their "business" is then addressed, and Knowledge Management as a management tool, is situated within this debate.

As a reminder, the research aimed:

> To investigate Knowledge Management practices and perceptions within the UK HEI context.

More specifically to investigate the following:

> Whether Knowledge Management was being used as a management tool on an organizational level within Higher Education Institutions in the United Kingdom, to enhance competitive advantage;
>
> What the contributing factors were, that hindered or promoted the implementation of Knowledge Management within the HEI context;
>
> What the perceptions and practices of KM were, within this context.

A presentation of the pertinent arguments and debates, as related to the research study aims and objectives, is presented next, starting with the relevance of Higher Education and then moving on to the changing landscape of the Higher Education context in the UK.

2.2. THE RELEVANCE OF HIGHER EDUCATION

It is important to address the question "What is the role of universities today, and what function do they have in today's society and economy", as a start to the discussion on change and HEIs. Cowen (1996) suggests that, in the past, there has been some confusion about what a university is, and that the purposes and function of a university are now less clear than before. There is an abundance of literature and views on the subject of relevance of HEIs. However, there cannot be arguments against the view that at a very basic level, HEIs primarily are about 'sharing knowledge; "it is a place whither students come from every quarter for every kind of knowledge" (Boulton and Lucas, 2008:p.3). Palfreyman (2001) has a particular view of a university in terms of inputs-processes-outputs; his model suggests that the inputs to the HE system are students, finances, staff and infrastructure, which are transformed by the university and its processes (teaching, peer pressure, collegiality etc), into outputs (employable graduates, research, a wider social role). This view is in keeping with the view of Boulton and Lucas (2008) which is that universities serve to educate, to do research, to play a role in innovation, engage on different levels with the public and to engage on an international level. Boulton and Lucas further postulate that too many demands are being placed on the role of universities that they possibly cannot live up to, and that these demands, and the chosen role, obscure the more important societal contributions that could be made:

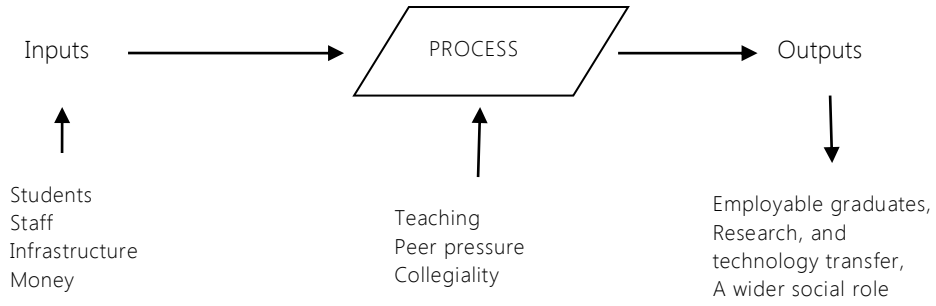
> ".....slipshod thinking about the roles that universities can play in society is leading to demands that they cannot satisfy, whilst obscuring their most important contributions to society, and, in the process, undermining their potential" (Boulton and Lucas, 2008:p.16)

Their view is that it is wrong to expect universities to be "dynamos of growth" and huge wealth generators, able to enhance the quality of life in an astronomical way; however, they suggest that, in reality, universities can only be a part of the process of producing a successful knowledge economy (Boulton and Lucas, 2008).

In October 2010, Lord John Browne of Madingley produced a report which was a culmination of a review of Higher Education in the UK. In this report, emphasis is

placed on the importance of HE for the UK economy and society in general, and the report suggests that, in a fast-changing and increasingly competitive world, the role of higher education in equipping the labour force with appropriate and relevant skills, in stimulating innovation and supporting productivity, and in enriching the quality of life, is central (Browne, 2010). HEIs today have a vital role to play in the lives of individuals, well-being of communities, and the sustainability and economic growth of countries in general. Kelly (2008:p.3) suggests that there has been a growing awareness of the role of Higher Education in the economy and that it has been widely accepted that HEIs "in the UK, have an observable economic impact through their activities", and a growing interest in the value that may be created through the exploitation of the knowledge that HEIs are believed to possess. HEIs are becoming more important in today's society; Gibbons (1998:p.1) suggests that "gone are the days" when HEIs were able to "pursue knowledge for its own sake", instead the view is that HEIs serve a more important role, and "are meant to serve society, primarily by supporting the economy and promoting the quality of life of its citizens".

FIGURE 2. 2 INPUT – PROCESS – OUTPUT MODEL OF A UNIVERSITY

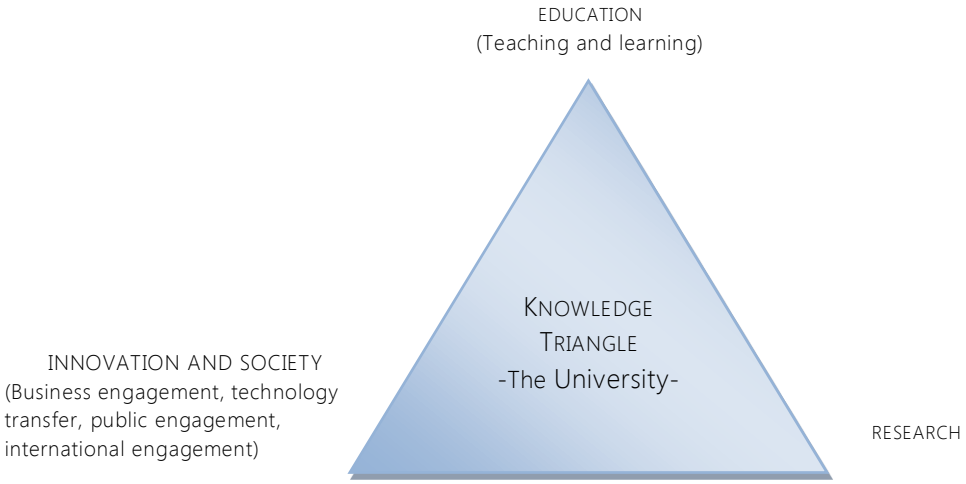


Source: Adapted from Palfreyman (2001)

It is clear that Higher Education has undergone substantial change over the past few decades, progressing from a service accessible by the elite, to a service that was made accessible to the masses. The massive advances in technology has globalised "trading" in Higher Education, and hence, Higher Education Institutions were forced to change the way they provide their services, engage with students and other stakeholders, and rethink their role. Gibbons (1998) suggests that the changes HEIs underwent were not notional and hence, were intended to have a direct impact on their behaviour and functioning. The Browne report suggests that HE is of extreme importance in the 21st Century as: HEIs help to create the knowledge, skills, and

values that underpin a civilised society; HE can transform the lives of individuals substantially; and HEIs drive innovation and economic transformation (Browne, 2010). A pictorial view of the role Higher Education plays, and its impact on the individual, civilised society and the economy can be seen in Figure 2. 4, on page 27.

FIGURE 2. 3 KNOWLEDGE TRIANGLE

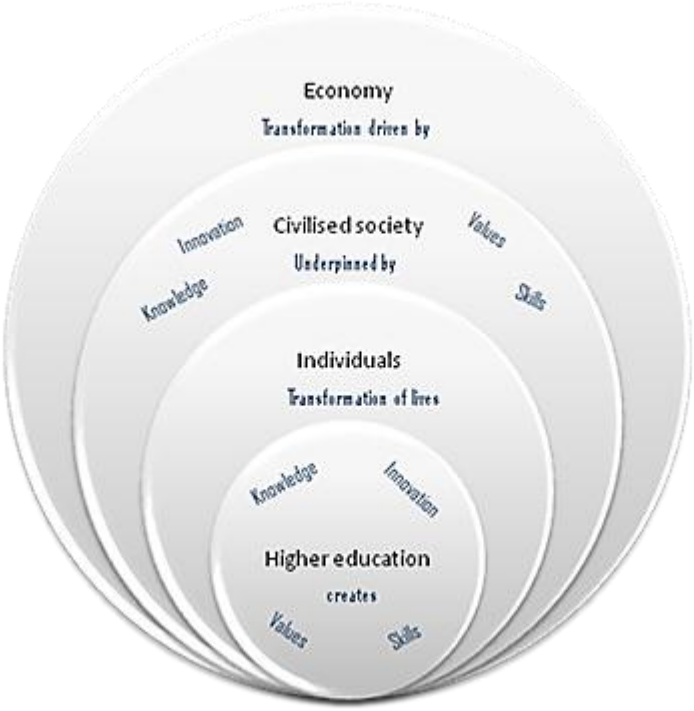


Source: After Boulton and Lucas (2008)

The Brown report of 2010, purports that Higher education is a major part of the economy, larger in size than the advertising industry, and considerably larger than the aerospace and pharmaceutical industries, which helps to produce economic growth, in turn contributing to national prosperity (Browne, 2010). Browne therefore places a very high premium on the role HEI plays in today's economy.

Gibbons (1998:p.10) refers to "the dynamics of relevance" for Higher Education, suggesting that relevance is not a static concept but a functional one that should adapt to "particular, but evolving-techno-environments". Given the external pressure on HEIs of the 20th century elements of massification, and the emergence of accountability, and the 21st century elements of globalisation, marketisation, and the knowledge economy, literature suggests that universities have started to change the way they teach, and do research (Gibbons, 1998). However, in 2002 Serban *et al* (2002b) suggested that few HEIs have formal processes that utilize knowledge to spur innovation, improve instructional and support service, or maximise operational efficiency and effectiveness. They further purport that few possibly utilise the benefits of Knowledge Management for competitive advantage.

FIGURE 2. 4 CHANGING IMPORTANCE OF HIGHER EDUCATION IN SOCIETY



Source: Author, taken from Michael Gibbons' (1998) view of the importance of Higher Education

In 2008, the researcher was interested to understand, given the substantial changes that the Higher Education sector had undergone over the past few decades, and the impact of globalisation and marketization on the sector as a whole, whether this sector aggressively sought to employ management tools like KM to ensure its competitiveness within the 21st century; whether it was 'business as usual', or whether universities were driven to change, to be able to compete in the 21st century. A glimpse of some of the changes imposed on the HE sector in the past few decades is discussed next.

2.3. THE CHANGING HIGHER EDUCATION LANDSCAPE: A UK CONTEXT

Universities within the UK vary in size, shape mission, ethos, history, and over the last three to four decades have undergone substantial change, some experiencing this change more significantly and acutely than others. Universities are said to be diverse, with the older universities in England, being established by Royal Charter, Statute or by an Act of Parliament (Higher Education Funding Council For England, 2009a). If, and when, a HEI displays the appropriate characteristics, an agency called the Privy Council, is responsible for granting University status, and many were

granted this status in 1992, when the binary divide within the HE sector was abolished.

Change has impacted upon the whole UK HEI sector, with some experiencing substantial change imposed by the government and funding councils earlier on in the 20th century (especially in the 1980s and 1990s), with others experiencing substantial change more recently, driven to the change by the nuances of the 21st century. Although HEIs have undergone substantial change already over the past decades, universities stand to experience further substantial changes. Duderstadt (2005) cites the Glion Declaration(1998) which suggests that HE has entered a significant period of change, one in which universities will attempt to respond to the challenges, opportunities and responsibilities before them, the most critical challenge facing HEIs being to develop the capacity for change, removing the constraints that prevent them from responding to the needs of a rapidly changing society.

A discussion of the history of change and its implications follows:

2.3.1 GROWTH IN HEI PARTICIPATION

The Robbins Report published in 1963, by the Committee on Higher Education, recommended that significant expansion needed to occur within this sector (Higher Education Funding Council For England, 2009a), expanding the "elite model of higher education, …to all those who had the aptitude and desire to go" (Browne, 2010:p.18). This expansion resulted in a tripling of student numbers over the years, as well as a sharp increase in the number of universities created, particularly when the 'binary divide' within the HEI sector in the UK was abolished in 1992, granting over 40 former polytechnics[1] University status. Gibbons (1998) suggests that the growth in numbers of students seeking university education had a number of consequences for Higher Education. First, there was growth in the old yet elite universities, which was soon followed by the creation of new universities, then the expansion of non-University forms. After a very rapid rise in the number of students between 1988 and 1993, the Government placed a cap on any further growth in publicly-funded, full-time, undergraduate student numbers (National Committee of Inquiry, 1997). However, the Higher Education Act of 2004 re-emphasized the widening of participation within this sector. Shattock (2003) contends that a mass

[1] A polytechnic was an institution of Higher Learning, and did not have university status.

higher education system required some way of distinguishing between the many universities, and that there was a need to be able to assess their strengths and weaknesses in a way that an elite system did not have to do. Media-created league tables therefore become an essential part of the UK higher education in assessing and ranking universities within the UK, and reviews of research by subject fields – most noticeably in the Research Assessment Exercise (RAE)- allowed a numerical score to be assigned to each departmental submission, which eventually provides an institutional score for ranking purposes in the league tables (Shattock, 2003).

2.3.2 EMERGENCE OF ACCOUNTABILITY AND FINANCIAL CHANGE

The Dearing report suggests that, although there was widespread support for the expansion of higher education, there were some concerns that the quality assurance arrangements were inadequate to ensure comparability of standards in this enlarged sector. The impact of these concerns saw an increase in regulation and compliance requirements, with formal appraisal of teaching and research through subject reviews and the Research Assessment Exercises (Greenaway and Haynes, 2003), introduced for the first time in 1986 with five further assessment exercises carried out, with the last one conducted in 2008. The establishment of the Quality Assurance Agency for Higher Education occurred in 1997 which oversaw all quality assurance within this sector.

What followed was an increased focus on efficiencies within universities, both economic and administrative, as a result of a sharp decline in public funding, both in terms of the amount and the way in which it was dispersed. Formal public funding of universities by the central government began in 1989 and the University Grants Committee, established by the Treasury, was commissioned to look into the financial needs of University education and to advise the government on the distribution of grants to meet those needs; grants were allocated and fixed for a period of 5 years at a time (Thillaisundaram, 1998). In the 1960s, universities in the UK were almost entirely publicly funded. However, in 1975 the grant allocation cycle was changed to annual allocations with cash limits. In 1981, the then Conservative Government, with the Prime Minister being Baroness Margaret Thatcher at the time (1979 – 1990), sought to restructure HE, by abolishing the public subsidisation of overseas students, as one of the many actions taken during this time to reduce over dependence on public funds. This had an impact on universities across England, some experiencing the cuts more acutely than others. This year, the year 2010,

marks another turning point in Higher Education in the UK, where a new wave of cuts have been proposed by the new Coalition Government and passed in parliament, as well as substantial change to the Higher Education system.

Massification of Higher Education therefore, created its own set of challenges. Universities were asked to do much more with less. There was a substantial increase in demand for HEI places; however, public investment in higher education did not keep up with the demand, and the Browne report (2010) cites a drop in funding per student between the years 1989 and 1997, of 36%. The post-war and the post-Robbins publicly funded rapid phase of growth of the University system, came to a slowdown in the early 1980s under the Conservative Government, which made public expenditure reduction as a percentage of Gross National Product(GNP) one of its primary goals (Thillaisundaram, 1998). In 1981, the government sought to restructure the University system, emphasising efficiency in terms of cost and administration. The Government also sought to reduce the public contribution to overseas students and hence, enforced the full economic cost of their higher education through significantly higher fees (Thillaisundaram, 1998). This has made overseas students an attractive supplemental income source and universities have therefore aggressively recruited overseas students as a result.

A review of the HE sector in 1997, by the National Committee of Inquiry into Higher Education, chaired by Lord Dearing, led to the Dearing Report presenting a number of recommendations for this sector. This report presented changes in institutional and student funding, and made a recommendation which ended the era of universal free higher education tuition (Browne, 2010). Since 1988 when the funding councils (Polytechnics and Colleges Funding Council (PCFC) and the Universities Funding Council UFC) were created, to 1997 when the review of HE took place, an irrevocable change in the balance between public and private funding occurred, with universities in the 1960's being almost entirely publicly funded (Greenaway and Haynes, 2003). The mechanism for dispersing public funds also shifted away from block grants to fund teaching and research, to earmarked funding partly formulaic (for teaching), and partly performance based (for research), using the RAE as a measure.

Based on the Dearing recommendations, the Teaching and Higher Education Act of 1998 introduced measures to change the financial support for students, introducing tuition fees to be paid by all except the poorest, and the maintenance grant was

replaced with student loans being offered. Lord Dearing, had suggested that students pay a deferred contribution towards the cost of their tuition, after they started working; however, the Government at the time considered charging this fee upfront rather than to defer it. The principle of the deferred contribution was put into practice, however, with the Higher Education Act of 2004, and went into effect for students entering HEI in 2006. The 2006 reforms allowed students to take out income contingent loans to pay the fee that they were charged for their course, thus removing the upfront fee imposed in 1997, with fees being capped but variable between institutions (Browne, 2010). This increase in the fees did not reduce the demand for HEI, and hence, it was established that "graduates will pay towards the cost of higher education" (Browne, 2010:p.19). However, the fact that almost every university charged the maximum fee also meant that fee-based competition did not emerge.

In 2007, a global recession had a detrimental impact on the UK economy. Hence, when the new Coalition Government, comprising of Conservatives and Liberal Democrats to form the first full coalition government in Britain since 1945, with David Cameron serving as the country's 52nd prime minister and Nick Clegg becoming his deputy, came in to power in May 2010, the first priority was to reduce the country's deficit through various means, one of which being to cut public funding expenditure. Although the direct impact of this has not fully been realised by the HEI sector, an independent review of HEIs was commissioned in November 2009, where Lord Browne was asked to lead an independent Panel to "review the funding of higher education and make recommendations to ensure that teaching was sustainably financed, that the quality of that teaching was considered to be world class, and that anyone having the ability and aspiration to access HE could do so" (Browne, 2010). The Browne report of 2010 hinges on three aims: to increase participation, to improve quality, and to create a sustainable long term future for higher education in the UK. The Browne report suggests a Student Financial Plan and compares it to the suggestion of a Graduate Tax. Each of the suggested aims are underwritten by six principles for reform: 1) More investment in HE – but students will have to be convinced by institutions of the benefits of the investment; 2) Student choice to increase; 3) Potential of students should match the opportunities to benefit from HEI; 4) No student to pay for cost of learning until they are working; 5) When payments are made they should be affordable; 6) Better support for part-time students.

These recommendations would potentially bring about a different set of changes to the HEI sector, placing more emphasis on the student paying for the education at a later stage and not upfront, and the student making a more informed choice and selection of HEI, and hence, more intensified competition in UK universities. These recommendations have met with extreme opposition, both by shadow politicians, and politicians within the current government, as well as by students across the UK leading to intended peaceful protests, which have ended up being somewhat violent, and causing some casualties.

The intensified competition that HEIs will undoubtedly continue to face, will bring with it a stronger need for efficient and effective access to information, and more effective management of an organisation's information and knowledge assets so as to harness a competitive advantage.

2.3.3 GREATER EMPHASIS ON STUDENT SATISFACTION

In 2005, the HEFCE commissioned, online annual National Student Survey, took place for the first time, which enabled final year students to provide feedback on the quality of teaching on their course. Results are made available online at www.unistats.com to prospective students and their advisors, to assist them to make informed study choices. These results are used by universities, to enhance the student learning experience and to facilitate good practice (Higher Education Funding Council For England, 2009a). However, the Browne report (2010) suggests that, although student expectations have increased since students are paying more towards their cost of their higher education, it is not clear that the quality of the student experience has improved dramatically. The report further suggests that the incentives for institutions to improve the student experience are limited currently, given that universities receive their large block grants through HEFCE, irrespective of what students think of the quality of teaching, and since the demand for places exceeds the number available, competition to recruit students is not that hard. The Browne report makes further suggestions to change this situation to one where universities have to "actively compete for well-informed students, on the basis of price and teaching quality, improving provision across the whole sector, within a framework of minimum standards" (Browne, 2010). This recommendation is made in the Browne report in order to potentially increase the competition between universities for students, placing a higher value on the student experience and the university; ultimately, students will need to perceive their experience to match the

investment in terms of time and money they have contributed to their education. The Browne report continues to add that student expectations and their demands have and will continue to change; how universities are able to address these demands, flexibly and dynamically, will require an awareness of not only their own quality of offerings and students experience of it, but that of their competitors as well.

2.3.4 THE 21ST CENTURY AND THE IMPLICATIONS FOR HIGHER EDUCATION

The UK is said to be the sixth largest economy in the world and the fourth largest in the OECD; it depends heavily on international trade, and changes in the global economy have a big impact on it (Browne, 2010). Over the past two years, a global recession, has impacted greatly on the economy of Britain, affecting every area in both the public and private sectors, the impact of which has been the loss of jobs, the reduction in public funding, and the closure of many private organisations, including a number in the banking sector. This recession of global proportions, has added to the many challenges that HEIs have to face today, and although there have been substantial cuts to public funding, the Browne (2010:p.14) report suggests that a "strong HE system is considered an important element in the economy and culture of a leading nation, and hence, further and continued investment in HEI is paramount to the future economic growth and social mobility".

The Browne report suggests that in the 21st Century, HEIs in the UK face major challenges which have not been resolved by previous reforms:

- There is no change in the balance between private and public contributions made to the HEI system;
- Insufficient investment in HEI currently;
- Insufficient number of student places;
- No resilience against future reductions in public spending;
- Limited progress on fair access;
- Inadequate support for part-time students;
- HEI system not responsive to the changing skills needs of the economy; and
- Limited improvements in the student experience. (Browne, 2010)

The Browne report sets out a plan embracing six underlying principles to reform the HEI system by increasing participation, improving quality and creating a sustainable solution for funding it (Browne, 2010). The recommendations bring with it a higher

degree of competition between universities, and a sharper emphasis on the student and the student perception of the 'value for money' received. The suggestion is being made that, if students contribute more to the funding of their higher education, they will certainly be more likely to demand certain levels of quality of service and teaching in their education. The suggested increase in student fees could potentially be triple the current rate of fees, and, if this happens, the current debates suggest the potential for HE to became an elitist activity again, with the masses and particularly the poor of the country not able to afford the cost of it. These discussions are on-going, and opposition to the recommendations continue. These suggested changes, and the changes that have gone before, are geared towards addressing the challenges imposed by a changing society. The White Paper entitled "The Future of Higher Education", published in 2003 by the Department for Education and Skills, purports that the economy is becoming ever more knowledge-based, and that our living is increasingly being made through the selling of high-value services, rather than physical goods. Another aspect to consider is the impact of ubiquitous computing and globalisation on Higher Education; each of these are introduced next.

2.3.4.1. THE KNOWLEDGE ECONOMY

Knowledge-based economies are said to be economies which are directly based on the production, distribution and use of knowledge and information, and the term 'knowledge-based economy' emphasizes a fuller recognition of the role of knowledge and technology in economic growth (OECD, 1996).

In 1990-2000, Higher Education in the UK was said to generate over £34 billion for the UK economy, and supported more than half a million jobs, equivalent to 2.7 per cent of the UK workforce in employment (Department of Education and Skills, 2003). Knowledge and skill transfer between business and higher education is of great importance in England's regional economies. Universities have an important role to play in fostering the establishment and growth of new companies; in working with existing companies both on the application of the latest technology and the successful application of more tried and tested technologies; and in working with business to develop the skills of the workforce at technical and professional level (Department of Education and Skills, 2003:p.37).

Godin (2008:p.4) argues that, according to many authors, think tanks, governments and international organisations, we now live in a knowledge-based economy. He

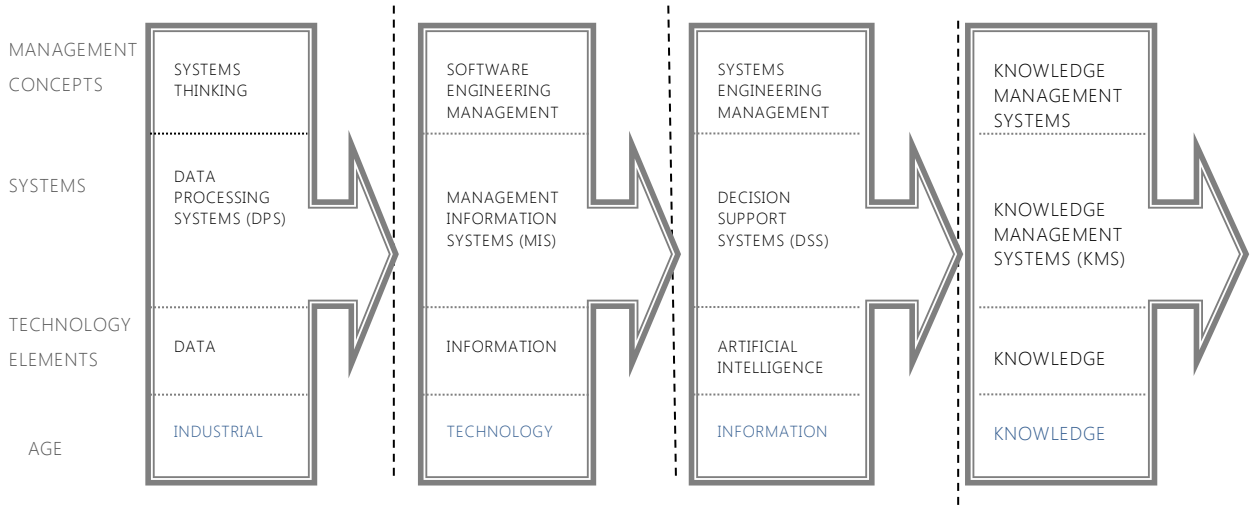
further purports that an economist, Fritz Machlup, was the first to measure knowledge as a broad concept, and published a study in 1962 that measured the production and distribution of knowledge in the USA. Bell (1973) was one of the first to suggest the coming of a post-industrial society, which he defined as having two dimensions: the centrality of knowledge and information; which included the expansion of service delivery. He suggests that in a pre-industrial sector, the sector is primarily *extractive*; with the economy based on agriculture, mining, fishing and timber, and other natural resources like gas or oil. He further purports that an industrial sector is one that is primarily *fabricating*, using energy and machine technology for the manufacture of goods. Lastly, he defines a post-industrial sector as one of *processing*, in which telecommunications and computers are strategic for the exchange of information and knowledge (Bell, 1973). If capital and labour are the major structural features of an industrial society, then knowledge and information are the major structural features of a post-industrial society, now known as the Knowledge Society. This change, over the past 3 decades, has therefore shifted the emphasis of economies from manufacturing and manual labour, to automation of processes, thereby improving efficiency, with the machine replacing the human, in countless time-consuming tasks and roles. Bernheim and Chaui (2003) concur with Bell and argue that a new economic and productive paradigm is emerging with the most important factor ceasing to be the availability of capital, labour, raw materials or energy, and shifting to the intensive use of knowledge and information. They further contend that knowledge and information have become central to the wealth and power of nations; however, at the same time, there has been a trend towards treating it as a commodity.

The Department of Trade and Industry's White Paper 'Our Competitive Future: Building the Knowledge Driven Economy' defines a knowledge-based economy in the following terms:

> "A knowledge driven economy is one in which the generation and the exploitation of knowledge has come to play the predominant part in the creation of wealth. It is not simply about pushing back the frontiers of knowledge; it is also about the more effective use and exploitation of all types of knowledge in all manner of activity"(Department of Trade and Industry, 1998)

Gibbons (1998:p.26) argues that the "success of the knowledge industry depends on the extent to which it is supported by an information technology infrastructure". Ubiquitous computing, over time, has thereby drastically altered the way people perform their tasks within their working role, with emphasis and skills linked to the ability to access data and information much more easily and efficiently, and on a global scale, hence, opening up a different set of opportunities, as well as challenges, for both public and private sector organisations. In 2005, Birgeneau (2005) wrote that HEIs face many challenges in a rapidly, changing global economy. He further contends that HEIs face a world that is more interconnected, one in which knowledge, creativity, and innovation are the essential elements, where capital is mobile, technology spreads quickly, and goods can be made in low cost countries and shipped to developed markets. HEIs face a world in which the UK's distinctive capabilities are not raw materials, land or cheap labour, but has to be its knowledge, skills and creativity. Bloch (in Duderstadt, 2005:p.81) supports this view by stating that "we are entering a new age, an age of knowledge in which the key strategic resource necessary for prosperity has become knowledge itself – educated people and their ideas".

FIGURE 2. 5 TIMELINES LEADING TO THE KNOWLEDGE AGE



Source: Author, after Birgeneau(2005) and Stankosky (2005)

The above timeline, shown in Figure 2. 5, suggested by Birgeneau and Stankosky, and adapted by the author, reflects a shift of emphasis from data, in the industrial age, to an emphasis on knowledge, in the knowledge age we live in today. Studies have shown that knowledge has become vitally important to the economy; for example, Driouchi *et al* (2006) examined the impact of knowledge and its related variables on the economic performance of 56 countries, and their results indicated that "knowledge is a key driver of economic growth"(2006:p.241), and confirm that "economic output and growth have been boosted as a result of the efforts that expand the knowledge base" (Driouchi et al., 2006:p.248). The World Bank Institution introduced the term Knowledge Economy Index (KEI), which measures the extent of knowledge acquisition, creation, use and access in a given country, consisting of four components: the Economic Incentive Regime, Innovation, Education, and Information Infrastructure, each having its own list of indicators (Driouchi et al., 2006:p.242).

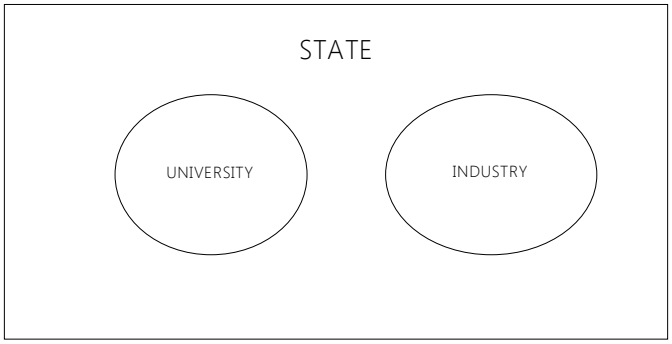
The White Paper released in 1998 by the Department of Trade and Industry, entitled 'Our Competitive Future Building the Knowledge Driven Economy', clearly articulates that, in a knowledge-based economy, both the economic competitiveness and improvements in quality of life depend on the effectiveness of knowledge sharing, between business and Higher Education. Over the years, this has resulted in universities in the UK creating Knowledge Transfer units to create that relationship between business and Higher Education. The UK government strongly supports this relationship through the Higher Education Innovation Fund (HEIF) provided to universities, with the aim to promote knowledge transfer and innovation, with a separate strand within this to encourage the relationship between less research-intensive universities and business (Department of Education and Skills, 2003).

The White Paper further purports that success in the knowledge driven economy requires a shift in the business mind set, and suggests that there should be greater receptiveness to know-how, the ability to see commercial potential, eagerness to keep on learning at all levels in a business, and flair in spotting new customer needs and fresh business opportunities (Department of Trade and Industry, 1998). HEIs in general, and universities in particular, have also been expected to have a shift in their 'business mind set', and have needed to become more entrepreneurial in nature to accommodate for the change in public funding support and cuts experienced over the years, and will have to do even more, given the radical changes to public funding imposed by the new Coalition Government of 2010. Over

the years, universities have had to become more entrepreneurial and will continue to become more so. Universities will need to foster a new entrepreneurial spirit that will enable more opportunities to be seized, and more commitment made to constant innovation and enhanced performance (Browne, 2010). In this new environment, two of the most important commodities are becoming information and knowledge.

Knowledge and technology have always been central to economic development, it is only over the last few years that its relative importance has been recognised, just as that importance is continuing to grow (OECD, 1996). How are universities placed within this Knowledge-Based Economy, and what role are they playing? Etzkowittz and Leydesdorf (2000) contend that the late 19th century witnessed an academic revolution in which research was introduced into the university mission and made more or less compatible with teaching, and that many universities in the USA and worldwide are still undergoing this transformation of purpose. They further contend that the "increased salience of knowledge and research to economic development has opened up a third mission: the role of the university in economic development" (Etzkowitz and Leydesdorff, 2000:p.110), and propose the Triple Helix which depicts the relationship and interplay between the university, the government and the industry, and present the historical developments of these relationships. In Triple Helix I, they suggest that the nation state encompasses academia and industry and directs the relations between them as can be seen in Figure 2. 6 below:

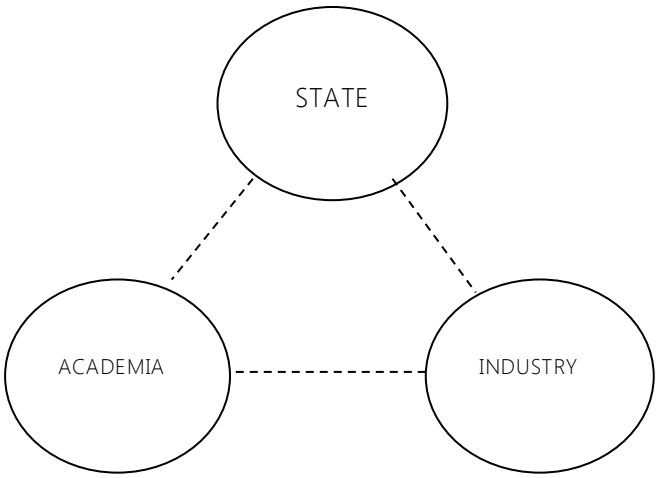
FIGURE 2. 6 HELIX I - AN ETATISTIC MODEL OF UNIVERSITY–INDUSTRY–GOVERNMENT



Source : adapted from Etzkowittz and Leydesdorf (2000:p.111)

HELIX II, a second policy model, "consists of separate institutional spheres with strong borders dividing them and highly circumscribed relations among the spheres" (Etzkowitz and Leydesdorff, 2000:p.111), as depicted in Figure 2.7 below.

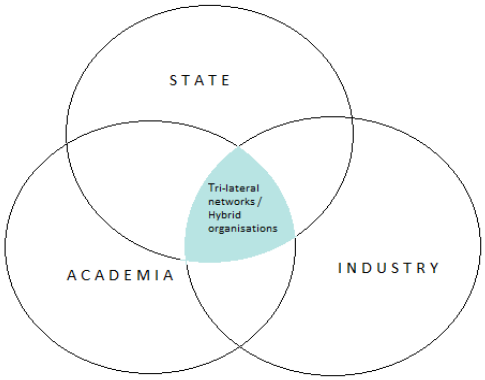
FIGURE 2. 7 HELIX II - "*LAISSEZ-FAIRE*" MODEL OF UNIVERSITY–INDUSTRY–GOVERNMENT RELATIONS.



Source: adapted from Etzkowittz and Leydesdorf (2000:p.111)

The third policy model, HELIX III, "is generating a knowledge infrastructure in terms of overlapping institutional spheres, with each taking the role of the other and with hybrid organizations emerging at the interfaces" (Etzkowitz and Leydesdorff, 2000:p.111), as can be seen in Figure 2. 8 on page 40. Etzkowitz and Leydesdorf (2000) further suggest that most countries and regions are presently trying to attain some form of Helix III, with the common objective being to realize an innovative environment consisting of university spin-off firms, tri-lateral initiatives for knowledge based economic development, and strategic alliances among firms, operating in different areas, and with different levels of technology, government laboratories, and academic research groups.

FIGURE 2. 8 HELIX III – TRIPLE HELIX MODEL OF UNIVERSITY-INDUSTRY-GOVERNMENT RELATIONS



Source: adapted from Etzkowittz and Leydesdorf (2000:p.111)

The literature suggests that the economy is more reliant on knowledge, but what is knowledge and how does it differ from information? A discussion of the views from literature on these terms and their meanings can be found in section 2.3.8 on page 52. Attention is shifted now to the issue of globalisation and the impact it has had on HEIs.

2.3.4.2. GLOBALISATION AND HEIs

Scott (2005:p.22) defines globalisation as "the process whereby countries become more and more integrated, mainly via movements of goods, capital, labour and ideas". Globalisation is viewed by Bernheim and Chaui (2003:p.14) as not only confined to the purely economic aspects, but also having a multidimensional aspect to it, a "… multidimensional process taking in aspects relating to the economy, finance, science and technology, communications, education, culture politics, etc..". Globalisation has had a profound impact on both the economies of nations and the pressures on countries to compete effectively, pressures which have also impacted on HEIs significantly. The rapid development of the Internet in the past years has resulted in an escalation of the global economy. Becher and Trowler (2001) contend that the globalised landscape has fundamental consequences for HE, creating new patterns of incentives and disincentives, new opportunities and dangers, new structures and constraints. Slaughter and Leslie (1997:p.36) suggest that globalisation has at least four "far-reaching implications for higher education": 1) The constriction of money available for discretionary activities; 2) The growing centrality of techno-science and fields closely related to markets; 3) The tightening relationship between multinational corporations and state agencies concerned with

product development and innovation; and 4) The increased focus of multinationals and established industrial countries on global intellectual property strategies. Slaughter and Leslie (1997:p.39) further contend that globalisation theories "underline the importance of higher education to techno-science, to industrial policy, and to intellectual property strategies; universities being the central producers of techno-science and the primary product of post-industrial economies.

Scott (2005) highlights two main attributes of what he terms the 21st century globalisation: 1) Acceleration of trends associated with a knowledge society (some of these trends include the rise of information and communication technologies, which has been accompanied by a cultural revolution); and 2) The process of acceleration and innovation has brought about uncertainty about individual identity, about social affinities, about gender roles and about jobs and careers. If it is easy for goods, capital, labour and ideas to move around, what do HEIs need to do to stay competitive to ensure the quality of their products and to ensure that a good academic experience is achieved by their students, especially given the further cuts on public funding and the impact on HEIs and the new suggestions to place the financial cost of HEI more squarely on the student? Globalisation, marketization, and internationalisation have forced HEIs to think about the way in which they teach, conduct research and manage the institution and its various stakeholders. Peter Scott (2005) suggests that globalisation has forced HEIs to consider the way they go about their business.

> "….the influence of globalization constantly changes the way higher education is perceived and approached, bringing up new and unforeseen challenges for the governments and universities to deal with"(Brătianu et al., 2010:p.47).

Without any doubt, HEIs have undergone many changes, and stand to face many more challenges to come. The question therefore was whether HEIs were attempting to incorporate management methods and models from the business world to enhance their competitive advantage. This research aimed to understand whether HEIs within the UK - given the impact of globalisation, massification, emergence of accountability, reduction in financial support from government, and the impact of the Knowledge Economy on HEIs - had begun to adapt 21st century management tools, like Knowledge Management, to enhance its competitive advantage.

HEIs today, and in the near future, will experience different and intensified external pressure influenced by globalisation, and the past few decades have witnessed the pressure on HEIs to respond to this global integration (Bloom, 2005), with globalisation being dominated by the intensity of knowledge and international competitiveness (Bernheim and Chaui, 2003). Advances in technology and ubiquitous computing, have certainly contributed to the widely accessible array of knowledge and information, which the next section discusses further.

2.3.4.3. ADVANCES IN INFORMATION TECHNOLOGY AND THE IMPACT ON HIGHER EDUCATION

Technology has developed dramatically over the past few decades, and has become embedded in how people work, play and live. The ability to harness electrical power in miniature form has had a huge impact on our everyday lives (Cole, 2004), and Oliver (2002:p.1) supports the view that technology "is a force that has changed many aspects of the way we live". Modern digital technologies are reshaping our society and our social institutions (Duderstadt, 2005), with Information and communication technologies (ICTs), having a transformational impact on every single aspect of business activity (Department of Trade and Industry, 1998).

Automation and mainframe computers, have under-pinned nearly three decades of growth; in the 1980s, personal computers revolutionised the way we work; however, it is suggested that the innovations which emerged during the 1990s - in particular with the advent of the Internet - lead to even more radical business change. The arrival of the World Wide Web, being cheap and easy to use, tore down barriers which used to preserve the use of technology for large organisations which could afford the expensive, custom-built infrastructure and software needed (Department of Trade and Industry, 1998). The speed of adoption of the Internet into general use is unprecedented. Comparative advantage is increasingly being determined by the competitive use of knowledge, information and communication technologies (Bernheim and Chaui, 2003), hence, the importance of understanding more about their application in HE.

In 1998, the Department of Trade and Industry (DTI), in their paper 'Our Competitive Future: Building the Knowledge Economy', placed extreme importance on the role of technology by suggesting that digital technology is the nerve system, and key enabler of the knowledge driven economy. The DTI has acknowledged that substantial advances have been made to the ability to collect, store, retrieve, analyse and communicate information, reaching into homes as well as into classrooms and

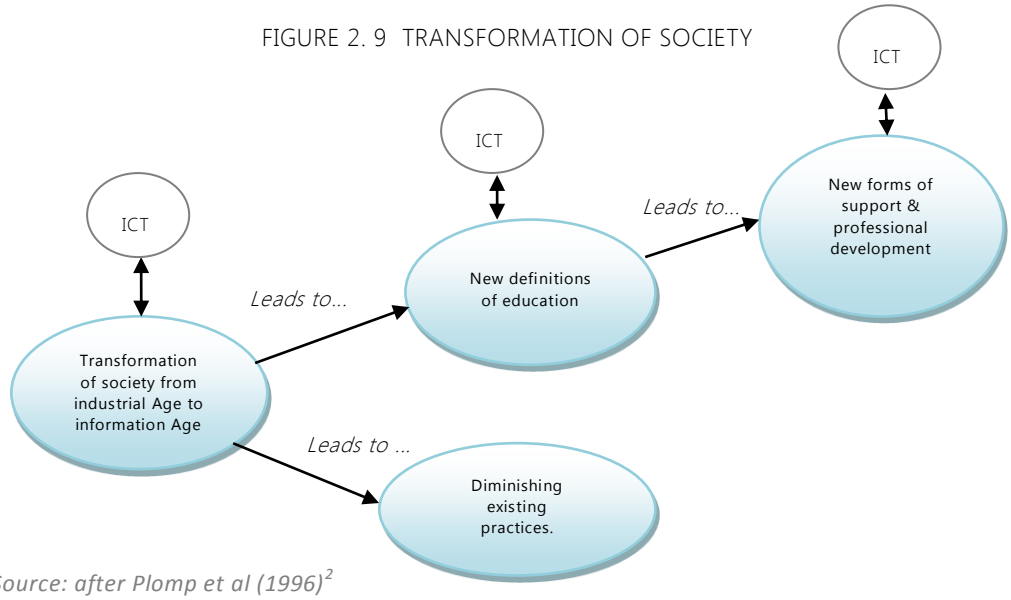
workplaces. The ability to share information has expanded exponentially, through mobile communications, satellites and the Internet (Department of Trade and Industry, 1998).

As knowledge-driven organisations, universities are greatly affected by the rapid advances in information and communications technology (Duderstadt, 2005:p.85). Coaldrake and Stedman (1999) agree with the view that Information technology has already had a significant impact on higher education, and will continue to reshape the education landscape in coming years. Oliver (2002:p.1), however, suggests that there is a vast difference in the way certain fields, like medicine for example, operate today compared to how they used to in the past; on the other hand, in education there has been "an uncanny lack of influence and far less change than these other fields".

Oliver continues to add that in the past, there have been impeding factors for this, including: 1) lack of funding, 2) lack of training, and 3) lack of motivation and need among teachers to adopt ICT as a teaching tool. However, since 2002, this has since changed and there has been a growing need to explore the opportunities and efficiencies that the utilisation of ICTs could bring. The suggestion is that there has been a slow adoption of ICTs in educational practice in education; however, the 21st century and its many challenges and opportunities has brought with it strong forces which impose the adoption of ICTs in education, suggesting that large scale changes in the way education is planned and delivered, will be seen as a consequence of the opportunities ICT affords education (Oliver, 2003).

Le Grew (1996), cited in Bates (1996), suggests that post-secondary education was undergoing a transformation, a paradigm shift, as characterised by Table 2. 1, on page 44. Moving from the industrial age to the information and knowledge age, creating a 'paradigm shift', has necessitated that these organisations require substantial change to accommodate the associated changes (Bates, 1996). Substantial change in terms of sources of employment and new models of teaching and learning to prepare learners for the uncertainties of the 21st century, including work-place learning, as well as greater focus on teamwork than individual work, will need to take place. Oliver (2002) supports this view and suggests that how students learn, what they learn, when and where they learn, and who is teaching them, will change over time.

FIGURE 2. 9 TRANSFORMATION OF SOCIETY



Source: after Plomp et al (1996)[2]

TABLE 2. 1 A PARADIGM SHIFT FOR POST-SECONDARY EDUCATION

FROM	TO
Industrial Society .....to.....	Information Society
Technology Peripheral.....to.....	Multimedia Central
Once-only Education.....to.....	Life-Long education
Fixed curriculum.....to.....	Flexible, open curriculum
Institutional Focus.....to.....	Learner focus
Self-contained organisation.....to.....	Partnerships
Local Focus.....to.....	Global Networking

Source: After Le Grew (1995)[3]

The DTI's report of 1998, further suggests that there has been an increased capacity to know and to do things, to communicate and collaborate with others, allowing information to be quickly transmitted, linking distant places and diverse areas, thereby enhancing and enriching the teaching and scholarship. Educational services can be delivered to anyone, at any time and in anyplace, creating an open learning environment; hence, competition for staff, students and resources has increased, and will continue to increase. Garrison and Vaughan (2008) contend that Higher Education must address the changing expectations of the quality of the learning

[2] " Policies on Computers in Education in the Netherlands", by Tjeerd Plomp, Erna Scholtes and Alfons Ten Brummelhuis in Cross National Policies and Practices on Computers in Education Technology-Based Education Series, 1996, Volume 1, 359-380,

[3] Le Grew, D. 1995. Global Knowledge: Superhighway or Super Gridlock. *Applications of Media and Technology in Higher Education* Chiba, Japan: National Institute of Multimedia Education.

experience and the wave of technological innovations; however, Newell et al (2002) contend that advancements in ICTs do not automatically or deterministically lead to the adoption of new organisational forms or new arrangements of organising, and suggest that these changes depend largely on the interactions between technology, organisation and context. They further contend that having access to the technology like intranets and email does not necessarily imply that knowledge sharing will be painlessly shared across an organisation, and suggest that "..new technologies provide constraints and opportunities for human action..... human action is embedded in a particular institutional context, which both constrains and facilitates action, ...institutional context simultaneously empowers and controls behaviour since it legitimizes some forms of behaviour while simultaneously prohibiting others" (Newell *et al.*, 2002:p.94).

2.3.5 THE EFFECT OF CHANGE AND THE ACADEMIC WORK

In 1999, on the eve of the 21st century, Coaldrake and Stedman (1999) purported that Higher Education around the world was facing unprecedented challenges brought about by change, and that the change was having an impact on the way academics go about doing their work. They suggest five aspects of change in academic work:

- Growing pressures on time, workload and morale;
- Greater emphasis on performance, professional standards and accountability;
- Staffing policies shifting from local control and individual autonomy to a more collective and institutional focus;
- Academic work becoming more specialised and demanding;
- New tasks blurring old distinctions between categories of staff.

Becher and Trowler (2001) suggest that the demands on permanent fulltime academic staff have multiplied. Henkel (1997:p.139) also suggests that, academics not only need to develop new courses, but need to " cost them, determine and stimulate markets for them, evolve new ways of delivering them and ensure they can stand up to hard external scrutiny". In a study commissioned by the National Inquiry into Higher Education in 1996, the report suggests that all of the administrative and support staff had experienced a significant increase in the volume of their work. This was largely the result of a combination of growing student numbers, resource constraints and static, or falling, staffing levels.

Academics are pressured to "do more with less" and need to include scholarships of "leadership, management, administration, and entrepreneurialism, which now form an inescapable part of the modern academic's agenda" (Becher and Trowler, 2001). Shattock (2003:p.117) argues that, as universities increasingly diversify their funding base, they take on responsibilities and management tasks which are very distinct from their core business. Slaughter and Leslie (1997:p.8) refer to "institutional and professorial market or market-like efforts to secure external moneys", as referred to by Becher and Trowler, and by Shattock, as academic capitalism. The growth in ICT has also changed the roles and responsibilities of staff within HEIs (Whyley and Callender, 1996).

2.3.6 HIGHER EDUCATION MANAGEMENT

Deem (1998) contends that in the past, universities were perceived as communities of scholars, researching and teaching in collegial ways, working with minimal hierarchy and maximum trust, characterised by a "powerful professional culture that explicitly rejected entrepreneurial initiatives and business goals" (Robins and Webster cited in Slaughter and Leslie, 1997:p.41), and enjoyed a great deal of autonomy. The idea of managing academics, or suggesting that they required management, was strongly frowned upon; however, over the years, there have been greater demands placed on universities to justify the expenditure of public funds, demonstrate value for money, and provide evidence of quality teaching and research and educational provision, and hence, "it would appear that the explicit and overt management of academic staff and their work…..is becoming more common" (Deem, 1998p:48).

Throughout the 1980s and 1990s there has been substantial change in the organisational structure and management of public sector organisations, and in the 1980s British leaders worked with the Thatcher Government to build an enterprise culture in tertiary education, after cutting university funding substantially. This view was pushed in 1985, and was articulated by the Jarrett Committee, requiring Higher Education to adopt more efficient managerial styles. Higher Education started to experience the emergence of 'New Managerialism' (Exworthy and Halford, 1998), and New Public Management (NPM), which Deem *et al* (2007) contend has dominated the academic and policy agendas for public services reform in the UK for the past few decades. They define 'Managerialism' as an ideological movement that regards management and managing as functionally and technically indispensable to

economic progress, technological development, and social order within any political economy. Flynn(2000) describes NPM as a series of reforms which reshaped the relationships between public and private sectors, professionals and managers, and central and local government, with citizens and clients being recast as consumers, and public service organisations, being recast in the image of business. Deem *et al* (2007:p.6) suggest three forms of Managerialism: Corporatist, Neoliberal, and Neo-technocratic[4] Managerialism (suggested to be introduced by the coming into power of New Labour), although not an exact fit with Higher Education, while Becher and Trowler (2001) suggest two models of Managerialism: the client/market model, and the efficiency model. Deem *et al* (2007:p.31) further suggest that Higher Education has tended to be more resistant to Managerialism reforms than any other public service in the UK.

Becher and Trowler (2001) assert that Managerialism involves a framework of values and beliefs about social arrangements and the distribution and ordering of resources. They suggest that the aim of Managerialism is efficiency, effectiveness, and economy, with some key characteristics being:

- A strong orientation towards the customer and the market;
- Emphasis on the power of the top management team to bring about change and its legitimate rights to change cultures and structures and processes;
- The management of change is seen largely as a top-down activity,
- In education, a conceptualisation of knowledge and learning is adopted which is atomistic, mechanistic and explicit.

McCaffery (2004:p.30) contends that the development and changes in style of governance and management of HEIs can be viewed in phases; four phases for the older universities and three phases for the newer ones (see Table 2. 3 on page 50), with the newer universities arriving at a "similar point, though by an entirely different route", and no longer being so dissimilar in terms of their management systems and practices. Consequently, McCaffery continues that the newer universities do not

[4] Deem *et al* (2007) cites Child (2005) from "Organisation : contemporary Principles and Practice". Malden, MA and Oxford: and defines these three forms as follows: **Neo-corporatist Managerialism**: dominated by a negotiated compromise between bureaucratic and professional modes of *administrative control*; **Neoliberal Managerialism:** moved away from previous form towards a more complex combination of market-based and managerial-based regimes of micro-level *work control*, including audits, performance and accountability technologies; **Neo-technocratic Managerialism:** public services modernization through personalization, customization, localization, co-production and empowerment, with stronger emphasis on performance, accountability and metrics, while aiming to avoid social inequalities.

have the same deep-rooted attachment to institutional autonomy and collegiality, and are not able to enjoy the financial security evident in the 'old' universities.

Gibbons (1998) suggests that the change in the management of universities was driven by two imperatives: the need for partnerships and alliances; and the need to demonstrate the quality of the services that were being provided. Deem (2007:p.31) suggests that the growth of new forms of Managerialism in Higher Education arose from: 1) The growth of corporate governance and management, which came about from the Jarratt Report of 1985 and the Dearing Report of 1997; 2) Pressure to develop mass Higher Education; and 3) Regionalisation of Higher Education in England. The reduction in Government funding for HEIs started to introduce the need for tighter control measures and a need for HEIs to explore alternative funding sources to remain viable, hence, academic capitalism, as defined by Slaughter and Leslie (1997:p.8) was introduced into HEI. They further suggest that academic capitalism has been pursued by universities in response to the conditions of resource dependence, one such strategy being technology transfer, "the movement of products and processes from the University to the market" (Slaughter and Leslie, 1997:p.139). As a result, Coaldrake and Stedman (1999) advocate that universities have had to become more entrepreneurial in operation which has had implications for their culture and policies, academic policies in particular. They, contend that some members of an academic community would be able to capitalise on various opportunities as a result of the entrepreneurial activities more successfully than others, hence, creating a differentiation in rewards, status and resources across the institution. Gibbons (1999, p. 34) notes that "… those who wish to contribute to research in this mode must adopt a different set of research practices. But if they do they will be 'out of synch' with the existing reward structure of universities … Universities that wish to be active in Mode 2 research will have to become much more entrepreneurial in the ways in which they utilize their 'intellectual' capital and this may mean experimenting with a much broader range of contractual employment arrangements".

It is widely accepted that the knowledge and skills possessed by staff members contribute to economic growth; in particular academic staff, who are the "repositories of much of the most scarce and valuable human capital that nations possess" (Slaughter and Leslie, 1997:p.10). Staff also contribute to the success of the organisation within which they work, and Slaughter and Leslie (1997:p.12) cement this argument by suggesting that the "scarce and specialised knowledge and

skills of academic staff are being applied to productive work that yields benefits to the individual academic, to the public university they serve, to the corporations within which they work, and to the larger society". How important therefore, is it to ensure that crucial knowledge embedded within these highly skilled personnel be retained in some way so as to ensure continuity of organisational success? Stewart (2001:p.13) defines Intellectual Capital as "the sum of its human capital (talent), structural capital (intellectual property), methodologies, software, documents, and other knowledge artefacts), and customer capital (client relationships)". He further argues that "Intellectual Capital is knowledge that transforms raw materials and makes them more valuable"(Stewart, 2001:p.12).

Deem *et al* (2007) have suggested forms of management, as can be seen in Table 2. 2, below; however, they contend that HEIs do not fit squarely into any one of these forms.

TABLE 2. 2 FORMS OF MANAGEMENT

1960-1970	1970-1980	Mid 1980's	Late 1990's
Corporatist form of Managerialism (Neo-)	Neoliberal Managerialism	New Public Managerialism	Neo-technocratic Managerialism

Source: After Deem et al (2007)

Given the changes in management of HEI documented in the literature, the researcher was interested to understand whether HEIs were indeed utilising management tools like KM to support it in its management of organisational knowledge for competitive advantage.

2.3.7 CULTURE OF HIGHER EDUCATION

Culture has been defined very differently by a number of scholars, and "…. has been invoked by all persons to mean all things"(McCaffery, 2004:p.30). McCaffery contends that culture is much more complex than simply being "the way people do things" and he suggests that organisational culture is a combination of values, structure and power, having implications for every aspect of an organisation (McCaffery, 2004), as can be seen in Figure 2. 10 on page 51. Morgan's (1986) view of culture has similar elements to that of McCaffery, and he defines culture as the shared meaning, shared understanding, and shared sense making that contribute to the personality of an individual or an organisation. Dopson and McNay (1996), cited

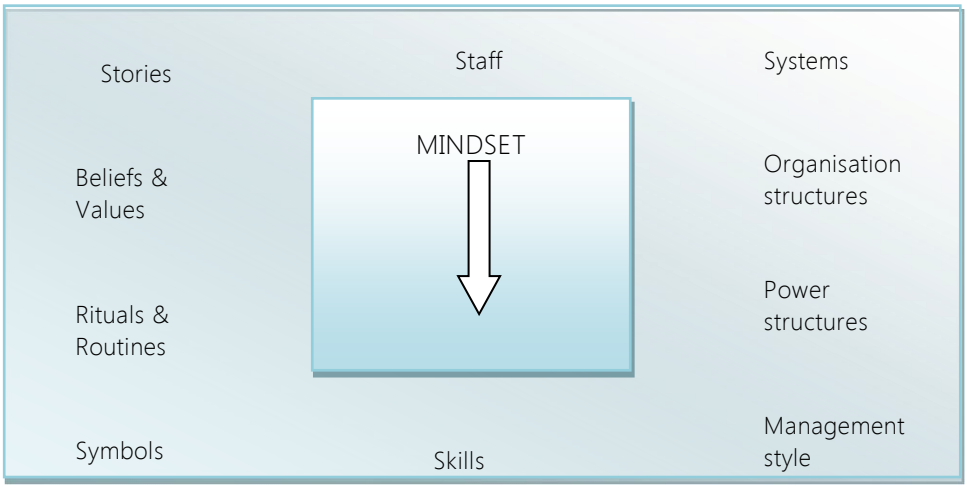
in McCaffrey (2004) suggest a model of four types of culture (see Figure 2. 11 on page 52) and define universities as organisations that could fall within these different cultures: Collegial, Bureaucratic, Entrepreneurial, and Corporate.

TABLE 2. 3 MANAGEMENT OF UK UNIVERSITIES OVER THE DECADES

PHASE PERIOD	Civic (late nineteen hundreds to early twentieth century)	Donnish (1920s to early 1960s)	Democratic (late 1960s to 1970s)	Managerial (1980 to date)
OLD UNIVERSITIES				
Characteristics	• Dominance of lay patrons and governing councils.	• Elite collegiality; vice-chancellor and senior professors; • Pre-eminence of academic senate; supervisory lay council.	• Democratic collegiality; • Extension of democracy to staff and student ' rank and file'	• Reordering of internal authority • Senior management influence increases; effective (if not formal) power of organs of academic self-government decreases.
Management	• Non-issue.	• Minimal; lightest of touch	• Consensus	• Heads of department as line managers; formation of senior management teams (SMTs)
Administration	• Skeletal	• Subordinate	• Professionalized: Conference of University Administrators (CUA)	• Managerial cadre (including planning, strategy)
PHASE PERIOD	Municipal pre-1989	Transitional 1970'2 - 1989	Corporate 1989 to date	
NEW UNIVERSITIES				
Characteristics	• Local authority institutions. • No form of institutional democracy.	• Establishment of academic boards in HEIs	• Polytechnics established as free standing institutions (1989); creation of unified University system (1992); establishment of new, smaller governing bodies with majority of independent members (closed corporation)	
Management	• Undeveloped bureaucratic hierarchy, regulatory	• Gradual devolution of local authority responsibilities	• Fully fledged; pre-eminence of SMT (senior management team) 'overshadows' academic board	
Administration	• Key functions the responsibility of local authorities	• Creation of national policy environment,. Via National Advisory Board (NAB)	• Professionalized and formalized; takeover of local authority residual responsibilities (industrial relations, estates management, strategic planning)	

Source: adapted from McCaffery (2004:p.31)

FIGURE 2. 10 CULTURAL WEB OF AN ORGANISATION

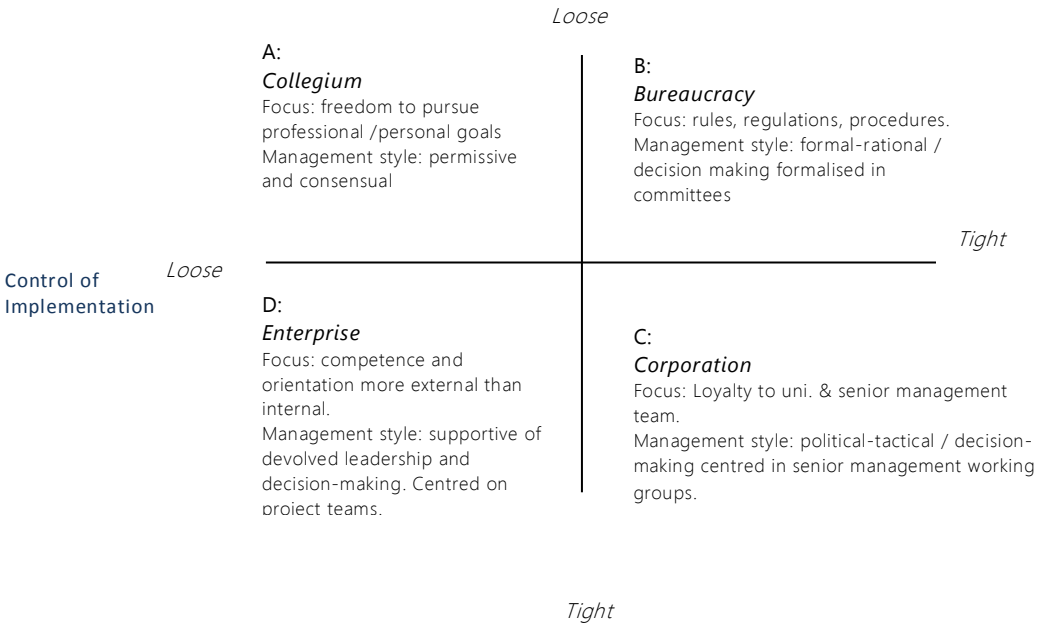


Source: adapted from McCaffrey (2004)

McCaffery (2004) purports that universities have moved in a clockwise direction from culture category A to D (see Figure 2. 11 on page 52), not universally fitting all universities, however, with all four cultures possibly co-existing in most universities. Culture is also said to be dynamic and can change over time (Lomas, 1999).

The contention that the issue of culture is not necessarily uniformly defined across an organisation, and that subcultures exist is supported by Lomas (1999) who contends that once an organisation has grown beyond a size where it is possible for members to communicate regularly, then there is likely to be the development of sub-cultures which have basic assumptions, beliefs and values that may differ from those of senior managers. Cole (2004) also agrees with this view and contends that within any organisation or culture, there will be subcultures operating at lower levels of influence. Becher and Trowler (2001) take this argument further and purport that cultures and subcultures develop around disciplines, which they refer to as "tribes and territories", created around these disciplines. Cronin and Davenport (2001:p.36) agree with this view and suggest that the primary allegiance of many scholars is to their field or subfield, rather than their parent discipline or institutions. How does this notion of subcultures around disciplines affect a University's ability to implement management initiatives that might not be considered as crucial or important to an individual within a particular 'tribe of discipline'? One of the questions of particular interest to this research study was: How does the culture of a university affect its ability to embrace KM activities more generally and on an organisational level? We now move to the issue of knowledge and its management, and present some of the literature debates surrounding it.

FIGURE 2. 11 MCNAY AND DOPSON'S MODEL OF ORGANISATIONAL CULTURAL TYPES



Source: McNay and Dopson (1996) and McCaffrey (2004:p.33)

2.3.8 THE IMPORTANCE OF KNOWLEDGE AND ITS MANAGEMENT

To stay competitive, HEIs must be able to rely on data, information and knowledge about the changing environments and external pressures, as well as their internal core competencies to effectively achieve their mission. The fact of the matter, contends Stankosky (2005), is that we live in a knowledge-based-economy, where knowledge assets are the principal factors of production, and nations and organisations have to deal with knowledge assets, if they want to attain a competitive advantage. But what are knowledge and knowledge assets? What is data, and information, and how does each relate to each other and to knowledge, and to the university? How effectively do HEIs manage knowledge within their organisations, and, more importantly, how can it support HEIs to achieve competitive advantage today, especially given that we are living in a Knowledge Society where a much greater emphasis is placed on knowledge and intellectual capital, than ever before? This study aimed to investigate the application of Knowledge Management within the context of Higher Education, it is therefore appropriate, to identify what the literature describes knowledge to be.

2.3.8.1. DATA, INFORMATION AND KNOWLEDGE

The Cambridge International Dictionary of English [n.d] defines knowledge as

> "Understanding of information about a subject which has been obtained by experience or study, and which is either in a person's mind or possessed by people generally" (p.787).

This definition places knowledge within the human mind, acquired over time with experience or study, which the American Heritage dictionaries (online) adds to, by including it to be,

> "...the sum of what has been perceived, discovered, or inferred".

Newell *et al* (2002) suggest that what an individual infers from information is related to their cognitive capacity and interpretive schema. They continue to state that it is reasonable to suggest that different people may infer different things from the same information, which could lead to the creation of new and different knowledge.

The Chambers 21st Century Dictionary, defines knowledge as "the fact of knowing; awareness; understanding". Like the related concepts of truth, belief, and wisdom, there is no single definition for knowledge on which scholars agree, but rather numerous theories and continued debate about the nature of knowledge exists. This statement is supported by Donald Hislop (2005) in his book 'Knowledge Management in Organizations', in which he contends that answering the question 'what is knowledge', is by no means simple due to the enormous diversity of definitions. Newell *et al* (2002) contend that it is these definitional problems that draw attention to the highly contextual, situated nature of knowledge that needs to be addressed when attempting to manage knowledge within organizations.

Although the term 'knowledge' is "an intrinsically ambiguous and equivocal term" (Newell *et al*., 2002), for which a definition seems to spur different perspectives, there does appear to be a common understanding and acceptance amongst theorists for the terms data and information. Davenport and Prusak (2000b) relate the three terms by suggesting that knowledge derives from information, as information derives from data; for information to be transformed into knowledge it requires human intervention. They suggest that their definition expresses the characteristics that make knowledge valuable:

> "Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms" (Davenport and Prusak, 2000b:p.5).

This definition suggests that human beings apply their skills, ability experience, know-how, values and culture, via some transformation, or activity, to change the information into knowledge, which can be acted upon, and which can become part of the broader organisational knowledge. They refer to the transformation act as occurring through the 4 C's: *comparison* (how does this information compare with others), *consequences* (what implications does this information have for decisions and actions), *connections* (how does this bit relate to others), and *conversation* (what do other people think about this information) (Davenport and Prusak, 2000b).

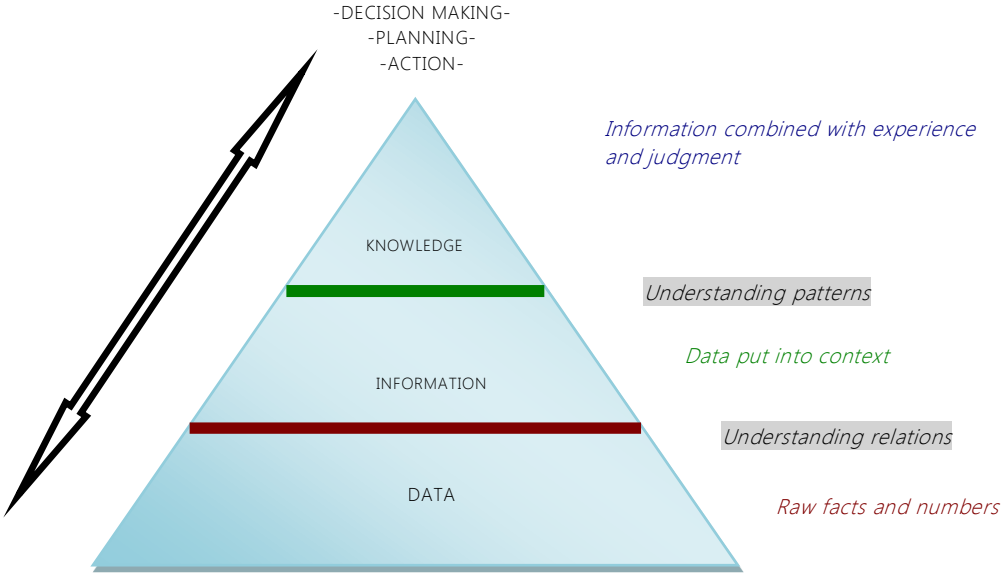
It is necessary to make the distinction between the terms information and knowledge, despite these being terms that are very often interchanged (Nonaka, 1994). Hislop (2005) makes the distinction between the three terms as follows:

- *Data*, as raw numbers, images, and words, and sounds, which are derived from observation or measurement;
- *Information*, represents data arranged in a meaningful pattern, data where some intellectual input has been added;
- *Knowledge,* to analyse/understand information/data, belief about causality of events/actions, and provides the basis to guide meaningful action and thought.

Each relates to each other, with data and information providing the building blocks for knowledge, yet knowledge is also viewed as being able to generate information and data, making the relationship between them dynamic, interactive, and multi-directional (Hislop, 2005). Hislop also brings in a fourth dimension, action, which Nonaka (1994:p.15) emphasizes as well:

> "In short, information is a flow of messages, while knowledge is created and organized by the very flow of information, anchored on the commitment and beliefs of its holder…..emphasizing an essential aspect of knowledge that relates to human action"

FIGURE 2. 12 KNOWLEDGE, INFORMATION, AND DATA PYRAMID



Source: Adapted from Serban and Luan(2002a)

"Information is not knowledge", says Wiig (2004:p.73), and he continues to add that information is fundamentally different from knowledge with the purpose of knowledge being action, and the purpose of information being description. These actions are, however, initiated by knowledgeable people, who make decisions and act using different kinds of mental functions (Wiig, 2004:p.ix). Newell *et al* (2002) suggest that knowledge and action are coupled through a process of sense-making.

TABLE 2. 4 SOME DIFFERENCES BETWEEN INFORMATION AND KNOWLEDGE

	Information	Knowledge
Consists of	Data organised to characterise a situation, condition, context, challenge, opportunity	Facts, perspectives, concepts, mental reference models, truths, beliefs, judgements, expectations, know-how, methodologies
Used to	Describe , specify things, a situation	To evaluate and handle situations, decide how to use tables, etc, to assess, decide, problem-solve, plan act and monitor.
Created by	Application of knowledge creates information	Information created by the application of Knowledge

Source: after Wiig (2004)

Wiig (2004:p.74) distinguishes between *actionable knowledge* and *passive knowledge*, the former referring to knowledge that leads to decisions being made and action taken on those decisions, and the latter referring to knowledge that resides in repositories, systems, procedures, books, documents, databases, and many other forms.

TABLE 2. 5 THE OBJECTIVIST AND PRACTICE-BASED PERSPECTIVE OF KNOWLEDGE

	OBJECTIVIST VIEW	PRACTICE VIEW
1.	Knowledge is an object / entity	• Knowledge is embodied in people • Knowledge is socially constructed.
2.	Knowledge regarded as objective facts	• Knowledge is culturally embedded. • Knowledge is contestable • Knowledge is socially constructed
3.	Explicit knowledge privileged over tacit knowledge	• Tacit and explicit knowledge are inseparable and mutually constituted.
4.	Knowledge derived from an intellectual process.	• Knowledge is embedded in practice • Knowing/.doing is inseparable.
5.	Distinct knowledge categories	• Knowledge is multidimensional

Source: from Hislop (2005)

Just as there are two broad perspectives in the Social Sciences with regard to epistemologies, Hislop (2005) argues that there are two broad epistemological camps (see Table 2. 5 above) on the nature of knowledge: the *objectivist* perspective and the *practice*-based perspective, sometimes referred to as the *structural* perspective and the *process* perspective, respectively (Newell *et al.*, 2002). Hislop's argument suggests that depending on the perspective one has of knowledge, this influences the sharing and management of it. As there are different perspectives on knowledge, there are different types of knowledge, which will be discussed in the next section.

2.3.8.2. TYPOLOGIES OF KNOWLEDGE

Knowledge typologies distinguish between different types of knowledge. Two of the most common distinctions made are between Polanyi's tacit knowledge and explicit knowledge, and between individual and group knowledge (Hislop, 2005). A discussion of each of these follows:

i) Tacit and Explicit Knowledge

Tacit knowledge is described as personal knowledge embedded in individual experience, and involves intangible factors such as personal belief, perspective, and

the value system; it is not easily visible and expressible, and thus is hard to articulate with formal language and communication (Nonaka, 2007). Nonaka continues to add that tacit knowledge has two dimensions:

a) The first is the *technical dimension*, which encompasses the kinds of informal and hard-to-pin-down skill or craft captured in the term *know-how*.

b) The second is the *cognitive dimension*, which consists of schemata, mental models, beliefs, and perceptions, so ingrained we take them for granted (Nonaka and Kazuo, 2007:p.298).

There are those who contend that tacit knowledge cannot be transformed into explicit knowledge; however, there are others who believe that some aspects of it can be communicated or documented in some way or another.

Nonaka and Kazua's (2007) view of explicit knowledge is that it can be expressed in words and numbers, and is easily communicated and shared in the form of hard data, scientific, formulas, codified procedures, or universal principles.

TABLE 2. 6 THE CHARACTERISTICS OF TACIT AND EXPLICIT KNOWLEDGE

Tacit Knowledge	Explicit Knowledge
Inexpressible in a codifiable form	Codifiable
Subjective	Objective
Personal	Impersonal
Context specific	Context independent
Difficult to share	Easy to share

Source: from Hislop (2005)

ii) Individual-Group Knowledge

Although Nonaka contends that knowledge can only exist at the individual level, other writers have suggested that knowledge can reside in social groups to some extent, one of these writers being Spender(1996), who makes the distinction between the individual and organisational or group knowledge, and combines it with Polanyi's tacit and explicit knowledge dichotomy (Hislop, 2005). Spender's (1996) four different types of knowledge are:

a) Individual / explicit (conscious)

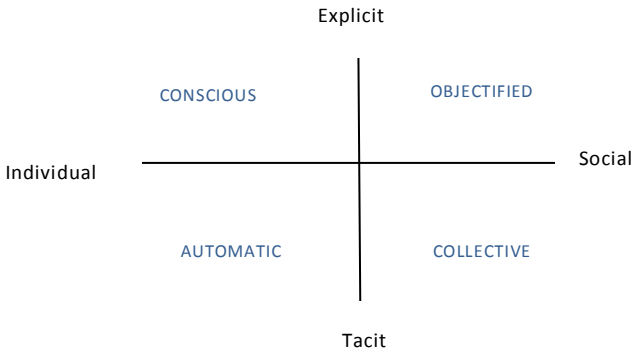
b) Individual / tacit (automatic)

c) Social / explicit (objectified)

d) Social / implicit (collective)

Spender's four generic knowledge types are depicted pictorially in Figure 2. 13 below.

FIGURE 2. 13 GENERIC KNOWLEDGE TYPES



Source: from Hislop (2005)

2.3.9 MODES OF KNOWLEDGE PRODUCTION / CREATION

As there are different perspectives and types of knowledge, there is also a plurality of models for the production and creation of knowledge. Nonaka (1994) presents a model for knowledge creation, suggesting that knowledge creation has two dimensions to it:

1) The distinction between the tacit and explicit knowledge (discussed in the previous section 2.3.8.2), and
2) An ontological dimension: The level of social interaction, suggesting that there are several levels of social interaction at which the knowledge created by an individual is transformed and legitimized.

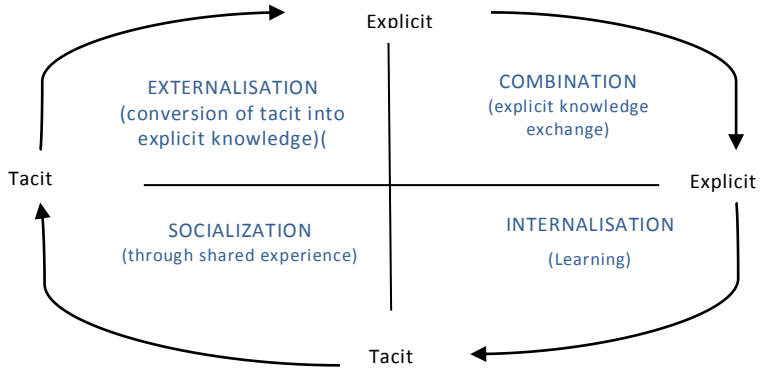
Nonaka's model suggests that knowledge is created by individuals; and that an organisation cannot create knowledge without individuals, however, the organisation provides a context for individuals to create knowledge, through different levels of social interaction. Nonaka (1994:p.19) suggests four modes of knowledge creation:

- SOCIALIZATION – (tacit to tacit) knowledge created through experience, through practice (observation, imitation, on the job training etc)
- COMBINATION (explicit to explicit) knowledge created through different social processes to combine different bodies of explicit knowledge held by individuals.

- EXTERNALISATION (tacit-to-explicit)
- INTERNATIONALISATION (explicit-to-tacit)

Nonaka (1994:p.20) distinguishes individual knowledge from organisational knowledge and suggests that a "spiral model of knowledge creation" is needed, with all four modes of knowledge creation organisationally managed to form a continual cycle. Nonaka further presents a model which can be related to organisational knowledge creation in a corporate organisational setting, processes that would enable individual knowledge to be enlarged, amplified, and justified within an organisation (Nonaka, 1994).

FIGURE 2. 14 FOUR MODES OF KNOWLEDGE CREATION



Source: adapted from Nonaka (1994)

Gibbons (1998) argues that the consequences of massification of Higher Education and the pressures of international competition, have had an impact on the way research is carried out, leading to the emergence of a new mode of knowledge production. Gibbons (1998) identifies the model of knowledge production that has a disciplinary basis, as MODE 1 knowledge production. MODE 2 knowledge production is defined by Gibbons as being organised around a particular application. The basic difference between these two modes of knowledge production, according to Gibbons, is that the one deals with problem-solving conducted following the codes of practice relevant to a particular discipline, while the other is organised around a specific application.

TABLE 2. 7 MODE 1 AND MODE 2 FORMS OF KNOWLEDGE PRODUCTION

MODE 1 KNOWLEDGE PRODUCTION	MODE 2 KNOWLEDGE PRODUCTION
Knowledge produced and problems solved in context governed by largely academic community	Knowledge is produced in the context of application
Disciplinary	Trans-disciplinary
Homogeneity of skills	Heterogeneity of skills
Organisations hierarchical, attempting to preserve form -	Flatter hierarchies using transient organisational structures
Not socially accountable nor reflexive	Enhanced social accountability and reflexivity
Some quality control, with practitioners in local context.	Expanded system of quality control, with a heterogeneous set or practitioners, collaborating.

Source: from Gibbons (1998)

Given the suggested changes in knowledge production and creation, and the move from mode 1 type of research, to mode 2, the suggestion is that more collaboration and teamwork is being considered, as opposed to researchers working in isolation only.

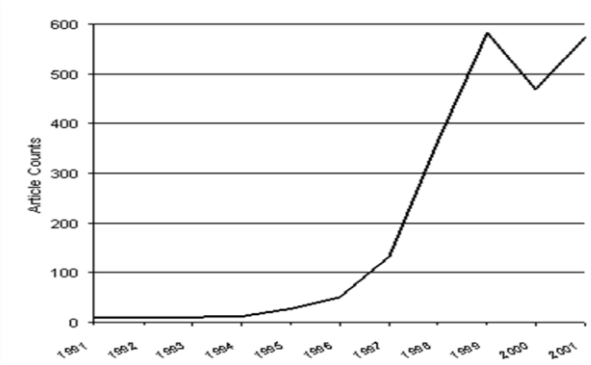
The question therefore would be whether, there has been a shift towards more collaboration and teamwork within the research environment, and hence, the application of KM principles within this environment to enhance competitive advantage, given the suggested paradigm shift? A discussion of KM follows.

2.3.10 KNOWLEDGE MANAGEMENT

Stewart (2001) contends that KM was brand new in 1995; however, by 1999 a survey found that 82% of companies were pursuing KM. Where did KM come from? Prusak (2001:p.1005) in his essay, 'Where did Knowledge Management come from?', suggests that the three practices that have brought the most content and energy to Knowledge Management, are information management, the quality movement, and the human factors/human capital movement". Knowledge Management has increased in popularity and credibility as a management tool, as well as a research discipline, over the past decade. Despite this, there have been concerns about whether KM is simply a fad, and researchers and academics have debated its faddish like characteristics. Knowledge Management has been touted by some as being at the heart of what management has to do in today's fast-changing global environment, being a solution to some of the challenges HEIs face today, and yet by

others as a management fad that will too fade away and receive less prominence over time (Wilson, 2002, Ponzi, 2002). Those who believe that Knowledge Management is a valuable 21st century management tool, with very clear benefits to an institution, also do not agree necessarily on what knowledge management is and means to an organization, and hence, various views of what Knowledge Management is today, are in existence. Prusak and Weiss (2007) contend that KM gained credence through legitimization that comes from publication by 'thought leaders' and through focusing on those practitioners who experimented with KM pilots and programs. They continue to add that it gained its legitimization through case studies, books, articles, and conferences, by three groups: business practitioners and journalists; academics; and other institutions such as the American Productivity and Quality Centre and the Conference board. Godin (2008) also contends that the calculations of the production and distribution of knowledge in the USA by Machlup in 1962, gave rise to a whole base of literature on the knowledge economy. Ponzi (2002) in his article "*Knowledge management: Another management fad*?" used the article-counting technique and applied it to the concept of KM in order to illuminate its state of development. He retrieved article counts from the three DIALOG files i.e., Science Citation Index (File 34), Social Science Citation Index (File 7), and ABI Inform (File 15). The retrieved counts were articles that included the phrase 'Knowledge Management' in its title, abstract, or descriptor fields. The assumption made was that retrieved records that included 'Knowledge Management' in these fields represent writings focused on Knowledge Management. The graph in Figure 2. 15 below, shows a sharp incline in KM articles in the late nineteen hundreds.

FIGURE 2. 15 KNOWLEDGE MANAGEMENT PUBLICATIONS



Source : after Prusak (2001)

Although the KM literature increased in numbers, the different perspectives on what knowledge is had an impact on the differing opinions of what Knowledge Management is. To date, no general approach to managing knowledge has been commonly accepted – although several isolated, and at times diverging, notions are being advanced (Wiig, 1997). Girard contends that:

> "A definition of knowledge management has eluded scholars and practitioners alike since the term first entered our lexicon. Virtually every paper penned on the subject includes a re-worked definition, and the debate continues" (Girard, 2004:p.19).

There are varying views on which definitions capture the concept: Serban *et al* (2002) present two that in their view, are widely recognised as best capturing the concept:

> "Knowledge management is about connecting people to people and people to information to create competitive advantage"(referenced in Serban 2002:p.6).

> "Knowledge management is the systematic process of identifying, capturing and transferring information and knowledge people can use to create, compete, and improve"(referenced in Serban, 2002:p.6).

Some alternative views and definitions of KM are worth mentioning here:

> "Knowledge management is the explicit and systematic management of vital knowledge and its associated processes of creating, gathering, organizing, diffusion, use and exploitation. It requires turning personal knowledge into corporate knowledge that can be widely shared throughout an organization and appropriately applied" (Skyrme, 1997:p.1)

Here Skyrme focuses on the essential or *critical knowledge* that requires managing and the processes that accompany it to ensure it can be managed. Newell *et al* offer another definition for KM:

> "The emphasis in knowledge management is on identifying, extracting and capturing the 'knowledge assets' of the firm so that they can be both fully exploited and fully protected as a source of competitive advantage" (Newell *et al.*, 2002:p.16).

In this definition, Newell *et al* focus on the managing of *knowledge assets*, which Stewart (2001:p.11) defines as "…..talent, skills, know-how, relationships – and machines and networks that embody them – that can be used to create wealth". He further defines an *asset* to be "something that transforms raw material into something more valuable" (Stewart, 2001:p.11), and equates Knowledge Assets to

Intellectual Capital defined by Stewart as "the sum of its human capital (talents), structural capital (intellectual property, methodologies software, documents, and other knowledge artifacts) and customer capital (client relationships)".

Stankosky also focuses on managing knowledge assets but includes in the definition the reason why those assets need to be managed, and the potential benefit for an organization:

> "… is leveraging knowledge assets to improve performance, with emphasis on improving efficiencies, effectiveness, and innovation" (Stankosky, 2005:p.6).

Each of these mentioned definitions, except for Skyrme's definition, refers to knowledge generally; however. Girard makes reference to 'organizational' knowledge in his definition:

> "…Knowledge Management emphasizes the creation, transfer, and exchange, of *organizational* knowledge to achieve competitive advantage" (Girard, 2005b:0.40sec)

Wiig (2004), in his definition below, introduces another element to KM, notably action:

> "The goal of KM is to provide the best possible tacit and explicit knowledge to support and improve knowledgeable, competent decision making that will result in effective actions to fulfill enterprise and personal objectives" (Wiig, 2004:p.78)

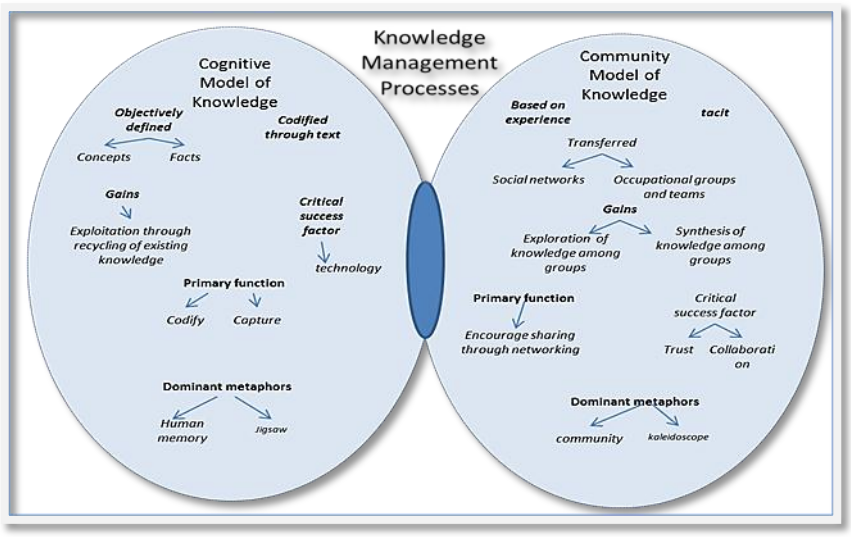
Newell *et al* (2002) have introduced two contrasting views of the KM process, and suggests that a Cognitive model of KM exists and that a Community model exists, as can be seen in Figure 2. 16 on page 64.

Each of the definitions listed therefore, has a similar meaning; however, each emphasizes, perhaps, a different element of KM, as can be seen in the Table 2. 8 on page 65.

What are organizations trying to do when they attempt to manage knowledge? Bill Gates (1999) in his book 'Business @ the speed of thought' believes that Knowledge Management starts with the business objectives and processes, and recognition of the need to share information. He contends that Knowledge Management is nothing more than managing the information flow, getting the right information to the people who need it so that they can act quickly (Gates, 1999), thereby increasing institutional or corporate IQ, where Corporate IQ is a measure of

how easily a company can share information broadly and how well people within an organisation can build on each other's ideas. Newell *et al* (2002), however, contend that managing knowledge and knowledge workers is arguably the single most important challenge being faced by many kinds of organisations across both private and public sectors.

FIGURE 2. 16 TWO CONTRASTING VIEWS OF THE KNOWLEDGE MANAGEMENT PROCESS



Source : adapted from Newell et al (2002)

Wiig (2004) purports that the management of knowledge has three approaches that have been introduced by scholars:

1. Technical Approaches: The management of knowledge which primarily focuses on knowledge acquired from people, in computer-knowledge bases, knowledge based systems, and knowledge made available over technology-based networks using email, groupware, and other tools
2. Intellectual Capital focus: Involves the management of intellectual capital, in the forms of structural capital and human capital in people.
3. Broader focus to include all relevant knowledge-related aspects that affect the enterprise's viability and success. It encompasses the above notions to also include most knowledge -related practices and activities of the enterprise.

TABLE 2. 8 KM ELEMENTS AS EMPHASIZED BY DIFFERENT SCHOLAR DEFINITIONS FOR KM

KM ELEMENT	AUTHOR
Action (decision making)	Wiig (2004)
Organisational (knowledge)	Girard (2005)
Knowledge Assets	Stankosky (2005), Newell *et al* (2002)
Benefits : Competitive Advantage Improve efficiency, effectiveness & innovation Improved Corporate IQ	 Girard (2005) Stankosky (2005) Bill Gates (1999)
Vital (knowledge)	Skyrme (1997)
(Knowledge) processes	Girard (2005),
Experience, values, insights	Davenport and Prusak (2000)

Source: developed by author

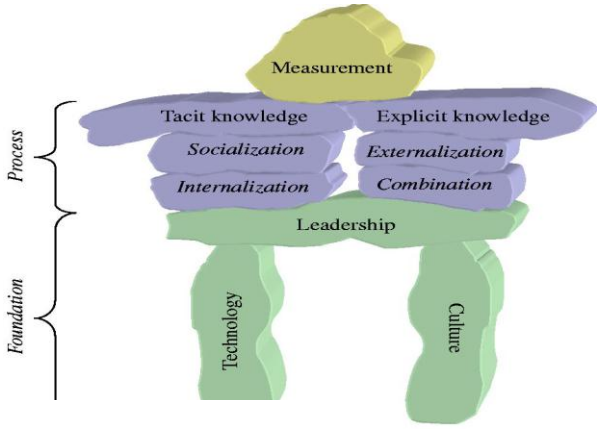
Prusak (2001:p.1002) contends that Knowledge Management, like any system of thought that has value, is both old and new, and its combination of new ideas with ideas that "everyone has known all along" should reassure practitioners rather than unnerve them. He further purports that KM is not just a consultant's invention, but a practitioner-based, substantive response to real social and economic trends, like globalisation, ubiquitous computing and the changing view of the firm to that of one that is knowledge-centric.

With the sharp increase in the number of articles on KM, a plethora of Knowledge Management models or frameworks have been suggested by various scholars; however, the purpose of this literature review was not to explain and present all of these, of which there are too many. Rather the review aimed to highlight a select few, and in particular: i) The Inukshuk, ii) Carla O'Dell's Enabling model of Transfer, iii) Mark McElroy's Organisational Knowledge Production model, and iv) Stankosky's Pillars of KM. A discussion of the four models follows, with the choice of the model used to frame the research, being Stankosky's pillars of KM:

i). THE INUKSHUK – A CANADIAN KM MODEL

The Inukshuk model derived from The Knowledge Torii, uncovered by Professor John Girard's research, is a model that presents five elements (Technology, Leadership, Culture, Measurement, and Process), as the key enablers of KM. The Japanese normally construct a Torii with two vertical bars supported by two or three horizontal bars, and key to the structure's integrity is the lowest horizontal bar (or Nuki). The process bar is the Nuki in this model, and is based on Nonaka and Takeuchi's SECI model of socialisation, externalisation, internalisation and combination (discussed in section **2.3.9**. on page 58) The highest bar is not crucial to the integrity but plays an important role. This model was considered sound and a useful tool; however, the symbol of the Torii did not resonate well with the users, and hence, a different symbol for the model was sought that the Canadian users would be able to associate with. Hence, the Inukshuk model was introduced as can be seen in Figure 2. 17 below. The Inukshuk, is "like a person. An arrangement of stones, often resembling the shape of a human. The Inukshuk is used as a navigational aid, as a marker for hunting grounds an caches of food suppose, in hunting to lure geese and corral caribou. These stone cairns embody strong spiritual and ancestral connections….." (Girard, 2005a:p.14).

FIGURE 2. 17 THE INUKSHUK – CANADIAN MODEL OF KM



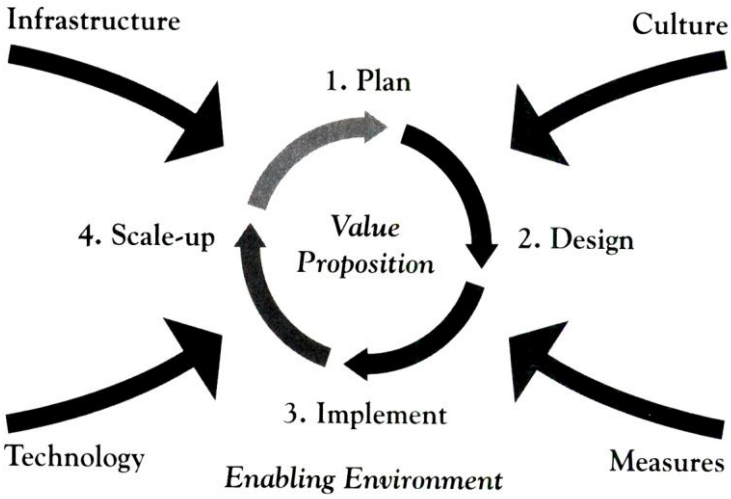
Source: Girard (2005a:p.15)

The Inukshuk model of KM suggests 5 key enablers of KM, which are very similar to Stankosky's four pillars of KM, some of which are subsumed in the four pillars.

ii). O'DELL AND GRAYSON'S ENABLING MODEL OF TRANSFER

O' Dell and Grayson (2004) describe a model for best practice transfer as having three major components: a) three value propositions[5], b) four enablers, and c) the four-step change process, which are plan, design, implement, and scale-up. The model applies to knowledge and practices, and applies to both tacit and explicit knowledge. The four enablers they use within the model are: Infrastructure, Culture, Technology, and Measurement, and are considered essential elements of a KM model (see Figure 2. 18 below).

FIGURE 2. 18 A MODEL FOR BEST PRACTICE TRANSFER



Source: from O'Dell and Grayson (2004:p.22)

iii). MARK MCELROY'S ORGANISATIONAL KNOWLEDGE PRODUCTION MODEL

Mark McElroy (2000) suggests that KM can be divided into two generations: the first generation KM viewed as technology being able to provide the answer, the second-generation KM thinking being more inclusive of human resource and process initiatives. Therefore, Mark McElroy (2003) suggests that KM has had a different focus, since its inception: first generation KM emphasised the distribution of existing knowledge throughout an organisation, accounting for the heavy use of technology; he refers to this first generation of KM as supply-side KM. The second generation KM (SGKM), demand-side KM, emphasizes the production of new knowledge, and

[5] Value propositions are what an organisation hopes to achieve through the more effective management and transfer of knowledge, page 21 in O'DELL, C. & GRAYSON, C. J. 2004. *The Executive's Role in Knowledge Management,* Texas, American Productivity & Quality Centre (APQC).

focuses also on enhancing the conditions for innovation, placing emphasis on high performance learning, hence, marking the convergence of KM and organisational learning. McElroy's view of the second generation KM is that it does not ignore the first, however, includes the activities of the first. The arrival of second-generation KM (SGKM) includes the introduction of some new terms, new concepts and new insights, which include: 1) Supply-side versus demand-side KM, 2) The knowledge lifecycle, 3) Knowledge processes, 4) Knowledge as rules, 5) Knowledge structures, 6) Nested knowledge domains, 7) Organizational learning, 8) Complexity theory. McElroy suggests that the more appropriate term to use for KM is Knowledge Process Management, and suggests that if we "feed the processes that spawn the production and integration of new knowledge in human affairs, and innovation, better organizational performance will follow" (McElroy, 2000:p.93).

Three processes of knowledge production are suggested by McElroy: production, validation, and integration. McElroy defines organisational knowledge as being the subject of SGKM, and generally expressed by what an organization believes or does, or by how it behaves. He further defines two types of organisational knowledge: declarative knowledge (know-what), and procedural knowledge (know-how), and suggests that it is embedded in organisational practice, and expressed in knowledge structures (see Table 2. 9). McElroy further suggests that SGKM has an end to end view, and presents a Knowledge Life Cycle (KLC), as seen in Figure 2. 19 on page 69) McElroy further contends:

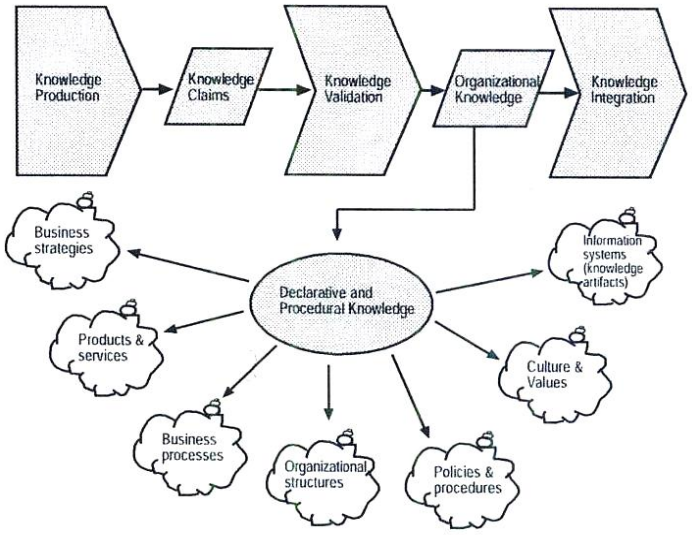
> "I like to think of SGKM as a management discipline that focuses on organizational learning with business innovation and competitive advantage in mind" (McElroy, 2000:p.98).

TABLE 2. 9 ORGANISATIONAL KNOWLEDGE STRUCTURES

Knowledge Structures	Declarative knowledge	Procedural knowledge
Business strategies	x	
Products and services	x	
Business processes		x
Organizational structures	x	
Policies and procedures	x	x
Culture and values	x	x
Information systems (including hardcopy and other knowledge artefacts)	x	x

Source: after McElroy(2000:p.95)

FIGURE 2. 19 ORGANISATIONAL KNOWLEDGE LIFE CYCLE



Source: after McElroy(2000:p.96)

iv). STANKOSKY'S PILLARS OF KM

This model remains the most studied and quoted descriptions of the KM system (Girard, 2005a), and it is loosely based on Wiig's (1994) three pillars of KM model. It suggests that each pillar, namely: Leadership, Organisation, Technology and Learning, represents critical elements to KM implementation, and these four pillars are referred to as the DNA of KM. Stankosky and his team researched the many models, elements and definitions and approaches which essentially cover these four principle areas or groupings, each containing many elements. The evidence of these four pillars was statistically validated by the research done by Francesco Calabrese (2005). The framework was used as a lens for this particular research study.

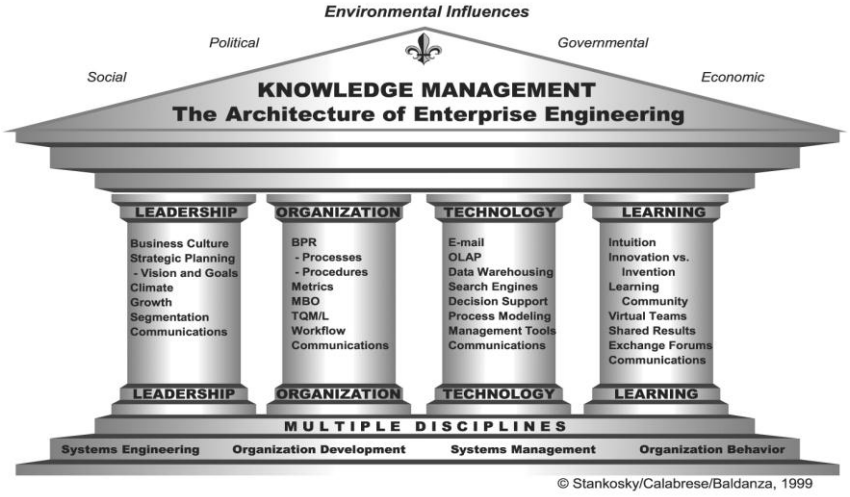
2.3.11 HIGHER EDUCATION AND KNOWLEDGE MANAGEMENT

Kidwel *et al* (2000:p.28) pose the question whether the concepts of KM are applicable to universities and colleges. The mission and ethos of most HEIs is primarily research and education, which involves the 'sharing of knowledge'; however, if that is the case, then the higher education sector should be replete with examples of institutions that proactively embrace KM to enhance their competitive advantage. However, although some examples exist, they are the exception rather

than the rule. In 2000, Kidwell *et al* suggested that Knowledge Management was a new field, and experiments were just beginning in HE (Kidwell *et al*., 2000:p.28). Leitner (2004) supports this view and contends that it is surprising then that issues relating to KM in universities have only recently started to attract attention. Serban and Luan (2002b:p.1) takes the argument further by suggesting that few HEIs have processes that are institutionalised for the purpose of "leveraging knowledge to spur innovation, improve instructional and support services, or maximise operational efficiency and effectiveness". And even fewer, suggest Serban and Luan, possibly utilise the benefits of KM for competitive advantage.

In 2000, Kidwell *et al* suggested that many institutions of Higher Learning did not have an organised knowledge management system in place or even an understanding of such a system, a view which Corral also supports (1999). Cheng (2009:p.313) contends that "instead of knowledge sharing, knowledge hoarding could be more prevalent in HEIs". There are a few examples of KM implementation dotted around the Higher Education literature, and even fewer in the UK. A case study conducted by Basu and Sengupta (2007) of KM initiatives within a Business school in India, found that the knowledge initiatives were more individualistic and personal goal oriented, than organisational; the KM culture in terms of learning and sharing knowledge among academics was mostly informal and limited to peer groups and restricted to closed pockets of individuals. Another study conducted within an Iranian University (Mehralizadeh, 2009) investigated the practices of KM within it and whether the IR unit and function supported the KM function and implementation in some way. The research findings of this study showed that KM was not developed with regards to the university strategies, policies and programs, and that the IR function and unit did not use KM in ways that could support it or the university.

FIGURE 2. 20 STANKOSKY AND TEAM'S FOUR PILLARS OF KNOWLEDGE MANAGEMENT



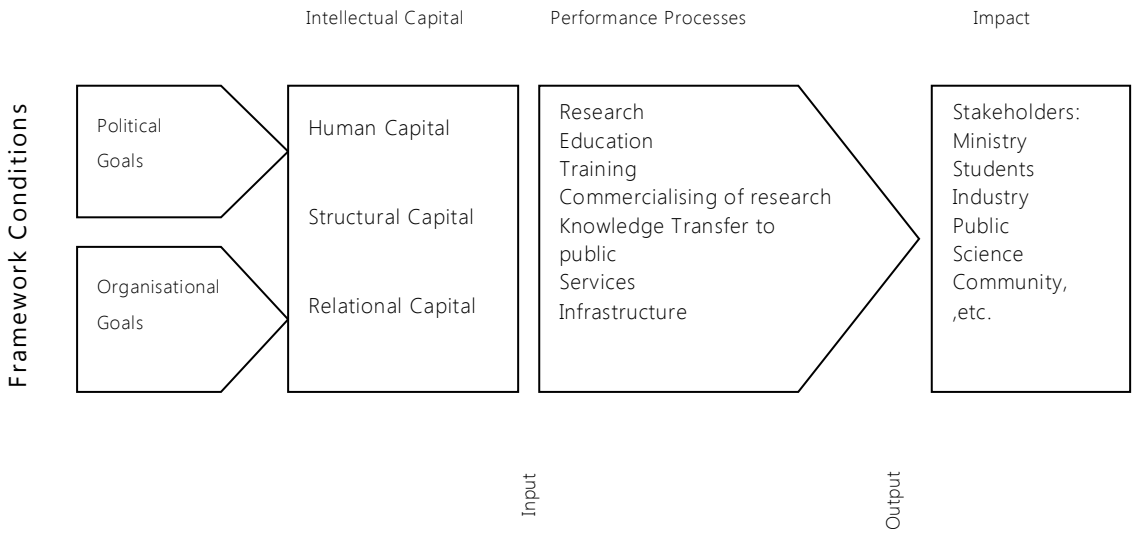
Source: cited in Stankosky (2005)

In 1999, Corral (1999) suggested that KM did not seem to have had much impact on the High Education sector thus far; however, she suggests that there was some evidence of involvement. She lists three universities in the UK that were involved in research projects at the time: One addressed HR roles in the KM initiatives, the second included a Know-How project, and the last university was part of a Knowledge Consortium. Over the years, a small number of scholars have reported on KM type activities within UK higher education. In 2002, Slater and Moreton (2007) reported on a large scale KM implementation within their IT department and present some guidelines for implementation of a KM programme within an IT department; in 2004, White (2004) presents a case study conducted within an academic library within Oxford University, and concluded that academics need KM, which would work better if initiated in a small project, and also concluded that not having a definition for KM could exacerbate the problem. In 2007 Moss *et al* (2007) suggested that there was greater pressure on HEIs to improve their Intellectual Capital (IC) research outputs, and that a collectivist approach to the research task would increase research output more than the individualistic approach would, and that a pressurised research culture within universities has led to more of an individualistic work culture and ethic than a collegial one, a culture that is needed to enhance and stimulate knowledge sharing and creation; and lastly Wright (2008:p.49) suggests that predominant attention is being paid to explicit knowledge in the curriculum and pedagogy of UK universities which offer courses entitled Knowledge Management,

which may be at the expense of more tacit knowledge management approaches. A list of all the research studies addressing KM within Higher Education, which contributed to this research in different ways, can be found in Appendix D on page 345.

Another research study worth mentioning here, is the one conducted by Leitner (2004:p.133) who presents an example of KM implementation within all Austrian Universities, a model for IC reporting (seen in Figure 2. 21 below). This model aims to visualise the knowledge production process within universities within Austria and consists of four main elements: the goals, intellectual capital, the performance processes and the impact, similar to the input-process-output model of Palfreyman (2001).

FIGURE 2. 21 MODEL FOR INTELLECTUAL CAPITAL FOR AUSTRIAN UNIVERSITIES



Source: from Leitner (2004:p.133)

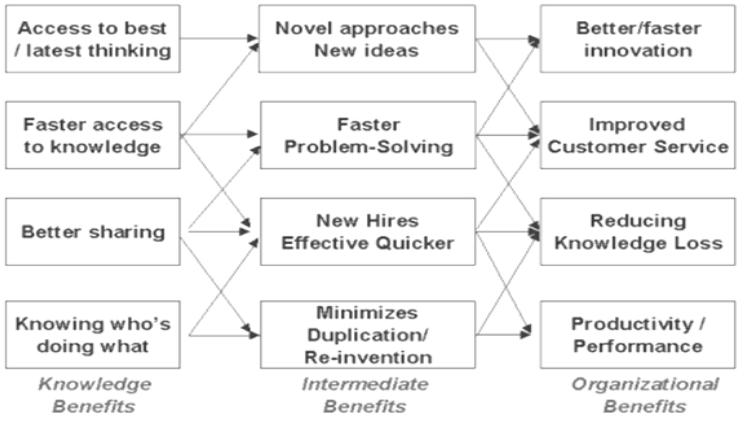
Although there are examples of some KM implementation in the literature, Rowley (2000:p.329), suggests that a series of unrelated knowledge based activities is not sufficient. She further purports that universities and their staff must recognise and respond to their changing role in a knowledge based society, and need to be consciously and explicitly managing the processes associated with the creation of their knowledge assets; to recognise the value of their intellectual capital to their continuing role in society, and in a wider global marketplace for Higher Education.

Lin *et al* (2007) take the argument of using the intellectual capital more effectively, further, by suggesting that, for a university to be most effective in its decision making process, it must make use of the highest possible levels of intellectual analysis, and hence, must look to all possible sources of information and talent which includes academic staff. Their contention is that academic staff are not utilised to their maximum in this regard. Despite the lack of substantial literature evidence of KM implementation in Higher Education, there are those scholars who have the view that there is tremendous value to HEIs that develop initiatives to share knowledge to achieve business objectives, and believe that the potential for KM to provide benefits to every area of Higher Education in support of their mission, is significant (Kidwell *et al.*, 2000). Geng *et al* (2005:p.1032) support this view by contending that KM can offer "Higher Education the ability to improve its effectiveness in many significant ways". Skyrme (2002:p.1) presents, what he terms, "some commonly found benefits for implementing KM within an organisation", and specifies the knowledge benefits, the intermediate benefits and the organisational benefits, that can be experienced by organisations (see Figure 2. 22 on page 74).

Notwithstanding the benefits, a study conducted by Oliver (2003) suggests that there is a high level of awareness of the importance of KM, yet a low level of implementation. Oliver further purports that, in terms of KM implementation, within the HEI context of constant change, the challenge will be to identify the most appropriate mix of KM practices aligned to goals and strategies.

The knowledge needs of a university however, are very different from corporate needs, in that "universities seek to share knowledge for the good of society, whereas corporations seek a profit" (Geng et al., 2005:p.1033). Although this is the case, universities are expected to take on market-like behaviours to expand their funding base, and engage in knowledge transfer with business using their intellectual capital and intellectual property; however, fundamentally, universities are non-profit organisations, having to, more and more take on business-like behaviours. Although the literature did not have a wealth of examples of KM implementation in Higher Education, this research was interested to uncover, whether management type tools like KM, was being used on an organisational level to enhance its competitive advantage. Business-like behaviours were being introduced into HEIs to assist to secure additional funding sources, however, were management tools like KM being used within this context?

FIGURE 2. 22 COMMONLY KNOWN KNOWLEDGE MANAGEMENT BENEFITS



Source: from Skyrme (2002:p.1)

Given all the changes that universities have had to undergo, as well as the external and internal pressure placed on them, Rajan (2007) contends that it is imperative that universities embrace practices to improve their performance, and suggests that universities embrace 'knowledge-centric" approaches to their functioning. Given these external pressures on universities, and that university priorities change over time (Slater and Moreton, 2007), the researcher was interested to know whether universities had changed their priorities to include more management tools, and, in particular, KM, to improve competitive advantage.

2.4. GAP IN LITERATURE

Stankosky (2007) contends that many organizations all over the world have changed their organizational structure by creating KM departments and creating a Chief Knowledge Officer position, and suggests that educational organizations have recently begun to understand the importance of those changes. The literature, however, did not at the time have a substantial body of knowledge on the perceptions, and practices of organizational wide KM implementation within Higher Education, particularly focusing on universities, and more specifically in the UK. Although KM has been legitimised as an academic subject, through a variety of means, the question of KM being used as a university-wide management tool to enhance organisational performance within universities, and, in particular UK universities, presented a gap in the literature. Of specific interest were the practices

and perceptions of KM within universities in the UK, and what the factors were that hindered or promoted its use as a tool to enhance competitive advantage. These issues were of specific interest as universities are by nature of their mission and role, very different from business, yet are expected to take on business-like behaviours in certain respects, and hence, whether HEIs were utilising business management tools, in particular KM, was of specific interest.

Research already conducted in the UK on KM in Higher Education was either based within a particular department – for example the IT department at Wolverhampton University (Slater and Moreton, 2007), and a library at Edinburgh (Hayes, 2007) and Oxford University (White, 2004), however, the state of KM in HEIs overall, was not evident. As noted before, various scholars have presented a variety of models and perceptions of KM; however, in Stankosky's research, he identified that KM could fit within four areas: Technology, Learning, Organisation, and Leadership, a framework very similar to the Inukshuk model presented by Girard in section **2.3.10** on page 60. This overall and systemic view of KM as applied within HEI's, had not been researched within the UK, to the researcher's understanding, and hence, was of significant research interest.

2.5. SUMMARY

This chapter has presented the initial literature background to the research undertaken. It presents the landscape and history of change that HEIs within the UK have undergone, focusing on the particular changes and pressure brought about by massification, the emergence of an environment of stricter accountability within the constraints of reduced government funding support, the 21st century and the implications for HEIs, the introduction of managerialism and the changing culture of HEIs. Knowledge and Knowledge Management are placed within this changing context of Higher Education with some examples given of some research conducted within Higher Education internationally, and within the UK.

A vast array of models for KM are present in the literature; however, this review addressed four such models, and presents the framework selected for this research. Finally, the opportunity to pursue this research is presented as a gap in the KM and Higher Education literature, which this particular research study aimed to fill.

The next chapter presents the research process, some of the decisions behind the choices made for the research methodology, and finally the research methodology chosen. Ethical considerations are presented in the final pages of the chapter.

Chapter 3

RESEARCH DESIGN FRAMEWORK

RESEARCH DESIGN FRAMEWORK

CHAPTER 3

3. RESEARCH DESIGN FRAMEWORK

3.1. INTRODUCTION

All research (whether quantitative or qualitative) is based on underlying assumptions, philosophical or theoretical, about what constitutes 'valid' research and the choice of appropriate research methods. In order to conduct and/or evaluate research, it is important to know what these (sometimes hidden) assumptions are (Myers, 1997). A vast number of these assumptions exist today, and Patton (2002) contends that there is no definitive way to categorise the various philosophical and theoretical perspectives (underlying assumptions) that influence the different types of research inquiry. To conduct research requires having a plan or proposal, a *research design* (Creswell, 2009), which Denzin and Lincoln (2000:p.22) define as "a flexible set of guidelines that connect first theoretical paradigms" (philosophical worldviews) to "strategies of inquiry" (methodologies), and "second to methods for collecting empirical material". A researcher's worldview (Creswell, 2009), a particular epistemological stance, the underlying theoretical perspective (Crotty, 1998), and the personal biography of the researcher (Denzin and Lincoln, 2000), are said to influence the research design choices made. However, deciding on whether to pursue a qualitative inquiry rather than a quantitative one, which methodology or strategy of enquiry to use, and which research methods to use to support the methodology, given the extant number of options available to a researcher, can be a daunting task.

It is the researcher's belief that many of these decisions reside with the nature, experience and skills of the researcher, as well as with the nature and context of the research problem (Strauss and Corbin, 1998, Levy, 2006), very much in accordance with Creswell's (2009) and Denzin and Lincoln's (2000) criteria for selection of a research design.

Although the researcher recognised that the personal experience and preference of a researcher can influence some of the choices made, the researcher actively sought to allow the research in question to drive the selection of the methodology.

The researcher has adapted Creswell's (2009) and Truath's (2001) criteria for selection of a research design (see Table 3. 1 below) or the study at hand, and has included Denzin and Lincoln's view on a researcher's biography, to include

- The research problem (Truath, 2001)
- Philosophical world view (Creswell, 2009, Truath, 2001)
- The degree of uncertainty (Truath, 2001)
- The researcher skills, experience and biography (Denzin and Lincoln, 2000, Truath, 2001, Creswell, 2009)

TABLE 3. 1 CRITERIA FOR SELECTING A RESEARCH DESIGN

Truath (2001)	Creswell (2009)
The research problem	The research problem
The Researcher Theoretical Lens	Philosophical Worldview
The Degree of uncertainty surrounding the phenomenon	Personal experience of the researcher
The Researcher Skills, experience and biography (Denzin and Lincoln, 2000)	Audience for whom research intended
Academic Politics	

Source: after Truath (2001), Creswell (2009), Denzin and Lincoln's (2000)

Truath's last criterion (see Table 3. 1 above) had no bearing on this research since, although the selected methodology was considered a contentious one, academic politics had no influence on the research design choices. The audience for the research will initially be the researcher's supervisor and external examiners of the PhD degree; however, the researcher is aware of the influence that the biography of the individual examiners could be different and hence, they should not be considered as one audience, but as individual, very different readers of the thesis. As such, much care was taken with the clarity and specificity of the process of the research and design choices, with the intention of accommodating for individual differences of discipline. A discussion of the four selection factors of a research design are presented next.

3.2. THE RESEARCH PROBLEM: CONTEXT

The researcher was keen to investigate and understand whether Knowledge Management was being used as an organisation-wide management tool within HEIs,

and what the contributing factors were that hindered or promoted its use. Trauth (2001) indicates that some would argue that *what* one wants to learn has an influence on *how* one should go about learning it. At the outset, the researcher conducted a broad literature review to ascertain the existing status of KM within the Higher Education context. Whereas the field and application of KM within industry is written and researched by many scholars, very few, at the time of this research and to the researcher's knowledge, had written about or researched KM within the context of Higher Education (Corral, 1999, Metcalfe, 2006, Birgeneau, 2005, Chen and Burstein, 2006, Kidwell et al., 2000, Milam, 2001, Rowley, 2000, Serban and Luan, 2002a, Stankosky, 2005), and even fewer had pursued this research within the United Kingdom context. As such, the literature review did not provide the necessary background to the current state of KM within the HEI context within the UK. The researcher, together with the supervisor, identified a need for this research, and there was recognition that the research methodology needed to be inductive and interpretive in nature, to allow the theory to emerge from the data. A strategy to acquire an overview of the current status of KM within UK HEIs was necessary, and hence, a survey was sent to all HEIs within the UK to establish this background. Once an overview was acquired, the aim was to uncover the stories or reasons behind perceptions, and underpinning practices of KM within this context. The most suitable way to accomplish an in-depth understanding of the perceptions and practices of KM within HEI was by using multi-case studies with a sample of institutions. At this stage, the researcher chose to select a methodology that would allow the theory to emerge from the data and hence, Grounded Theory was the methodology of choice to accomplish this. What the researcher was hoping to learn from the research was a deciding factor on how it was researched, and hence, the methodology chosen reflected this view.

3.3. PHILOSOPHICAL WORLDVIEW

Guba (1990), cited in Creswell (2009:p.6) defines *worldview* as a "basic set of beliefs that guide action". Greene (2007) defines this set of assumptions, understandings, predispositions, values and beliefs which guide all researchers as *mental models,* while Lincoln (1998) defines it as a *paradigm*, and Crotty (1998) uses the terms *epistemologies* and *theoretical perspectives* or *lenses*. Creswell (2009) contends that worldviews are general orientations about the world and the nature of research that a researcher holds, which are shaped by the discipline area of the researcher,

the beliefs of advisors and faculty, and past research experiences. These also shape the choice of methods for the research.

For this research, Crotty's (1998) and Creswell's (2009) frameworks for a research design have been adapted to shape the overall research: i.e. the elements of a research design which constitute the primary elements of research - the philosophical worldviews (epistemology, theoretical perspective), research methodology (selected strategies of inquiry) and research methods. Different scholars provide an explanation of a different number and a different mix of worldviews. Crotty's (1998) view of the three primary epistemological influences are discussed: objectivism, constructionism and subjectivism, influenced by various theoretical perspectives – positivism, interpretive, feminism, critical inquiry and post-modernism. Two of the primary elements of research design (epistemology and theoretical perspectives) are discussed next and presented in relation to the research study, and the research design choices.

TABLE 3. 2 DIFFERENT TERMINOLOGY USED FOR BASIC SET OF BELIEFS AND ASSUMPTIONS UNDERLYING RESEARCH

Worldview (basic set of beliefs)	Mental Models	Epistemologies and theoretical perspectives	Paradigms
Guba(1990)	Greene(2007)	Crotty (1998)	Lincoln (1998)

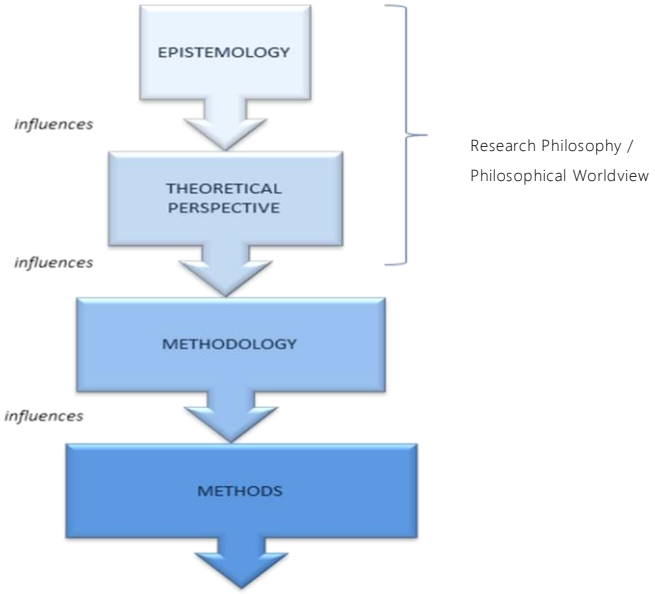
Source: Author after, Guba (1990), Greene (2007), Crotty (1998), and Lincoln (200a)

3.3.1 EPISTEMOLOGY

Epistemology is the study or a theory of the nature and grounds of knowledge, especially with reference to its limits and validity (Webster, 2007). It is a way of understanding and explaining how we know what we know (Crotty, 1998); it is the "nature of social knowledge" (Greene, 2007:p.52).

There are several epistemologies specified in the literature; however, three epistemologies will be considered here: objectivism, constructionism[6], and subjectivism.

FIGURE 3. 1 ELEMENTS OF RESEARCH DESIGN



Source : adapted from Crotty (1998) and Creswell (2009)

Objectivism, contends Crotty (1998), takes the approach that reality exists apart from the operation of consciousness. Crotty further explains that

> "…a tree in the forest is a tree, regardless of whether anyone is aware of its existence or not…When human beings recognize it as a tree, they are simply discovering a meaning that has been lying there in wait for them all along" (Crotty, 1998:p.8).

Objectivism is the epistemological view that things exist as meaningful entities independently of consciousness and experience, that they have truth and meaning residing in them as objects, and that careful research can attain objective truth and meaning (Crotty, 1998). Objectivity is defined as "the minimisation of inquirer and methodological bias in the quest for truth" (Greene, 2007:p.165). Greene

[6] Jean Piaget developed constructivism, and Seymour Papert a student of Paiget's expanded it and developed constructionism (in ACKERMANN, E. Piaget's Constructivism, Papert's Constructionism:What's the difference?). Crotty (1998) contends that these two terms are used interchangeably, however, that a distinction can be made. He suggests that it would be useful to reserve the term *constructivism* for epistemological considerations focusing exclusively on 'the meaning-making activity of the individual mind' and to use *constructionism* where the focus includes the 'collective generation [and transmission] of meaning' (Crotty, 1998:p.58). He further contends that constructivism emphasizes the unique experience of each person, with each one's way of sense making of the world to be respected, and considered valid and hence, tending to eliminate any hints of a critical spirit. Constructionism, on the other hand, emphasizing the hold culture has on us, shaping the way in which we see things, giving us a definite view of the world. Finally suggesting that constructivism tends to resist the critical spirit, while constructionism tends to foster it (Crotty, 1998).

(2007:p.166) further purports that, in other philosophical frameworks and mental models, objectivity is viewed as unattainable, given the "intertwined nature of the knower and the known", and includes interpretivism and constructivism within this view. *Constructionism* permits the researcher to explore the views of the different participants within the subject context recognizing that each might have a different view or understanding of the same situation, and that truth or reality exists only through interaction with the realities of the world (Levy, 2006). Meaning is not discovered, but constructed, and hence, different people may construct meaning in different ways, even in relation to the same phenomenon (Crotty, 1998:p.9). It is defined as follows:

> " ….all knowledge, and therefore all meaningful reality as such, is contingent upon human practices, being constructed in and out of interaction between human beings and their world, and developed and transmitted within an essentially social context." (Crotty, 1998:p.42).

Meaning is not inherent in the object, waiting for someone to discover it, however, it is constructed by human beings as they engage with the world they are interpreting.

In the third epistemological stance, *subjectivism*, meaning does not come out of an interplay between the subject and the object, but is imposed on the object by the subject. In other words, the researcher will impose his or her own values, impressions, interpretations on the object, and the interplay between the researcher and the object is solely dependent on the researcher's subjective views of the object or phenomenon (Crotty, 1998).

Although the above epistemologies seem quite different from each other, Crotty (1998) advises that the epistemologies should not be seen as 'watertight compartments'.

3.3.2 EPISTEMOLOGICAL DECISIONS

At every point in research, the contention is that, in our observing, our interpretations, our reporting and everything else we do as researchers, we inject a host of assumptions about human knowledge, and about realities encountered in our human world, which shape for us the meaning of research questions, the purposiveness of research methodology, and the interpretability of the research findings (Crotty, 1998). It is necessary to explicate the values and world view of the researcher to add to the understanding of the research and to recognise how it was

influenced and shaped by some of the inherent assumptions of the researcher, some of which are explained in relation to this research.

The researcher is of the opinion that certain aspects of this world have objective meaning, and that certain truth does exist apart from the operation of any consciousness. However, when human beings interact, this interaction can bring about constructed additional meaning and dimensions to a variety of societal issues, and, in so doing, some form of meaning is constructed through the interplay of the two. This presented the researcher with a dilemma in choosing the appropriate epistemology that she felt comfortable with and that best suited the research. Crotty (1998) contends that we need to be "consistently objectivist or consistently constructionist (or subjectivist)". The nature of the research required a conceptual and contextual understanding of the current state of KM practices within HEIs, as well as perceptions of KM practices and their use or non-use within HEIs. The culture and environment of HEIs encourages individual thought and opinion, as well as the construction and development of new knowledge, with each individual encouraged to construct meaning and each possibly perceiving world phenomena at times very differently from one another. Given that the construction of knowledge is encouraged within the Higher Education context, the researcher approached the research with a constructionist epistemology. The discussion of how this particular epistemology of constructionism fits with Grounded Theory is discussed further in the methodology section (section 3.7.4.3 on page 103).

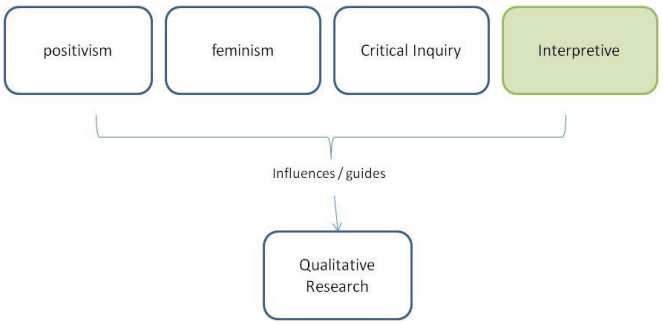
3.3.3 THEORETICAL PERSPECTIVE

A theoretical perspective is the philosophical stance underpinning a methodology, that reaches into the assumptions about reality that we bring to our work, and, if we ask about these assumptions, we question the theoretical perspective (Crotty, 1998). It is the theoretical perspective and the philosophical stance informing the methodology that provide a context for the process and grounds its logic and criteria. For the purposes of this research, the four categories of theoretical perspectives, suggested by Crotty (1998) - positivism, feminism, critical inquiry, and interpretive theoretical perspectives (see 88) - are discussed.

Myers (1997) describes positivist research as a researcher assuming that reality is objectively given and can be described by measurable properties; it generally attempts to test theory. Positivists assume that it is possible to obtain hard, secure

and objective knowledge; as a result, positivist research is able to focus on generalisation and abstraction to a wider context (Levy, 2006). Crotty (1998) contends that it discovers meaning - meaning that is already inherent in the objects being researched - and hence, believes this to "embrace the epistemology of objectivism" and to imply that "from the positivist viewpoint, objects in the real world have meaning prior to, and independently of, any consciousness of them" (Crotty, 1998:p.27). Positivist methods, therefore, assume an unbiased and passive observer who collects facts, but does not participate in creating them, and who rejects other possible ways of knowing, such as through interpreting meanings and intuitive realisations (Charmaz, 2006). This research aimed to inductively allow the theory to emerge, as opposed to testing a hypothesis, and, given the research context and the nature of the actors and the understanding that there would not be one single truth within this context, the positivist view was not considered appropriate.

FIGURE 3. 2 UNDERLYING PHILOSOPHICAL ASSUMPTIONS



Source: adapted from (Myers, 1997) and (Creswell, 2009)

A *feminist* perspective presumes the importance of gender in human relationships and societal processes, and orients the study in that direction (Patton, 2002). Crotty (1998) explains that, when feminists come to research, they bring with them an abiding sense of oppression in a man-made world, some having an awareness of the inequity and the need to level the playing fields, and others perceiving the injustice more profoundly and severely, wanting to revolutionize the injustice through radical change in culture and society. "This striving for equity and liberation marks feminist research indelibly" (Crotty, 1998:p.182). Although the researcher is South African, and, hence, given the history of South Africa, was acutely aware not only of injustice to and oppression of women, but also of racial injustice, this particular perspective strives for equity and liberation, and hence, did

not fit the nature of the research nor the research problem. Despite this particular perspective not fitting the research context in its entirety, the researcher would question any signs of discrimination or inequity as a matter of principle, and these values would certainly impact on the research in that respect.

Critical research is defined by Myers (1997) as assuming that social reality is historically constituted and that it is produced and reproduced by people, with the main task being one of social critique. Social and political aspects of the situation might also be investigated to understand how they shape the reality; that is, how larger contextual factors affect the ways in which individuals construct reality (Merriam and Associates, 2002). The aim of this research project was to investigate certain factors that hindered or promoted KM use and to generate theory as an outcome. The outcome of the research aimed to be more than simply a social critique of KM within the HEI context, and aimed to be more exploratory and explanatory in nature, and to generate new theory; hence, this epistemological stance was also considered to be unsuitable.

Interpretive research is described as research that assumes access to reality (given or socially constructed) through social constructions, such as language, consciousness and shared meanings (Myers, 1997). It is about learning how individuals interact with their world and what meaning it has for them (Merriam and Associates, 2002). Orlikowski and Baroudi (1990) define interpretive research as follows:

> "Interpretivism asserts that reality, as well as our knowledge thereof, are social products and hence, incapable of being understood independently of the social actors (including the researchers) that construct and make sense of that reality" (Orlikowski and Baroudi, 1990:p.14).

Interpretivism assumes that, as people interact with each other and their world, they associate their own meanings, and, hence, interpretive researchers attempt to understand the researched phenomena through the meanings that the participants assign to it (Myers, 1997). Merriam and Associates (2002) further contend that basic interpretive and descriptive qualitative research is characterised by:

- the search for meaning and understanding;
- the researcher as a primary instrument of data collection and analysis;

- an inductive strategy;
- a richly descriptive end product (Merriam and Associates, 2002).

It was the researcher's view that the above four characteristics all aptly applied to the research. The research aimed to produce an understanding of the context of KM within HEIs and to identify the contextual factors that hindered or promoted KM implementation within this context. The researcher was the primary instrument for data collection and analysis; and did not have a hypothesis to test, but aimed for emergence of theory rather than the testing of it. The interpretive, theoretical perspective was considered the most suitable as the researcher aimed to discover and understand the KM phenomenon implementation within the HEI context, and understand the processes, perspectives and worldviews of the people involved (Merriam and Associates, 2002). The interpretative, theoretical perspective was therefore the perspective of choice and the one used for the research project.

3.4. THE DEGREE OF UNCERTAINTY SURROUNDING THE PHENOMENON

Knowledge Management was a relatively new tool that industry had recognised as a key management tool to ensure competitive advantage (Davenport and Probst, 2002, Nonaka and Ichijo, 2007, Serban and Luan, 2002a, Kidwell *et al*., 2000). However, the extent to which it was being used within HEIs, and those specifically within the United Kingdom, was relatively unknown and relatively under-researched as an area. In 2000, Kidwell *et al* indicated that Knowledge Management was a new field, and that experiments on implementation were just beginning in higher education. They continue to add that Colleges and Universities have significant opportunities to apply Knowledge Management practices to support every part of their mission, but, in 2008, a key question was whether HEIs within the United Kingdom were recognising the value of managing what they know about their assets, both tangible and intangible?

A preliminary review of the KM literature at the start of the research project revealed that KM within HEIs was under-researched. Although the researcher witnessed a steady growth in the number of articles focusing on KM in HEIs since the start of the PhD, very few of these addressed KM within HEIs in the UK and the researcher did not find any reference to research articles that addressed the organisational implementation of KM within HEIs within the UK.

In the light of the paucity of previous research on the perceptions and practices of KM on an institutional wide level within HEIs, this research provided a perspective on what seemed to be an emerging research topic. The outcome focus of this research topic therefore aimed at theory building rather than theory testing, in line with other scholars and the reasoning behind their decisions (Rowlands, 2005). Given the relative 'newness' of the research within the given context, made obvious by the lack of writing on the subject, and in particular the reasons for KM use or non-use within this particular context were not adequately researched or documented, the researcher therefore approached the research inductively selecting Grounded Theory as the methodology of choice for this research.

3.5. THE BIOGRAPHY OF THE RESEARCHER INCLUDING SKILLS AND EXPERIENCE

Creswell (2009) suggests that the researcher's own personal training and experience has an influence on the choice of approach. Denzin and Lincoln (2000) takes this argument further and suggest that a researcher's biography has a great influence on the perspective with which a researcher would approach the research. They further contend that class, race, gender, culture, and ethnic orientation could influence the researcher and the particular position the researcher would speak from. Creswell (2009) adds to this by suggesting that, depending on the researcher's methods he or she is trained in, this would also influence the preference of methods selected. The researcher agrees with both Creswell and Lincoln and Denzin in so far as, depending who we are and what our belief and value system is, our biography can influence the methods selected, and research decisions made. Being female, however, should not necessarily imply that the feminist approach will be sought; similarly, being from a South African context where racial discrimination was the order of the day, does not imply that the researcher went into the research with an abiding sense of oppression. In whatever way a researcher's background does sensitize him or her to various social elements; it does not necessarily imply that these perspectives will be forced on the research.

Although the researcher was familiar with quantitative methods more than qualitative methods at the outset, selecting both quantitative and qualitative methods fitted the researcher and the research as both the structure of the quantitative research methods and the flexibility of the qualitative inquiry could be achieved. The researcher has a science background with work experience in

management within the HEI context; however, the researcher was keen to harness the strengths of both methods to ensure a rich data set and to enhance the strength of the data analysis.

3.6. RESEARCH AIM AND OBJECTIVES

The mission and ethos of any Higher Education institution is primarily scholarship. Southern Polytechnic University (2010) in Georgia, USA contends that scholarship has the following properties: it involves providing or sharing knowledge; it involves new knowledge or new use or application of old knowledge; and it involves evidence or documentation of accomplishment. However, some HEIs have formal organisation-wide processes that leverage knowledge to spur innovation, improve instructional and support service, and maximise operational efficiency and effectiveness (Serban and Luan, 2002b). It is not clear from the literature whether HEIs in general utilise the benefits of Knowledge Management for competitive advantage, suggesting that not very many HEIs actually do implement such methods. There could be many reasons why this was the case and hence, the intention of this research investigation was to use the grounded theory methodology to address the following aim:

> To investigate the Knowledge Management practices and perceptions within the UK HEI context.

More specifically, the research aimed to investigate:

- Whether Knowledge Management was being *used as a management tool* within Higher Education Institutions in the United Kingdom, to enhance competitive advantage;
- What the *contributing factors* were, that hindered or promoted the implementation of Knowledge Management within the HEI context;
- What the *perceptions and practices* of KM were, within this context.

3.7. RESEARCH DESIGN

The research uses both Crotty (1998) and Creswell's(2009) suggestion of the elements of a research design i.e. a philosophical worldview (including epistemology and theoretical lens), research methodology, and research methods. The underlying epistemology and theoretical lens, and hence, the philosophical worldview, which influenced the research is presented and discussed in section 3.3

on page 83. The research methodology and methods selected for this research follows.

Methodology is defined as "the strategy, plan of action, process or design lying behind the choice of particular methods and linking the choice and use of methods to the desired outcomes" (Crotty, 1998:p.3). Creswell (2009:p.11) uses the term 'strategy of inquiry' which he defines as the "types of qualitative or quantitative, and mixed method designs or models that provide specific direction for procedures in a research design".

3.7.1 QUANTITATIVE AND QUALITATIVE RESEARCH APPROACHES

Dawson (2006) explains quantitative research as generating statistics through the use of large-scale survey research, using methods such as questionnaires or structured interviews. Quantitative methods fit the varying perspectives and experiences of people into a limited number of pre-determined response categories to which numbers are assigned (Patton, 2002). The researcher agreed with Patton's (2002) argument that each approach has its own set of advantages and hence, is appropriate for different types of research; qualitative methods increase the depth of understanding of a limited number of cases, whereas, quantitative methods facilitate the statistical analysis of a large volume of data, which can yield a broad, generalizable set of findings presented succinctly and parsimoniously.

Qualitative methods are said to facilitate the study of issues in-depth and provide more description of the reasons behind certain practices and perceptions; its characteristics, enabling the researcher to approach the fieldwork without being constrained by pre-determined categories of analysis, contribute to the depth, openness and detail of qualitative inquiry (Patton, 2002). Dawson (2006:p.15) defines qualitative research as "one that explores attitudes, behaviour and experiences through methods such as interviews or focus groups and attempts to get an in-depth opinion from participants". This particular research aimed to explore attitudes, behaviour and experiences and perceptions, and, hence, Phase II incorporated a qualitative research methodology that enabled the unpacking of the why, what and when questions not easily accommodated in the quantitative approach, and Phase I incorporated a quantitative approach.

3.7.2 THE CASE FOR A MIXED METHODOLOGY APPROACH

As this research was novel, and, as far as the researcher was aware, had not been conducted within the HEI context in this format, a natural choice was to select a research methodology that was inductive in nature that would allow theory to emerge from the data. It was also necessary to incorporate a mixture of research approaches, as a broad understanding of the practices of KM within this context was initially needed; once this overview was acquired, a deeper understanding of some of the issues, as well as explanations of certain aspects, could be followed. Hence, as a first phase, a survey of the HEIs within the UK was thought appropriate, followed by a deeper understanding of KM within HEIs through more in-depth case studies that would expand on the first phase. The researcher was therefore led by the research intentions to consider the merits of mixing both qualitative and quantitative approaches.

Various ways are suggested to combine or mix qualitative and quantitative approaches in a given research. Creswell (2009) suggests six such mixed approaches, which combine the process and the intent of the mixing of the approaches in their names. This particular research adopted the two-phase mixed method studies, or *sequential mixed methods approach,* as reworded by Tashakkori and Teddlie (1998), and defined as those studies that combine the qualitative and quantitative approaches into the research methodology of a single study or multi-phased study, used either in parallel or sequential phases (Tashakkori and Teddlie, 2003). However, in Crotty's (1998) research model, the distinction between qualitative and quantitative research occurs at the level of methods.

The research was divided into two phases: Phase I incorporated a quantitative research methodology using quantitative techniques and tools to collect and analyse the data, and Phase II incorporated a qualitative research methodology. A researcher would undertake research utilising a mixed-methods approach for various reasons, and Greene *et al* (1989) in their book *Toward a Conceptual Framework: for Mixed-Method Evaluation Designs* and cited in Tashakkori and Teddlie (1998:p.43) suggest 5 reasons why it could be considered:

- *Triangulation* purposes, hence, seeking convergence of results;
- *Complementary* reasons, to allow for the examination of overlapping and different facets of a phenomenon;

- *Initiation* purposes, allowing the discovery of paradoxes, contradictions, or fresh perspectives;
- *Development* purposes, allowing the methods to be used sequentially such that the results of the first method informs the use of the second method;
- *Expansion* purposes, allowing for breadth and scope of the project.

The mixed-method approach was utilised in this particular research, using the above definitions, for two reasons:

- Firstly, as *initiation* which enabled the discovery of the practices and perceptions of KM within HEI broadly, and
- Secondly for *development purposes*, allowing the methods to be conducted in two sequential phases, Phase I – Quantitative and Phase II – Qualitative, with the results of the first phase, informing the second.

Creswell (2009) contends that a mixed methods design is useful when either the quantitative or qualitative approach by itself is inadequate to best understand a research problem or when the strengths of both approaches can provide the best understanding. A pictorial view of the research design is presented in Figure 3. 3 on page 97 and the timescale of the data collection and analysis phases is presented in Table 3. 3 on page 97. A discussion of the 2 research phases follows.

3.7.3 PHASE I – QUANTITATIVE RESEARCH METHODOLOGY

3.7.3.1. SURVEY METHOD – USING QUESTIONNAIRES

The survey method provides an economical option for ascertaining the general state of a research question or problem, and was used to investigate the state of KM practices within HEIs. Perceptions and practices of KM within the HEI context were not adequately understood or researched prior to the start of this research. Speculation about what KM meant in practice and in theory for HEIs could and did take place; however, no empirical evidence of the state of KM within this context was available. The survey method was used to ensure an efficient and economical way to investigate the current state of KM practices within HEIs in the UK in general, which provided rich data to be used for further investigation and analysis. A comprehensive questionnaire was designed and administered, both online and *via* the postal service. An explanation of the design and distribution of the

questionnaire, as well as the process for data capture and analyses, is presented next.

3.7.3.2. DESIGN OF QUESTIONNAIRE

The questionnaire was designed using KM surveys previously conducted in the UK, New Zealand, Australia and Canada (Mitchel, 2006, Mason and Pauleen, 2002, Statistics Canada, 2001). The aims for conducting the survey were threefold:

- to broadly understand whether KM was being considered as a management tool within the HEIs in the UK;
- to uncover key issues within the HEI context; and
- to better understand the sample for the next phase of the project.

The questionnaire covered broad areas of KM, as can be seen in Appendix A on page 299 and in Table 3. 4 on page 99. Sections of the questionnaire included: definition, policy and standards, organisation culture, KM technology, KM development and implementation, KM practices and progress, perceived challenges and benefits, underlying reasons for using KM, KM and competitive advantage, spending and responsibility for KM within institutions.

A variety of question types was used within the survey to accommodate the diverse range of participants and to gather as much data as possible from the participants. Open-ended questions, closed-ended questions - multiple choice questions and dichotomous questions - were used. The variety of the type of questions allowed for a richer response from the participants, as well as providing a means for triangulation of questions.

3.7.3.3. PILOT OF QUESTIONNAIRE

The questionnaire was piloted with a KM consultant (the Chief Executive Officer CEO of a UK-based company) and an experienced academic researcher in the KM field. A few suggestions were made with regards to the ambiguity of certain questions, and the perceived prior knowledge that respondents were expected to have in order to respond to a number of questions.

Two definitions for KM were then included at the start of the questionnaire, and a clear message included that the definitions were not exhaustive and that the participants would probably not view KM in the same way and that the

questionnaire aimed to understand the perceptions and practices of KM as currently understood by the respondents.

After the questionnaire was piloted, the online survey was developed using *surveymonkey;* the online survey was not piloted, but was tested by the researcher.

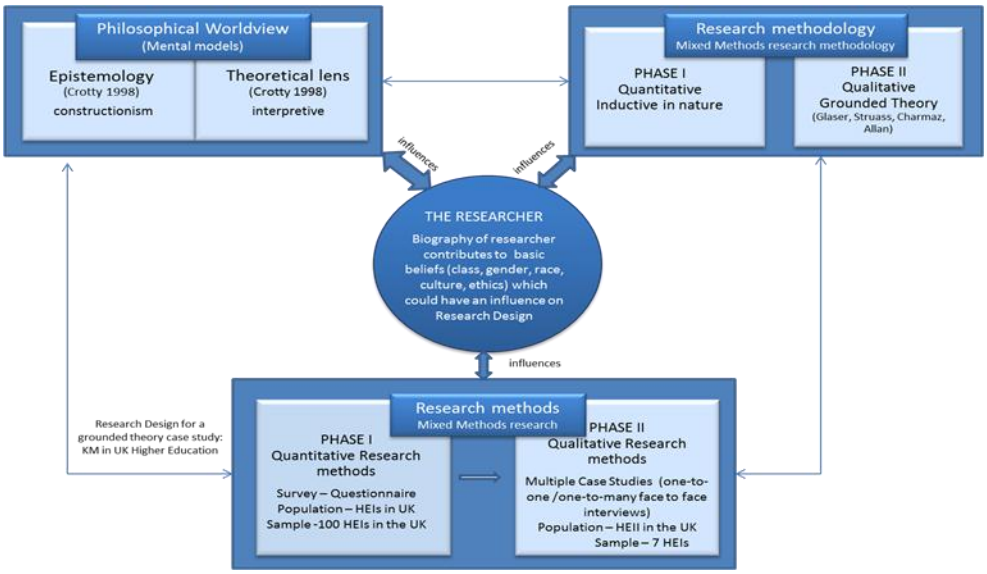
TABLE 3. 3 TIME SCHEDULE FOR THE TWO PHASES OF THE RESEARCH

	2007						2008	
	April	May-June	July-Sept	*Oct	Nov	Dec	Jan	Feb
	Phase I – Quantitative		Phase II – Qualitative data collection and analysis					
	Distribution of question-naire	Question-naires returned	Data collection stage 1 (at 5 universities)			Data collection stage 2 (at 6th university)	Data collection stage 3 (at 7th university)	
TRANS-CRIPTION			→	→		→	→	
CODING			→	→	→	→	→	
ANALYSIS		→	→	→	→		→	→

Note: * presented at international conference in South Africa for 2 weeks. Also attended and presented at an International conference in Portugal, in May 2008

Source: developed by Author

FIGURE 3. 3 RESEARCH DESIGN WITH RESEARCHER INFLUENCES



Source: adapted from Creswell (2009), Crotty (1998) and Denzin and Lincoln (2000)

3.7.3.4. DISTRIBUTION OF QUESTIONNAIRE

A hardcopy of the survey was distributed by post to 100 HEIs across the UK. These surveys were personalised and addressed to the Vice-Chancellor (VC) or Principal of the institution who was asked either to complete it or pass it on to the most relevant person. The option of using the online version of the survey was also offered as an alternative to the institutions, and the Uniform Resource Locator (URL) was indicated in the cover letter (in Appendix A on page 299) attached to the survey. To ensure an acceptable response rate, a 3-step approach was followed: 1) distribution of survey, personalised to institutions and to their Vice Chancellors or Principals 2) follow-up telephone calls were made to 90 of the institutions, two weeks after the distribution and emails were sent to those who requested the survey to be sent again; 3) further follow-up calls and emails were sent to those institutions who had suggested that they would participate. A total of 122 emails were sent to institutions as reminders. It was a long and painstakingly slow process; however, the response rate achieved was much better after the 3-step approach was completed.

From the outset, it was not clear whether addressing the surveys to the Vice-Chancellors and Principals of institutions would be an advantage or a disadvantage. The assumption was that Vice-Chancellors were extremely busy people, who in certain instances would leave the opening and redirection of the mail to their executive assistants, who would prioritise the mail for the VC. Furthermore, student researchers in the main do not have the prestige and authority to demand an audience or to request priority; hence, the process appeared to be a long, slow one.

After an initial period of one month, the response rate was exceptionally low, and replies only started to be received from universities after personal calls were made to these institutions and were followed up by re-sending the questionnaire to them. Timing of the survey within the academic year seemed to present a challenge for some, as the pressure of major institutional audit submissions prevailed at the time. This factor was taken into account and institutions facing this challenge were provided with an alternative date to submit the forms. However, through gentle, consistent reminders, a good response rate was eventually achieved, and further discussion is presented in Chapter 4.

TABLE 3. 4 SECTIONS OF QUESTIONNAIRE

THEME	QUESTION CATEGORIES
DEFINITIONS	If institutions have adopted a KM definition, perceptions of knowledge, and KM.
POLICY, STRATEGY AND STANDARDS	Whether KM strategy/plans , standards, drivers for KM, persons responsible for KM
ORGANISATIONAL CULTURE	Perceptions of the HEI culture and the culture required for KM
TECHNOLOGIES, PRODUCTS, MODELS AND PROCESSES	Level of integration, technologies used, cop, process mapping, frameworks.
RESPONSIBILITY FOR KM PRACTICES	Drivers of KM technology.
BENEFITS AND CHALLENGES	Perceptions of KM benefits and challenges
DEVELOPMENT WITHIN THE INSTITUTIONS	How KM developed within institutions, factors that have influenced the emergence of KM
PROGRESS	Maturity levels, date started
MEASUREMENT	KM audit
REASONS FOR USING KM	Understanding when KM started and the reasons for it.
PERCEPTION OF KM AS COMPETITIVE ADVANTAGE.	Questions related to competitive advantage and the institutions perceptions of HEIs and competitive advantage.
SPENDING ON KM	Understanding the KM budgets and spending
INCENTIVES	What would motivate or increase KM practices in the institutions.

Source: Author

3.7.3.5. DATA INPUT

Participants were provided with two options to answer the questionnaire; an online option and a hardcopy mail option, which provided two methods of data entry and collection. Initially, this presented a slight challenge as the layout of the online survey with regards to one question was slightly different from the layout of the hardcopy, by virtue of the structure of the online survey and the flexibility of the tool. Furthermore, the online respondent files could not simply be merged with the hardcopy responses, but needed to be carefully placed in the correct order in Excel, which was time consuming yet achievable. Excel 2007 was used for data entry and, once both sets of data i.e. the hardcopy manually entered data, and the downloaded online files, were merged and entered, the complete file was imported into the statistical package SPSS (version 15 initially, upgraded later to SPSS version 16).

3.7.3.6. DATA ANALYSIS

The data was analysed using the statistical software package SPSS, and Microsoft Excel 2007. Questionnaires completed online used *Surveymonkey* for aspects of the data analysis. *Surveymonkey* was therefore more than a survey design tool, but provided data storage and a statistical analysis tool as well. Responses were hosted by *surveymonkey* on a server, and descriptive statistical analysis, i.e. *frequency distributions* were provided for each question in the form of percentages which were presented graphically. Although it proved very useful to gain an initial view of the responses, the researcher needed to download the files from the server and carefully merge the two sets of data, to perform the analysis with the complete set of data in SPSS.

Descriptive statistics was used to establish how frequently each score or category of observations of KM within HEIs within the UK occurred in the data. A *frequency distribution,* defined as a "listing of all observed scores of a variable and the frequency *(f)* of each score or category" (Ritchley, 2008:p.50), was conducted on each of the questions of the data set, thereby providing the initial information required for the second phase of the research. *Percentage frequency distributions*, "a listing of the percent of the responses for each category or score of a variable"(Ritchley, 2008:p.51), were also used to present information per question and participant, in relation to the group as a whole.

The researcher was interested to establish whether there were any relationships between the variables. However, as the variables used were mainly *nominal* , i.e a "named category for which codes are used and merely indicate a difference in category, class, quality or kind" (Ritchley, 2008:p.43), the Chi-Square Test which focuses on the frequency of joint occurrences was considered. However, after conducting a test using SPSS, the widely recognised shortcoming of this test was understood, which is that this test statistic restricts the number of categories used and the expected frequency for each cell *must equal at least 5 (Ritchley, 2008:p479)*. The difficulty was that KM, as an organisation-wide strategy, was not being implemented on a large scale; in fact, only two institutions had a KM strategy, with a further six institutions in the process of developing the KM strategies; hence, the frequencies of the responses did not reach five for the cells concerned. The data analysis of phase I, however, provided an excellent overview of

the current perceptions and practices of KM, used to further the investigation of KM at the selected sample of HEI institutions.

The analysis of the findings of this phase is presented in Chapter 4.

3.7.4 PHASE II – QUALITATIVE RESEARCH METHODOLOGY

3.7.4.1. GROUNDED THEORY OVERVIEW

Grounded Theory (GT) is described in Glaser and Strauss (1967) '*The Discovery of Grounded Theory: Strategies for Qualitative Research',* as the discovery of theory from data which is systematically obtained and analysed. Glaser's (2008) '*Doing Quantitative Grounded Theory'*, suggests that Grounded Theory is an inductive methodology that provides a set of rigorous research procedures leading to the emergence of conceptual categories. These concepts and categories are related to each other as a theoretical explanation of the action(s) that continually resolves the main concern of the participants in a substantive area. Glaser (2008) is clear that the Grounded Theory methodology can be used with either qualitative or quantitative data.

The Grounded Theory approach is therefore

> "a general methodology of analysis linked with data collection that uses a systematically applied set of methods to generate an inductive theory about a substantive area" (Glaser, 1992:p.16).

The term 'grounded theory' therefore refers to a method of inquiry as well as the product of that inquiry (Charmaz, 2008), but how is the term 'theory' defined, and what does it mean. Strauss and Corbin define a *theory* as

> "…a set of well-developed concepts related through statements of relationship, which together constitute an integrated framework that can be used to explain or predict phenomenon." (Strauss and Corbin, 1998:p.15)

Labovitz and Hagedom (cited in Creswell (2009:p.51)) defines a theory as an "interrelated set of constructs (or variables) formed into propositions, or hypotheses, that specify the relationship among variables,…. which might appear as an argument, a discussion, or a rationale, which helps to explain or predict phenomena in the world", that "specifies how and why the variables and relational statements are interrelated".

Charmaz (2006) suggests that the researcher's theoretical perspective influences the definition of theory, and that knowledge and theory are situated and located in particular positions, perspectives and experiences. Charmaz (2006:p.126) defines a *positivist view of theory* as "being one that seeks causes, favours deterministic explanations, and emphasizes generality and universality, whereas *interpretive theory* calls for the imaginative understanding of the studied phenomenon and assumes emergent, realities, indeterminacy, facts and values as linked, truth as provisional and social life as processual". In practice, therefore, suggesting that interpretive theory emphasizes understanding.

Strauss and Corbin (1998) contend that a theory is usually more than a set of findings; it offers an explanation about phenomena and provides various properties, the one being *scope* – the generality of the theory, and the other being *parsimony* (Strauss and Corbin, 1998), described by Hage (1972) as the precision of prediction and accuracy of explanation. Glaser (1992) contends that Grounded Theory meets the two prime criteria of good scientific inducted theory by having these two properties of scope and parsimony. In Grounded Theory, the generated theory is said to emerge from the data inductively as opposed to a hypothesis being tested using deductive logic. The inductive logic of research in a qualitative study (as presented by Creswell, 2009) can be seen in Figure 3. 4 on page 104.

Glaser and Strauss define two types of theory: s*ubstantive theory* and *formal theory:* "By substantive theory we mean that developed for a substantive or empirical area of sociological inquiry…… By formal theory we mean that developed for a formal, or conceptual area of sociological inquiry, such as stigma, deviant behavior, formal organization, socialization, status congruency, authority and power, reward systems, or social mobility." (Glaser and Straus, 1967:p.32)

This research study has used the GTM to develop a substantive theory for KM implementation within HEIs in the UK, the analysis of which is discussed and presented in chapters 5 and 6. The development of theory using the GTM is contentious, however; Glaser (1992) suggests that a well-constructed theory, is one that meets four criteria: fit, work, relevance and modifiability:

- Fit: If the categories and their properties fit the realities under study in the eyes of subjects, practitioners and researchers in the area;
- Work: If it will explain the major variations in behaviour in the area with respect to the processing of the main concerns of the subjects;
- Relevance: If the theory fits and works then the grounded theory has achieved relevance;
- Modifiability: The theory should not be written in stone and should be readily modifiable when new data present variations in emergent properties and categories.

3.7.4.2. JUSTIFICATION OF THE DECISION TO USE GROUNDED THEORY

Carsen *et al* (2001) in their book *Qualitative Marketing Research,* and cited in Levy (2006), suggest that a research problem should exhibit three characteristics before the GT methodology will be applicable:

1. The research should be *interpretive*;
2. The research should be about *complex social processes* between people;
3. There should be *virtually no existing theories* about the phenomena; or existing theories are demonstrably *inadequate*.

This research exhibited all three of these characteristics and hence, GT was considered suitable.

3.7.4.3. GROUNDED THEORY AND CONSTRUCTIONISM

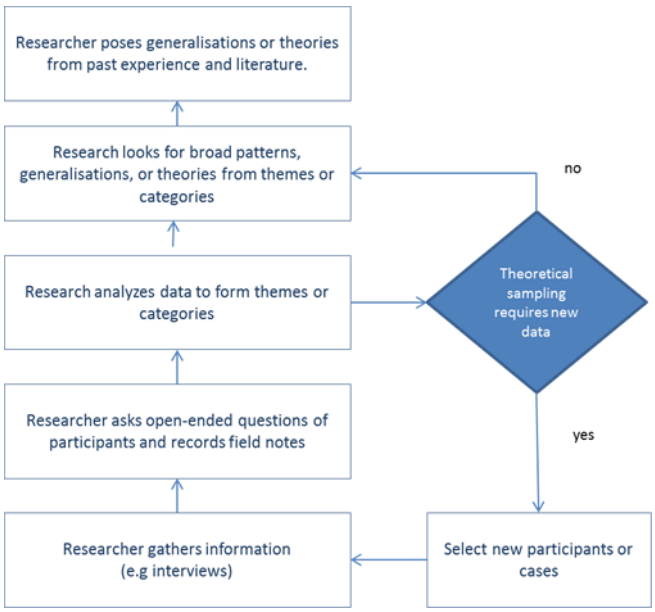
Grounded Theory, using the Glaser and Strauss (1967:p.1) definition, refers to the "discovery of theory from data". In this definition, reference is made to theory as being discovered, which implies that the "truth" or the theory exists and needs to emerge, irrespective of the interplay that the researcher has with it. This is, therefore, a suggestion that the 'truth' exists without any interaction from the researcher who could add any meaning to it, and lies in waiting to be uncovered. This perspective leans towards the positivist one and the objectivist epistemology. Glaser and Strauss contend that "in discovering theory, one generates conceptual categories or their properties from evidence…."(Glaser and Straus, 1967:p.23).

For concepts and categories to be "generated", the researcher contends that some form of interaction from the researcher is required, who will inevitably apply, in some way, prior skills developed and knowledge, in order to arrive at the new concepts or categories. This does not mean that the new concepts and categories are not grounded in the data; but that conceptualization requires interpretation and

that all researchers would not necessarily arrive at the exact same interpretation. Pidgeon and Henwood (2004) support this view and contend that, philosophically, theory cannot simply 'emerge' from data, as interpretation and analysis are conducted within some pre-existing conceptual framework used by the researcher. They argue for a constructivist revision of grounded theory due to their perception of it combining the rigour of analysis with the interpretive research process which is dynamic and creative in nature.

Charmaz (2008) argues that, to develop a grounded theory for the 21st century, "….we must build upon its constructionist elements rather than objectivist leanings" (Charmaz, 2008:p.204). Charmaz (2006) further purports that grounded theory has taken on different forms since its creation: constructivist and objectivist grounded theory. Constructivist grounded theory forms part of the interpretive tradition and objectivist grounded theory derives from positivism (Charmaz, 2006). This particular research has been influenced by the Charmaz view of grounded theory and constructionism, which also suggests that interpretive theorizing, may cover overt processes but also delves into implicit meanings and processes, and is most evident in them. The research embraces the view that some form of construction and interpretation is required in the analysis phase, grounded in the data, and does not happen in a vacuum.

FIGURE 3. 4 THE INDUCTIVE LOGIC OF RESEARCH



Source: adapted from Creswell (2009)

3.7.4.4. GLASERIAN AND STRAUSSIAN APPROACHES

The use of Grounded Theory in this research study, as a methodology and a concept, was very new to the researcher and hence, an extensive review of GT was undertaken to best understand how to apply it within this research context. The seminal work of Glaser and Strauss (1967) was initially examined and Glaser's subsequent books, *Theoretical Sensitivity* published in 1978, *Basics of Grounded Theory* published in 1992, and *Doing Quantitative Grounded Theory*, 2008 were examined. Strauss and Corbin also published the 2nd version of the book in 1992 *Basics of Qualitative Research;* however, it is this book that sparked a rebuttal response from Glaser, and stimulated the subsequent debates around what constituted the Grounded Theory methodology. This book, together with a number of articles (Glaser, 2002a, Glaser, 2002b, Glaser, 2004), clearly articulates Glaser's dissatisfaction with Strauss' and others' departure from what he terms as the original GT methodology; for example, Charmaz's view of constructivist GT became apparent, and a "…colourful public disagreement between Glaser and Strauss as to how to conduct Grounded Theory research" (Fernandez, 2004, p.84) ensued. Glaser became concerned that the original GT was being remodelled and was concerned for the subsequent eroding impact on the methodology (Glaser, 2004). As a consequence, two different approaches emerged: the Glaserian approach and the Straussian approach (Hunter et al., 2005).

There are different views on the essence of the divergence of the two approaches; some maintain that the two are very different approaches and yet others posit that the difference is minimal and is simply in the interpretation of the approach. Scholars (including Walker and Myrick, 2006, Allan G, 2003, Fernández, 2004, Kelle, 2005, Goldkuhl and Lind, 2005) have therefore compared and critiqued these approaches to GT; some have chosen to use the Glaserian approach and others have chosen the Straussian approach, and still others have chosen to combine aspects of the two approaches. The major issue that arose for the researcher therefore, was deciding which approach was the most appropriate for this particular research. As the researcher was a novice at Grounded Theory application, the researcher initially felt most at ease with, and favoured a more structured approach to concept generation; however, having become more confident with the technique, the emphasis started to shift to simply generating concepts and ideas, using the constant comparative method rather than coding word for word. The research study, therefore, brings together the techniques of both Glaser and Strauss,

combining some of Strauss's structure and techniques of micro-analysis (word-by-word analysis of the text and subsequent code generation for it) at the beginning stages of the research, and, as confidence in the method and technique was achieved, more of a Glaserian approach was adopted, also influenced by other scholars like Charmaz (2006, 2008), Allan (2003), and by Gorra's (2007) view of the process of coding and theory generation which can be seen in Figure 3. 8 on page 119.

3.7.4.5. ENTERING THE FIELD / LITERATURE REVIEW

Knowledge Management within Higher Education was a relatively under-researched area, the researcher therefore, needed to explore the KM literature to deepen the understanding of the different KM concepts and develop a broad framework or lens through which to view KM within HEIs. The researcher adopted Lempert's (2007p.254) position:

> "…in order to participate in the current theoretical conversation, I need to understand it. I must recognize that what may seem like a totally new idea to me - an innovative breakthrough in my research - may simply be a reflection of my ignorance of the present conversation. A literature review provides me with the current parameters of the conversation that I hope to enter…….It does not however define my research." (Lempert, 2007p.254)

Given that the KM field of research and application suggested that different scholars have a different perception of it, understanding these differences and how HEIs compare was essential as a first phase of the research. Adopting this approach provided a loosely-framed structure for the interviews; and contributed to the development of *an interview protocol* which was crucial given the lack of research within this area. Having scanned the literature for KM models, perspectives and frameworks, the researcher chose two sets of models and perspectives on KM which provided the lens through which to investigate KM at HEIs in the UK; 1) Stankovsky's (2005) model on Knowledge Management – The Architecture of Enterprise Engineering depicted in Figure 3. 9 on page 120, was used to frame the interview questions in order to better understand perceptions and practices within the four pillars of Knowledge Management in HEIs i.e. Technology, Learning, the Organisation, and Leadership; 2) Davenport and Prusak (2000) have a very pragmatic approach to Knowledge Management and, hence, their perspective on what KM is, was embraced.

The four Pillars of Enterprise Learning (Stankosky, 2005) are defined below:

- LEADERSHIP - guide the KM values;
- the ORGANISATION - support the leadership values through good processes etc;
- TECHNOLOGY- enable the processes, and
- a culture of LEARNING - enhance and promote collaboration and the sharing of knowledge; "attributes necessary for the learning organisation" (Stankosky, 2005:p.6).

As KM has such a diverse range of definitions, and can be very differently understood depending on the discipline it is being viewed from, it was necessary to have a frame to structure the interviews in some way so as to optimise its value. The researcher did not impose the framework on the research, however, used the four pillars as areas to explore KM at the institutions. It was decided to do this even though contradictory views exist in the GT literature about entering the field with a clear mind and not allowing the literature to influence the emergent themes. The approach used was one consistent with researchers who have studied and used GT and have found that entering the research field without any preconceived ideas or frameworks or an understanding of the area is very difficult to do, and there is debate about the aimlessness that could happen if there is no idea of the theory of the field of research (Rodon and Pastor, 2007). Urquhart and Fernandez (2006) postulate that the idea that the researcher using Grounded Theory can have a blank state is a myth. However, they continue to add that, like most myths, the idea of the researcher as a blank slate has some truth in it; however, "it is more accurate to say that grounded theory does not *start* with a theory to prove or disprove" (Urquhart and Fernandez, 2006:p.460), and it is this view that the researcher embraced. Strauss and Corbin (1990) value the role of literature in the Grounded Theory methodology and contend that all kinds of literature can be used before the research begins (Strauss and Corbin, 1998), which is not the case with Glaser. In Glaser's approach to GT, the researcher is required to enter the research setting with as few predetermined and preconceived ideas as possible (Glaser, 1978). In his book '*Theoretical Sensitivity: Advances in the Methodology of Grounded Theory*', Glaser suggests that the concern is to not contaminate the data analysis stage where efforts are made to generate concepts from the data, with preconceived concepts that may not really fit, work or be relevant, but appear so fleetingly. "The danger is,

of course, to force the data in the wrong direction if one is too imbued with concepts from the literature" (Glaser, 1978, p.31). However, there are different views on whether it is possible to enter a research field without any prior knowledge, experience or assumptions and whether research needs to be guided by one or more social theories (Hardy and Bryman, 2004, Patton, 2002, Kelle, 2005, Rowlands, 2005). The researcher has taken the view that, given the field of research, and the relative infancy of the subject to the research context, some guidance was required and hence, the literature was investigated, and a framework chosen initially to guide and shape the research and the interviews.

3.7.4.6. DATA COLLECTION AND ANALYSIS

Data collection in the GT methodology is described by Glaser and Strauss (1967) to be a cyclical and iterative process. Once the first set of data is collected, the originators of the methodology, Glaser and Strauss, suggest that analysis starts immediately, and the information gleaned from the analysis should be used to shape and guide the collection of the next set of data. Despite the emerging and inductive nature of GT, this phase of GT assumes some form of deduction; however, only for further sampling purposes. A description of case study methods, and how this particular research embraced the method, as well as how the data was collected, follows.

A.) CASE STUDY RESEARCH METHOD

The survey results of Phase I provided detailed information for Phase II of the research, and informed the selection of the case studies to be conducted. A case study is defined by Yin as an empirical inquiry that

> "Investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (Yin, 1994:p.13).

Stake (1995) describes a case study as the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances. Yin (2003) contends that it can be defined as single- or multiple-case studies, and by nature it can be explanatory, exploratory, or descriptive:

- An *exploratory* case study (whether based on single or multiple cases) is aimed at defining the questions and hypotheses of a

subsequent study (not necessarily a case study) or at determining the feasibility of the desired research procedures;

- A *descriptive* case study presents a complete description of a phenomenon within its context;
- An *explanatory* case study presents data bearing on cause-effect relationships – explaining how events happened (Yin, 2003, p.5).

The qualitative phase of the research incorporated a multiple-case study research strategy that aimed to be explanatory and descriptive in nature. The Case Study research method was selected as the most appropriate method to provide an in-depth study of the KM phenomenon. The aim was not to generalize, but to understand and explore the perceptions, attitudes and practices of Knowledge Management within the Higher Education context.

B) GROUNDED THEORY AND CASE STUDY RESEARCH

Eisenhardt (1989) suggests three strengths for theory building from cases:

- "One strength of theory building from cases is its likelihood of generating novel theory" (Eisenhardt, 1989, p.546);
- "A second strength is that the emergent theory is likely to be stable with constructs that can be readily measured and hypotheses tested" (Eisenhardt, 1989, p.547);
- "A third strength is that the resultant theory is likely to be empirically valid" (Eisenhardt, 1989, p.547).

Eisenhardt (1989) further contends that building theory from cases is particularly well suited to new research areas or research areas for which existing theory seems inadequate, given its strengths as listed above. KM as a research area is certainly not a new one; however, divergent theory exists and its application, especially within the Higher Education sector and particularly in the United Kingdom, was in its infancy, which made KM and this research well suited to this combination of research tools and techniques: case study and GT.

C) INTERVIEWS

Semi-structured, one-to-one and one-to-many interviews were conducted at the case locations in a setting that was familiar and comfortable for the interviewees, in most cases in their offices. A small number of participants, requested a one-to-many type of interview, rather than being interviewed individually. Although the

researcher found the one-on-one interviews to be more constructive, as it allowed individuals to provide their own perspectives without having a colleague influence it, the one-to-many interviews provided very valuable perspectives as well, and were used in the case study. Participants were senior members of staff, mostly members on the senior executive committee of the institution, and some of these staff members were either directly or indirectly linked to KM or Information Management practices in some form. Others were involved with Information Technology projects that could be categorised as a KM project, either on an institution-wide level or within a particular Faculty.

Once the institution was selected, the participant was emailed to confirm the institution's willingness to participate in the case study. These participants were typically those who took part in the survey, and were initially selected by their Vice-Chancellors (VCs) or Principals as the best persons to complete the survey. In some cases, interviewees were from a wide range of levels of seniority; however, in other cases, only a senior administrator or academic was interviewed.

This largely depended on the institution's willingness or ability to organise for the researcher to meet other participants on site. In cases where only one person was interviewed at the institution, the researcher acquired additional names and subsequently contacted these persons, requesting their participation by completing the interview questions online; however, this method did not yield the expected response rate.

Information packs were prepared (see Appendix B), including an informational letter enlightening participants of the structure and nature of the interview and how it would be conducted. It also included a consent-to-participate form, and, upon request, the interview questions were sent to the participants prior to the interview. Participants were requested to consent to the interview being digitally recorded. Two of the 18 interviews were not audible; however, in these cases the interview notes were used. The interviews were initially transcribed verbatim into Ms Word, and later the themes and responses to the questions were analysed. The qualitative software analysis tool, QSR NVIVO 8, was used to organise, code and analyse the data.

TABLE 3. 5 THE INTERVIEW PARTICIPANT LIST WITH DESIGNATIONS

CASE STUDY RESEARCH SITE	UNIVERSITY	DESIGNATION OF PARTICIPANT	GENDER	ADMINISTRATIVE DEPARTMENT	ACADEMIC DEPARTMENT
CASE A	A.1	VP Knowledge Manager	Male	Information Systems Department	
	A.2	Vice Principal	Male		Physics
	A.3	Registrar	Female	Registrar's Office	
	A.4	Project Manager	Female	Registrar's Office	
	A.5	Knowledge Manager	Female	Information Systems Department	
	A.6	Academic Deputy Dean - Science Faculty	Male		Mathematics
CASE B	B.1	Executive to the Vice Chancellor	Male	Vice-Chancellor's office	
CASE C	C.1	Executive Director Information systems, audio-visual and Knowledge Management	Male	Information Systems Department (integrated services)	
CASE D	D.1	Vice Principal - Knowledge Transfer	Male	Knowledge Transfer Unit	
CASE E	E.1	Academic Dean - Information Technology Faculty	Male		IT
CASE F	F.1	Academic Dean - Business School	Female		Business
Case G	G.1	Registrar	Male	Registrar's Office	
	G.2	Pro-Vice Chancellor	Male	Vice-Chancellor's office	
	G.3	Deputy Librarian	Male	Library	
	G.4	Assistant IT Manager	Male	Information Technology	
	G.5	Industrial Research Support Manager	Male	Research Support Services	

Source: Author

TABLE 3. 6 SIZE OF INSTITUTION PARTICIPATING WITHIN THE CASE STUDY (2008)

SIZE OF INSTITUTION	NUMBER
Less than 10,000 students	1
10,000> and <15,000 students	3
>15,000 and < 20,000 students	2
>20,000 and < 30,000 students	1
Total	7

Source: Author

TABLE 3. 7 TYPE OF INSTITUTION PARTICIPATING WITHIN THE CASE STUDY (2008).

TYPE OF INSTITUTION	NUMBER
Post -1992 Former polytechnics[7]	2
Post-1992 : Other[8]	1
Pre-1992: Russell Group[9]	3
Pre-1992: Other[10]	1
Total	7

Source: Author

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[7] In 1992 Higher Education in the UK underwent major change, abolishing the Polytechnic institutions as a type of Higher Education institution and University status conferred on some. Institutions within the UK having the polytechnic status before 1992 and received university status in 1992

[8] Post-1992: other – Higher Education institutions with university status before 1992

[9] Russell Group - A group of HEIs within the UK that enjoy an excellent reputation internationally and that receives two-thirds of universities' research grant and contract funding in the United Kingdom.

[10] Pre-1992: other – A group of universities that had the university status before 1992, but do not fall within the pre-1992 Russell Group of universities.

D) GROUNDED THEORY TOOLS AND TECHNIQUES

D.1) CODING

Charmaz (2006) defines coding as "categorising segments of data with a short name that simultaneously summarizes and accounts for each piece of data". A code can either be a label related to the data or the exact word in the data, known as an *in vivo* code. Coding is a step by step process of analysing the data, line by line in search of phenomena of interest and then labelling the data with a code. Grounded theory coding requires us to stop and ask analytical questions of the data that has been gathered (Charmaz, 2006). Codes, concepts and categories are generated by analysis of the data, and a process of *constant comparative analysis* is used, which compares these codes, categories and concepts iteratively and constantly to each other until a *core* category is discovered and *theoretical saturation* is reached, leading to theory generation. A concept is defined as "a labelled phenomenon", "… an abstract representation of an event, object or action/intervention that a researcher identifies as being significant in the data" (Strauss and Corbin, 1998:p.103). *Open coding* is the analytic process through which concepts are identified and their properties and dimensions are discovered in data (Strauss and Corbin, 1998, p.101).

There are two types of codes that can be generated according to Glaser (1978): *substantive* and *theoretical* codes. Substantive codes conceptualise the empirical substance of the area of research, while theoretical codes conceptualise *how* the substantive codes may relate to each other. The researcher followed the general research process, as depicted in Figure 3. 8 on page 119, starting with the interviewing of the cases, transcribing, coding and writing memos, where necessary. Codes were compared with each other and concepts (higher level codes) started to emerge[11], which were constantly compared to yield categories. These were also constantly compared for connections, relationships, properties and dimensions. Theoretical coding and coding families were used, and the substantive theory, grounded in the data, and after a long analysis process, emerged.

[11] The word 'emerge' is used with the recognition of the role the researcher plays in the construction, generation, conceptualisation of the codes, categories and concepts which then emerged from the data, as a result of the interaction with it,

Different grounded theorists have different ways in which they generate codes and the terminology can be bewildering (Schreiber and Stern, 2001). First-level coding (also known as *in situ*, *in vivo*, open coding) is used; second-level coding (more abstract and represent a synthesis of the first-level codes); and third-level coding (theoretical coding). These levels of coding, i.e. first, second and third, are understood to be the generation of concepts, categories and relationships respectively (seen in Figure 3. 8 on page 119).

Charmaz (2006), on the other hand, suggests that there are two main phases to coding: 1) the initial phase of coding (initial coding), which involves coding for every word, line or segment of data, and 2) a more focused, selective phase (focused coding) that uses the most frequent and/or significant initial codes, it requires decisions about which initial codes make the most analytic sense to categorize the data incisively and completely. Strauss and Corbin (1998) suggest three different forms of coding, and Glaser suggests two. Both of these are depicted diagrammatically in Figure 3. 6 and Figure 3. 7 on page 118.

The data collection process started with the interviews (with prior reading of the KM and HEI literature), identifying issues of interest to the participants, which informed the following interviews. The data analysis phase began with a sentence by sentence examination of each interview (Strauss and Corbin, 1998). The first step involved the discovery of the thoughts, ideas and meanings contained within the interview text, following Strauss and Corbin (1998). These were then labelled or coded, and these codes compared with each other and with other *codes* with similar properties grouped together into *concepts;* these concepts were then compared with each other, constantly searching for similarities, and similar concepts were grouped into *categories* (see Figure 3. 8 on page 119).

The researcher initially started coding against the themes in the interviews, i.e. Leadership, Learning, Organisation and Technology; however, subsequently, the researcher started to focus on allowing the codes to emerge from the data. Every word that was thought to be of significant value was coded and a substantial number of codes were generated in this way. Even though Stankosky's four pillars of enterprise learning were used to categorise the codes initially, it was relatively difficult to abstract up to the concept level and hence, free and open coding was undertaken. Rodon and Pastor (2007) experienced a similar challenge of ending up with many codes, and they link it to 1) their lack of extensive and in-depth

experience with GT, and 2) the use of computer software (which assisted to organise the data into codes, but in a descriptive rather than analytical way). In the researcher's case, the first reason was a contributing factor; however, as far as Rodon and Pastor's second reason, the researcher relied on the software to assist in the analysis phase and hence, did not find it a hindrance or that it contributed to the difficulty.

D.2) SAMPLING AND THEORETICAL SAMPLING

Mason (1996:p.83) defines sampling as the "principles and procedures used to identify, choose, and gain access to relevant units which will be used for data generation by any method". Given that universities can be historically, locationally and financially very different (Shattock, 2003), the sample was carefully selected to be representative of the different types of HEIs within the UK (see chapter 5 for discussion). The pre-case study survey enabled HEIs to express an interest in participating in the case study. This provided a sample of interested institutions from which to make a selection. These institutions were carefully selected on the basis of their history, location and size of the institution, as well as the responses to some of the survey questions. A representative sample of seven HEIs was carefully selected in terms of size and type of institution, as can be seen on page 112. Two of these institutions could be classified as primarily teaching universities, while the remaining five are research intensive universities. Selection of cases is considered an important aspect of building theory from case studies; also, the selection of an appropriate population controls extraneous variation and helps to define the limits for generalizing the findings (Eisenhardt, 1989).

Initial participants were selected by the Vice-Chancellor (or Principal as used within some institutions) as a first point of contact, and were considered to be the most knowledgeable and/or involved with their understanding of KM-type activities at the institution. These initial participants were often senior members of staff, who then selected additional members of staff to take part in the case study. The participant roles are reflected in Table 3. 5 on page 111.

Unfortunately, the only private Higher Education institution in the UK did not participate within the case study; however, the sample is very representative of the spread of HEIs within the UK. This precluded any study of the possible link between a private institution and the use of KM for competitive advantage.

Theoretical sampling is the process of data collection for generating theory whereby analysis jointly collects, codes and analyzes the data and decides what data to collect next (Glaser and Straus, 1967). Charmaz (2006) contends that initial sampling in Grounded Theory is where you start, whereas theoretical sampling directs you where to go. Locke (2001) suggests that, in terms of research practices, *credibility* is achieved through theoretical sampling of comparison groups in order to extend the general applicability or analytic generalisability of the substantive theory. In this research, the cases were selected, based, in the first instance, on the institution's willingness and availability to participate in the research. In the second instance, the researcher tried to include HEIs from each of the five categories as defined within this research, based on the history, size and mission of HEIs. Stratified random sampling procedures were used to ensure that each of the different types of HEIs was adequately represented in the sample.

The researcher was able to select an additional case institution purely based on the analysis of the data and the need for an institution with a different management model. The Qualitative Research Phase was conducted in three stages, as can be seen in Table 3. 3 on page 97.

D.3) CONSTANT COMPARISON

As the data analysis progressed, the researcher became more convinced that Strauss and Corbin's micro-analysis was exceptionally time consuming and generated vast amount of codes; hence, further abstraction was required. The researcher then referred back to Glaser for this modification and much appreciated Allan's (2003) process of concept and category generation and the subsequent theory generation. This involved constantly comparing each incident of codes with each other to create a concept, and then comparing each incident of concept with each other to create categories. The researcher used the c*onstant comparison* technique continuously. This involves comparing the data, codes and concepts from each of the interviews constantly, and refining and reworking these until some form of saturation takes place. These concepts and codes were also compared with theory. This process either generates new concepts, categories and hypothesis, or theoretical saturation is reached, and then selective coding starts, soon followed by theoretical coding, generation of coding families and the subsequent generation of a substantive theory.

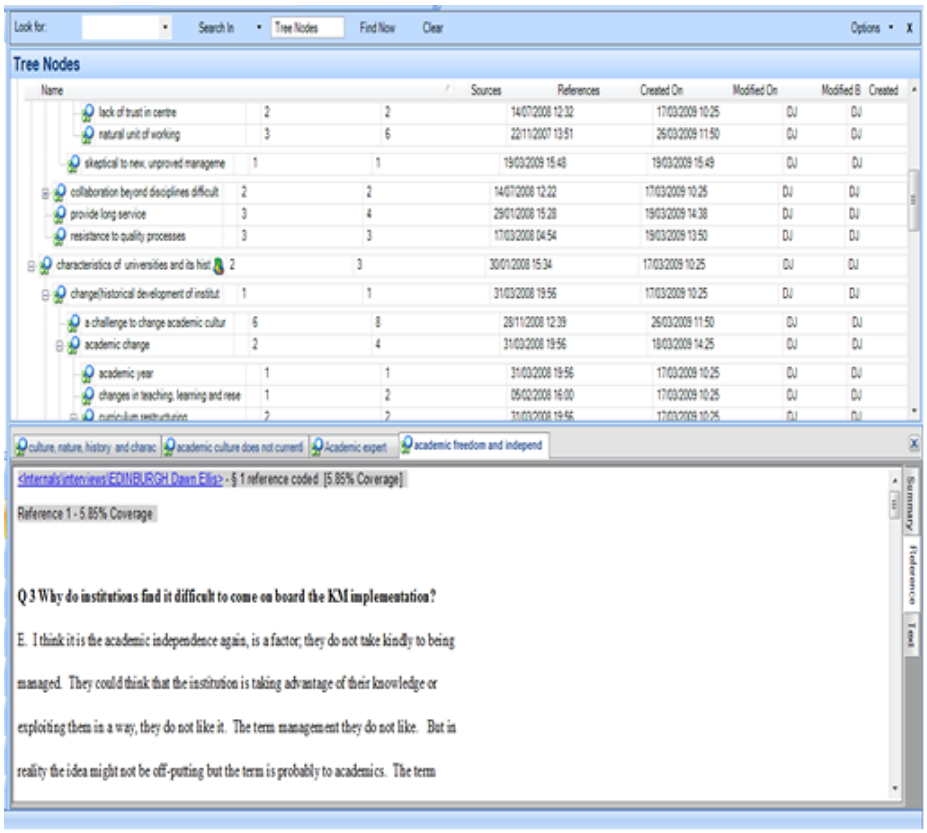
D.4) MODELLING

Modelling was used as a visual aid to understand and visualise the concepts and codes and how they related to each other (see Appendix C for the NVIVO models).

D.5) MEMOING

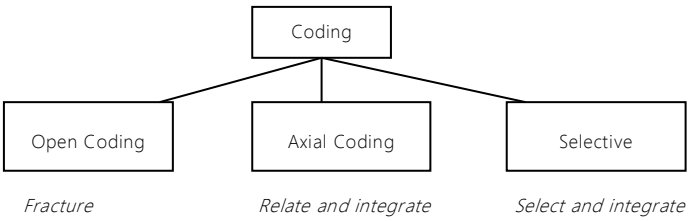
Another technique used was *memoing*, defined as "the researcher's record of analysis, thoughts, interpretation, questions and directions for further data collection" (Strauss and Corbin, 1998:p.110). An example of a memo can be seen in Figure 3. 10 on page 121. After each interview, informal notes or memos of how to restructure the next set of interviews was written, and a brief description of the researcher's thoughts and ideas, and how the previous interview could shape the next, was reflected upon. Memos were also written for the main codes, concepts and categories

FIGURE 3. 5 A SNAPSHOT OF THE NVIVO CODES INITIALLY GENERATED



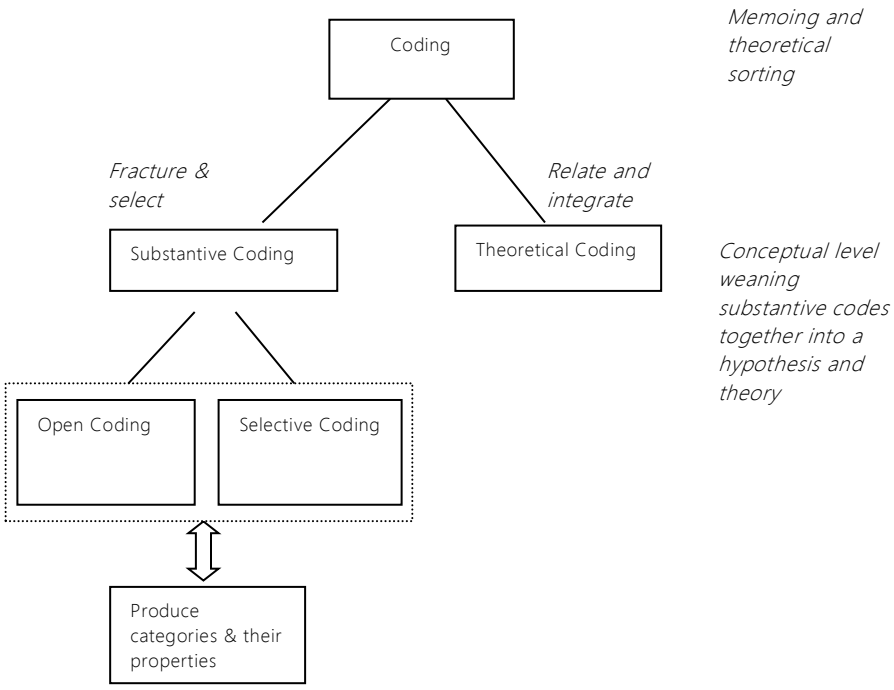
Source: Author

FIGURE 3. 6 FORMS OF CODING FOLLOWING
STRAUSS AND CORBIN'S (1998) SUGGESTED CODING ACTIVITIES.



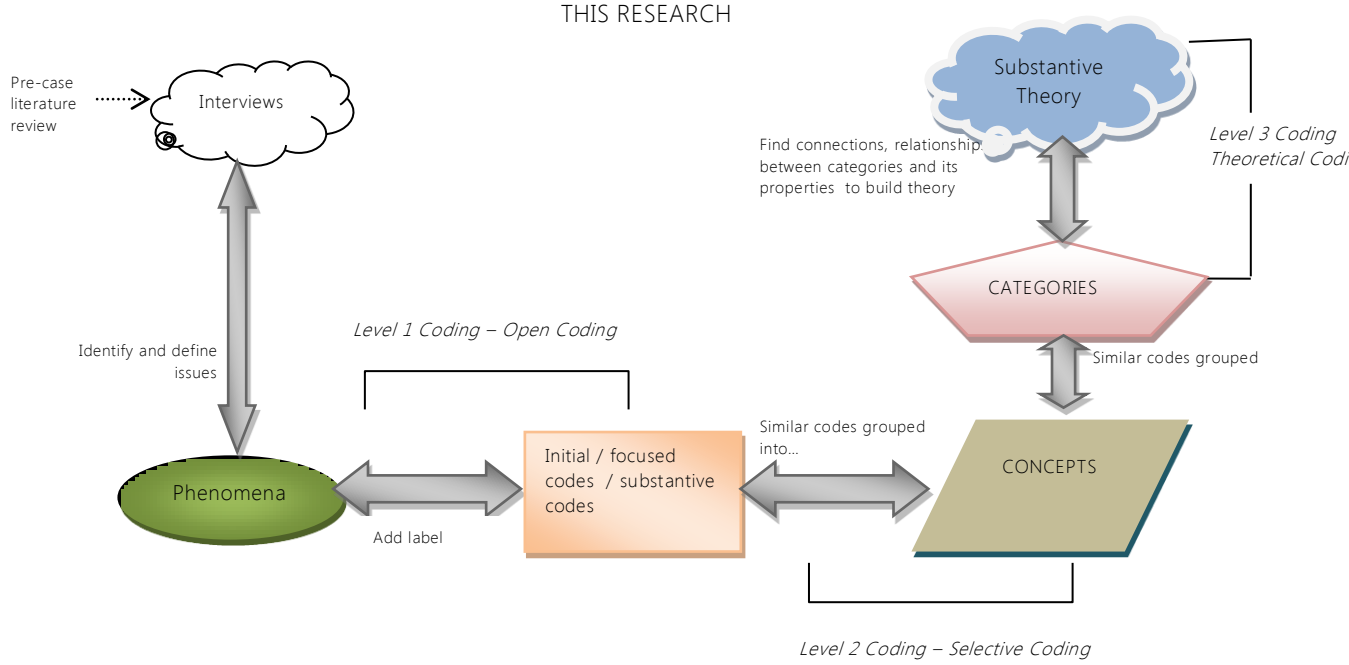
Source: Author after Strauss and Corbin (1998)

FIGURE 3. 7 FORMS OF CODING FOLLOWING GLASER'S (1978)
SUGGESTED CODING ACTIVITIES.



Source : Author after Glaser (1978)

FIGURE 3. 8 GENERAL RESEARCH CODING STEPS IN GROUNDED THEORY USED FOR THIS RESEARCH



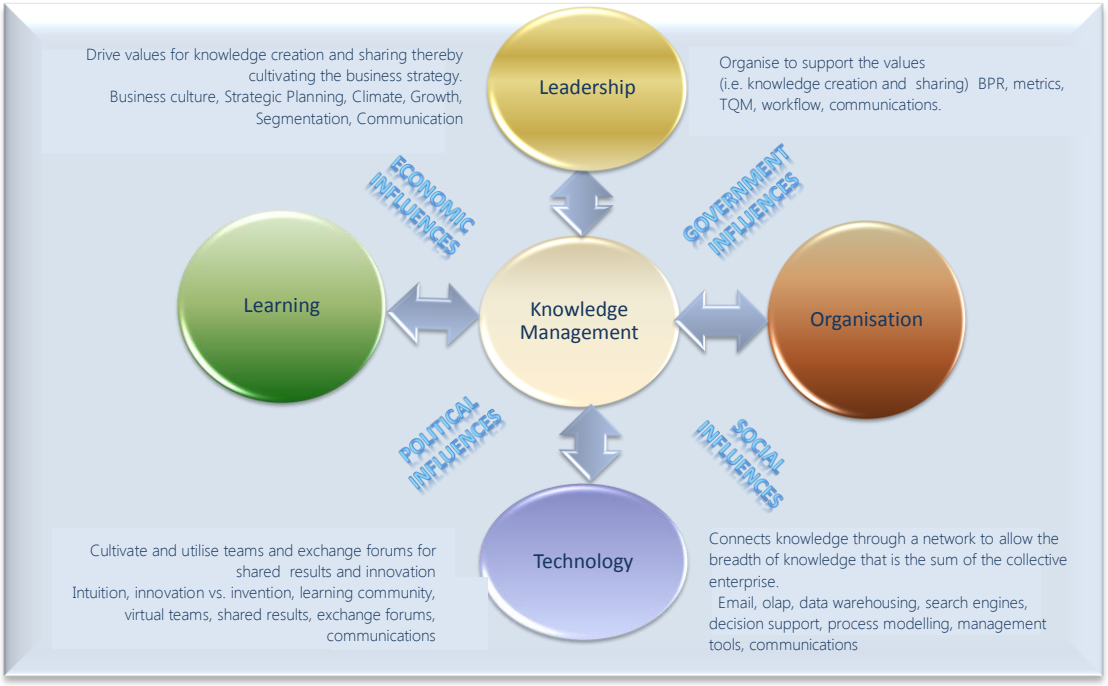
Source : adapted from Gorra (2007) , Allan (2003) and Schreiber (2001).

3.8. STRATEGIES TO ENHANCE THE QUALITY OF THE RESEARCH

The aim of this research was, within the first phase, to establish an overview of current perceptions and practices of KM within the HEI context within the UK, and then to further investigate underlying reasons for its use or lack thereof, in the second phase. The research employed the sequential mixed methodology approach, with the quantitative phase being the first phase, and the qualitative phase following afterwards. Different methodologies were employed for each of the phases, as discussed previously and as can be seen in the research design (see Figure 3. 13 on page 136).

Varied views exist on how to achieve quality within a research project (Lincoln and Guba, 2000, Guba and Lincoln, 1998, Flick, 2009, Bryman, 2008, Smith and Deemer, 2000, Patton, 2002). However, the researcher acknowledges these and agrees, in particular, with Denscombe (2002) who suggests guidelines for good practice. These guidelines, as well as the sections which discuss how some of these good practice guidelines were incorporated into the research, is reflected in TABLE 3. 9 on page 132. In this section, strategies to further enhance the rigour of the research process, and the research outcome (the substantive theory), as well as ethical consideration issues, are discussed.

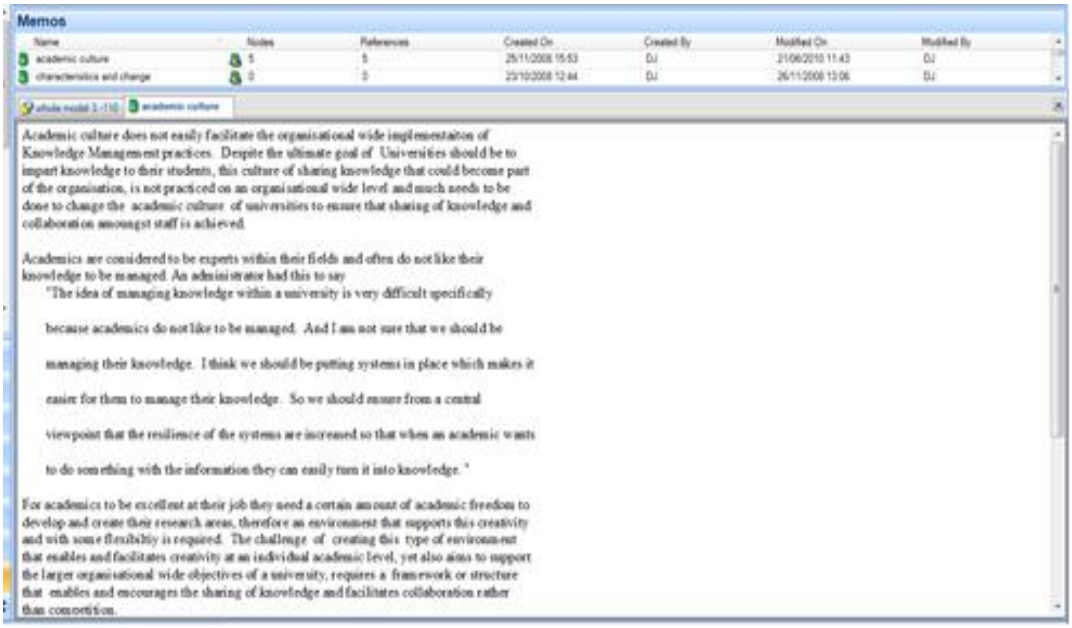
FIGURE 3. 9 FOUR PILLARS OF KNOWLEDGE MANAGEMENT WITH ENVIRONMENTAL INFLUENCES



Source: Adapted from Stankosky (2007)

The design of the survey incorporated a variety of instruments, and the final survey instrument was tested on a senior executive of a small business and a KM senior researcher, who both provided suggestions for improvement based on their test of the survey instrument. These suggestions were incorporated into the final revision of the survey instrument. The testing was important to establish the content validity. Creswell (2006:p.149) defines content validity as checking whether the items measures the content they were intended to measure of the instrument and to improve questions, format and scales. As part of rigorous data collection, the researcher provided detailed information about the actual survey instrument used (see section **3.7.3.1** on page 95 for discussion and Appendix A for survey instrument). To ensure a good response rate, a three-phased approach was undertaken: 1) distribution of survey via mail; 2) follow up email to all secretaries of VCs within the sample to enquire as to whether they received the survey instrument, if not an email copy was sent; 3) telephone calls were made to all non-respondents to attempt to encourage participation, which resulted in some emailing their reasons as to their non-participation, others responding, and still others not responding and not participating in the survey.

FIGURE 3. 10 AN EXAMPLE OF A MEMO WRITTEN DURING THE ANALYSIS PHASE



Source: Author

A good response rate was achieved only after the 3-phased approach was followed and completed. This phase provided a sample of universities who expressed an interest in participating in the case study, and yielded an overview of the practices and perceptions of KM generally within HEIs in the UK. Strategies to ensure the accuracy of data input were adopted that only applied to half of the respondents as *SurveyMonkey* was also used as the online tool for data collection and partial analysis. A more detailed view of the process for the quantitative research phase can be seen in Figure 3. 11 on page 133.

In Phase II, the Grounded Theory methodology was used, which, through its constant comparative analysis (Glaser and Straus, 1967, Strauss and Corbin, 1998), provided rigour to the research process. A combination of Grounded Theory (Glaser and Straus, 1967, Charmaz, 2006, Strauss and Corbin, 1998, Allan, 2003, Gorra, 2007) approaches was used, which, in the researcher's view, enhanced the understanding and the application of the GT approach within the research. The researcher adopted Morse's (2002) view of v*erification* as being the process of checking, confirming, making sure, and being certain, throughout the different steps within the process. Glaser and Strauss (1967:p.28) suggest that "the generation of theory through the comparative analysis both subsumes and assumes verification, and accurate descriptions, but only to the extent that the latter are in the service of

generation". The constant comparison method incrementally contributes to ensuring reliability and validity and, thus, the rigour of a study, the mechanisms of which are integrated into every step of the inquiry to construct a solid product by identifying and correcting errors before they are built in to the developing model and before they subvert the analysis (Morse *et al*., 2002).

The researcher does not make any absolute truth claims about the theory, but does suggest that it presents a particular view which could be practically useful for the HEI context. Diagrams and memos were used to ground the data analysis, and Nvivo automatically tracked the sources and references to the sources used within codes.

3.8.1 THE SUBSTANTIVE THEORY

The outcome of a Grounded Theory methodology addressing a substantive area can either be a *substantive theory* or a *model*, with concepts either being descriptive or relational; the relational specifies relationships between concepts through propositions or hypothesis (Locke, 2001). Locke favours relational over descriptive as the relational is suggested to have the explanatory power to account for the elements within the substantive area being studied. Locke (2001) further contends that the researcher moves from the empirical observations to conceptualisation which then becomes a lens for understanding the patterning perceived in the social situation being studied. This research acknowledges this view and expounds on the *explanatory power* of the theory through understanding the *pattern* and behaviour of academics working within HEIs, looking at their practices, and perceptions of knowledge within this context and how it should be managed, and the influence this has on HEIs' ability to embrace organisation-wide KM. The researcher, therefore, according to Locke (2001), focused on the study of patterns of behaviour and meaning, which accounted for variations in perceptions and practices of KM within HEIs in the UK, in order to arrive at conceptually based explanations for the KM processes operating within the substantive problem area of KM within HEIs.

Strauss and Corbin (1998) took the view that judging the merits of qualitative research required a redefinition of some of the general criteria used to judge quantitative research, *generalizability* being a case in point. They contend that the purpose of GT is to build theory, hence, the explanatory power, or 'predictive ability' of the theory, rather than applying the usual definition of generalizability (Strauss

and Corbin, 1998). Strauss and Corbin(1998) further contend that predictive ability in this sense refers to the ability to explain what might happen in given situations, the real merit of which lies in the substantive theory's ability to speak specifically for the populations from which it was derived and to apply it back to them. The substantive theory of this research therefore applies to a representative sample of seven HEIs within the UK and suggests that it can be applied to the population of HEIs within the UK.

To evaluate the 'goodness' of the theory, Glaser and Strauss (1967) suggest two ideas for evaluation; *pragmatically useful* and *credibility*. For a theory to be practically useful, it needs to work on the ground (Locke, 2001); hence, it must *fit* the area being researched, it must be *understandable* to those working in the social context studied, be *general* in the sense that it is relevant to a number of different conditions within the same research setting, and the person using it must have a level of *control* (Glaser and Straus, 1967). In terms of this research study, it is the researcher's view that the theory outcome needs to be practical enough to 'work on the ground' and easily understandable for those working on the ground within HEIs. It must have the necessary fit for HEIs within the UK as it describes the practices, perceptions and characteristics of HEIs and of those individuals working within it. Theory should cover contributing factors in the ability of HEIs to employ KM on an organisational wide level currently, and, in so doing, makes a *proposition* about the substantive area, which could be further tested within the same context. Generalisation in this context means explanatory power, according to Glaser and Strauss (1967), already discussed above.

Locke (2001) summarises Glaser and Strauss's (1967) view of *credibility* in terms of: a) the practices in which the researcher can engage during the analytic process (see discussion in section 3.7.4.6 on page 108); b) the rhetorical issues involved in crafting a credible publication; c) the relationship between the composed concepts and the readers' experiences, and the researcher's own beliefs (see section 3.3, page 83 and section 3.5, page 91). Both points a) and c) are discussed elsewhere in this thesis as specified; however, the researcher would like to address point b) here. Glaser and Strauss achieve the credibility with their readers of their publications by having developed a writing style that helps readers to understand the theoretical framework very clearly by *describing vividly* the social situation being studied, and by including *direct quotes* by participants, descriptions of the scene and excerpts

from field notes (Locke, 2001). They also build into their work a degree of redundancy, which requires specifying it at the beginning of their writing, specifying it in detail within the body of their writing, and then restating it again in summary form at the end, allowing nothing to chance for the readers to misunderstand, something which this research has also attempted to achieve.

3.8.2 ETHICAL CONSIDERATIONS

Ethical concerns are an integral part of the pre-observation decision-making process in research (Graziano and Raulin, 2000) and should be high on the research design agenda of any researcher (Mason, 1996). Different ethical considerations need to be taken into account based on the type of research being undertaken; however, the same ethical principles should be applicable in any research. Creswell (2009) contends that ethical practices involve much more than merely following a set of static guidelines; they should be considered in the research problem, in the purpose and questions of the research, in the data collection, analysis stage and in the writing up and dissemination of the research. Discussions about ethical principles in social research, and perhaps more specifically transgressions of them, tend to revolve around certain issues that recur in different guises (Creswell, 2009). Diener and Crandall (1978), cited in Bryman (2008), have broken down the ethical principles into four main areas which overlap with many theorists' views of ethics, for example (Patton, 2002), and are discussed next.

3.8.2.1. ETHICAL PRINCIPLES

HARM TO PARTICIPANTS

The word 'harm' can have different meanings in different contexts; for example, Bryman (2008) suggests that participants can experience different forms of being harmed through research: physical harm, harm to participants' development; loss of self-esteem; stress; and inducing subjects to perform reprehensible acts. The nature of this research could not inflict physical harm nor did it conduct acts that could inflict harm on participants. The researcher provided as much information as possible before the interview about the research in the form of an information pack (see Appendix B) in order to alert the participants very clearly of the intention of the research. During the interviews, much care was taken to inform the participants of the research objectives and to emphasize that they were not expected to know the theory of KM.

The issue of harm to participants is further addressed in ethical codes by advocating care over maintaining the *confidentiality* of individual records (Bryman, 2008), and, hence, in conference presentations and other presentations, the identities of individuals or universities were not disclosed. The researcher recognized that to some experienced professionals, the contextual information may suggest the identities of universities, however, careful consideration was given to not include specificities that might directly make this obvious. All memos, transcripts and actual interview recordings were kept confidential, and all reference to actual names of participating universities or interviewees were kept confidential in the thesis document by replacing university names with case numbers and participating interviewees with numbers as well.

INFORMED CONSENT

As part of these ethical considerations, the researcher included a participant information pack (see Appendix B) sent out prior to the interviews. These packs provided information about the research and requested participant consent, including a consent form. Participants were given an 'opt-out' clause if they did reconsider taking part in the case study, and were also provided with a form. Graziano (2000) advises that *informed consent* is an important safeguard providing participants with enough information about the research to enable them to make informed decisions about their participation. A clear written agreement (the consent form) between the researcher and the participant was requested and obtained prior to the start of the interview, or at the interview.

Informed consent also involved being explicit about the amount of time the interview would take and providing the required detail for interviewees to make an informed decision as to whether they would participate (Bryman, 2008). Bryman (2008) contends that researchers can deliberately not disclose the correct amount of time or some of the research detail so as not to influence their decisions to participate negatively. This research did not deliberately take longer in the interviews; however, due to the informal nature of the interview, this allowed for discussions around various topics, and, as the researcher was very conscious of addressing all of the research guide questions, some continued over time; this was certainly the case with the first interviews. In more than one interview, the time spent was longer than anticipated and longer than initially presented to the

participants; however, the researcher adjusted the interview style to try and accommodate the time limitations in the subsequent interviews by pointedly asking the questions and not allowing too much discussion on a particular topic. The negative aspect of this decision was that later participants were less free to discuss certain aspects which often led to revelations not addressed in the interview protocol, with some aspects being discussed in more detail than others.

Confidentiality was agreed and hence, all University names and individual participant names were excluded from the research report and replaced with numbers.

INVASION OF PRIVACY

Issues of privacy are linked to issues of anonymity and confidentiality. Bryman (2008) contends that the research participant does not abrogate the right to privacy entirely by providing informed consent. The nature of the research did not require personal information from participants that was deemed sensitive. The research was not presented with a situation where participants were unwilling to answer specific questions due to the nature and sensitivity of the question; participants appeared relaxed and very happy to discuss the issues and, at times, certain responses were of a political nature; however, these were responses freely offered rather than the researcher asking a question of an extremely political nature.

DECEPTION

"Deception occurs when researchers represent their work as something other than what it is" (Bryman, 2008:p.124), and Bryman further purports that the ethical objection to deception hinges on two points: Firstly, it is not a nice thing to do and secondly he adds that it would endanger the reputation of social research and the mutual trust between society and the researchers. The researcher was upfront and honest about the nature of the research and the intention and purposes for the research.

3.8.3 ETHICS AND THE ISSUE OF QUALITY

The School of Management at the University of Southampton clearly outlines the importance of academic integrity for the research process of a PhD degree, which the researcher upheld as a principle. The School suggests four practices that should be avoided:

- *Plagiarism* – the researcher has aimed to uphold the guidelines of plagiarism and deems it critical to any research to present other scholars' work correctly. Within a PhD, one is required to start the reading process from the first year, and very clear thoughts and ideas not generated by the researcher must be referenced appropriately; however, the line between the point at which reading, experience, ideas and information blends in with one's own over time and influences subsequent thinking can be difficult to differentiate. The researcher has, however, made a conscious effort to create this distinction in her own thinking and representation of the work.
- *Falsification*: All interviews were conducted by the researcher, and three quarters of the interviews were transcribed personally. A student was used to transcribe three interviews; however, it was necessary for the researcher to check those transcripts before continuing with the analysis of the research.
- *Recycling* of any documents or a portion of a document, and their use in a different context, is considered inappropriate. A note at the beginning of the thesis explains that the researcher presented a section of the research at two international conferences, as well through the publication of an article in a magazine, before the publication of the thesis.

The researcher, at all times, aimed to conduct the research with a view to being responsible to the research profession, the participants, the public and the funding council and school providing the funding for the research, hence, adopting a code of conduct exemplifying professionalism. The Economic and Social Research Council (ESRC) is the major agency in the UK context for funding social scientific research and provides the Research Ethics Framework (REF) which outlines the Council's requirements in terms of ethical practices for the research it supports(Bryman, 2008). The researcher aimed to ensure that the research was ethical in all respects, and of high quality, using both the ESRC and the University of Southampton ethical guidelines for research.

3.9. CRITICAL ASSESMENT OF THE RESEARCH STUDY

Being able to critically assess the quality of the research study requires some form of judgement. Judgements of quality constitute the foundations for the perceptions of credibility, which require certain criteria (Patton, 2002). However, Patton further contends that it is important to acknowledge that a particular philosophical view or theoretical lens used, and the reasons for the qualitative inquiry, will generate different criteria for judging the quality and credibility of it. Researchers often have radically different views on what constitutes rigorous research, the process used for the research and the outcome of the research, each of these needing to meet certain criteria (Lincoln and Guba, 2000). Flick (2009) postulates that the problem of how to assess qualitative research is unresolved. The issue of relativism was also considered and Smith and Deemer (2000) suggest that any discussion of criteria for judging social and educational inquiry must confront the issue of relativism, and how relativism is understood matters greatly.

There are also different views on whether the same measures should be used to judge quantitative and qualitative research, whether qualitative research should have its own standards developed for it, and whether evaluation criteria should be abandoned (Flick, 2009). Eisenhardt (1989) suggests that there is no generally accepted set of guidelines for the assessment of building theory from case studies, and no single method – or collection of methods – provides the absolute method that leads to ultimate knowledge.

It is the researcher's undertaking that any research does require some form of guidelines or criteria against which the research could be judged. The researcher also undertakes that the set of criteria should be adaptable to the research being undertaken and, hence, all forms of criteria do not fit all research, and some adaptation is required, conforming with Strauss and Corbin's (1998) stance. The researcher is also of the opinion that the way in which research is conducted not only reflects the researcher's theoretical underpinnings and the lens used (Patton, 2002), but is also underpinned by his or her moral base (Smith and Deemer, 2000). Hence, the ethical considerations have a part to play in the quality of the research (discussed in section 3.8.2 on page 124).

The different views of a number of scholars on criteria for assessing the quality of the research are presented in Table 3. 8 on page 131. Another issue debated is

which aspect of the research project should be judged. The researcher was of the opinion that both the outcome of the research as well as the research process should be able to reflect a level of quality that would instil confidence in any reader. Therefore, criteria were selected to assess both the research process and research outcome, to indicate that the research followed careful analytical procedures (Eisenhardt, 1989) and that the outcome of the research represented a 'good' substantive 'theory'.

The research design framework adopted for this research study has provided a good set of methods to allow the themes to emerge in line with the objectives of the research study. The nature of the research therefore relied on the data to yield different theories and themes, suggesting a particular methodology and theoretical perspective - an inductive, Grounded Theory Methodology and an interpretive theoretical perspective. This research, being interpretive in nature, therefore aimed to study the perceptions and practices of KM, which not only deals with social processes but technological and organisational processes as well. Reflecting on the process of the research, and given more time spent within each of these specific areas could have provided more breadth to the explanation; however, this was not possible given the constraints and boundaries of the research.

Although rich data can be obtained from Quantitative Analysis and was obtained during this study, Qualitative Analysis is a "powerful tool for learning more about the lives and the socio-historical context in which we live" (Merriam and associates, 2002,p.xv). It provides researchers with a tool to "understand the meaning people have constructed about their world and their experiences" (Merriam and associates, 2002, p.4). Merriam *et al* (2002) contends that all qualitative research is characterised by the search for meaning and understanding; the researcher is the primary instrument of data collection and analysis, an inductive investigative strategy, and a richly descriptive end product. Hence, to harness the strengths of both the Quantitative and Qualitative methods, it was decided to use the mixed-method approach enabling the researcher to gain a good understanding of KM application and perceptions within the sample, using the Quantitative approach which provided a rich set of data from which to build the more in-depth investigation using Qualitative Analysis on seven HEIs within the UK.

As the researcher understood KM application within HEIs to be minimal, and previous research on KM application within HEIs was also relatively minimal, it was decided to allow the data to yield the theory and not to try and enter the field with a hypothesis to test; hence, Grounded Theory met the criteria and objectives of the research. Using Grounded Theory, therefore, the goal, as Merriam (2002) explains, was to derive inductively from data a theory that was 'grounded' in the data. The case study research method, used with GT, provided the rich in-depth analysis required for the research. Although the research was considered to be highly successful in meeting its objectives, two limitations of the research were encountered: the nature of KM and the infancy of the terminology within HEIs, and the availability of the individual cases. Both of these factors restricted the number of interviews at the case institutions. It was recognised that, if one were to interview a range of staff from different disciplines, according to race, gender, age and seniority, this diversity of interviewees would present different dimensions to the research. However, as GT was being used as a methodology, generating emergent themes and concepts was the primary aim, and hence, testing a hypothesis was not of primary importance; concepts or themes that emerged out of the data were all considered and judged according to their own merits (Bryant, 2003).

The Quantitative Research phase experienced a difficulty in that, although the hardcopy survey was piloted, the online-survey was not piloted, and this yielded a challenge in one of the question-types; the question should have been a multiple choice question, but, instead, it only allowed for one answer to be entered. This had to do with the way in which the online survey was set-up initially and it could not be changed once data had been entered against the online survey. As only 13 institutions completed the survey online, only one had difficulty with the particular question and wanted to include more than one possibility; however, this question was not used in the analysis.

TABLE 3. 8 DIFFERENT SCHOLAR VIEWS ON THE CRITERIA FOR ASSESSING THE QUALITY OF RESEARCH

QUANTITATIVE CRITERIA	QUALITATIVE CRITERIA		UNIVERSAL CRITERIA	ORIGINAL GROUNDED THEORY CRITERIA	STRAUSS & CORBIN'S GROUNDED THEORY CRITERIA
• Validity • Reliability	• Credibility • Transferability • Dependability • Confirmability	• Rigorous methods • Credibility of the researcher • Philosophical belief in the value of qualitative inquiry	• Validity • Relevance	1) Judgements of the theory- • Fit • Work • Have relevance • Be modifiability 2) Judgements of how the theory was generated	Two sets of criteria • Adequacy of the research process • Empirical grounding of findings
(Sheldon, 1994)[12]	(Lincoln and Guba, 1985)[13]	(Patton, 2002)	(Hammersley, 1992)[14]	(Glaser and Strauss, 1967)[15]	(Strauss and Corbin, 1998; Corbin and Strauss, 1990)[16]

Source: adapted from (Elliott and Lazenbatt, 2005)

One of the limitations of the Qualitative Research phase was access to more participants at two of the institutions; however, the persons interviewed were senior members of staff and hence, were knowledgeable about the institution's mission, aims and objectives. Consequently, only one perspective was provided at the institution and, given the researcher's previous experience with interviewing, this one view is certainly not the only view, held at the institution.

Despite the challenges of certain aspects of the research, the research process was conducted with the ethical considerations taken into account, with the highest level of professionalism, undertaking a rigorous process for data collection and analysis to enhance the 'goodness' of the substantive theory.

[12] Sheldon, 1994 *Report of a workshop on clinical effectiveness*. NHS Centre for Reviews and Dissemination. York: University of York.

[13] Lincoln and Guba, 1985 *Naturilistic Inquiry*. Newbury Park CA: Sage Publications

[14] Hammersley, and Atkinson, 1992 *Ethnography: Principles in practice*. 2nd edn. London:Routledge.

[15] Glaser and Strauss, 1967 *The Discovery of Grounded Theory Strategies: Strategies for qualitative research*. New York:Aldine de Gruyter.

[16] Strauss and Corbin, 1998 *Basics of qualitative research*. 3rd edn. Thousand Oaks CA:Sage Publications; and Corbin and Strauss, 1990 *Grounded Theory Research: Procedures, canons and evaluative criteria*. Qualitative Sociology, 13(1):3-21

TABLE 3. 9 GROUND RULES FOR GOOD RESEARCH- A 10 POINT GUIDE

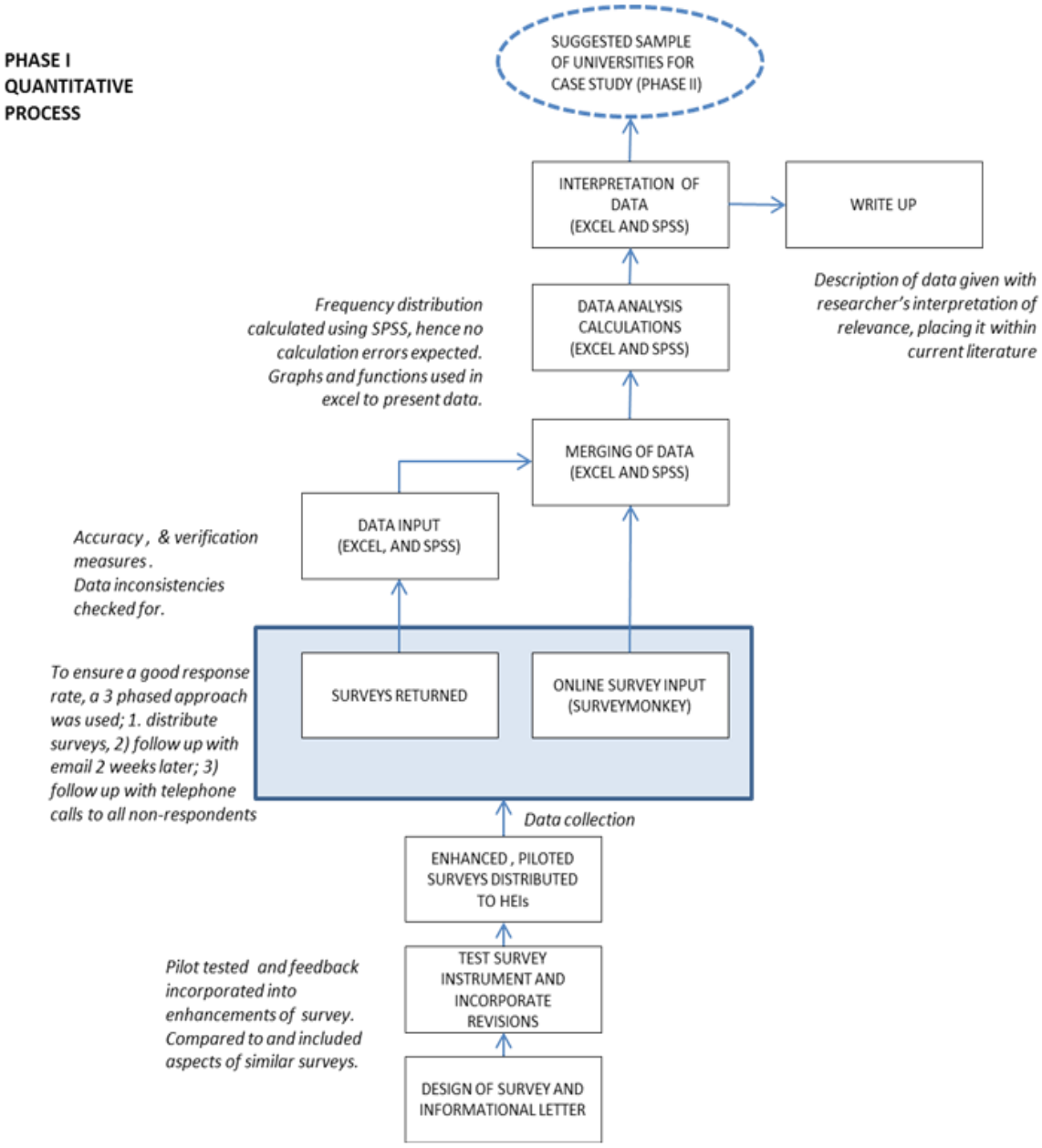
THEME	STRATEGIES AND DISCUSSION
Purpose & Relevance	Clearly stated aims (section 3.6 on page 92), related to existing knowledge and needs (see section 2 for literature review)
Resources	The research was planned around the availability of the case universities and their participants, and the researcher relied on the goodwill of the participants. The case studies were dotted around the UK and hence, the study was compacted into 2 weeks in the first instance with the last 3 having a few months in between. The cost of travel and accommodation was off-set by the University of Southampton. An information pack was sent to establish transparency with the hope of building trust.
Originality	The research aimed to contribute something new to the body of knowledge of Higher Education and Knowledge Management. A discussion can be seen in Chapter 8, section 8.2 on the suggested contribution made.
Accuracy (using data that is valid and precise with validity, reliability, truth and reality being key to this)	Section3.7.4.6 on page 108 provides an explicit account of the research process.[17] The constructionist, interpretive view was taken on truth and reality and hence, no claims to absolute truth or absolute reality are made in this research (see Section 3.3 on page 83 for discussion on the researchers worldview and epistemological stance)
Accountability (Data collected and used in a justifiable way)	An explicit account and description of the methods of data collection and analysis are presented in section 3.7.3 and section 3.7.4 on pages 95 and 101 respectively. Key decisions about the research design are presented and justified in section 3.7 on page 92, and sections 3.3.2 page 86, and section 3.7.4.1 on page 101
Generalisations (Sampling, representativeness, generalizability, transferability)	Strauss and Corbin (1998) suggest that generalizability in the GT context refers to the explanatory power of the theory or "predictive ability" – the ability to explain what might happen in given situations. The explanatory power of the substantive theory is discussed further in Chapter 6 and 7 Denscombe (2002) suggests that transferability is the process in which the researcher and the readers infer how the findings might relate to other situations (p.149). The case setting was HEIs in the UK and hence, the research findings were specific to the case setting sample, which could possibly be transferred to other HEIs within the UK, however, the research does not suggest that it can be transferred to any other setting other than the case population.
Objectivity	Although the researcher approached the research with a constructivist view of the world, and interpretive stance, the researcher undertook Denscombe view of objectivity to mean approaching the research with an open mind, being neutral, impartial, fair , free from conscious bias, and having no vested interests (See section 3.3 on page 83 – worldview, section 3.5 page 91 for background of researcher)
Ethics	Participants expect researchers to behave in a professional manner adhering to a certain code of conduct and ethics. A discussion of the code of conduct and ethics adopted for the research is presented in section 3.8.2 on page 124
Proof	Evidence has been provided in both the appendices and the main text to support the arguments put forward by the research. This evidence has been collected using GT as a methodology and hence, the process was rigorous and systematic. Alternative theories have been taken into consideration; however, conclusions drawn from the research are appropriately cautious, and do not make an absolute truth claim. The process of data collection and analysis is detailed with as much information as this document would possibly allow.

Source: Adapted from (Denscombe, 2002)

[17] Given the many definitions for validity and reliability Denscombe's (2002:p.100) definitions are used here:
"*Validity* concerns the accuracy of questions asked, the data collected and the explanations offered. Generally it relates to the data and the analysis used in the research"

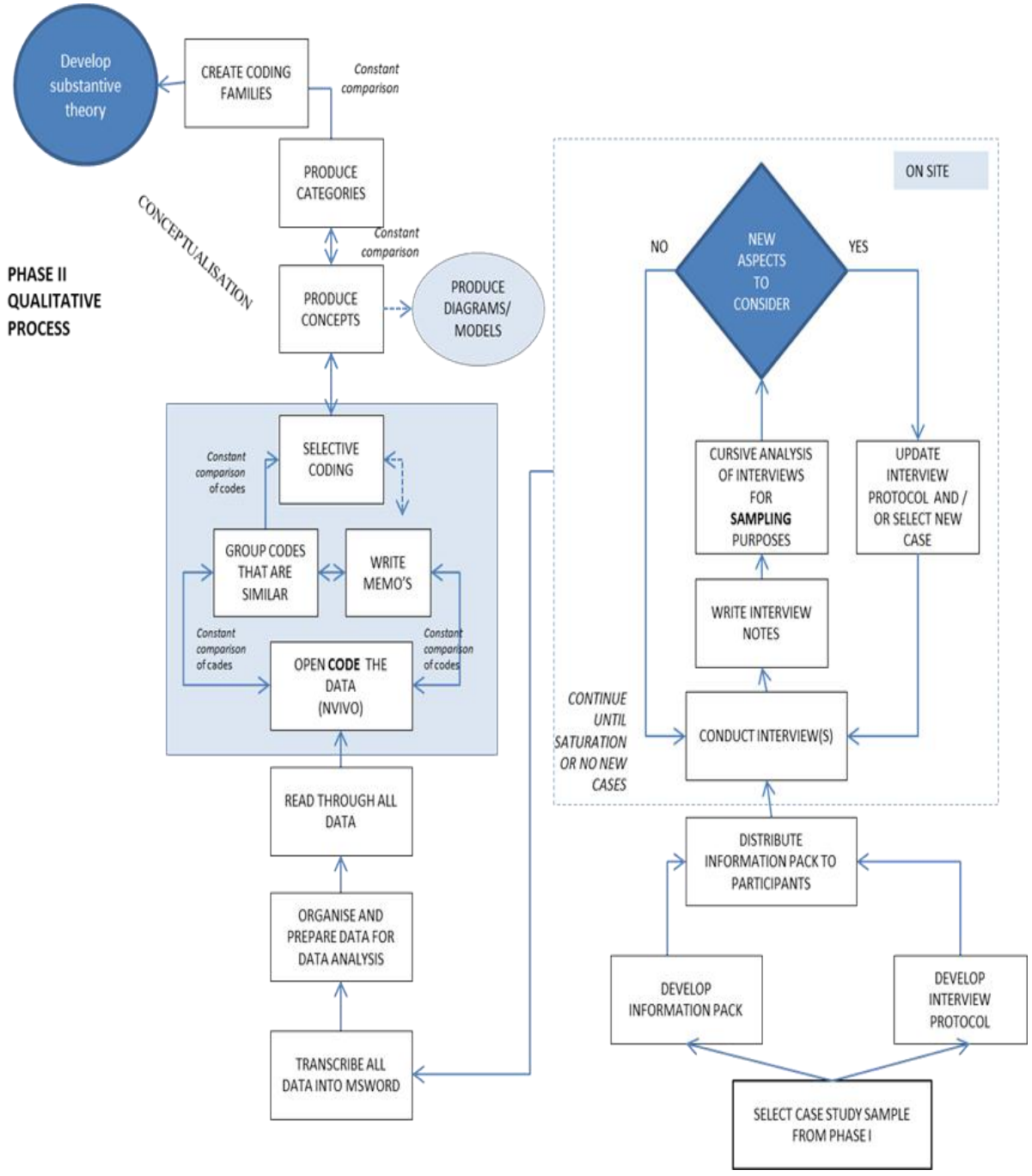
"*Reliability* relates to the methods of data collection and the concern that they should be consistent and not distort findings. Generally it entails an evaluation of the methods and techniques used to collect data"

FIGURE 3. 11 PHASE I QUANTITATIVE PHASE – INCLUDING STRATEGIES TO ENHANCE QUALITY



Source: Author

FIGURE 3. 12 DETAILED VIEW OF PHASE II QUALITATIVE PROCESS



Source: Author

3.10. SUMMARY: RESEARCH DESIGN FRAMEWORK

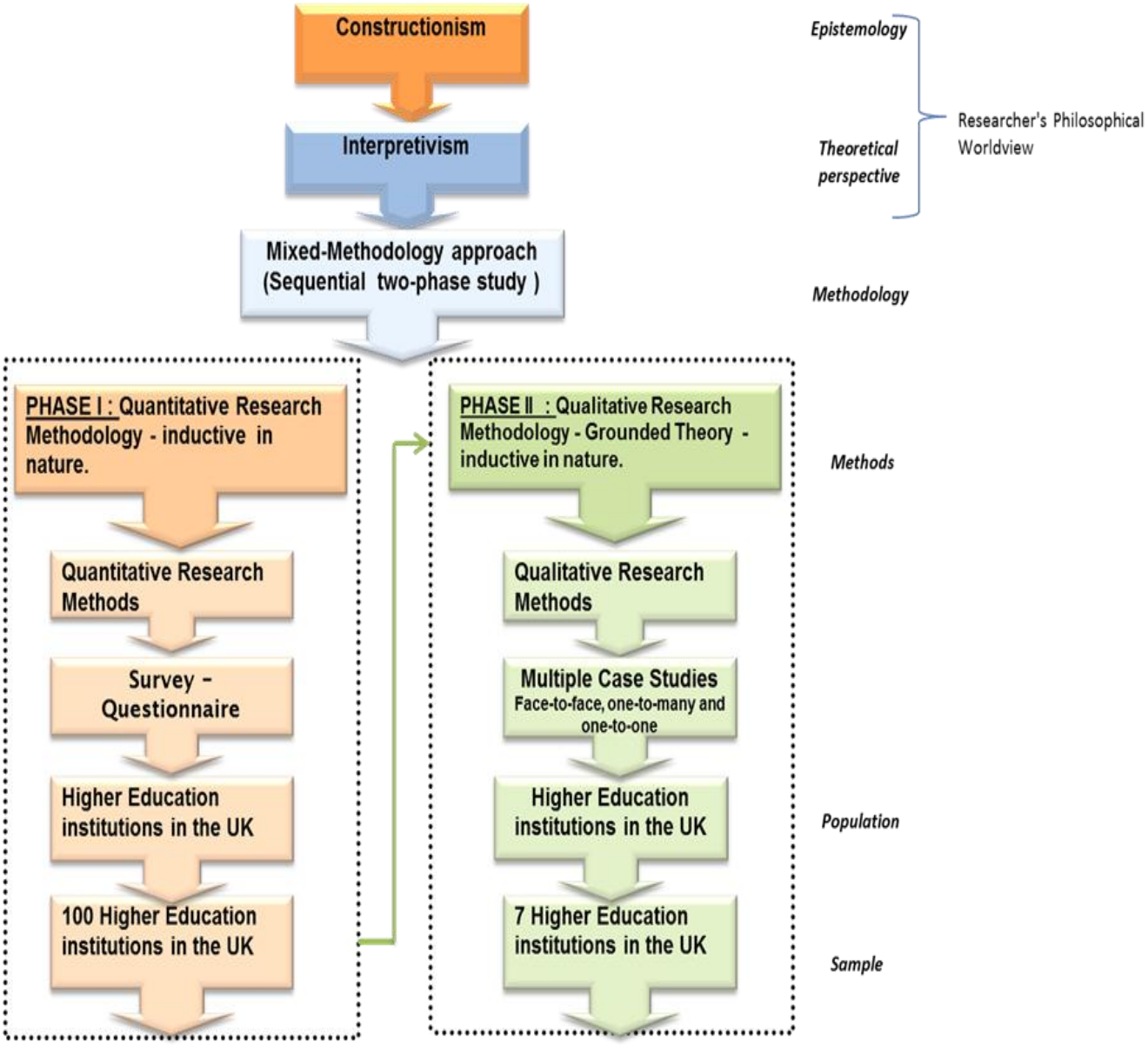
This chapter has presented the three elements of the research design. The decisions behind the design choices were discussed and certain methodological issues of contention were raised in relation to the research and the researcher's views. The research incorporated a two phased sequential, mixed methodology approach, each using different methods for data collection and analysis. Phase I, was quantitative in nature, used a survey distributed to 100 universities in the UK; Phase II was qualitative in nature, using the Grounded Theory Methodology. The originators of the GTM developed divergent views over time as to the implementation of the methodology; however the researcher harnessed certain aspects of each, with the implementation of it being influenced by other scholarly works as well. The researcher embraced the constructionist epistemology in so far as there was recognition of the contribution that the researcher plays in generating and constructing the codes, concepts and substantive theory from the data, and that the researcher was not a passive observer within the process of interviewing, data collection and analysis.

Strategies to enhance the quality of the research were discussed next, with guidelines for best practice in research being used. The chapter concluded with a critical assessment of the research study.

The following section, section II, presents the analysis of the research, and is divided into 3 chapters, describing the quantitative analysis phase (chapter 4), and then the qualitative analysis phase. The qualitative phase is divided into 2 chapters (Chapter 5, and Chapter 6).

A summary of the major research design decisions is presented on page 136

FIGURE 3. 13 RESEARCH DESIGN FRAMEWORK



Source : Author

SECTION II

DATA ANALYSIS

PHASE I QUANTITATIVE ANALYSIS

CHAPTER 4: THE SURVEY

PHASE II QUALITATIVE ANALYSIS

CHAPTER 5: CONTEXT AND PRESENTATION OF THE CASE STUDY

CHAPTER 6: EMERGENT THEMES AND CONCEPTS

SECTION II - OVERVIEW

Section II of the research study includes 3 chapters which set out the data analysis presented in 2 phases: the quantitative phase and the qualitative phase.

PHASE I presents and describes the quantitative data collection process of the research in chapter 4, detailing the distribution and analysis of the survey, and provides a profile of the institutions and participants. A presentation and analysis of the survey results follows, after which the chapter concludes with a discussion on the findings, followed by a summary of the chapter. A survey was used, with the population of HEIs in the United Kingdom (UK) providing the context, and universities. A good response rate was achieved.

PHASE II presents the qualitative data collection and analysis, and includes two chapters: Chapter 5 – The context and presentation of the Case Study; and Chapter 6 – The Emergent Themes and Concepts. Chapter 5 presents the individual cases, addressing the history and context of each, the shape and size of each, and the change each have undergone over the past few years. The chapter presents some findings on the observed characteristics of pre and post universities, addresses the limitations of the study, and a summary concludes the chapter. This chapter leads on to Chapter 6, which focus' on the emerging themes across cases, and the emergent substantive theory.

A multiple-site, case study research method was used which combined aspects of various grounded theorists, and did not adhere purely to any particular view. A sample of seven universities were used in the case study, with 18 participants and 12 interviews conducted with very senior members of staff. The methodology was strongly influenced by the originators of the grounded theory methodology, Barney Glaser and Corbin Strauss, following some aspects of Kathy Charmaz and George Allan.

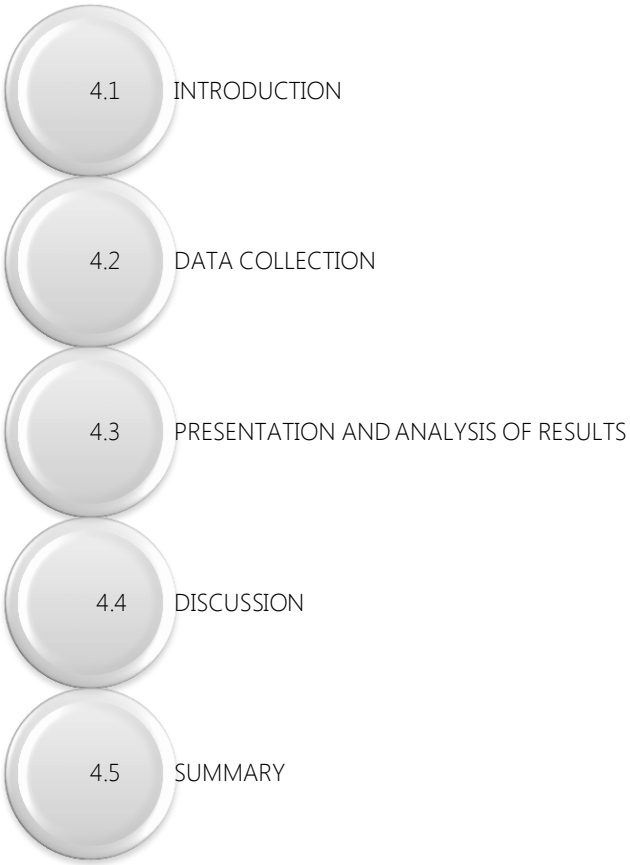
PHASE I

QUANTITATIVE ANALYSIS

Chapter 4

A SURVEY OF KM IN HIGHER EDUCATION INSTITUTIONS IN THE UK

A SURVEY OF KM IN HIGHER EDUCATION INSTITUTIONS IN THE UK



CHAPTER 4

4. A SURVEY OF KM IN HEIs IN THE UK

4.1. INTRODUCTION

This chapter discusses the findings of the quantitative phase of the research, and presents the process used to administer PHASE I. To highlight the objectives of the research in relation to this phase, the research questions are presented here:

The research aimed:

> To better understand Knowledge Management practices and perceptions within the UK HEI context.

More specifically to understand:

- Whether Knowledge Management was being *used as a management tool* within Higher Education Institutions in the United Kingdom, to enhance competitive advantage;
- What the *contributing factors* were, that hindered or promoted the implementation of Knowledge Management within the HEI context;
- What the *perceptions and practices* of KM were, within this context.

The intention of PHASE I was to provide a general overview of the position of KM within the UK HEI context. This was considered a necessary phase as the researcher did not have any secondary data that could be used to provide this general overview and position of KM within the UK. The results are discussed in relation to the research questions as set out.

4.2. DATA COLLECTION

4.2.1 DISTRIBUTION

A questionnaire was designed using, as a basis, KM surveys previously conducted within the UK, New Zealand, Australia and Canada (Mitchel, 2006, Mason and Pauleen, 2002, Statistics Canada, 2001). The survey aimed to explore current KM practices and perceptions within HEIs in the UK and to highlight key issues for

future development of KM in HE. The questionnaire covered broad areas of KM; definition, policy and standards, organisation culture, KM technology, KM development and implementation, KM practices and progress, perceived challenges and benefits, underlying reasons for using KM, whether it was used as a tool for competitive advantage, spending and responsibility for KM within institutions. As the survey included text boxes to enable respondents to write comments, some qualitative data and responses could be included to provide additional information about a particular question, and the analysis of those qualitative comments is provided.

The survey received a 46% response rate of which 17% was email and letter responses detailing reasons as to why the institution could not participate (see Table 4. 1). It was interesting to note that a few found the survey difficult to engage with despite the terms and language used within the survey being common. 48% of the respondents chose to complete the survey online while 52% returned a completed hardcopy of the survey to the researcher.

TABLE 4. 1 REASONS FOR THE NON-PARTICIPATION OF INSTITUTIONS

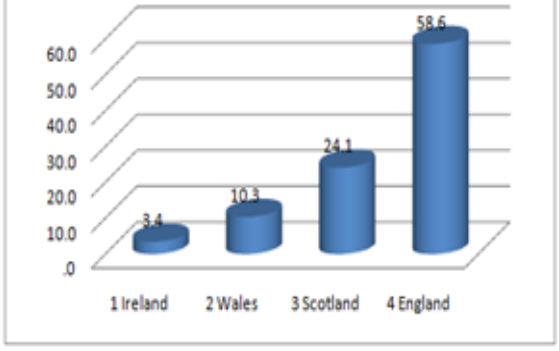
NO	REASON GIVEN	PERCENT
1	No time	15%
2	KM was not a term used within the institution	9%
3	Found the survey difficult to engage with	13%

Source: developed by Author after survey conducted in 2007

Despite 52% of the respondents indicating that it took them less than 30 minutes to complete the survey, and the survey indicating that it should not take longer than between 30-40 minutes to complete, lack of time due to external pressure and priorities, was listed as one of the reasons why some institutions could not participate.

The survey was distributed to each of the four countries within the United Kingdom. A good representation of each of the countries within the United Kingdom was achieved as indicated in Figure 4. 1 page 149, with the majority of the responses being from within England.

FIGURE 4. 1 GEOGRAPHICAL LOCATION OF THE SURVEY RESPONSES



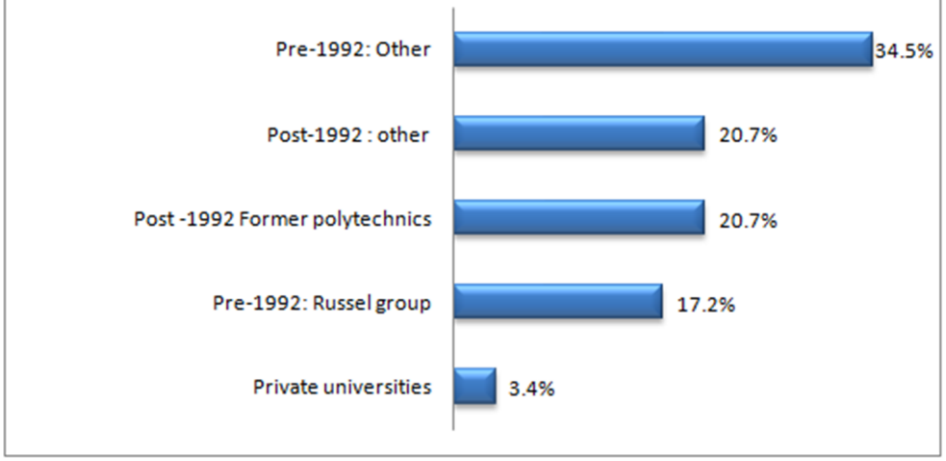
Source: developed by Author after survey conducted in 2007

4.2.2 PROFILE OF INSTITUTIONS.

Respondents were asked to indicate the type of job they were responsible for so as to understand the level of seniority and specific discipline or role the respondents held. The seniority of the respondents was crucial to the research as the survey encompassed management issues, current or future, and hence, including senior staff within the sample was crucial to provide the strategic thought and practices of the institutions within the sample. Data on the size of the institution, the perception of knowledge and the ease of its management and the sharing of it, were aspects this section of the survey aimed to understand. Questions on the size and type of universities were therefore asked, in order to understand better the factors that were perceived to influence the emergence and implementation of KM.

A good spread of institutions, in terms of location (see Figure 4. 1, above), type (see Figure 4. 2 on page 150), and size (see Figure 4.3 on page 151) was obtained.

FIGURE 4. 2 TYPE OF INSTITUTION



Source: developed by Author after survey conducted in 2007

4.2.2.1. TYPE OF INSTITUTION.

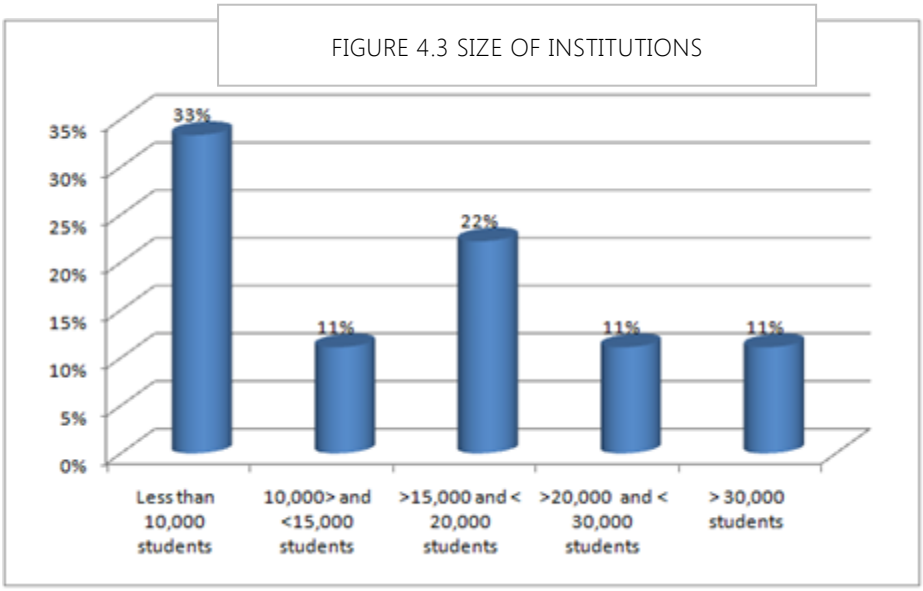
A good representation of the different type of HEIs within the UK responded. Due to only a few institutions having formal KM in place on an institutional wide level, this presented a challenge in understanding the responses in relation to the history and possible change that these institutions needed to undergo. PHASE II of the research was able to address this issue.

Thirteen of the twenty seven institutions answering this question, fell into the post-1992 category (institutions that were classified as universities after 1992); eight were of the pre-1992 category (institutions classified as universities before 1992), and five of the institutions were a particular group within the pre-1992 group called the Russell Group - a group of twenty British universities that receive two-thirds of UK universities' research grant and contract funding, sometimes referred to as the British equivalent of the Ivy League of the United States. 54% of these institutions were therefore in the category, pre-1992 with 17% being Russell group institutions, hence, established institutions with established reputations for excellence in teaching and research. A good spread of institutions therefore responded, balancing between pre and post 1992 institutions as well as including both Russell group and non-Russell group institutions.

4.2.2.2. SIZE OF INSTITUTIONS

The majority of the institutions surveyed were medium to large institutions as can be seen in Figure 4.3, below, with more than half of the responding institutions having a student population of over 10 000 and a staff complement of 1500 or more.

FIGURE 4.3 SIZE OF INSTITUTIONS



Source: developed by Author after survey conducted in 2007

Davenport and Prusak (2000b) contend that the size and geographic dispersion of organisations contribute to the challenges of locating knowledge within the organisation and its distribution. Their contention is that, in smaller organisations, managers know where the expertise resides and probably have physical access to the expertise in an easy manner; in contrast, therefore, the sharing of knowledge in larger organisations is more complex, which can lead to "reinventing the wheel, solving the same problems from scratch again and again, duplicating efforts because knowledge of already developed solutions has not been shared" (Davenport and Prusak, 2000b:p.18) within the organisation. As part of the analysis, the researcher attempted to use the chi-square test on the nominal variables size and KM definition, knowledge definition, KM strategy to investigate the relationship between size and KM, and to test whether the larger institutions were more prone to having a Knowledge and Knowledge Management definition as well as a KM strategy in place than smaller institutions. Upon executing the crosstab tables in SPSS, it was clear that the expected frequency of each cell in the crosstab table was not at least 5; hence, too few institutions in the sample had a knowledge definition, KM definition or KM strategy. The second phase of the research, using the case

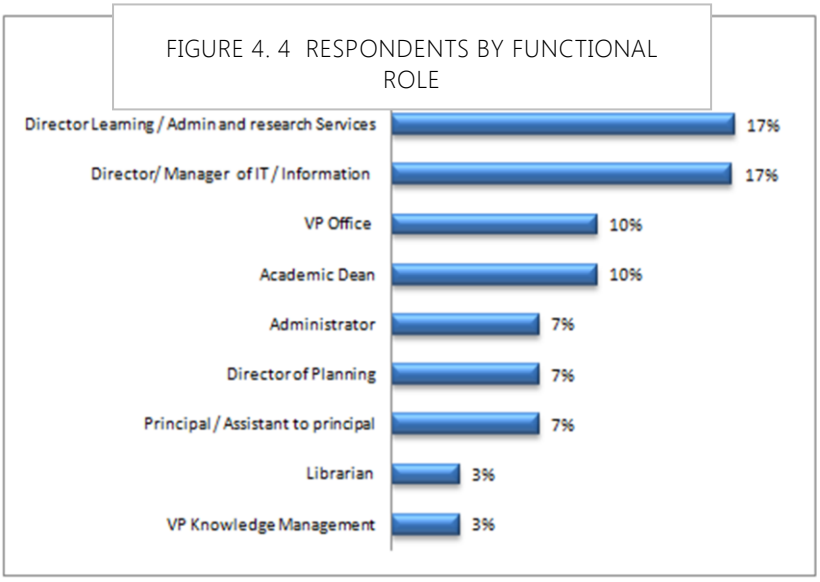
study, investigated the question of the mission of HEIs and the apparent lack of KM definition and KM strategy, and the size of the institution and the need to embrace KM more formally within the institution.

4.2.2.3. RESPONDENT JOB RESPONSIBILITIES.

A diverse group of respondents took part in the survey (see Figure 4. 4 below). These individuals were selected by the Vice-Chancellor or Principal or their office, to complete the survey. One respondent had the designation "Vice Principal Knowledge Management"; the majority of the respondents were within the group, Director Learning / Admin and Research services (17%) and Director/Manager IT/ Information Technology.

The second highest group of respondents were also senior members of staff (10%), Vice Principals and Academic Deans. The remaining respondents ranged from an Administrator, Librarian, Director of Planning, to the Principal Assistant, as well as the Principal of an institution.

FIGURE 4. 4 RESPONDENTS BY FUNCTIONAL ROLE



Source: developed by Author after survey conducted in 2007

It was not clear how some of the respondents were selected to complete the survey, whether they had some form of responsibility for KM within their institutions or whether they were the most knowledgeable or most suitable person selected based on position. Although the cover letter requested Vice-Chancellors to select the participant based on the most relevant person, it was not clear what the relevance was. The question of how they were selected was not included in the questionnaire;

however, the follow up case study provided some insight into some of the selections.

This phase therefore had senior members of staff completing the survey, and the expectation was that they were privy to the current practices, issues and concerns of the institutions, and could complete the survey with the necessary understanding of the institution giving a higher degree of credibility to the responses received.

4.3. PRESENTATION AND ANALYSIS OF RESULTS

4.3.1 KM DEFINITION AND STRATEGY

In this section of the survey, the researcher aimed to establish how many institutions had adopted a definition for KM, and what the elements and perceptions of knowledge were.

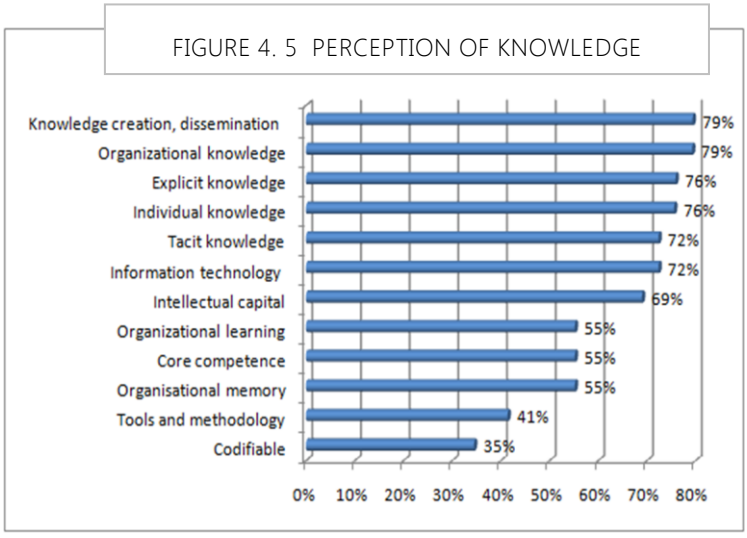
4.3.1.1. PERCEPTIONS OF KNOWLEDGE

79% of the respondents perceived knowledge within their institutions to be *organizational knowledge* that could be created and disseminated. This was an interesting finding as the institutions were academic institutions, each having a number of different departments with different disciplines and research fields, and, given Becher and Trowler's (2001) notion of academic tribes and fiefdoms, the expectation from the literature was that the highest response would be that knowledge was viewed as being individual as well as explicit, a view that received the second highest response rate within the survey on this particular question. 76% therefore perceived knowledge as explicit and individual; however, more respondents did consider it as organizational knowledge, rather than individual knowledge. A large portion of the institutions (72%) still considered knowledge to be information technology; however, KM scholars (Wiig, 1998, Davenport and Prusak, 2000a, Serban and Luan, 2002a, Bixler, 2005) are of the opinion that KM involves much more than just IT. Brixler (2005) contends that the latest advances in information and communication technology can facilitate processes, such as channeling, gathering or dissemination of information; however, the final burden is on the manager or knowledge worker to translate that information into actionable knowledge that enhances performance (Bixler, 2005). Consequently, it is the individual or person that embraces the available knowledge and uses it to the institution's benefit. This question did not, however, allow respondents to comment

on how they viewed IT to be knowledge, whether as in a supportive or enabling role or as a whole.

Knowledge perceived as tools and methodology received a response rate of 41% which indicates that less than half of the respondents perceived knowledge to be about the tools and the methodologies, which could be an indication that institutions are beginning to recognize that the sharing of knowledge requires tools to enable it, but that relying on tools alone will not necessarily provide a successful implementation of the management of knowledge. Ichijo and Nonaka (2007) contend that, as a result of there being too few research initiatives that analyze how KM can contribute to overcoming important management issues facing leaders, managers tend to discuss KM without really applying it to actual business issues, which has had the affect of overemphasizing IT. They further contend that managers fail to understand how KM can contribute to solving these important issues like globalization, corporate governance and corporate change.

FIGURE 4. 5 PERCEPTION OF KNOWLEDGE



Source: developed by Author after survey conducted in 2007

It was interesting to note that 55% considered knowledge to involve organizational learning and memory as well as to be the core competence of the institution. Given that more than half of the respondents expressed this view, the assumption would be that more formal strategies would be in place to include the management of knowledge, the perceived core competence of the institution. This was certainly not the case in this sample of institutions responding to the survey.

KM theorists (Hislop, 2005, Wiig, 1997, Davenport and Prusak, 2000b, Ichijo and Nonaka, 2007) explain that explicit knowledge is easily codifiable and that tacit knowledge is perhaps more difficult to codify as it involves human processes like creativity, conversation, judgment, teaching, and learning, and is therefore difficult to manage in the traditional way. Within the survey, 76% responded that they perceived knowledge as explicit, and 72% perceived it to be tacit; however, only 35% perceived knowledge as codifiable. This result could imply that the respondents were referring to the explicit knowledge being codifiable; however this is not clear. The question did not specify the type of knowledge but referred to all knowledge, and perhaps this distinction could have been made more explicit in the survey.

When asked about the perception of the *elements of knowledge*, more than half of the respondents (see Figure 4. 6 on page 158) indicated that the elements of knowledge within their institution were based on personal skill and experience (89.7%), and that they embraced both explicit as well as tacit (86.2%) knowledge, that they were derived from an intellectual process (79.3%), and that the sharing of knowledge involved interaction and networking (75.9%). A large proportion of the respondents also indicated that knowledge was both objective (75.9%) as well as subjective (72.4%). 48% indicated that it was difficult to share knowledge; 69% believed that knowledge has a cultural aspect to it.

A few respondents perceived KM as "… *not a concept we use*" (Cranfield, 2007). A reason given for certain institutions not taking part in the survey was due to a lack of understanding (six institutions) as indicated in the comment "the *terms you are using are not understood or used within our institution in that way and therefore we will not be able to complete the survey*" (Cranfield, 2007). The terms used were, in reality, commonly used and understood in business; the apparent lack of understanding in some institutions was therefore in itself significant.

4.3.1.2. PERCEPTIONS OF KNOWLEDGE MANAGEMENT

The survey aimed to present the state of KM practices, both intended and current, of HEIs within the United Kingdom. From the survey, it was clear that KM, as a definition and concept, was still not widely understood as a management tool that could be used within Higher Education. An overwhelming majority (93.1%) of HEIs from the sample did not have a common definition for KM, and 66.7% did not have a KM strategy in place. A minority of institutions (18.5%) were in the development

stages of the KM strategy and only 7.4%, two institutions, indicated that a KM strategy was in place.

Interestingly, one of the institutions with the KM strategy in place did not have a formal definition for KM within the institution; the question as to why this was the case was addressed in the second phase of the research.

TABLE 4. 2 PERCEPTION OF KNOWLEDGE MANAGEMENT

Answer Options	Response Percent
Capture of relevant knowledge	76%
Knowledge sharing through immersion in practice – watching and doing	62%
Knowledge sharing through rich social interaction	62%
Conversion of tacit into explicit knowledge	52%

Source: developed by Author after survey conducted in 2007

The institution with the KM definition in place indicated that KM was perceived as:

> "Knowledge that can be easily transferred to others by identifying, capturing and transferring information and knowledge"(Cranfield, 2007)

The perspectives of KM varied from the objectivist perspective, as defined by Hislop (2005) as the capture of relevant information (76%) , and reflected by response number 1 (see Table 4. 2 above) being the most popular response in this survey, to the practice-based perspective, also defined by Hislop (2005) and reflected by numbers 2 and 3 in Table 4. 2. 62% indicated that Knowledge Management was the sharing of knowledge through immersion in practice, as well as through rich social interaction. 52% indicated that Knowledge Management involved the conversion from tacit to explicit knowledge.

From the survey, it was clear that KM was perceived to be both tacit and explicit which involved some conversion from tacit to explicit, organizational and individual, both objectivist in nature yet, practice based as well. Ichijo and Nonaka (2007)

suggest that it is these varying views within the organization about what KM is, and the absence of a common ground for managing knowledge, which leads to KM ending up on the agenda for IT managers, not on the agenda for top management.

4.3.2 KM POLICY, STRATEGY AND STANDARDS

Denning (2009:p.1) suggests that the first and most difficult stage of initiating a KM program is to put in place a strategy for sharing that knowledge which "entails a collective visioning as to how sharing knowledge can enhance organisation performance and the reaching of consensus among senior management of the organisation that the course of action involved in sharing knowledge will in fact be pursued". This collective envisioning would also involve setting certain standards and establishing policy. This section of the questionnaire aimed to understand whether the sample HEIs had a strategy, policy or standards for managing knowledge, and whether there was consensus on the course of action involved in sharing knowledge within institutions.

4.3.2.1. KNOWLEDGE MANAGEMENT STRATEGY

It was evident that a KM strategy was not a strategy that was well known or used within the institutions participating in the survey, or, certainly, the majority of the participating individuals were not aware of it. All of these institutions had IT strategies in place and in use, but only 7% (2 institutions) indicated that a KM strategy was in place and in use, and another 21%, or 6 institutions (Figure 4. 7 on page 160), indicated that a KM strategy was in the development stages. Unfortunately none of these institutions expressed an interest in participating in the follow up case study, so as to establish the context for the development of the KM strategies.

Of those who completed this question by either indicating that the institution had a KM strategy or that it was in the development stages, the majority of these respondents referred to their KM strategy as being an information strategy or an IT strategy. Some misunderstanding about what a KM strategy is and could be, and how it should and does differ from an Information strategy, was apparent. There was therefore some overlap in the usage of the terms, data, information, knowledge, and the management of Information and Knowledge within different sectors. Some respondents described their KM strategy (Cranfield, 2007):

"The strategy is not explicit. The Information Strategy focuses on the management of information (both personal and institutional) and the provision of facilities giving an individual easy access to all the information they need for a particular task".

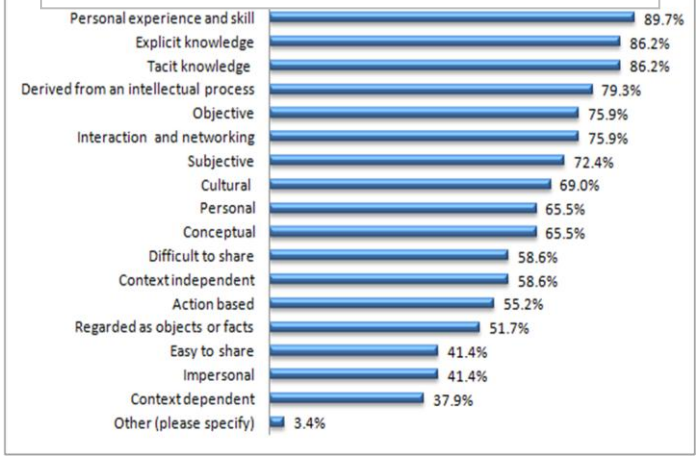
"Operates for the broad areas that can be loosely defined as lying in the information services domain - not extended to cover all organizational/administrative processes yet".

"Aspects of knowledge management will be dealt with in the current work on the next generation of the Information strategy".

"Development of institutional digital repository, and procedures for its use".

Although there is a fine line between IM and KM at both the conceptual and practical levels (Bouthillier and Shearer, 2002), there is a difference between Information Management and Knowledge Management. Bouthillier and Shearer (2002) further purport that there is a myriad of definitions offered for knowledge and its management in the literature; they contend that KM is a continuation of IM which often leads to the two terms being used interchangeably. The apparent lack of understanding within the institutions in the sample was, in itself, significant as within this context creators and producers of knowledge are employed, and, therefore, the assumption would be that they would be very clear about the two terms and the benefits for HEIs, which the research suggests is not the case.

FIGURE 4. 6 PERCEPTIONS OF THE ELEMENTS OF KNOWLEDGE.



Source: developed by Author after survey conducted in 2007

21% indicated that there were some practices of KM within certain departments within their institution. One institution indicated that several departments had local plans in place to address KM, and most of the institutions who indicated that KM

was being addressed in some way indicated that the Information Services (or Information Technology department) was responsible for KM implementation; only one institution indicated that KM was managed by a particular Faculty.

The survey therefore revealed that, if there was any KM activity in HEIs, it was mainly being dealt with by the IT department and was included within the IT strategy, rather than in a separate strategy document or by other senior members of staff

4.3.2.2. DEPARTMENTAL KM IMPLEMENTATION

Although the research was primarily interested in whether HEIs had overarching, systemic KM plans that encompassed the institution as a whole, participating institutions were asked whether any local KM plans or strategies were in place within departments or areas of the administration. 21% of the respondents indicated that they did have KM activity within certain schools; the flavour of the implementation ranged from schools beginning to address Knowledge Management to those with KM type activities being implemented. Most of the implementation, however, was in the IT department which included document management and institutional repositories. One faculty at a participating university was relatively active having KM practices in place and staff within the faculty were involved in projects to support regional businesses in the adoption of KM practices and the development of knowledge products. Within this particular university and specifically within one particular Faculty, practices included:

- Developing a group strategy for knowledge sharing and dissemination;
- Setting up functional leadership groupings for the capture of good practice;
- Faculty management team actioning the learning sets;
- New staff mentoring induction programme.

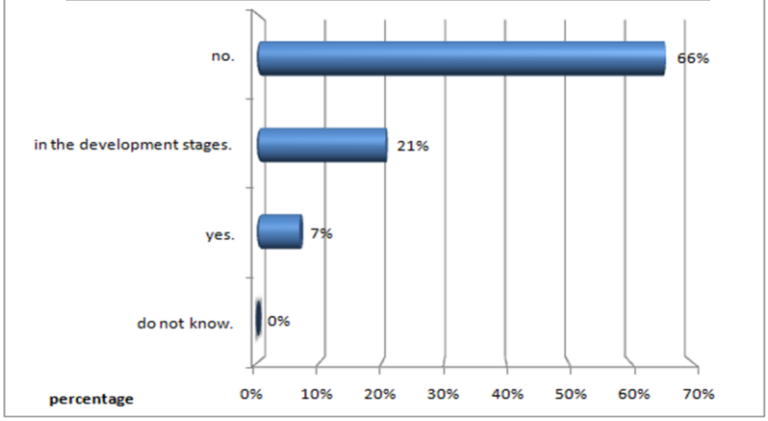
4.3.2.3. REASONS WHY INSTITUTIONS CHOSE NOT TO USE KM

Institutions were asked to indicate their reasons for not choosing KM as a management tool. The main reason given was that the benefits were not clearly understood; however, the same number of respondents could not offer a reason as to why it was not used.

A smaller proportion of the respondents (14%) indicated that the culture of HEIs was not suitable, and lack of funding contributed to why it was not used. One institution indicated that it was not clear how a KM strategy was different from an Information

strategy and yet another indicated that they did not regard KM as "a meaningful concept".

FIGURE 4. 7 KNOWLEDGE MANAGEMENT STRATEGY.

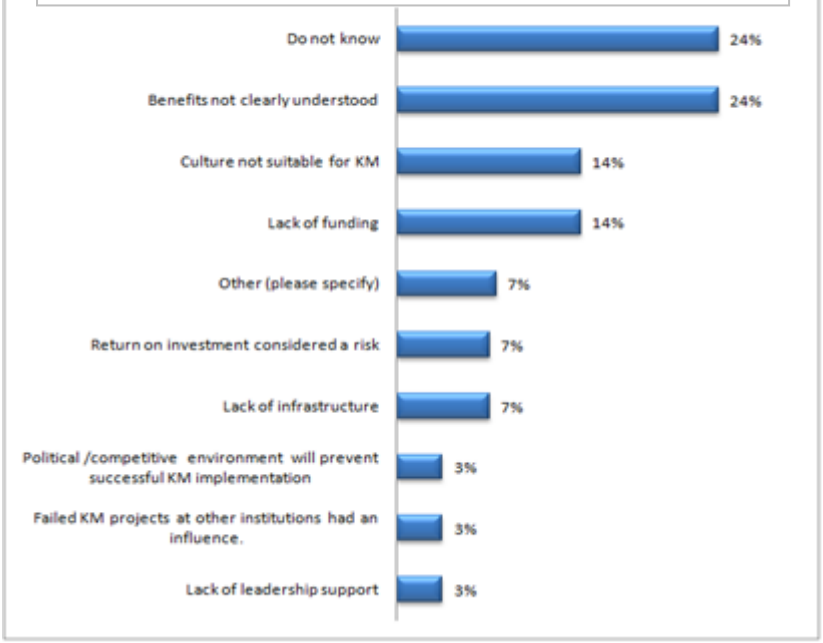


Source: developed by Author from survey conducted in 2007

Only a few respondents indicated that they did not choose to use KM due to financial risks or that the university did not have the correct infrastructure.

The detailed motivation and explanation for some of these reasons were addressed in the second phase of the research.

FIGURE 4. 8 REASONS FOR NOT IMPLEMENTING KM WITHIN THIS CONTEXT



Source: developed by Author from survey conducted in 2007

4.3.3 ORGANIZATIONAL CULTURE

Kidwell *et al* (2000) contend that culture is a key ingredient in an institution's ability to embrace KM. They define this culture as the "beliefs, values, norms and behaviours that are unique to an organisation" (Kidwell *et al*., 2000:p.31). A *strong culture* is said to have a high degree of similarity between the values and goals of the organisational members, the hierarchical integration and the strategies (Sporn, 1996). Sporn (1996) continues to define *weak cultures* as those with relatively loosely linked subunits or groups with cultures that can be contradictory to each other. This section of the questionnaire aimed to establish the kind of knowledge sharing culture prevalent within the sample of universities.

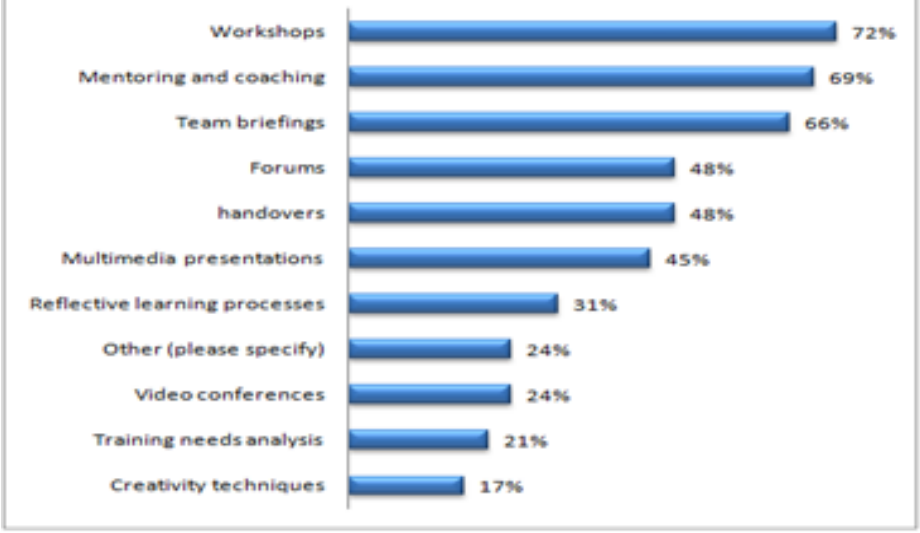
The survey revealed that the lack of an 'appropriate' organisational culture was one of the main challenges to KM implementation. This is in keeping with other surveys conducted in business; for example, results from the Ernst & Young International survey conducted in 1996 and cited in Stankosky 2005, showed 80% of the respondents indicating that organisational culture was the main barrier to KM success, and in 2008, the survey revealed that the same challenge exists within this sample of HEIs. To this extent, universities are no different from the business world. But one can ask 'What is an appropriate culture for KM?', and more specifically, "What kind of culture do HEIs have?"

4.3.3.1. KM CULTURE AND THE HIGHER EDUCATION CONTEXT.

The culture of an organization is difficult to assess objectively because it is grounded in the taken-for-granted, shared values and beliefs of individuals and groups in the organization (Sporn, 1996). In 2000, Kidwell *et al* contended that the culture within Higher Education was changing from one that said "*What's in it for me*?" to a new culture that asks "*What's in it for our customer*?" They further argued that HEIs were developing a culture that could embrace KM. Some theorists (Roman-Velazquez, 2005, Davenport and Prusak, 2000a, Lam, 2005) have cited the creation of the 'correct' environment or knowledge-culture as one of the main contributors to successful implementation of KM, and attribute the failed KM initiative to the absence of a 'knowledge culture' within the organisation (for example, Lam 2005). HEIs are inherently, by nature, knowledge creating institutions, and the question has been posed whether the concepts of KM are applicable to universities. Some would argue that, as sharing knowledge is critical to their *raison d'être* (Kidwell *et al*., 2000, Serban and Luan, 2002b), HEIs should have the appropriate culture and

environment to enable and facilitate the effective use of institutional-wide knowledge and hence, be able to apply KM principles and practices to harness effectiveness, efficiency and innovation for sustainable competitive advantage. However, the survey showed a striking lack of awareness of KM in the sample of HEIs, as well as an absence of systemic practices of KM. Further investigation into reasons for this is presented in Phase II of the research.

FIGURE 4. 10 HOW KNOWLEDGE SHARING IS FACILITATED.



Source: developed by Author

Responses from this survey indicated that culture was ranked as one of the main challenges for being able to implement KM successfully. But what is culture, and what kind of culture is alive within HEIs, and in particular universities? Why is culture perceived as one of the main challenges within this context? In essence, the culture of an organisation is its dominant pattern of shared beliefs and values (Cole, 2004). A culture supportive of KM is one that values knowledge and encourages its creation, sharing and application. It was clear from the survey that developing such a culture remained one of the biggest challenges (the second highest), for most KM efforts and for Higher Education in particular.

4.3.3.2. KNOWLEDGE SHARING ACTIVITIES

Knowledge Management involves the sharing of knowledge. The survey attempted to ascertain the different ways in which knowledge was shared within the HEI environment. In the main, it was apparent that Knowledge sharing (see Figure 4. 10 above) was facilitated mostly via workshops (72%), mentoring and coaching (69%),

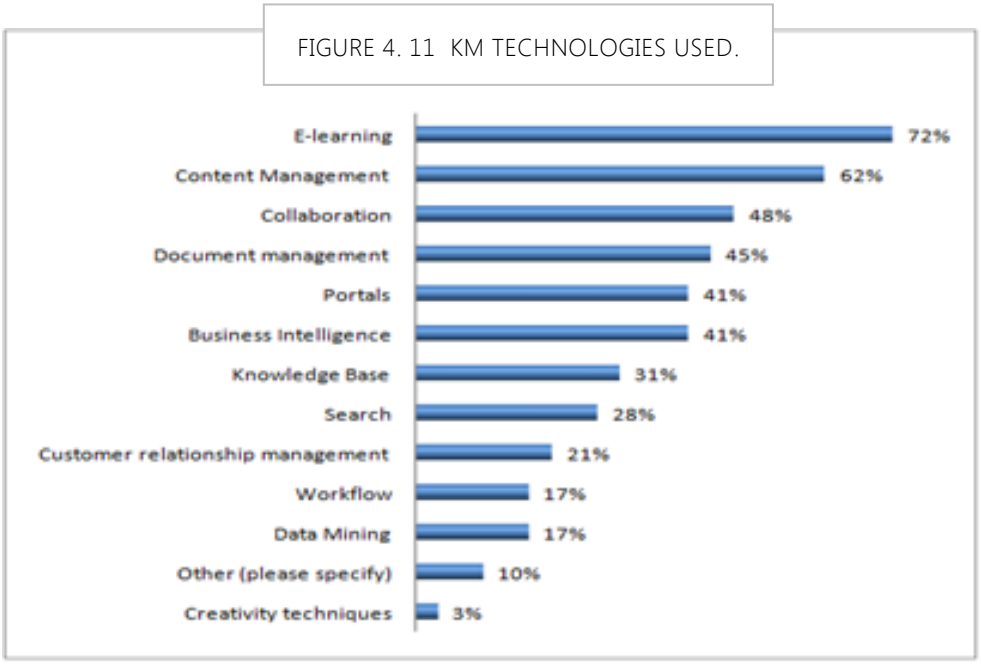
team briefings (66%), forums (48%) and handovers (48%). One institution indicated that it used all of the listed mechanisms to share knowledge in one way or another; however, it was done in pockets rather than on an institutional basis. Another indicated that the institution was very diverse and hence, a variety of the listed mechanisms was used. Still another institution indicated that much was left to individuals and networks of colleagues, and was not supported on a formal basis at the centre of the institution, which made it non-systemic and unreliable.

Knowledge Management was promoted and encouraged in a top down (59%) fashion, and was encouraged rather than enforced. It was also encouraged on an individual basis. The HEIs surveyed displayed different styles of leadership; hence, new initiatives were promoted in different ways within the sample of institutions; however, the majority of the institutions used encouragement rather than enforcement. Only 3% indicated that they used enforcement to ensure KM was adopted within the institution.

4.3.3.3. THE ROLE OF TECHNOLOGY

Most firms make their first moves with KM in the domain of technology (Davenport and Prusak, 2000a). Universities are no different, as can be seen from the survey response to the question "How has KM developed within your institution?"

FIGURE 4. 11 KM TECHNOLOGIES USED.



Source: developed by Author

E-learning, content management, collaboration tools, document management, portals, business intelligence, knowledge bases, search engines, customer relationship management, data mining, workflow, and creativity techniques were tools listed in this survey (ranked in order of usage) as being used within Higher Education to support KM. This list continues, and hence, the role of KM technology within Higher Education is to enable and support the aims and objectives of KM as understood and practiced within an institution, which, as Gates (1999) indicates, is a means to an end not the end in itself, the end being to increase institutional intelligence, or corporate intelligence which is the measure of how easily an institution can share information broadly and how well people within the institution can build on each other's ideas.

Knowledge Management requires powerful and sophisticated hardware and software tools to enable and support it; however, emphasis on the technological aspects alone will achieve little progress toward Knowledge Management (Serban and Luan, 2002b). Davenport and Prusak (2000b:p.18) contend that although low cost computing and networks have opened up the potential for KM opportunities, they are only the "pipeline and storage system for knowledge exchange". They further contend that technology does not create knowledge and cannot guarantee or even promote knowledge generation or knowledge sharing in a culture that does not favour those activities (Davenport and Prusak, 2000b). The fact that 'knowledge is power' is as "old as the human civilization, but having the means to put in place organization wide systems that constantly and systematically capture and capitalize on this power is a fairly recent, evolving capability" (Serban and Luan, 2002b:p.7).

One of the aspects of this survey was to investigate the KM technologies used within the HEI context and to establish the most common technologies used to support and enable the KM agenda. The survey revealed that E-Learning (72%) was the most common technological tool used to support KM, which is not surprising as it enables training support to the student at anytime, anywhere. Content Management (62%), "the ability to manage content over the web" (Luan and Serban, 2002:p.89), and document management (45%) were listed as technologies used to support KM, which Luan and Serban (2002) contend are key to a sound KM infrastructure.

Collaboration, portals and business intelligence were the next most common set of technologies and methods used to support KM (see Figure 4. 11 on page 163).

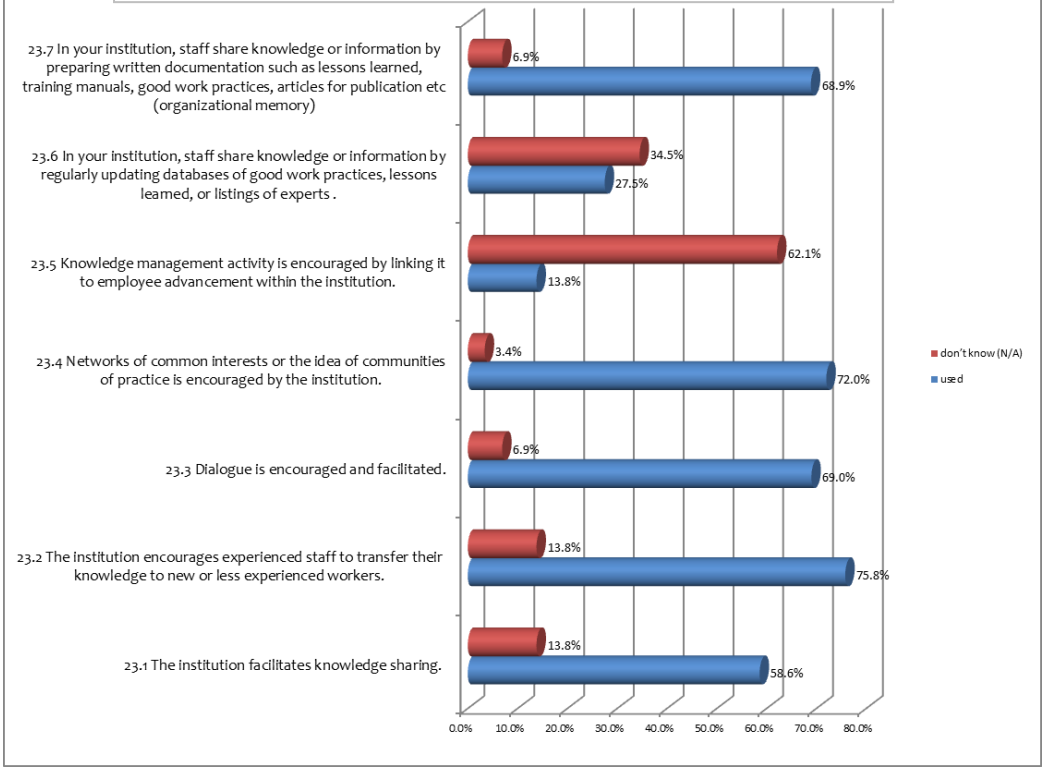
It was interesting to note that only 21% used Customer Relationship Management[18] (CRM) as a tool, despite the benefits for managing the relationship between an institution and its 'clients' or 'customers' (both words are considered contentious if used within the HEI context), and despite the culture of HEIs having changed to one that favoured the views of the 'customer' or learner. This was not a common tool used within this context.

The survey also aimed to understand the level of integration of the various information systems between functional areas within HEIs. When information systems are not integrated on some level, data capturing, storing and retrieval inefficiencies and duplication of effort, are inevitable. The survey revealed that 69% of the institutions responded that they had integration with 'some functions'. 14% had 'very little integration' and only 10% indicated that they had a 'fully integrated system'.

HEIs were asked to list freely the systems they had which supported KM within their institution. The technologies ranged across the different functional areas of an institution from student learning and teaching – blackboards, WebCT, VLEs and library systems - to general administration – CRMs, CMS, finance, HR, shared drives, emails and intranets, student information and record systems, identity management and authorisation, workflows, performance reviews and annual development. One institution indicated Communities of Practice within the IT and e-learning groups.

[18] FAYERMAN, M. 2002. Customer Relationship Management. *In:* ANDREEA SERBAN, J. L. (ed.) *Knowledge Management: Building a Competitive Advantage in Higher Education*.) contends that Customer Relationship Management (CRM) is an enterprise wide business strategy designed to optimize revenue and customer satisfaction by organising the institution around customer segments. It provides improved customer tracking, understanding and responsiveness, important in an environment that is competitive, and provides a means for better customer interaction and service, hence, representing an important link in the knowledge chain. He further contends that CRM encourages symbiotic relationships between customers and colleges, as well as within higher education institutions itself.

FIGURE 4. 12 KNOWLEDGE SHARING WITHIN HEIS



Source: developed by Author from survey conducted in 2007

Capturing tacit knowledge is said to be a difficult task (Ichijo, 2007, Serban and Luan, 2002b, Davenport and Prusak, 2000b). However, its substantial value makes it worth the effort (Davenport and Prusak, 2000b), and according to Ichjo (2007) the key challenge in sharing knowledge is in recognising the value of tacit knowledge and understanding how to use it. Serban and Luan (2002b) describe Knowledge Management as "the systematic and organised approach of organisations to manipulate and take advantage of both explicit and tacit knowledge, which leads to the creation of new knowledge," that people can use to create, compete and improve. The survey revealed that inductions and performance appraisals were the most common tool used within the HEI context to convert tacit to explicit knowledge (52%). The survey also indicated that project groups used formal processes for this conversion.

Only one institution indicated that its administration processes incorporated KM within it. 21% did not know if it did, and 28% indicated that their processes did not include KM.

4.3.4 RESPONSIBILITY FOR KNOWLEDGE MANAGEMENT PRACTICES

4.3.4.1. PERSONS RESPONSIBLE FOR KM

The survey aimed to understand whether KM required certain people to drive and implement it, and whether certain roles within the institution were responsible for KM. It was interesting to note that the main drivers of a KM strategy were perceived to be the senior management (28%), librarians (21%) and institutional planners (14%), whereas the formal persons responsible for KM were listed as the Head of Library, IT Directors and Institutional Planners. How KM became the responsibility of these functions and roles was not addressed by the survey, and hence, was a question addressed within the case study.

The perception was also that Knowledge Management practices should be the responsibility of executives and managers (79%) as well as academics (66%), and not only the preserve of the KM managers and officers.

4.3.4.2. DRIVERS OF KM TECHNOLOGY

For any new technology or management tool to be implemented within an organisation, it needs to be promoted and driven to receive the support it requires to be successful or effective. The survey revealed that more respondents were of the opinion that the drivers of the KM technology should be the senior management team (45%), whilst 31% indicated that it should be the IT specialists or executives exclusively. This finding corresponds with Bechina and Ndlela (2009), who contend that leadership is central in the implementation of technological change. Technology, however, by itself "will be insufficient to create and sustain knowledge management" (Luan and Serban, 2002:p.85).

4.3.5 BENEFITS AND CHALLENGES

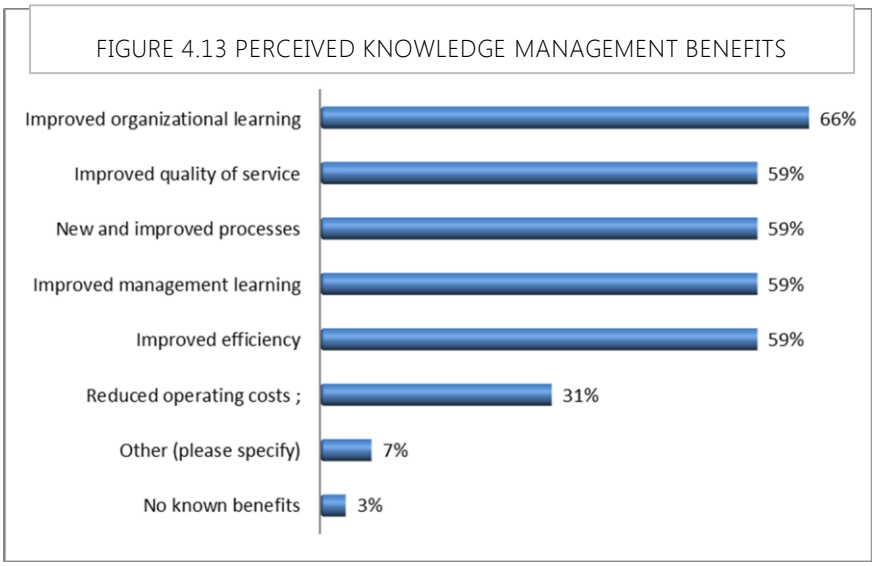
4.3.5.1. BENEFITS

HEIs stand to gain several benefits from the implementation of an institution-wide strategy for KM (Serban and Luan, 2002a, Kidwell *et al.*, 2000, Hamre and Pickette, 2002, Metcalfe, 2006). Kidwell outlines the benefits for the administrative services, the strategic planning process, for student services and alumni services, the research process, and the curriculum development process. Kidwell *et al* further contends that an institution-wide approach to KM can lead to improvements in sharing both explicit and tacit knowledge and the subsequent surge of benefits (Kidwell *et al.*, 2000). Literature suggests several benefits for KM implementation, but how do

universities perceive the benefits of KM? Five benefits that yielded the highest frequency of responses in the survey were:

- Improved organisational learning (66%);
- Improved quality of service (59%);
- New and improved processes (59%);
- Improved efficiency (59%), and
- Improved management learning (59%).

FIGURE 4.13 PERCEIVED KNOWLEDGE MANAGEMENT BENEFITS



Source: developed by Author

Perceptions of benefits of KM within HEIs seem to be linked mainly to quality, improvement and learning rather than as a tool to reduce operating costs; however, HEIs are expected to be innovative, creative and entrepreneurial in their pursuit to attract additional funding, especially given the financial pressure and constraints within which they need to work. HEIs are 'not-for-profit' institutions, and the external pressure for HEIs to account for their quality of services and products, could possibly account for this emphasis in quality.

4.3.5.2. CHALLENGES

The survey revealed six main challenges contributing to difficulties in the implementation of KM within the HE sector:

- A lack of KM strategy (59%);
- Cultural issues (56%);
- Diversity of the internal constituency and their needs (56%);
- Organisational structure (33%);
- The lack of a central unit taking the responsibility to drive the agenda (30%), and
- Politics and resistance to change (26%).

Two of these challenges correspond to those discovered in a survey distributed by Ernest & Young (Stankosky, 2005); for example, culture (80%), and organisational structure (54%). It was interesting to note that the HEI sample placed less significance on the support from senior staff (hence, not a major challenge 7%), compared with 46% in the Ernest& Young survey of 1996.

The survey conducted with this sample of institutions highlighted the lack of an effective, corporate KM strategy as the main challenge for successful KM implementation within higher education. KM is used within many business organisations across the world, for example, by Accenture (Falk, 2005) Cable & Wireless (Kumar, 2005), and the Reserve Bank of New Zealand (Anand *et al.*, 2002), as well as being most commonly found at highly successful Japanese companies like Honda, Canon, Matshushita, NEC, Sharp, and Kao (Nonaka, 1998). Implementation within these companies has not been without its challenges, yet the benefits seem to be considered to outweigh the difficulties. Each of the three main challenges is discussed below:

A) LACK OF A KM STRATEGY

The lack of a KM strategy is cited by this sample of universities as being a major challenge to KM implementation. Despite the lack of an overall KM strategy, most universities reported that KM projects were being implemented within specific organisational units or to meet particular needs; however, there was no evidence of a holistic approach to KM being implemented on an institution-wide level.

The majority of institutions within the sample indicated that the emergence of KM was as part of an IT project (35%). 21% indicated that KM emerged as part of a change management programme, and the same percentage indicated that it emerged as part of a bottom-up process. At this point, it was not clear from the

survey what the drivers were for this emergence, and therefore how and why it emerged.

Although KM was encouraged from the top-down, as seen in section 4.3.3.2 on page 162, it is clear that the KM activities emerged from the bottom-up; hence, the top-down encouragement occurring after the bottom-up emergence of KM.

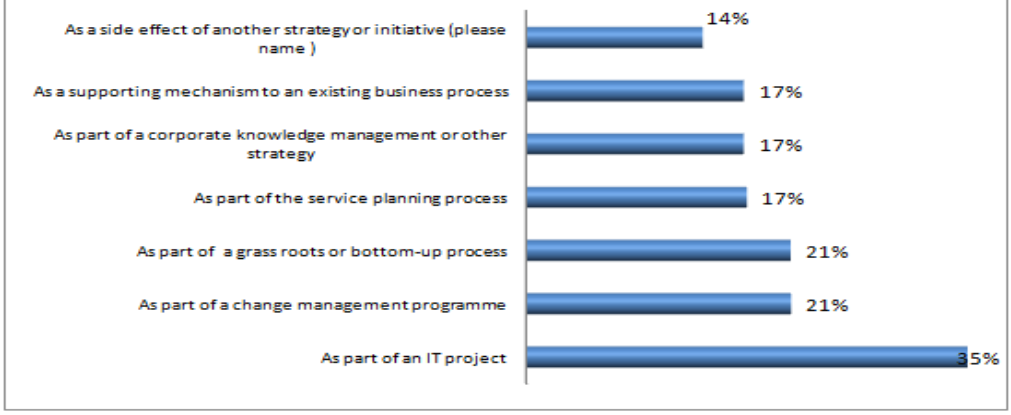
There are different schools of thought as to the best approach to introduce any new idea or tool. One suggestion is to start at the top of the organisation and develop the strategy after the senior management have accepted and approved the idea and have recognised the potential benefits; the second approach is to implement on a small scale at grass roots, show the proof of concept as being successful and then to solicit support from senior management. Within HEIs, it is always difficult to solicit support for a radical approach to process change without any empirical evidence of success. Universities tend to be risk averse; the very nature of HEIs in creating and sharing knowledge also tends to require the demonstration of evidence at a level beyond that required in the private sector; and the collegiate traditions in higher education also stimulate debate and argument that may dilute any corporate strategy. The first approach is always extremely difficult in any environment as competing functional constraints will influence whether support is given or not. Higher Education technology projects are generally implemented in response to a particular need, driven or identified by the 'business', and if there is no strategy in place this could lead to a proliferation of projects within the area of KM, without an institution-wide approach to it.

B) CULTURAL ISSUES

The lack of an appropriate organisational culture is cited by this sample of universities as being one of the main challenges to KM implementation. This is in keeping with other surveys conducted in business; for example, results from the Ernst & Young International survey conducted in 1996 and cited in Stankosky 2005, showed 80% of the respondents indicating that organisational culture was the main barrier to KM success. To this extent, universities are no different from the business world.

A culture supportive of KM is one that values knowledge and encourages its creation, sharing and application. Developing such a culture remains one of the biggest challenges for most KM efforts, and for Higher Education.

FIGURE 4. 14 EMERGENCE OF KNOWLEDGE MANAGEMENT



Source: developed by Author after survey conducted in 2007

C) DIVERSITY OF THE INTERNAL CONSTITUENCY AND THEIR NEEDS.

Becher and Trowler (2001) contend that the ways in which academics organise their professional lives are directly related to the intellectual tasks they are engaged in, or their discipline, hence, forming disciplinary cultures within an institution. These cultures describe the "taken-for-granted values, attitudes and ways of behaving which are articulated through and reinforced by recurrent practices among a group of people in a given context" (Becher and Trowler, 2001:p.23). For Clarke (1996), he views the growth in knowledge and the subsequent growth in disciplines as the most important change affecting Higher Education. With growth, there is also decline and hence, certain disciplines were subject to change (Becher and Trowler, 2001), which leads to uncertainty among academics, and this, in turn, can create a stronger defensive culture within disciplines to ensure its sustainability. Becher and Trowler (2001) further contend that these shifts in the HE landscape have significant implications for academics, their various tribes and disciplinary territories. Academics tend to 'belong' to their discipline and then the institution within which they work (Becher and Trowler, 2001). Given the many different academic disciplines and the subsequent sub-cultures, a divergent set of needs arise within this context. Any university does not only include academic departments, but also administrative departments to support the academic work, and often these departments also have different cultures from those of the academic ones, as well as a different set of needs. This divergent set of needs make implementing a system that provides information and knowledge to those requiring it, a challenge, and has been listed as one of the main challenges by the sample of institutions.

4.3.6 DEVELOPMENT WITHIN THE INSTITUTION

Serban (2002a) postulates that there are several reasons for the emergence and growth of the field of Knowledge Management. Serban and Luan (2002a) contend that some of the reasons include, information overload and chaos, information congestion, information and skill segmentation and specialisation, workforce mobility and turnover, and competition. This section of the survey aimed to understand how KM developed within HEIs, what external or internal factors influenced the emergence of KM and whether this sample of HEIs had Institutional Research Units (IRUs).

4.3.6.1. EMERGENCE OF KM

KM type activities emerged within this sample of institutions as part of IT projects (35%). The fact that KM emerged primarily within this sample of institutions as part of an IT project does mean that substantial work within the field of KM at an organisational level is still required.

Knowledge Management processes perform best when enabled by powerful, easy to use technologies; however, emphasis on technology alone will achieve little progress toward Knowledge Management (Serban and Luan, 2002b) and institutions will need to ensure that the other aspects of KM, for example learning, the organisational issues, and leadership issues (Stankosky, 2001), are addressed.

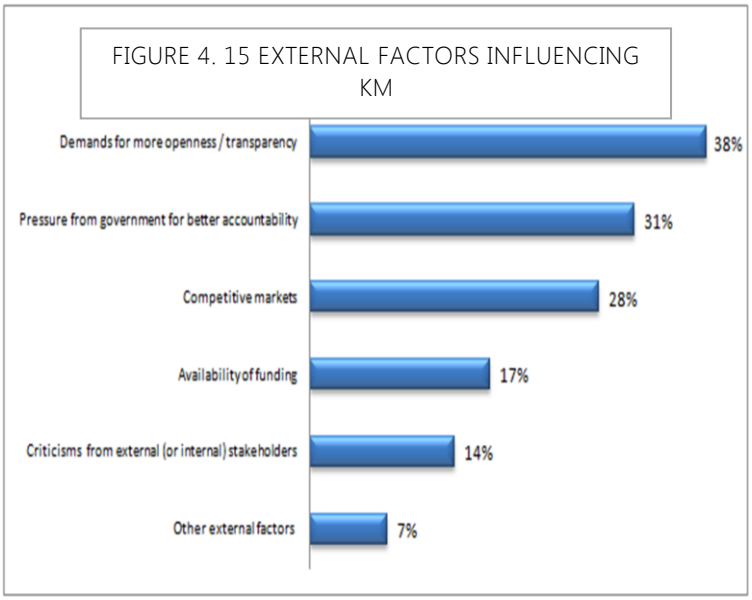
4.3.6.2. FACTORS INFLUENCING KM INCLUSION

Organisations generally are driven or influenced by internal and/or external factors to include management tools perceived to be able to assist and improve their way of 'doing business'. HEIs are no different in this respect, as they too are influenced by both internal and external forces to improve services and products.

Some of the external factors (Figure 4. 15 on page 173) influencing the decision to start thinking about including KM type activities within these HEIs were:

- Demands for more openness and transparency (38%);
- Pressure from government for better accountability (31%), and
- Competitive markets (28%).

FIGURE 4. 15 EXTERNAL FACTORS INFLUENCING KM

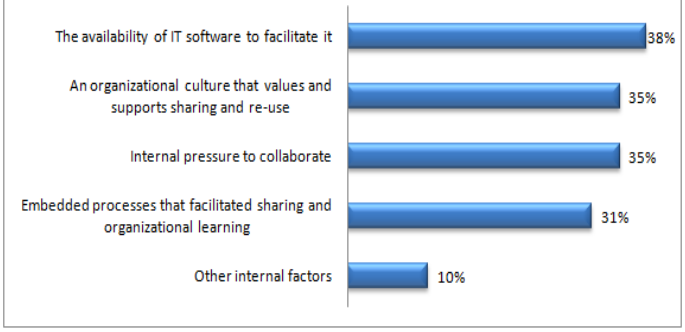


Source: developed by Author after survey conducted in 2007

Some of the internal factors (see Figure 4. 16 below) listed as influencing the implementation of KM activities were:

- The availability of IT software to facilitate it (38%);
- An organizational culture that values and supports sharing and re-use (35%), and
- Internal pressure to collaborate (35%).

FIGURE 4. 16 INTERNAL FACTORS THAT INFLUENCE KM IMPLEMENTATION



Source: developed by Author after survey conducted in 2007

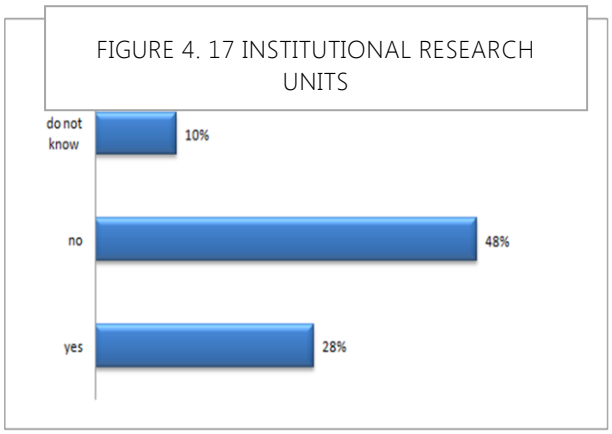
4.3.6.3. INSTITUTIONAL RESEARCH UNITS

The survey was interested to understand how many HEIs had Institutional Research Units. The mission of institutional research (IR) is to enhance institutional effectiveness by providing information which supports and strengthens operations management, decision making, and unit and institutional planning processes (McLaughlin and Howard, 2004). Serban (2002) contends that, from an institutional research perspective, knowledge management can and has already become the "fifth face" of the Higher Education profession and Institutional Researchers have the potential to become the first generation of knowledge managers. The IR function could be a change agent in leading institutions to becoming true learning institutions, which Senge (1990) maintains is difficult to do as most organisations are poor learners by nature of their design, the way they are managed, job definitions and, mostly, how all are trained to think and interact which leads to learning disabilities. Senge (1990) further postulates that organisations learn only through individual learning, which does not necessarily guarantee organizational learning; however, without it, no organizational learning will occur. The learning therefore must start with the individual and Senge (1990) refers to this individual learning and growth as '*personal mastery*'. Senge defines a learning organisation as follows:

> "People with high levels of personal mastery are continually expanding their ability to create the results in life they truly seek. From the quest for continual learning comes the spirit of the learning organisation" (Senge, 1990:p.141).

Although this question suggested that 48% of institutions (see Figure 4. 17 on page 175) within the sample did not have an institutional research unit, when asked a different question in a different section i.e. in section K in relation to KM and competitive advantage, 'Does your institution have a unit dedicated to market research, looking at competing HE institutions', more than half of the institutions (55%) indicated that they did, despite almost half indicating that they did not have an Institutional Research Unit. It was not clear why this discrepancy existed between the two questions; however, this could be because IR is an American term; many HEIs within the UK and within this sample of HEIs do not have a unit called an IR unit (28% indicated that they did). Most HEIs in the UK undertake IR functions, but they do not have IR units as such, with those functions undertaken in other parts of the organisation, such as planning, marketing, or quality assurance. However, most institutions do have units responsible for market research.

FIGURE 4. 17 INSTITUTIONAL RESEARCH UNITS



Source: developed by Author after survey conducted in 2007

4.3.7 PROGRESS

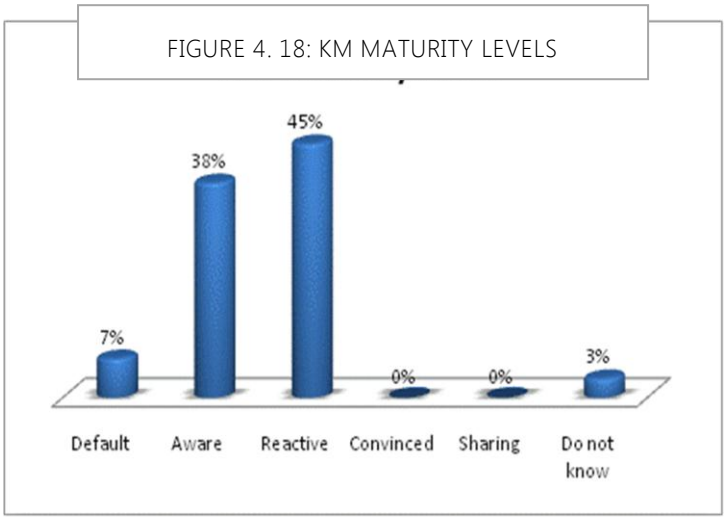
The survey used 5 maturity levels (Mitchel, 2006) to gauge the levels of KM 'maturity' as described and defined below:

- DEFAULT (dependence on individual skill, knowledge fragmented);
- AWARE (sharing on needs basis, routine and procedural knowledge shared);
- REACTIVE (beginnings of integrated approach to KM, enterprise wide systems in existence etc.);
- CONVINCED (EWS in place and quality, currency and usage high, leverage of internal and external expertise high, understand measurable benefits for sharing);
- SHARING (sharing institutionalised and second nature, organisational boundaries are irrelevant, knowledge return on investment integral to decision-making).

The majority of the institutions fell within the '*Reactive*' maturity level which implies that these institutions are at the beginnings of an integrated approach to KM; enterprise systems are in existence, but awareness and maintenance are moderate; the organisation collects and understands metrics for KM; and managers recognised the roles of and encouraged knowledge sharing. 38% were of the 'Aware' maturity which implies that these organisations share knowledge purely on a needs basis, that routine and procedural knowledge was shared, and they were able to repeat basic business tasks of the institution. None of the institutions responding were in the 'Convinced' or 'Sharing' maturity levels.

Another question concerned the year institutions started considering the use of KM as a tool and shows that 21% of the institutions considered using KM between 2004-2006. A few did consider using it earlier, i.e. before 1995, but this was rare.

FIGURE 4. 18: KM MATURITY LEVELS



Source: developed by Author after survey conducted in 2007

4.3.7.1. COMPETITIVE ADVANTAGE

HEIs today are beginning to face very similar challenges of competition to businesses. However, fundamentally, most universities are very different from businesses as they do not exist to ensure that a substantial profit is made. The debate about the nature of this difference continues; as HEIs have undergone substantial restructuring to their funding support, they have had to rethink ways in which to remain viable and sustainable. This involves investigating alternative ways in which to remain viable and sustainable, and to find new and creative ways in which to remain competitive, not only for students but in staff and resources.

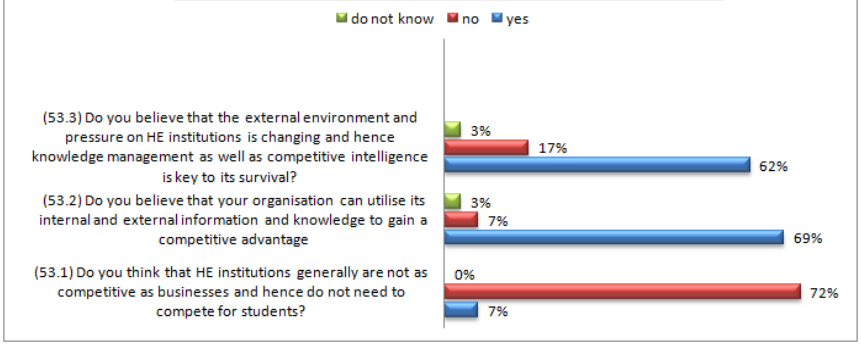
The survey revealed that the three main reasons why institutions chose to use KM were:

- To increase efficiency by using knowledge to improve student processes (55%);
- To train staff to meet strategic objectives of the organisation (55%); and
- To improve the competitive advantage of the institution (45%).

45% of the HEIs within the sample were therefore using KM to improve their competitive advantage.

It was interesting to note that 72% of the respondents were of the opinion that HE institutions did need to compete for students, and a further 69% were of the opinion that internal information and knowledge could be used to gain competitive advantage. Knowledge Management and competitive intelligence were considered key to HEI's survival by 62% of the respondents, especially given the changing external environment and pressure exerted on them.

FIGURE 4. 19 KM AND COMPETITIVE ADVANTAGE



Source: developed by Author after survey conducted in 2007

4.3.7.2. INCENTIVES TO IMPLEMENT KNOWLEDGE MANAGEMENT

Institutions were asked to list what would motivate them to increase the KM activities within their institutions; these were the themes emerging from the comments:

- Clear evidence of 'return on investment';
- Value added aspect of KM with a clearer indication of improved efficiency /effectiveness;
- Increased 'workforce' expressions of satisfaction;
- Others (peers/competitors) implementing similar things;
- Comprehensive re-engineering of processes arising from introduction of new software in all major business applications, post-merger; benefits realisation projects arising from the above;
- Reduction in student numbers; loss of academic staff in particular researchers; need to cut costs;
- Failure to improve competitive position, missing opportunities;
- It would need to be established as a recognised priority in the Information services strategy via a specific need, e.g CRM, document management, i.e it will be driven by pragmatism rather than ideals of concepts;
- Clear competitive threats or advantages;

- External promotion of the issues;
- Funding council pressure.

4.4. DISCUSSION

The KM survey was distributed to HEIs across the United Kingdom and a good response rate of 46% was achieved. The survey attempted to gain a better understanding of KM practices within HEIs in the UK. In particular the research aimed,

> To better understand Knowledge Management practices and perceptions within the UK HEI context.

More specifically to understand:

- Whether Knowledge Management was being *used as a management tool* within Higher Education Institutions in the United Kingdom, to enhance competitive advantage;
- What the *contributing factors* were, that hindered or promoted the implementation of Knowledge Management within the HEI context;
- What the *perceptions and practices* of KM were, within this context.

Phase I of the research aimed to broadly address each of these questions and gain an overview of the state of KM within this context; Phase II addressed issues arising from this phase as well as aiming to gain a deeper understanding of KM within this context and underlying reasons why it was used or not used.

Significant findings could be drawn from the survey about the perceptions and practices of KM within the Higher Education context within the UK. A list of these is presented:

4.4.1 KNOWLEDGE MANAGEMENT USED AS A TOOL WITHIN HEIS

– LIMITED NUMBER OF HEIS ADOPTING AN INSTITUTION-WIDE APPROACH TO KM.

The survey revealed that only a limited number of institutions were using or in the process of using KM as a tool within these HEIs at an organisational level. This was reflected by only 28% of the institutions either having a KM strategy (7%) or being in the process of developing a KM strategy (21%). Although the lack of a KM strategy is not an indication of the lack of KM activity within the institution, it is a reflection of the importance senior executives and the Vice-Chancellor places on it as a tool. This was an interesting finding as HEIs are large organisations with a very diverse set

of needs, and hence, to introduce any new management tool used within industry into this context can be considerably slower than in industry; however, KM, although not on a large scale, was being considered as a tool. 21% of the HEIs surveyed indicated that there were local KM strategies within departments and schools.

It was evident that a range of IT projects were in place to support KM more broadly; however, there was rarely any institutional-wide drive to incorporate KM, and hence, no systemic approach to KM.

Despite only a limited number of institutions having a KM strategy, KM type activity was occurring within these institutions in an *ad-hoc* fashion.

– THERE WAS A LACK OF KM DEFINITION WITHIN THE HE CONTEXT.

Progress towards commonality of use of KM definitions across the higher education institution context is slow. It was evident that there was a lack of a common definition or definitions for KM within this context; an overwhelming majority of 93% of institutions indicated that they did not possess a common definition for KM for external or internal use.

– KM USED AS A TOOL TO ENHANCE COMPETITIVE ADVANTAGE.

Although the majority of institutions did not have a KM strategy in place, respondents viewed KM as being important in supporting the institution to be competitive (45% of the HEIs within the sample were using KM to improve their competitive advantage). A large majority of the respondents did consider the need to compete for students, did view the use of information and knowledge as crucial to gaining a competitive advantage and considered KM as well as competitive intelligence key to their survival. When asked the question "Do you believe that the external environment and pressure on HE institutions is changing and hence, knowledge management as well as competitive intelligence are key to its survival?" 62% responded positively.

– BOTTOM-UP APPROACH USED MORE GENERALLY.

Institutions tend to use the bottom-up approach more readily. Other approaches included KM being introduced as part of a change management programme. Only 17% indicated that it emerged as part of a strategy or plan something that is evident in the lack of KM strategy and plans within this context.

– EMERGENCE OF KM VIA TECHNOLOGY DRIVEN PROJECTS.

The emergence of KM has been primarily through technology driven projects. Work would therefore need to be done within this environment to encourage the other aspects of KM to be incorporated to support its initiatives.

4.4.2 PERCEPTIONS OF KM.

– HEIS CONSIDERED LEARNING ORGANIZATIONS

A large number of the respondents considered HEI to be learning organizations - one that was continually expanding its capacity to create its future.

– HEIS DO NOT HAVE THE CORRECT SHARING CULTURE AS YET TO IMPLEMENT KM ON ORGANIZATIONAL LEVEL, EFFECTIVELY, FOR COMPETITIVE ADVANTAGE

From the survey, only 14% of the institutions responding indicated that their institution had the correct culture to use KM for competitive advantage. A very small proportion (7%) indicated that they were developing the correct culture. 28% indicated that they did not have the correct culture and a further 24% were uncertain whether they did.

– HEIS PERCEIVED TO BE ABLE TO CREATE COMPETITIVE ADVANTAGE THROUGH STAFF COLLABORATION.

69% indicated that they did believe that an institution can create competitive advantage through staff members collaborating in a way that would create it. This is interesting as HEI staff are professionals who specialize in their own specific areas and hence, create their own fiefdoms (Becher and Trowler, 2001). Academics are also measured by their research output which places a certain amount of pressure on them to publish and perhaps creates an urgency to create their fiefdoms. It is therefore interesting to note that staff collaboration is recognized as a tool that could enhance its competitive edge.

– KM CONSIDERED TO BE ABLE TO YIELD BENEFITS FOR HIGHER EDUCATION BY USING THEIR INFORMATION AND KNOWLEDGE

Only one institution indicated that it did not consider KM as a management concept, which is significant in that all the rest considered it as a concept that was not clearly understood yet one that could yield benefits. The impression created is of many institutions that recognise a potential advantage, yet are uncertain how to proceed; the policy, if one exists, tends to be one of "*laissez-faire*", letting projects develop in an *ad hoc* fashion, led by enthusiasts and KM specialists.

This question was not answered by all the respondents; only 15 institutions answered the question (51%), however, 38% thought that HEIs could use its internal and external information and knowledge to gain a competitive advantage.

– PERCEPTIONS OF BENEFITS ARE LINKED TO QUALITY, IMPROVEMENT AND LEARNING.

Improved organisational learning was perceived as the most important benefit for HEIs. Improved quality of service and new and improved processes, improved efficiency and improved management learning were also listed as benefits. A significant finding is that KM is not perceived to be a management tool primarily intended to reduce costs and enhance economic efficiencies, but the benefits are linked more closely to quality, learning and improvement.

– HEIS FALL WITHIN THE 'REACTIVE' MATURITY LEVEL CURRENTLY.

The "*Reactive*" maturity level implies that these institutions are at the beginnings of an integrated approach to KM; enterprise systems are in existence, but awareness and maintenance are moderate, the organisation collects and understands metrics for KM, and managers recognised the roles and encouraged knowledge sharing.

– HEIS CONSIDERED TO BE COMPETITIVE AND HENCE, NEED CREATIVE MANAGEMENT TOOLS (LIKE KM) TO SUPPORT IT.

Respondents considered HEIs to be competitive and recognise that the use of KM to provide a competitive advantage.

– HEIS REQUIRED CERTAIN INCENTIVES TO MOTIVATE THEM TO INCREASE KM ACTIVITIES.

The perception was that HEIs required certain incentives or catalysts to motivate them to increase or include KM activities. Participants listed a number of incentives needed to motivate them to increase KM activity (see section 4.3.7.2 on page 177)

4.4.3 CONTRIBUTING FACTORS THAT HINDER OR PROMOTE KNOWLEDGE MANAGEMENT WITHIN THE HEI CONTEXT.

More than half of the respondents listed the main factors contributing to the hindrance of KM implementation to be: lack of a KM strategy, lack of the correct culture, and the diversity of the internal constituency and their needs (discussed in section 4.3.5.2 on page 168). Other contributing factors included:

– BENEFITS NOT CLEARLY UNDERSTOOD.

Interest in KM implementation was evident; however, the benefits were not clearly understood. Even within institutions where the benefits were understood, there was no clear direction as to the implementation.

– DISTINCTION BETWEEN INFORMATION AND KNOWLEDGE NOT CLEARLY UNDERSTOOD.

Issues of why a different KM strategy was required when an IM strategy was available were raised, indicating clearly that more progress is needed to clarify these different procedures and to explain the need for both to be managed and integrated. There is a distinction between these related concepts; however, KM is a newer concept which followed after IM and the two often get used interchangeably.

– ORGANIZATIONAL STRUCTURE, THE LACK OF A CENTRAL UNIT, POLITICS AND THE RESISTANCE TO CHANGE, RECEIVED THE NEXT HIGHEST RESPONSES.

What kind of organizational structure do HEIs have that contributes to impeding the use of KM, what type of politics is evident and rife in an academic environment that would add to the difficulty of KM implementation? Reponses received from respondents highlighted that KM was perceived to be able to add benefits as well as contribute to achieving a competitive advantage; however, KM was not widely used at an organizational level as a tool to enhance it. Answers to some of these questions were sought in Phase II of the research.

4.5. SUMMARY

The survey provided valuable information about the practices and perceptions of KM within the Higher Education context, and provided an excellent overview of KM. The researcher did not find any secondary data that could yield this overview of KM within this context and hence, this was a necessary and important phase to the research as a whole.

The survey provided an overview to the three main research questions and enabled findings to be extrapolated. The survey provided an insight into the understanding and practices of KM within the HEI context, and provided a platform for the next phase of the research, the Case Study, which included seven carefully selected HEIs who agreed to be part of the research. A large portion of the sample, 41%, expressed an interest in participating in a further investigation into KM practices within HEIs, which resulted in seven case studies being conducted. Phase II, written up in chapter 5 (an overview of the history, context, shape and size, change, at each

institution is presented) and chapter 6 (themes, concepts and findings are discussed), provides the Qualitative Analysis of the Case Study conducted at the seven participating HEIs in the UK.

This phase, the Quantitative Phase, was undoubtedly a necessary phase which provided a general understanding of the practices and perceptions of KM in the HEI context. In 2007 when this phase of the research was conducted, some literature cited HEIs as not being ready to embrace KM; others cited HEIs as having the appropriate mission of creating and disseminating knowledge but whether that encapsulated all forms of knowledge especially organisational knowledge within HEIs was a question that needed answering. Universities are always slower than industry to incorporate business management tools or technological innovations; this phase of the research aimed to understand whether HEIs were considering KM as a tool to be used, whether they had heard of the management tool, and whether they had practices in place that could harness the benefits of KM. Each of these questions could not be answered in detail without the initial general survey to provide overview data, conducted during phase I. The second phase, the Case Study, was guided and enriched by the data of the first phase which enabled a deeper probing into some perceptions and practices, and highlighted challenges, difficulties and some successes.

Despite the survey providing a rich set of data for the research, certain questions particular to the HEI context were raised and needed to be presented and investigated within this context with the assistance of the Case Study. For example, questions in relation to the particular cultural issues peculiar to the Higher Education context and its impact on KM implementation, and questions in relation to the type of organisational structure and culture HEIs have that could hinder the embrace of KM. A series of conundrums emerge. Why do only 2 institutions within the sample have a KM strategy plan in place when 66% perceive HEIs to be able to utilise KM as a tool to enhance competitive advantage? If HEIs exist to share knowledge, why is there no common understanding of KM practices and principles within this context, and why is KM not embraced more within this context? Further research and investigation into these factors was required; and hence, the case study aimed to expand the investigation.

Phase II, the Qualitative Phase, follows.

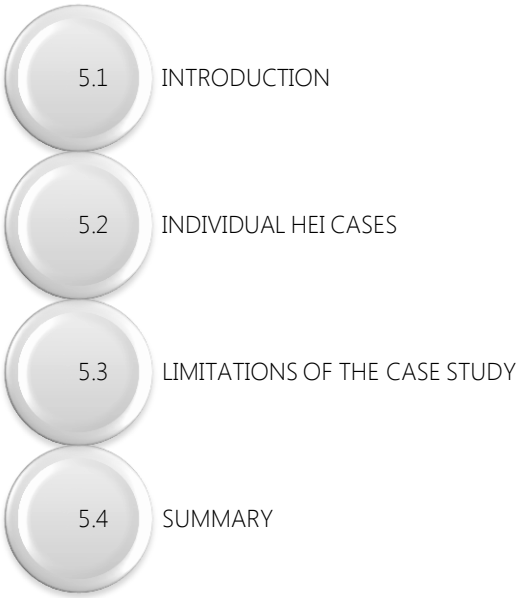
PHASE II

QUALITATIVE ANALYSIS

Chapter 5

THE CASE STUDY – THE CONTEXTUAL ISSUES EXPLAINED

THE CONTEXTUAL ISSUES EXPLAINED



CHAPTER 5

"....context is essential in order to observe and understand the phenomena of interest in a more holistic way. Emphasizing context in Knowledge Management (KM) initiatives helps managers chose the most suitable way to implement KM in accordance with their business strategy" (Hsieh et al., 2008:p.1)

5. THE CASE STUDY – THE CONTEXTUAL ISSUES EXPLAINED

5.1. INTRODUCTION

This chapter presents the contextual issues surrounding the 7 cases. The contextual background of the cases is crucial to understanding the institution's ability to change due to external or internal pressure. The case study perceptions and practices of Knowledge Management as conducted within each Higher Education Institution, is presented in chapter 6 with the themes and concepts emerging.

Each case description starts with the context, history, shape and size of the institution cases, as well as, where possible, some of the changes that have taken place within institutions. This background and the contextual issues were crucial to understanding the institution's history in relation to its current perceptions and practices of KM. Change and how institutions needed to cope with it over time, as well as the pressures for change and how this impacted on institutions' ability to react to their environment and embrace new 21st century management tools, became a crucial factor in understanding an institution's position on new management tools.

This research adopted Grounded Theory as the methodology of choice, and hence, aimed to uncover themes, concepts and a *substantive* theory from the interviews and subsequently the data, rather than using the interviews to verify or test a preconceived hypothesis. Seven HEIs within the UK were included in the case with senior members of staff (see Table 5. 1 on page 192).

The chapter includes interviewees' quotations; however given the decision to respect the anonymity of the cases and the interviewees, reference is made to

the case as a number and the person interviewed is given a number in the case, for example, case 1.1 would refer to the first person interviewed at University Case 1. The chapter ends with a discussion about the limitations and constraints of the research and the impact of these factors on the research.

5.2. INTERVIEW FORMAT OF CASES AT INSTITUTIONS

The interviews took on a semi-formal structure with a desired set of questions to guide the interview (see Appendix B on page 319 for guide of questions); however, adhering to all the questions was not always possible in the interview, given the semi-formal nature of the interviews and the time limitations. A few participants requested colleagues to be part of the interview process and this was endorsed. At certain institutions a cross section of staff, in terms of seniority and responsibility, was included within the cases; however, in the majority of institutions, this was not the case.

5.3. WITHIN CASE ANALYSIS: PROFILE OF INSTITUTIONS AND PARTICIPANTS

Institutions were selected to reflect a good spread of the different types of universities within the UK (see Table 5. 4 on page 194), with 3 institutions being within Scotland and four from across England (see Table 5. 2 on page 193). The sample of institutions reflected a range of institutional size in terms of student numbers, with a large number being medium to large institutions (see Table 5. 3 on page 193). The sample also included both research intensive institutions (5 institutions) and primarily teaching institutions (two institutions)

TABLE 5. 1 ROLE OF PARTICIPANTS

ROLE	NUMBER
ACADEMIC DEAN	3
DIRECTOR/ MANAGER OF IT / INFORMATION	3
VP / EXECUTIVE DIRECTOR : KNOWLEDGE MANAGEMENT	2
REGISTRAR	2
VP / SENIOR OFFICER: KNOWLEDGE TRANSFER PARTNERSHIP	2
VP	1
ASSISTANT TO PRINCIPAL	1
PRO VICE-CHANCELLOR	1
LIBRARIAN	1
KNOWLEDGE MANAGER	1
PROJECT STAFF	1
TOTAL	18

Source: developed by Author from Case study in 2007/8

Eighteen senior staff members participated in the case study. The interviews took on a one-to-one nature in most cases; however, in a few cases; the one-to-many interview type was preferred.

TABLE 5. 2 : DEMOGRAPHICS OF PARTICIPATING UNIVERSITIES

DEMOGRAPHICS	NUMBER
SCOTTISH	3
ENGLISH	4
TOTAL	7

Source: developed by Author from Case study in 2007/8

A large majority of the institutions taking part in the case study received a substantial amount of income from the Government, and within the sample it was evident that these were usually the older, research intensive, well established universities receiving their University status before 1992, hence, universities with reputations of excellence.

TABLE 5. 3: SIZE OF INSTITUTION PARTICIPATING WITHIN CASE STUDY (2007-2008)

SIZE OF INSTITUTION	NUMBER
LESS THAN 10,000 STUDENTS	1
10,000> AND <15,000 STUDENTS	3
>15,000 AND < 20,000 STUDENTS	2
>20,000 AND < 30,000 STUDENTS	1
TOTAL	7

Source: developed by Author from Case study in 2007/8

5.3.1 HISTORICAL BACKGROUND OF INDIVIDUAL CASES

Each of the institutions had a different story to tell about their development over the years. It became clear in the interviews that not all institutions had the same starting point, and that they certainly had different external and internal pressures to develop into institutions that were accountable, and committed to excellence. Five of the seven cases were relatively large institutions, with only two having a student

population of 10,000 and below. The majority were research intensive institutions receiving substantial amounts of money from the government, some substantially more than others. It was interesting to note that the smallest University in the sample of cases received the third highest amount of income.

Each of the institutions was restructured at some point over the past few decades, for some the catalyst was the abolition of the HEI divide in 1992 and for others external pressures and the new knowledge economy of the 21st century were the stimulant for change. Some of the changes involved restructuring the university into schools, and Faculties, others into colleges and schools. Change within each of the universities is discussed in section 5.3.3 on page 199.

The background of each is portrayed next to depict some of the differences and similarities and to contextualise KM within this.

TABLE 5. 4: CATEGORY OF INSTITUTIONS PARTICIPATING WITHIN THE CASE STUDY (2007-2008)

TYPE OF INSTITUTION	NUMBER
POST -1992 FORMER POLYTECHNICS[19]	2
POST-1992 : OTHER[20]	1
PRE-1992: RUSSELL GROUP[21]	3
PRE-1992: OTHER[22]	1
TOTAL	7

Source: developed by Author from case study in 2007/8

5.3.1.1. CASE 1

University *Case 1*, established by a Royal Charter in the late sixteen hundreds, is internationally renowned for teaching and research in the United Kingdom. It is one of the first few universities to be established in Britain, making it one of what is termed, the 'ancient universities' of the United Kingdom. It enjoys research and teaching prestige and is part of the Russell group, being amongst the largest and most prestigious in the world, currently ranking in the world's top 25. With an

[19] In 1992 Higher Education in the UK underwent major change, abolishing the Polytechnic institutions as a type of Higher Education institution and University status conferred on some. Institutions within the UK having the polytechnic status pre-1992 and received university status in 1992

[20] Post-1992: other – Higher Education institutions with university status after 1992 but not classified as polytechnics before 1992.

[21] Russell Group - A group of HEIs within the UK that enjoy an excellent reputation internationally and that receives two-thirds of universities' research grant and contract funding in the United Kingdom.

[22] Pre 1992: other – Institutions with the university status before 1992 not in the Russell Group.

income of more than £550 million reflected in 2008, and with a research income of more than £100 million, it also enjoys the financial stability and richness required to not only sustain its current offerings and reputation, but also to bring about the necessary changes imposed by the current economic and political climate.

University *Case 1* is a large University, boasting in the region of 25,000 students. The University divides into 3 colleges - Humanities and Social Sciences, Medicine & Veterinary Medicine, and Science and Engineering, and has a total of 21 schools. The University has recently undergone substantial restructuring to achieve this.

This University is considered a research-intensive University and for the purposes of this research has been classified as 'Pre-1992 – Russell Group' indicating that it is a University which was established pre-1992, before the year when major change was imposed by the government abolishing the divide in the HEI system. Being part of the Russell Group of HEIs within the UK enables this institution to enjoy an excellent reputation internationally. The Russell Group receives two-thirds of universities' research grant and contract funding in the United Kingdom.

The Principal contends that "*Our tradition for excellence in education and research, and our drive to disseminate the results of both to the wider world, remain at the heart of everything we do*" (The University of Case 1, 2008:p.3).

5.3.1.2. CASE 2

Case 2 is considered a dynamic, innovative and forward-looking institution located in the heart of a vibrant city, considered a major international centre for finance and the arts. It is a leading modern university in the United Kingdom and has a growing international reputation as a provider of high quality education, research and knowledge transfer. Its origin dates back to 1964 when it was a Technical College. The institution has taken on different names; has merged with different colleges; and has acquired various buildings, which later became part of its multi-campus. In June 1992, it was awarded the status of University, when the UK witnessed the abolishing of the 'binary divide' of HEIs. University Case 2 therefore had the polytechnic status pre-1992 and, after becoming a university in 1992, underwent the kind of changes required to begin to establish itself as a university.

University *Case 2* is a multi-campus modern university, situated over five main campuses. The university divides into three main faculties that host more than

14,500 students from more than 100 countries. It was rated the top university in its area for graduate employability in 2008. Its strategic plan expresses ambitions of being widely regarded as the best modern university in the area by 2010. For the year 2007/8, it received an annual income of just below £100 million, of which £4 million was earmarked for research grants and contracts.

5.3.1.3. CASE 3

University Case 3, founded in the fifteenth century, is one of Scotland's first universities and hence, one of the oldest universities in Britain. Over six centuries it has established a reputation as one of Europe's leading and most distinctive centres for teaching and research.

University *Case 3*, in the academic year 2008-2009, had a total student population in the region of 7,000 of which approximately 6000 were undergraduates and 1,000 were postgraduates. It is therefore considered a small to medium sized university, yet a strongly research intensive university receiving a large portion of income from the government and funding councils.

This University was ranked within the top 20 universities in the UK for the quality of all its research across Science and the Arts according to the results of the 2008 UK Research Assessment Exercise published on 18 December 2008 (Case 3, 2009). The RAE 2008 has demonstrated that University Case 3 has significantly expanded its complement of world class research since 2001, and is in the Top 100 of the Times Higher Education World Universities Ranking. In terms of the funding it received in 2007-2008, the total value of research grants awarded to the University was almost £40 million.

5.3.1.4. CASE 4

University Case 4 has a rich history stretching back to the nineteenth century. In the nineteenth century, the institution was renamed; however, later, the university split into two separate parts. One part, went on to become the university in the late nineteen hundreds and the other part changed its name a few times from a Technical College, to a Technical Institute, then to a College of Technology and finally to a University College. In 1996, both organisations joined together again to form the University of Case 4 as it is today. Today, the University has established a successful global presence with a 2006/7 turnover of some £156m, of which 5% was allocated for research grants and contracts.

University *Case 4* is considered a relatively large institution with 4 faculties and 12 schools. The student population reaches nearly 20,000 and it has a staff complement of 2,500.

This university is said to be widely regarded as one of the UK's leading enterprising universities, delivering real-world results to business, industry and the community in the UK and internationally.

5.3.1.5. CASE 5

This case university, one of the UK's newest universities, received university status in July 2005 and officially changed its name in August 2006. Although the university status is relatively new, its origin as a place of Higher Learning dates back to the nineteenth century. This particular case has evolved into a university through various mergers over the years with other colleges in the area, until eventually; it became a university in 2005. These beginnings can be seen in the University today, within the subject areas of art and design, technology and maritime studies and throughout the University in its emphasis on preparing students for modern professional practice (The University of Case 5, 2009). Today the University is known for its distinctive way in which it links together student learning, applied research and service to business and the community.

University *Case 5* has expanded over the years from approximately 10,000 students in 2006/7 to 16,000 students in 2008/9. As it is a relatively new university, its focus is primarily teaching with a few research degrees being offered.

5.3.1.6. CASE 6

This particular university, Case 6, has its modern roots tracing back to the early twentieth century when it opened its doors as a technical college. It later became a Polytechnic in the late nineteen hundreds and eventually received university status in 1992 when the 'binary system' of education was abolished.

The University is organized into 4 academic Faculties and 13 departments within these. It has academic strength in Pharmacy, Health and Sports Science, Teacher training, Media, Art and Design, Business, Computing and Technology and the Social Sciences. The University received £96 million in income for the year 2007, of which £4 million was allocated to research grants.

University *Case 6* is a medium sized university boasting more than 17,000 students in 2008 with 2% of its student population being research students. This university has recently developed a social responsibility statement and hence, being acutely aware of its responsibility to the region within which it is situated.

5.3.1.7. CASE 7

The University Case 7 is said to be internationally recognised as an innovative and entrepreneurial centre of knowledge and technology transfer to business and the public sector. It works in partnership with a wide range of companies and organisations from the largest multi-nationals to the smallest new businesses. This university was given approval by the Government in 1961 and received its Royal Charter of Incorporation in 1965. From its beginnings, the University has sought to be excellent in both teaching and research, and has now secured its place as one of the UK's leading research universities, confirmed by the results of the Government's Research Assessment Exercises of 1986, 1989, 1992, 1996 and 2001 (The University of Case 7, 2009). The University has done exceptionally well and is placed in the top 10 universities in the UK for the quality of its research.

University *Case 7* is a medium to large university, initially admitting only a small intake of graduate students in 1964; however, in October 2007, the student population was over 16,000. The University has 29 academic departments and over 50 research centres and institutes, in four faculties. The University hosts two HEFCE Centres for Excellence in Teaching and Learning (CETLs). This university is very entrepreneurial in style and nature and is the only one within the sample to have more of a central model of management and governance than a devolved one.

The University has been enterprising and outward looking from its origins and sought to match academic excellence with relevance, a policy which was not always popular in the late 1960s and early 1970s, but which has become one of its hallmarks (The University of Case 7, 2009).

Over the years it has become known as a beacon among British Universities for its dynamism, quality and entrepreneurial zeal (The University of Case 7, 2009). At the time of the changes in the financial restructuring and funding of universities, this particular University seized the opportunity to look at ways in which it could augment public monies with income generated through its own activities. The University has been able to develop both academically and physically because of the

ventures, which have made a significant contribution to its sustainability. The University has sought, through its activities, to play a significant role in the economic and social life of its region, by forging considerable linkages with local business and enterprise, and works closely with local schools and FE Colleges(The University of Case 7, 2009).

5.3.2 CHANGE AND THE IMPACT ON UNIVERSITIES

5.3.2.1. CHANGE AND UNIVERSITY CASE 1

University *Case 1,* considered a well-established, old, traditional university, was not subjected to the major change imposed by the government in the early 1980s and 1990s. They were considered also to be at the forefront of technology boasting some cutting edge research technology at the time; however, investment in the core administration of the university was not a tradition. An interviewee contended:

> "….everybody was happy and they were actually happy with the service that we were providing, even though it was very old-fashioned. It was very difficult to get any resources to do anything that was different" (Case 1.2, 2007:p5).

It was much later that the lack of change in the earlier years, as well as market forces, massification, and external pressure from government to increase accountability, brought about the realisation that new ways of managing the institution, its facilities and students, were required. This University therefore underwent substantial change in the early 21st century to consolidate its faculties and departments into colleges and schools, and substantial investment was ploughed into the core administration of the university to ensure efficiency and effectiveness of operation. The academic structure and the support services were completely reorganised and restructured. Interviewee 1 had this to say about the change:

> "We became much more harmonized and much more businesslike in how we run the universities business, from what used to be 136 departments and 10 faculties it was completely rethought" (Case 1.1, 2007:p.1).

By the 21st century, when globalisation, marketisation, increased accountability and increased competition for staff and students were all forces impacting on how institutions were managed, the University was in a fortunate position in that major change had not been imposed on it by Government in the 1990s. Its workforce was more susceptible to the proposed changes and, hence, the institution was in a

position, both financially and culturally, to undertake the perceived required change at this time to accommodate some of the factors impacting on the way in which it would do 'business'. Substantial investment was directed towards improving the student admission system and processes. A large project was invested in to facilitate the communication process to be more effective and efficient through web portals, enabling better distribution of information about the institution, internally as well as externally, and placing the communication tools in the hands of those responsible for the information.

5.3.2.2. CHANGE AND UNIVERSITY CASE 2

University Case 2 is said to have undergone substantial change over the past decade. Depending on the driver for change and the type of change incurred, this brings about uncertainty, and instability in any organization. When interviewing at the University, a clear message coming from the interviewee was that the University had undergone so much change over the past decade that any further substantial change implementation to processes or systems would need to be a directive from the Funding Councils or the Government. The opinion expressed was that the University did not have the luxury of financial or other resources to implement major change unless they could guarantee known and measurable benefits to the institution. The institution was not opposed to change; however, the 'pathfinder' notion of being led by other, well established and highly respected universities offering proven examples would be the impetus for that change. Knowledge Management and the implementation of it, together with the required changes necessary, was referred to as one such management innovation that would require the 'pathfinder' approach, before truly being implemented on a large scale within this particular University.

5.3.2.3. CHANGE AND UNIVERSITY CASE 3

University Case 3 is considered a prestigious University, enjoying substantial grants from the government as well as other funding bodies. It enjoys an excellent reputation, and hence, in the early 1990s, when all the major changes took place within universities, this particular University continued to enjoy some form of stability. Given the external pressures, both globally and nationally, and given the University's mission of excellence, it has recently begun to embrace 21st century management tools to enhance its efficiency mission. The change therefore brought

about by this University will enable it to continue to strive to be excellent, as a senior executive said, "….we strive for excellence in everything we do" (Case 3, 2009:p.1).

5.3.2.4. CHANGE AND UNIVERSITY CASE 4

The University Case 4 mission 'Realising our Vision', is the transformation ideal of the University and is a process of innovation and radical change affecting every area of the University life. The reforms taking place aim to put the University at the leading edge of HEIs in the UK.

In order to realise their vision, they have undergone transformation in four areas: Governance, Strategic Leadership, Academic Management, and Professional Services. This transformation is said to eventually bring about a new culture which will encourage a more open and consultative working environment. Flexible and innovative approaches to the delivery of teaching are being developed, and enterprise and entrepreneurship are being strengthened to increase its national and international profile.

In the 1980s, this University underwent major change imposed on it by the Government and the Funding Councils; this University chose to embrace innovative methods driven by cost. Some of these focused on converging certain services, for example the Library, Information Technology, Audio Visual and the Learning Technology services were merged. An interviewee had this to say:

> "…. when during a period in the 80s we were severely…had our grant severely cut by the Government and the Vice-Chancellor at that time took innovative approaches to various areas driven by cost and this was one of them. So he started the convergence so it goes back quite a long time. We believe that we are one of the first universities to do a converged service ……."(Case 4.1, 2007:p1).

5.3.2.5. CHANGE AND UNIVERSITY CASE 5

This case institution received its University status in 2006, and hence, is a relatively young University. Although the historical changes that this particular University underwent were not discussed in the interview, it is clear that over the years the University would have needed to change in not only its mission but also its aims and objectives and reach. Shattock (2003) contends that by far the most important disadvantage a University could experience seems to lie in a university's origins, whether it was created as a wholly new institution or whether it was awarded University status as an existing institution which impacts on its ability to focus on research as an institution. These institutions, therefore, tend to have a different type

of mission and focus on the teaching than research, and gradually introduce research as the staff and facilities allow; given the RAE and the funding criteria, these institutions are at a distinct disadvantage compared with the others who started as universities.

5.3.2.6. CHANGE AND UNIVERSITY CASE 6

The University has undergone substantial change over the years, moving from being a technical college, to a Polytechnic, to having University status in 1992. Universities who followed this path and became universities in 1992, underwent changes not only in structure and academic offerings, but also in aims and objectives and strategies to ensure that they were able to seamlessly move from being a mainly teaching led institution to including research within its offerings. As can be expected, this presented major challenges. However, the University perceived itself as one that was fairly adaptive, reflective and responsive to its surrounds and the external environment and pressures imposed, an opinion echoed by the interviewee.

5.3.2.7. CHANGE AND UNIVERSITY CASE 7

This University enjoyed its status from inception and did not undergo the same degree of change as some others who received University status in 1992, when the Government abolished the 'binary divide' within Higher Education. The University always had an entrepreneurial strategy and hence, sought to fund itself through various entrepreneurial means when the government changed its financial support structure to universities. This entrepreneurial attitude, even when it was not that popular with others at the beginning, has enabled this University to flourish and continue to thrive even during cash-strapped changing times. Over the years, the University has expanded and has become very popular with the students, attracting students with exceptional grades; however, it has been a mark of this particular University to ensure, encourage and facilitate admissions from those students considered less advantaged and from poorer backgrounds as well.

5.3.3 OBSERVED CHARACTERISTICS OF PRE AND POST 1992 UNIVERSITIES.

It became evident that the older more established universities were not affected as severely by the pressures of the abolition of the binary divide in higher education in 1992. Four institutions within the sample received University status prior to 1992 and three received it after 1992. Institutions given University status in 1992 and beyond were under pressure to excel in a different 'world', and needed to include research when perhaps they did not have adequate resources to do so. They

needed to compete against established research intensive institutions. Funding for research changed to being based on research excellence and output; given that these institutions were fledglings in this area, it took some time to get to the position where their research output could yield more income.

Older more established institutions that had perhaps built up a reputation for being excellent, and were perceived as such by their staff, were generally content with the levels of service; however, this started to change in the 21st century for this group of institutions. These Institutions started to include 21st century management tools into their University, to continue to strive towards being the best, and to continue to have the competitive advantage. This message was very clear.

Certain characteristics became evident through the interviews of institutions receiving University status prior to 1992 and those who received their University status in 1992 and beyond:

Observed characteristics of pre-1992 universities:

- Did not undergo major organisational and managerial change before the 21st century;
- Were therefore more amenable to change in the 21st century to include management tools;
- Major change was undertaken to remain excellent and to continue to have the competitive edge and advantage;
- Received substantial amounts of funding from the Government and were research intensive universities, providing some degree of financial flexibility and discretion.

Observed characteristics of post-1992 universities:

- Underwent substantial change before the 21st century
- Were therefore not as amenable to change if it was not imposed or enforced by the funding councils or Government;
- Required a 'pathfinder' before attempting major change;
- Were teaching institutions rather than research intensive institutions and hence, were less well funded universities.

5.4. LIMITATIONS OF THE CASE STUDY

After interviewing at the seven case universities, upon reflection, some limitations of the research choices made initially, became evident. This does not imply that the research is in anyway compromised, but simply that the limitations need highlighting in order to state clearly what the constraints of the case study were, and how it possibly affected the research. The constraints are discussed below:

- STRUCTURE OF THE INTERVIEWS – The structure of the interviews was semi-formal in nature, with an outline of questions prepared beforehand and added to, depending on the previous interviews and the analysis of the questionnaires. This led to some aspects of the outline being addressed and discussed in more depth than others, which is reflected in the discussion of each case.
- VARIED NUMBER OF INTERVIEWS PER INSTITUTION – Leaders of institutions were invited to submit names or a name of a staff member who would be the most appropriate to complete the questionnaire, and this person then become the contact person for the case study. Depending on the availability and the awareness of KM at the institutions, only one person was able to be interviewed at four of the seven case institutions, and in three of the institutions, either more individuals were interviewed on a one-to-one basis or some preferred a one-to-many interview structure. In the institutions where more individuals could be interviewed, a richer data set was gathered and different staff members placed emphasis on different aspects, giving a cross section of levels of seniority to be interviewed as well as different views and perspectives across the institution. In the interviews where more than one staff member was interviewed, it was clear that not as much freedom to speak each one's own mind was evident and that a constant checking with the other staff members for verification of thought and opinion became obvious.
- LIMITED TIME PER INTERVIEW – The interviews were conducted with senior members of staff and hence, time was limited for each interview. The nature of informal interviews is such that it allows for directions of thought to be accommodated even if not specifically a question in the interview framework, and hence, should allow for discussions to lead on

to other related topics not necessarily highlighted in the interview questions. This then leads to emphasis and the focus of each interview possibly being different and not always consistent across interviews. In some interviews therefore, this constraint presented gaps in data gathered in some cases, but richer data in others.

- LIMITED VIEW OF INSTITUTION GIVEN THE NUMBER OF INTERVIEWS PER INSTITUTION- It became very evident that the more staff members interviewed provided a richer data set to work with, as interviewing only one person at the institution provided a limited and individual perspective on various aspects of the interview. Despite this, each interview was analysed with all the other interviews and a rich set of themes emerged.
- TWO CASE TRANSCRIPTIONS WERE LIMITED BY A MALFUNCTIONING DIGITAL RECORDER- The digital recorder used impeded the second and the last interviews. It became apparent that when the recorder was placed on a surface other than a desk, the sound was not picked up effectively and hence, the recorded interview appeared inaudible. These interviews were written up using the notes of the researcher; however as can be understood, the detailed, in-depth discussions could not be verbatimly reflected in the discussions of the cases.

Despite these concerns and limitations, the research was able to highlight certain concepts and themes from the interviews, which yielded a very rich data set. These concepts and emergent themes are discussed in the following chapter.

5.5. SUMMARY

In this chapter, the cases of each of the seven universities were presented in terms of their context, history, and shape and size of each, looking at some of the changes each underwent. As with any research project, some constraints and limitations were evident and these are reflected in the chapter. Chapter 5 therefore provided the setting and historical background of each of the cases, leading on to the detailed analysis in chapter 6, which presents the emerging themes and concepts, and expounds on the substantive theory.

Chapter 6

EMERGENT THEMES AND CONCEPTS OF KM WITHIN UK HIGHER EDUCATION INSTITUTIONS

EMERGENT THEMES AND CONCEPTS

CHAPTER 6

6. EMERGENT THEMES AND CONCEPTS OF KM WITHIN UK HEIs

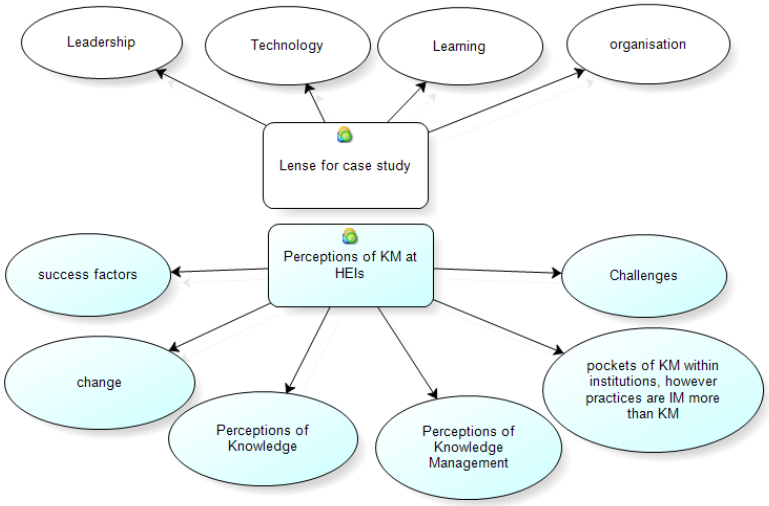
6.1. INTRODUCTION

This case study has yielded a rich set of data that provides valuable insights into the perceptions and practices of KM within seven HEIs within the UK. The chapter expounds on the emergent codes, categories and concepts from the cases as well as the emergent substantive theory. The approach the researcher adopted for this research was one that embraced some review of the literature at the onset, with subsequent reviews of the literature after the data collection and analysis phase, to position the findings within the literature. This enabled the researcher to gain an overview of the relevant literature at the beginning, and a decision was made to use Stankosky's four pillars of enterprise management as a guide to the interviews and the research. Stankosky (2007) suggests that KM encompasses four areas, pillars or groupings, each containing many elements. Given the many KM works, definitions, writings and approaches, the researcher made a research choice to use these four KM areas as lenses through which the research would take place, hence, guiding the questions within the interviews. These four lenses (see Figure 6. 1 on page 212) are:

- LEADERSHIP LENS - deals with the environmental, strategic and enterprise-level decision-making processes involving the values, objectives, and management of an organisations knowledge assets;
- ORGANISATION LENS – deals with the operational aspects of knowledge assets, including processes and its improvement, functions, structures, and controls;
- LEARNING LENS - deals with the organisational behavioural aspects and social engineering. It focuses on the principles and practices to ensure that individuals collaborate and share knowledge to the maximum.
- TECHNOLOGY LENS – deals with information technologies that support and or enable KM strategies and operations.

The nature of this chapter is such that it places the identified concepts and themes within the literature and makes the connections to the literature for each of the concepts and categories identified. Phase I and Phase II were separate phases, however, after data analysis and the emergence of the substantive theory, the conclusions of Phase I were used as data and incorporated in the NVIVO model. Where the conclusions provided new insights into the perceptions and practices of KM, these were highlighted in red in the model. Those not considered new, were subsumed in the lower levels of the model. Within this chapter, only the themes and concepts generated during this phase are discussed, as the Phase I conclusions are discussed in Chapter 4.

FIGURE 6. 1 STANKOSKY'S (2007) AND INITIAL CODES FROM ANALYSIS



Source: developed by Author from case study 2007/8

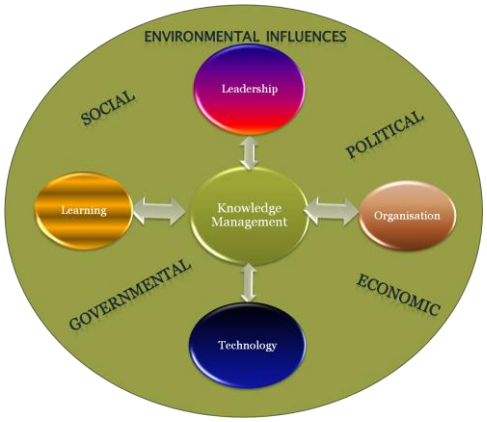
6.2. THE SUBSTANTIVE THEORY: EMERGENCE OF CODES AND CATEGORIES

Charmaz (2006) postulates that coding is the pivotal link between collecting data and developing an emergent theory to explain these data. She further purports that, through coding, you define what is happening in the data and begin to grapple with what it means. During the coding process, questions were continually asked in relation to the four lenses ("is this an issue about technology, learning, leadership, or the organisation") and codes were freely assigned within these four areas.

Initial coding stuck closely to the data (Charmaz, 2006); line by line coding was done and yielded three hundred and sixty four codes in the first round. Despite the four

lenses being a necessary tool to use within the interviews, it became evident that, for coding purposes, Charmaz' (2006) approach of not applying pre-existing categories to data was embraced. The four lenses eventually became too broad as the coding progressed and it seemed as if the researcher was 'squeezing' codes into one of these lenses. Figure 6. 1 on page 212 depicts the initial four lenses used to code the data and it also reveals the six other categories coded.

FIGURE 6. 2 FOUR AREAS OF KM



Source: adopted from Stankosky (2005)

The researcher further compared the data and the categories to allow concepts to emerge through generation and construction from the data, categories were combined and recombined, and any associations and relationships to each were sought through a series of iterations, the outcome of which yielded a substantive theory as set out below:

> 21st century management tools like KM are being considered within the HEI context; however, the KM terminology is contentious, there is a stronger emphasis on IM more than KM currently, and practices are largely in pockets rather than being implemented systemically across institutions. Although contributing contextual and other factors impact HEIs ability to implement KM systemically, the perceptions of the benefits of KM are linked to quality, improvement and learning, hence, to improved institutional performance and competitive advantage.

The substantive theory above presents that KM is being considered within HEIs (see Figure 6. 3 on page 215 for model, and more detailed and decomposed models are presented in Appendix C), however, for KM to be implemented on a systemic level within HEIs, the substantive theory suggests certain factors that have an impact on HEIs ability to implement KM on an organisational-wide level, and factors that could assist and support KM use within this context.

It became evident that HE institutions were indeed practising different forms of what could be considered within the umbrella of KM activity; however, most of the activity, except for one institution, and another at the beginning stages of an Institutional-wide KM focus, was being implemented in pockets rather than on an organisational wide level, favouring Information Management more than Knowledge Management, and certain factors - contextual, historical, differing perceptions, and the need for an appropriate environment - influenced this.

Each of the three aspects of the substantive theory is discussed separately in the following section. These aspects will be considered in relation to the implications for KM implementation.

6.2.1 FACTORS THAT INFLUENCE KM IMPLEMENTATION

CONCEPT 1: CONTEXTUAL AND OTHER FACTORS INFLUENCE THE HIGHER EDUCATION INSTITUTION'S ABILITY TO IMPLEMENT KM ON AN ORGANISATIONAL WIDE LEVEL CURRENTLY.

The research suggested that there were certain factors that had a direct impact on how HEIs embraced KM. These factors were grouped into three categories, namely

- The appropriate environment;
- Characteristics and culture of universities, and the nature of academic work;
- The Perceptions and practices of knowledge and Knowledge Management.

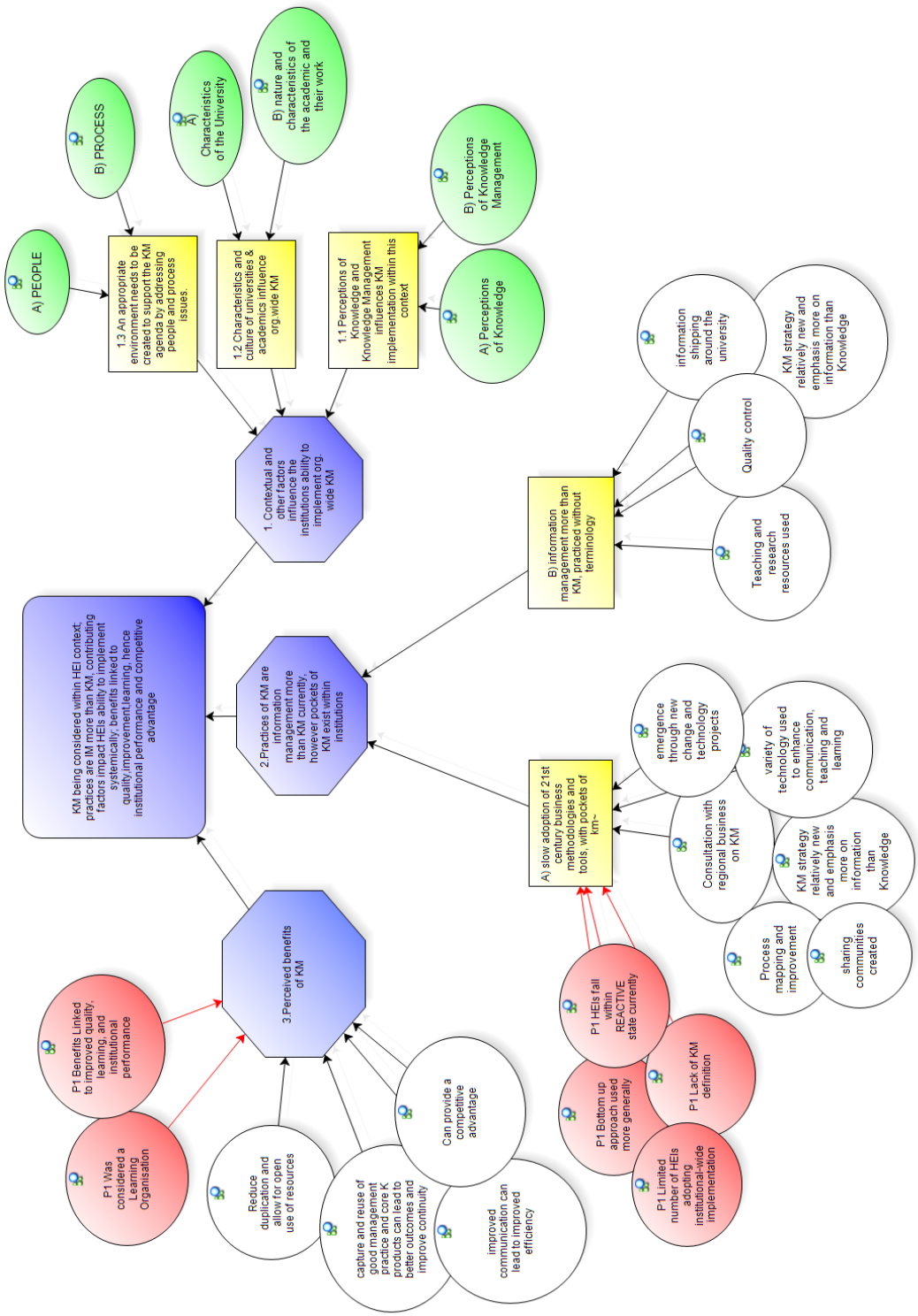
Each of the contributing factors are discussed within these three categories.

6.2.1.1. APPROPRIATE ENVIRONMENT

CONCEPT 1.1: AN APPROPRIATE ENVIRONMENT NEEDS TO BE CREATED TO SUPPORT THE KM AGENDA BY ADDRESSING PEOPLE AND PROCEDURAL ISSUES.

Any context would require a suitable environment that embraced a culture of sharing to enable KM. Within the HEI context, the research suggests that an appropriate environment was also required to enable KM. The concept emerging from the data was that a number of people and process issues needed to be addressed to create the appropriate environment to support KM, and these are discussed next.

FIGURE 6. 3 SUBSTANTIVE THEORY DEVELOPMENT - NVIVO LEVEL 3 MODEL



Note: the red categories indicate the conclusions included from Phase I, with others subsumed in the sub-categories. Green coloured categories indicate that it can be decomposed into sub-categories

Source: developed by Author

A) PEOPLE CONSIDERATIONS

The word 'appropriate' is defined as being 'suitable for a particular person or place or condition' (Wordreference.com, 2010). Each organisation has its own organisational culture, work ethos, procedures, and rules, written and unwritten, as well as a formal mission. Depending on these, each organisation would have different requirements for change, if the change was required, to enable a suitable environment for KM to succeed. It became apparent that, within the HEI context, changes would need to take place to enable, support and encourage a sharing environment for this context. But why would change need to take place, what were the aspects of the environment and the way in which staff worked within the environment that would require change?

The first aspect evident was that it was important for leadership to create an environment that would ensure that staff had a *positive attitude towards the institution* as a whole. For this particular context, academics generally align with their discipline in the first instance (Shattock, 2003) and at times form what Becher and Trowler (2001) refer to as tribes within their own disciplines. It was clear that this seemed to be the case within some of the sample institutions. This alignment with department and research area as a first priority could have a negative impact on the institution as a whole, especially when institutional-wide initiatives are being put into operation.

Working in silos was another issue that seemed to be contentious within the HEI context. The perception was that it was easier to create ivory towers within this context, and that organisational-wide change was therefore more difficult. Shattock (2003:p.93) contends that "academics and other staff are more willing to adjust their contributions to institutional goals provided that they have been convinced by them", which is in keeping with findings of this research in relation to KM and understanding the benefits of it on an individual level.

Academics were also perceived to generally not to like the word 'management', considered their knowledge, both created and produced within and outside of University hours to be 'theirs', and, more often than not, tended to work as a unit of one. These perceptions were expressed by academics themselves.

Given the typical academic way of working, *cultural change was considered to be required* within the HEI context to overcome any form of information and knowledge hoarding, so as to create an environment that would support KM. Within an organisation as large and as diverse as HEIs typically are, the perception was that *strong leadership* was needed and a *specific role for KM essential* to drive and promote KM within the University. KM would not 'just happen' within this context unless leadership recognised the importance of it and provided the environment, as well as financial and other resources for it. Although a clear top management view of KM and strong support for KM was required, the thinking was that many initiatives are not only initiated from top management, but also can be initiated by someone lower in ranks within the University. However, for systemic implementation, top management would be required to provide strong support for it.

An aspect of leadership which required change and support was *evidence based management;* that is leadership and management based on empirically sound evidence. A participant had this to say:

> "…if you were to pick apart the aspects of University management that don't work terribly well in most institutions, then the first I would say, is evidence-based management. A lot of time we develop courses, we initiate reforms, on gut feel…on a very limited evidential base" (Case 5.1, 2007:p.5)

Leadership were thought to have a *very strong role to play* in influencing whether tools like KM were embraced within an institution or not. One participating institution was of the belief that the embracing of KM was largely linked to the leadership. The suggestion was that leaders have very different experiences, backgrounds and skills which influence their choices and emphasis within their roles. This also influences whether there is a strong collaborative working environment within their realm of responsibility and whether clear communication practices occur despite formal processes that may or may not be in place.

Another aspect articulated was that a *strong collaborative environment,* both within and without the institutions, should be developed, which ought to include all required areas within the University, and not only within research (the one area in which some form of collaboration is cited to occur more readily). It was suggested that perhaps there was a history of independence and protection in certain departments which stopped people from being more open with each other. A

common mission was thought to assist to unite everyone around a common cause which would enable a more sharing and collaborative environment.

Within certain universities, the perception was that academics viewed the institution as 'being lucky to have them as an academic', and hence, with this type of mindset, staff would not be willing to share and collaborate unless there was some form of reward for them. It appeared that collaborative activities occurred more frequently with external stakeholders; however, internally, it was less obvious that substantial collaboration was occurring.

Due to the different perceptions of KM, both in the literature and within HEIs, it was suggested that a *KM strategy* would guide and enhance the thinking of KM within HEIs. Within most institutions, formally addressing KM within the institution, KM was incorporated into the Information Strategy. The one institution that had been addressing KM for a few years, had a separate KM strategy; however, it went through a serious of changes, which involved discourse around the word 'management' in the name of the strategy and, as a consequence, a name change, as well as undertaking future endeavours to change it to be part of the institution's overall strategy. There was some uncertainty as to whether the KM strategy should be part of the information strategy, the overall University strategy or a standalone KM strategy, as well as some misunderstanding about what a KM or IM strategy is and should be. A senior executive contended:

> "..... I think that senior managers struggle with the terms. Struggle to understand what is an information management strategy? What is knowledge management strategy? As against, everyone understands what a finance strategy is....."(Case 4.1, 2007:p.9)

B) PROCESS CONSIDERATIONS

– PROMOTE AND IMPLEMENT KM IN A MANNER APPROPRIATE FOR THE HE CONTEXT

One of the key points emerging from the interviews was that academic staff in the main *do not like the terminology of KM*; however, it was understood that they were involved in managing knowledge within their discipline, and were *open to sharing*. *In one University*, it was clear that KM was a priority (a senior executive was assigned the responsibility); however, there was no definition for knowledge or Knowledge Management within the University and KM activities were not always labelled as such. A participant had this to say:

> "Staff do not need to know that a KM process is just that. At the top level we do have KM priorities which build on each other"(Case 1.3, 2007:p.2).

The participant responsible for KM was not opposed to defining KM within that particular HE context; however, the said position had been recently changed to reflect more of the KM role and hence, implementation was in its infancy at the time, yet the most advanced within the sample of institutions. It was clear that KM needed to be *promoted within this context without the label or terminology* used as staff were accepting of KM-type activities without the actual label of KM. Suggestions that KM would need to be *gradually encouraged and promoted* within the HEI context were made, supporting the understanding of KM and its benefits rather than imposing ideas from the top down, which could meet with resistance from a highly skilled and professional staff complement. The suggestion was to combine and *allow both strategies* to be used; ie the bottom up and top down approaches, where staff would pressure central management to allow KM opportunities and initiatives within local departments, but where central management also understood the KM agenda and embarked on encouraging it across the University, without staff necessarily sufficiently understanding the terms, but understanding the benefits. *Sufficient consultation with staff* was seen as crucial.

A very clear *understanding of the HEI context* - how staff conduct their work and the culture of the University - was considered important for this environment. Hence, *'knowing the audience'* or knowing the HEI context, was vital for KM implementation. A senior member of staff, one with the necessary influence and 'clout', who was able to command respect, was perceived to be needed to *champion the KM* implementation. Universities, by nature, are large and diverse, with multiple sets of priorities; hence, KM will not just happen within such an environment, and as one of the participants suggested, "you would need someone to champion it as things just do not happen within big organisations……"(Case 1.1, 2007:p.7).

Although it was clear that academic staff were uneasy with the word 'management' being used together with knowledge, it was also clear that, given the varied perceptions of what knowledge means and is within this context and others, some form of *taxonomy* and *common language* was needed. This taxonomy did not necessarily have to be understood or used by the whole University, except by key members of staff. The taxonomy and common language would enable more of a common understanding for KM, which has *different meanings to different people,*

and, as a consequence, leads to misunderstandings of what KM means in this particular context. Although there were varying reasons as to why the institutions with KM strategies or in the process of developing ones did not have a formal definition for KM, it was understood that a *definition for KM* could assist to alleviate the different perspectives of KM and provide a platform for communication.

– PROVIDE APPROPRIATE RESOURCES LINKED TO THE KM STRATEGY

It was clear from the participants that, in the past, universities were not known to prioritise and invest huge sums of money in administrative systems; however, in the 21st century they needed to start addressing student satisfaction and experience within HEIs, and hence, student administration projects were started to either streamline processes or to increase efficiency. For a long while, universities were either satisfied with their antiquated and fragmented processes and systems or were unable to make the changes necessary due to financial constraints. Universities still operate within a cash-strapped environment and will continue to do so, and deciding how to prioritise the spending of their annual budgets is determined by a variety of external and internal factors. For a sharing environment to be created which supports the KM agenda, change would need to take place within this environment, which would not only require financial investment, but also human resources and an investment of time. Given the increasing pressure on university staff to 'do more with less', and to incorporate 'market-like behaviours' into their work, time to do additional activities that might not be prioritised by the university was a concern. However, it was very clear that, despite the challenges, adequate resources would need to be invested in the KM agenda and should be linked to the strategy, in that way giving it the prominence and priority it would need to receive attention and achieve its objectives.

– CREATE A STAFF DEVELOPMENT PROGRAM FOR KM

Another suggestion was that it was crucial to concurrently implement staff development programs that would address the universities' strategies and ultimate goals for KM, as well as attempt to change the culture of the University. Changing the working culture of people and, as such, an organisation, especially one as large and diverse as universities, is extremely challenging; however, it was deemed critical to ensure that staff were aware of the intentions and benefits through development programs. KM was also a contentious issue, not clearly understood in the same way

by all, and hence, the staff development program would enhance understanding of KM used as a tool to achieve strategic objectives.

– DEVELOP PROCEDURES TO INTEGRATE INFORMATION

HEIs are large organisations, consisting of schools, faculties and departments, as well as many other organisational units. Each academic school would employ highly skilled staff with specific research and teaching requirements. Over the years, as student numbers grew, and financial constraints were imposed, it became increasingly difficult for institutions to keep up to date with the technological improvements and to invest heavily in the rapidly changing technological support systems; hence, it was suggested that the central IT departments could not keep up with the technological demands placed on them by departments and schools, and, subsequently, local departments started to develop their own systems to address their specific departmental informational and technological needs. However, over time, this resulted in a proliferation of different systems being developed across the university, leading to challenges of duplication and effort, and a lack of integration. The 21st century brought new dimensions and pressure to HEIs requiring a rethink of the way they 'do business'; hence, universities started to undertake projects to enhance the student experience, and address efficiency and duplication issues. At the start of the interviews, some institutions were at the beginning stages of dealing with the inefficiency and duplication issues by aggressively addressing the fragmented systems and the subsequent challenges, and by viewing the problems from a 'business' perspective and not an IT perspective. Hence, addressing the actual consequences of certain procedural inefficiencies within different functions. A very prestigious University, that was at the forefront of technological developments in the past were hoping to retain their reputation and hence, only recently, within the last two years, had undertaken a large project to address this duplication, and the inefficiencies and lack of integration of information and systems across the University: *"Now, here isn't one system, it is several. It is very fragmented. There isn't just one corporate student records system, there are several…There was, in a sense, internally within the institution, no incentive for this or no interest in having it because everything was carrying on. It was working. Okay, it was very paper-based, very old-fashioned. But we also, within the centre, did not patrol any of the processes,…"* (Case 1.2, 2007:p3,4)

Universities therefore have a history of having to deal with fragmented systems, and the consequences thereof; however, there is considerable movement towards the integration of information, specifically for students and staff, which supports the KM agenda.

6.2.1.2. THE UNIVERSITY, THE NATURE OF ACADEMICS AND THE WAY THEY WORK

CONCEPT 1.2: THE CULTURE OF THE UNIVERSITY AND THE NATURE AND CHARACTERISTICS OF ACADEMICS AND THE WAY IN WHICH THEY WORK INFLUENCES THE CULTURE OF SHARING WITHIN THIS ENVIRONMENT, AND HENCE, KM

One of the questions asked within the 'Perceptions of KM' theme was, *'Why was KM not accepted more broadly in Higher Education*', if the perception was that the creation and sharing of knowledge was their '*raison d'être'*. This question sparked a vigorous discussion about what the nature (defined by Farlex's online dictionary, as the essential characteristics and qualities) of 'an academic' was perceived to be, what the characteristics and culture of Higher Education were, and the associated difficulties in relation to implementing change within this context. Farlex's (2010) online dictionary also defines the word 'characteristic' as a distinguishing quality, attribute or trait; a feature that helps to tell apart, identify or describe recognizably. This section looks at the perceived nature of an academic working within a university context, and considers the culture evident within a university and how these impact the implementation of KM within this context. In discussing KM it became evident that the nature in which academics work or do not work was perceived to be one of the factors that had a direct influence on the institution's ability to implement KM at an organisational level. Issues were grouped and the following characteristics and concepts emerged:

A) PERCEIVED NATURE OF THE WAY ACADEMICS WORK WITHIN HEIS

CONCEPT 1.2.1 ACADEMICS WORK AS SELF-SUFFICIENT UNITS, EXPECT SOME FORM OF ACADEMIC FREEDOM, AND ARE OPEN TO THE IDEA OF SHARING BUT RESISTANT TO THE KM TERMINOLOGY

– EXPECTATION OF ACADEMIC FREEDOM

Ideas emanating from the interviews were that academics are, by nature of their jobs, *experts in their field,* and consequently should be the most qualified to judge the methods and pedagogy in relation to their perception of quality and management of their own area of work. The perception was that they should have the ability to structure their work as they deem appropriate. Some form of

academic freedom and autonomy was expected within this context, which Barnett (1998:p.63) describes as the "right freely to research, to teach and to speak out in academic settings (the University being regarded as the haven for critical thought)". Academic freedom and autonomy here is in reference to the individual freedom and autonomy that academics might exercise. The idea of being managed and their knowledge being managed was not overly appreciated nor well received within this context. However, Barnett (1998) purports that the idea of academic freedom and the academic community is in jeopardy as universities seek to identify and market knowledge services which provide differentiating opportunities. He adds that specific disciplines can command more revenue than others by virtue of the discipline, which creates tensions between disciplines. Henkel (2007:p.87) adds that academic autonomy has long been regarded by academics as a fundamental core value for their working lives, and that the "ideal of academe as a sovereign, bounded territory, free by right from intervention in its governance of knowledge development and transmission, has been superseded by ideals of engagement with societies in which academic institutions are *axial structures,* whose work is important to governments, businesses, and civil society".

Although recognition was given for academic autonomy and it was accepted that this was regarded by academics as important, an academic Dean and senior executive expressed his view of academic freedom in this way:

> "Academic freedom for me is the freedom to do, not the freedom not to do. So you can take things forward, take ideas forward, develop new concepts, new approaches, new methods, but what you cannot do is not pick up good practice because you don't want to. That is unacceptable." (Case 5.1, 2007:p.22)

This view of academic freedom provides academics with the flexibility to include good practice into their work, and provides them with the freedom to include innovative ideas and concepts into their work, but also prevents them from not including good practice due to the lack of interest in so doing.

– OPEN TO THE IDEA OF SHARING BUT RESISTANT TO THE TERMINOLOGY OF KM

It became clear from the interviews that academic staff were not comfortable with using the word 'managed' 'or 'management' in the hard-core business sense within certain contexts, and were resistant to being managed, particularly if their knowledge was being managed. The word 'management' used together with 'Knowledge' was viewed as another managerialist intervention that could threaten

their academic autonomy and stifle creativity. An external consultant working within one of the universities contended:

> "I think it is the academic independence again, is a factor; they do not take kindly to being managed. They could think that the institution is taking advantage of their knowledge or exploiting them in a way, they do not like it. The term management they do not like. But in reality the idea might not be off-putting but the term is probably to academics. The term possibly is not liked." (Case 1.4, 2007:p.2)

The perception was that if academics were open to the idea of sharing, the main battle was won, and that, if behaviours and activities emulated the essence of KM, then the terminology was of less importance. Another had this to say:

> "I don't know any academic who would be resistant to the idea of open communications. They all like the sound of the words. They are open to the ideas of sharing, sounds good…"(Case 5.1, 2007:p.21)

The perception was therefore that academics were not opposed to the idea of sharing, and communicating which all sounded good; it was not clear, however, how often and whether the sharing that did take place, yielded any organisational benefits.

Suggestions were made that academics' knowledge should not be managed, but that resilient systems should be put in place to enable and enhance the sharing of knowledge, allowing academics therefore to continue to enjoy some form of academic freedom to manage their own knowledge. There was, however, clear acknowledgement of the benefits of sharing knowledge; nevertheless, the nature of the academic work, their subsequent work ethos and general characteristics were perceived to contribute to each working in the main as individuals rather than as teams.

The general perception shared by the academics interviewed was that they were involved in managing knowledge; and that they were the managers of their own knowledge, and were already involved at some level in KM. The issue of ownership of information and knowledge becomes contentious in this case as some Heads of Schools would view all course material, and any other material developed and written during official office hours, to be part of the institutional material which can and should be reused by other academics within fields or departments. The issue of *ownership of the information*, knowledge and products academics create,

presents conflicting ideas about whether the ownership resides with the institution, the employer or the individual academic, the creator, of the knowledge. An academic Dean had this to say:

> "The difficulty with information and knowledge is that people think it is theirs; they do not think it belongs to the institution." (Case 1.3, 2007:p.3)

Although the perception was that academics are open to the idea of sharing, the issue of creating opportunities for such interaction, as well as the concern for the timing of the sharing of research innovation, the goals of which go against the idea of sharing at the beginning stages, was raised. Academics need to share their research and must be able to establish first ownership while relinquishing possession to others; otherwise, they will not receive credit for its origination. For this reason, the timing for sharing of research ideas is considered crucial. Research, does create opportunities for academics to work as teams, however, often those teams can be virtual and online rather than within a particular department. Becher and Trowler (2001) contend that "communication is central to an academic enterprise" and further argue that "both the promotion of knowledge and the establishment of reputation is dependent on it". A Dean's view on the academic's perception of sharing research was as follows:

> "So I have a new technique. It is my new good technique. I'm going to write the research papers on it. Why should I share and tell others how to use it? And that won't go away. I don't think that there is any way that you can deal with that without changing the human being."(Case 5.1, 2007).

– ACADEMICS TEND TO WORK AS SELF-SUFFICIENT UNITS, AT TIMES IN SILOS, WHICH HAS AN INFLUENCE ON THE CULTURE OF SHARING REQUIRED FOR KM.

The natural unit of working for an academic is one – themselves - and in the main they are self-sufficient units. A senior academic and administrator contends:

> "We need to develop more of a team concept within the staff. They do naturally tend to be a unit of one. But if they have the chance to talk, if they have time to deal with their peer group and they make good use of it, you know, even the most stubborn will see over time that there are real merits and benefits in the sharing processes"(Case 5.1, 2007:p.18).

The quote also raised an issue of 'having enough time' for academics to be able to share knowledge or experiences and best practices, as well as some academics needing convincing of the real merits of sharing. This raised the question of whether academics have enough time during their day to share and communicate

informally or formally with others with the sole purpose of sharing knowledge. Slaughter and Leslie (1997) contend that the nature of academic work has changed substantially to include market like behaviours where institutions and academics need to compete for money, and they refer to it as *academic capitalism*. Becher and Trowler (2001:p.160) suggest that "academics no longer have a choice; whether they like it or not the market and the state intrude in a variety of ways into their lives and work." Academics are expected to engage in market like behaviours without necessarily having the training for it, and these activities would be in addition to the expected teaching, research and administration work load required of each academic.

Academics are commonly found *to be self-sufficient units who tend to work in silos*, which Lencioni (2006:p.175) defines as "nothing more than the barriers that exist between departments within an organisation, causing people who are supposed to work on the same team to work against each other." A senior member of staff had this to say:

> "Because, it is far too easy in the new University sector to develop your own little group. You know "this is mine" and I build walls around it and that is very unhealthy"(Case 5.1, 2007:p.8).

As self-sufficient units, academics take personal responsibility for their work and hence, make decisions for their area of work. Given the nature in which academics tend to work - on their own generally, and perhaps in silos - this makes it easy to build their own empires.

Working in silos does not advance KM; rather the "silos, and turf wars they create, devastate organisations. They waste resources, kill productivity and jeopardize the achievement of goals" (Lencioni, 2006:p.viii).

Another aspect emerging from the research was that academics generally align themselves more readily and in the first instance with the department or research unit or discipline within which they work, and then to the institution at large, which confirms with Becher and Trowler's (2001) view of academic tribes and territories and the notion of discipline cultures. This presents some challenges for an organisational wide implementation of KM which relies heavily on people to work together and share experiences and best practices, and to cross boundaries for the betterment of the institution at large.

Academics were also perceived generally to provide *very long service* to a University and, hence, once they decide to leave, this could have a detrimental impact on the School or Faculty and ultimately the institution, especially if the academic was a renowned expert within a particular field attracting students and substantial funding for the School, Faculty and the institution as a whole; being a specialist generally implies that someone else cannot quickly fill the gap the leaving staff member creates. This raises major issues of the importance of intellectual capital, and succession management, especially for this context, and the application of effective Knowledge Management principles to address this challenge. There was no clear suggestion that this issue was being addressed effectively and efficiently within the HEI context.

B) CHARACTERISTICS OF UNIVERSITIES AND IMPLICATIONS FOR KM IMPLEMENTATION

CONCEPT 1.2.2 THE CULTURE OF UNIVERSITIES DOES NOT READILY SUPPORT SYSTEMIC IMPLEMENTATION OF KM. CHANGE IS REQUIRED; HOWEVER, HISTORICAL DEVELOPMENTS IMPACT ON ITS ABILITY TO CHANGE AND PROJECT BASED LEARNING OCCURS MORE THAN ORGANISATIONAL LEARNING.

Interesting themes and concepts emerged in relation to the perceived nature and behaviour of universities and the subsequent impact on KM implementation. A discussion of the findings follows:

- HISTORICAL DEVELOPMENTS HAVE AN IMPACT ON HEIS ABILITY TO CHANGE UNLESS DIRECTED BY GOVERNMENT OR FUNDING COUNCILS; CHANGE IS OTHERWISE APPROACHED CAUTIOUSLY AND IS HIGHLY POLITICIZED.

Change is necessary and inevitable within this environment and within the 21st century, especially if institutions aspire to remain competitive. The research suggests that historical developments over the years, and the subsequent change imposed on universities has had an impact on institutions' ability to embark on any further major changes unless they are required by a directive from government or the Funding Councils; hence, change, and the tools that would require change, are approached cautiously and are highly politicised.

The HEIs within the sample were very representative of the different types of universities in the UK, and, certainly, as Shattock (2003) contends, they may all be universities but, historically, locationally, and financially, their positions are very different. They certainly did not all start from the same position. Given the differences in history, culture and mission, the interviews identified that commonalities in the difficulties experienced over the years existed; however, there

were major differences as well. One of the commonalities was change itself; however, the difference presented was in the nature and extent of that change. UK universities in general have undergone change over the past decade; however, this change was considered to be especially strong in the universities classified as pre-1992: Former Polytechnics, compared with the other well established, traditional universities who enjoyed research prestige, and were not pressured to change their processes and systems at the time. However, these well-established universities, having missed the extreme pressure of change in 1992 and beyond, have now begun to rethink the way they do 'business', given the impact of globalisation and marketization and their ambition to continue to maintain their prestige. A participant had this to say:

> "Very important to maintain our reputation……..Hence, will continue to try and remain competitive and improve where we think we can…….There is a lot of pressure and ambition to stay ahead ...."(Case 1.6, 2007:p.5)

These Universities within the case recognised the importance of needing to change the way in which they do 'business', and were undergoing substantial change in terms of either their structure, processes or management tools adopted, to become more student focused and to improve services, with certain institutions having more of a business approach to 'running' the organisation. This is evident in their adoption of certain management tools and the need to remain competitive and hence, to ensure efficiency and effectiveness of service. One, in particular, had recently, just before the case study, undergone a major restructuring exercise and at the senior level had started to embrace very modern 21st century management tools, for example ensuring senior representivity and responsibility for KM, and utilising the Balance Score Card, and process improvement tools.

A second Russell Group University did not overtly prioritise KM, but recognised what it does on a daily basis to achieve some of the KM objectives, and, in terms of the organisation and its processes, it embarked on a 21st century management tool which aimed to identify and eliminate waste to deliver improved value and service based on what their stakeholder requirements were, hence, improving existing processes and creating new ones where required. This University is a much smaller University, and hence, the question of size and geographical location of the University was raised – whether the way in which a HEI was spread across a wide area or localised in one area would necessitate the implementation of KM or not,

and how the process would work in practice. This institution, therefore, actively and aggressively, sought to ensure that they continued not only to deliver quality research, but also quality of management, processes and services through prioritising 21st century management tools to maintain rank and prestige. It became evident that the more traditional, older research intensive universities were acutely aware of their need for change to remain competitive and retain their reputation in the 21st century and beyond.

It was noted that the difficulties experienced by major change in the universities classified in this research as 'Post-1992: Former Polytechnics', impacted upon their ability to embrace additional major change not imposed by government or the funding councils. These institutions contended that a period of stability was required, where change and improvement was minimal. Their view was that 21st century management tools either needed to be imposed by Government or the Funding Councils or had to be tested and tried by the elite well-established research intensive universities within the UK, almost requiring a 'pathfindering' of the tools. The perception was that the luxury of resources was scarce to invest in any activities not considered core or critical to the university's mission; however, at the same time, it was recognised that new priorities emerging over time, either externally or internally imposed , would require change. Why and how certain change imperatives came about revealed drivers for change within this context:

- Internal aspirations of needing to retain reputation and remain competitive, therefore to continue to "be the best";
- External pressure from the state, Research Councils, Funding Councils and business;
- Internal pressure from rising student expectations, requiring a specific standard of University experience;
- Internal pressure from the change in the physical way in which research is being conducted in universities;
- Technological projects, often driven by the IT departments, can drive process and organisational change;
- New projects used as impetus for change.

Change was seen as being a highly politicised issue requiring caution and adequate and *substantial consultation*, which, in turn, would and could impact on the rate and speed of change within this context. The research intensive institutions, who enjoyed prestige and reputation in the past, wanted to be able to continue to do so

and to remain competitive, and the implementation of change would occur where required to ensure their competitiveness.

CONCEPT 1.2.3: CULTURE IS VARIABLE WITHIN THIS CONTEXT, IT EITHER LOOSELY OR AT TIMES MORE STRONGLY DEPENDS ON ITS LEADERSHIP, AND AS A CONSEQUENCE DOES NOT READILY SUPPORT SYSTEMIC KM IMPLEMENTATION

Morgan (1986) defines *culture* as the shared meaning, shared understanding and shared sense making that contributes to the personality of an individual or an organisation. It also has to be understood that, within any organisation or culture, there will be subcultures operating at lower levels of influence (Cole, 2004). With regards to the case study, senior members of staff were interviewed, as well as some middle managers who would be at the cold front of operation. It was interesting to note the difference and sometimes contradictory views and perceptions from these different groups; for example, in one case where more participants were available for interview, there was a cross section of participants and different views were expressed on the topic of communication or the lack therefore of pertinent information. The senior members of staff did not perceive any communication or knowledge sharing challenges or difficulties, or did not convey that message. They related that, as senior executives, and due to the structure of the University (centrally controlled with some devolved units), they would meet very often to share information, and policies, strategies and decisions. They further contended that the structure of the institution enabled and empowered them with the budgetary and influential prowess needed to implement any form of change. The middle managers, however, expressed a lack of communication of policy issues and change as a concern. The researcher questioned how much of a problem the lack of communication really was, or whether it was viewed differently due to where the manager was placed in the hierarchy or system. These two views raised issues of whether the middle managers could potentially be less privy to the 'more influential inner senior circle' and the heightened awareness that goes with being in it, and hence, by virtue of their position, lack insight due to not being within the nucleus of power. It was concluded that, the concern for the lack of communication certainly existed in the eyes of the middle managers, although the possible influence of structuration (proposed by Anthony Giddens (1984) in *The Constitution of Society)*, was considered.

The perception of an *academic and administrative divide* as well as differences in culture of these two groups was evident, with the perception that academics were more open to sharing than administrators within the University. A senior administrator suggests that:

> "..the academic community have a much more sharing culture. On the administrative side it is a case of getting the information only that you ask for, and if you do not ask the correct questions you possibly will not get the information you looking for" (Case 1.3, 2007:p.3).

The opinion was that this was prevalent within certain units, although practice within other units explicitly embraced and incorporated the sharing of knowledge and best practice to a degree. The majority of the universities within the case study were found to be traditionally collegiate, consensus type organisations. Two cases in particular highlighted this as a very strong culture within their University, which they mentioned was quite different from some other universities with more highly politicised, competitive environments, noted below:

> "We are very fortunate at this institution in that it is a very, very friendly institution, very little politicking goes on which from my previous experience is very rare and which is very different to my old institution. The culture is therefore of sharing" (Case 6.1, 2007:p.1).

Despite there being substantial pressure on HEIs to compete globally and nationally to remain excellent in an environment becoming increasingly competitive, some were considered to be more comparative[23] in nature while others were perceived to be highly competitive. In the universities which tended to be more competitive than others, it was noted that external project staff were contracted in to implement the change in a project structure to avoid the infighting and politics that could ensue from change directives.

Universities have a *diverse complement of staff* working within them as well as a range of disciplines. Becher and Trowler (2001) purport that universities tend to develop academic tribes and territories around disciplines. Clarke (1983) agrees and indicates that the core membership unit in an academic system is discipline-centred, and that each discipline, around distinctive intellectual tasks, has a knowledge tradition, categories of thought and related codes of conduct, and may be

[23] Comparative in the sense that, some of these institutions would compare themselves to other institutions, in a way to gauge their practices, and to understand best practices, rather than in a highly competitive, and negative way.

conceived as having recognizable identities and particular cultural attributes. Hence, each discipline is developing and creating its own subculture within the school and University. The research confirmed their contention about sub-cultures within universities; a participant contended that if the interview questions were posed to a different group or individual within a different discipline, it may have yielded slightly different answers, if posed to individuals from a different discipline for example. This is in line with Becher (2001) and Clarke (1983); however, it was mentioned that all the senior staff would be very aware of the particular culture created by the Vice-Chancellor and the ultimate objectives and direction for the institution. The perception was that, if there was a strong leadership presence, with the leadership being well respected for its leadership style, being supportive, encouraging, providing vision and guidance rather than being instructional and wielding directives only in a dictatorial fashion, then staff would be more open and aware of the mission, strategy and vision of the institution, and would want to support it.

Another aspect or characteristic arising from the interviews was that HEIs were perceived to be generally *slower to make systemic, organisational change* decisions, and therefore the rate of change within this context was considered relatively slow.

> "Being in a big diverse university inhibits the progress for moving from localised solutions to more general solutions" (Case 1.6, 2007:p.2).

Clarke (1983:p.182) contends that universities are "sluggish and heavily resistant to change", and adds that, once universities effect change, the changed process, technology or strategy becomes the norm and lasts for a long while afterward. Reasons why HEIs are so slow to change are related to the nature of HEIs and their governance, leadership and management. HEIs are large organisations, with a diverse staff complement, and hence, implementing any form of organisational change in a devolved structure, a structure which most universities have moved towards, requires caution, consultation and time. KM requires a collaborative culture which is a different way of working, particularly in this context, and hence, would require change in the way people work, change to processes and change to some systems. Within this context, though, it was reiterated that a directive from Government and pressure from external funding bodies would assist to legitimize an organisational wide change needed for KM implementation. This was thought to be particularly true of universities that were impacted by major change in the late

twentieth century and who were trying to catch up with the other more stable research intensive institutions that were less adversely affected by change at that time.

The one area of the University which reported some form of collaboration was research. More and more HEIs are conducting research on a national and sometimes international level which requires a different way of working and collaborating. The HEI environment was perceived to be creative and dynamic rather than a managed one and researchers and staff were therefore starting to work in different innovative ways; for example, using virtual team environments, where research collaboration, more often than not, would occur externally rather than internally within the institution. This points to institutional boundaries disappearing, as a participant noted:

> "This means that the institutional boundaries are disappearing in various parts of the work that we do to the point that I jokingly say to some of my colleagues that they do not know that they work at the University …… as they are so wrapped in their project or they are travelling so much or stuck away in the lab somewhere" (Case 1.6, 2007:p.4)

There were different opinions about whether HEIs are good learning organisations. On the one hand, the view was that institutions had gone through such a lot of change over the years, and needed to respond to the pressures and the environment, and hence, by implication, that learning had taken place. The other view was that HEIs are not good learning organisations and that more learning takes place within projects implemented within HEIs, in which external project staff are often contracted in for their expertise, and, as such, learning and documentation of that learning is part of the formal project management process. There is the recognition that organisational learning within this context needs to be improved, and that learning from others does not occur naturally, but that it does occur more readily within projects. HEIs are becoming better at *embracing best practices and lessons from external environments*, for example business, but sharing best practices and lessons internally on a regular basis was not a common practice. The issue of organisational history and whether it was captured to assist someone new to a position so that lessons can be learnt from the past, hence, avoiding pitfalls and mistakes of the past yet improving on the positive aspects, was also raised:

> "…there is often an approach of kind of, well, we don't need history – it is irrelevant. We'll carry on. We'll just be really directive. We'll make it up as we go along or we'll just make decisions…focus on making decisions rather than gathering information and analyzing. But then the time comes when you realize that the corporate knowledge is important because then you can see what didn't work in the past and why it didn't work. And there are benefits to capturing that. But we are still not there yet on that" (Case 1.2, 2007:p.23)

There tends to be a *lack of people and cultural management* within this context, and a culture where student administration systems are generally not invested in. Staff are expected to work with less resources; they are expected to be more efficient and to deliver more with less. The perception was that HEIs have to contend with being more resource constrained and have to compete for resources at national level.

Another aspect emerging from the interviews was that there appeared to be differences in relation to change between the older and the newer universities. As discussed before under section **5.3.2**, on page 199, Shattock(2003) contends that universities do not start from the same point; they each have different histories which shape them. This notion concurred with the research as Post-92 universities expressed the opinion that they operated within a more financially constrained environment as compared with their research intensive, pre-92 universities. The newer universities tended to be more modern in style of management than the older universities, some even being overtly entrepreneurial. The older universities were seen as embracing a more collegiate culture of governance and leadership, with the newer universities being more managerial:

> "…universities are traditionally collegiate, consensus type organisations with perhaps the universities created in the 1990s being more managerial……"(Case 4.1, 2007:p.9)

The research suggests that the older more established research intensive universities tended to, for a long while, be generally content with the old-fashioned fragmented systems and services. However, this started to change in the 21st century where these institutions were not able to continue to be content with 'business as usual' but needed to rethink how they operated and actively engage in ways to continue to remain competitive. Issues of duplication of effort, duplication of systems and inefficiencies in administrative services were key imperatives requiring change and improvement, especially with the more explicit forms of competition between

universities for staff, students, and resources, driven in part, by the emergence of league tables and rankings within the UK.

CONCEPT 1.2.4: THE MANAGEMENT STRUCTURE OF HEIS IMPACT ON THE EASE OF ORGANISATIONAL KM IMPLEMENTATION

The management structure and style of the case universities varied. One of the Russell Group universities within the research had a very clear, explicit mission of excellence, and, although it is a traditional, well-established, 'old', UK University, it embraced the 21st century management practices of KM evident in the redefining of an executive position with a clear mandate and responsibility for KM, both in the job title and duties. This position had been in place for a few years; however, a new appointment had recently been made, and some redefining of the position occurred. At the time of the case study, a second University had, two months prior to the case study, redefined the position from a Director level to that of Senior Executive, also with a very clear mandate and responsibility for KM in the job title as well as in the job description. Both of these universities mentioned have a devolved structure, empowering Heads (Deans) of Faculties or Colleges with devolved budgets, influence and power; a participant indicated that the structure potentially weakened the 'centre' or the senior executive's position and ability to drive change across the institution:

> "They had very powerful deans. There was no question of trying to come up with a corporate approach even to admissions. People just went ahead and did their own thing" (Case 1.2, 2007:p.30).

The structure was perceived to have a direct impact on the way in which systemic implementation of KM and institutional change is brought about, especially as systemic implementation of KM requires a culture of sharing. A participant had this to say:

> "The money and power resides with the schools, and hence, the frustrating thing is that not much of a budget is kept at the top level and hence, when top level needs to do anything across the institution you need to get heads of schools on board and then only will progress be made. This is a very slow process ....." (Case 1.6, 2007:p.1).

Although the leadership of certain universities valued KM, and in some cases these were the leading institutions within this case to embrace KM, implementation difficulties imposed by the structure of devolved institutions were a real concern.

Despite some of the difficulties, a few institutions did embark on institutional wide projects to begin to improve processes in a significant way.

A third University, considered as a newer, pre-1992 University, also known for its national and international excellence in research and teaching, marked its strategy with a wish to be enterprising and outward-looking and sought to overtly match academic excellence with relevance, a policy which was not always popular in the late 1960s and early 1970s. Although, entrepreneurial in style and mission, the perception was that it did not overtly practice KM, but considered KM-like activities to be part of what senior individuals within the institution already did. Its structure, however, favoured a more central model and hence, it was suggested that the senior members of staff did not have the same kind of implementation difficulties as the decentralised universities did, especially the problem of decentralised budgets which potentially could weaken the centre's ability to introduce systemic, institutional-wide change, with the necessary budget and authority required for it.

Lack of communication within the devolved structure of universities was another factor which impacted upon schools and departments; duplication of effort, open sharing and pooling of resources within this cash strapped, constraint driven environment, was not uncommon. A Dean indicated that the lack of communication between schools or faculties was a typical example of "where something happens in one school which can impact on another but they do not know about it" (Case 6.1, 2007:p.1).

6.2.1.3. PERCEPTIONS OF KNOWLEDGE AND KNOWLEDGE MANAGEMENT

CONCEPT 1.3: VARYING PERCEPTIONS OF KNOWLEDGE AND KNOWLEDGE MANAGEMENT WITHIN THE HEI CONTEXT HAS AN IMPACT ON THE HEI CONTEXT TO IMPLEMENT KM SYSTEMICALLY.

A) KNOWLEDGE

Despite HEIs being recognised to be in the 'business' of creating, developing and transferring knowledge through their fundamental underlying functions of teaching and research, it was evident that there was no clear view of what knowledge was, how it was to be managed, and whether KM was considered a new concept or not. There was no common understanding of knowledge within this context and hence, the research suggested that the different perceptions of knowledge and hence, Knowledge Management had an impact on an HEI's ability to implement KM systemically across the institution. These perceptions are discussed here.

There were a varied number of opinions about what constituted knowledge within this context. The perception was that the University had a *variety of types of knowledge*. One form of knowledge being the knowledge that *resides in graduates' heads*, which would leave with them when they graduate. Another form was the *outputs of research*, conducted by staff and students, and still another form being the *professional knowledge* of practices, services and processes, which was operational and strategic in nature. Knowledge was perceived to be *acquired* through experience, and represented the *wisdom* of the institution. There were opposing views as to whether knowledge could be managed, as it was perceived to be locked in the heads of staff, and uncertainty about whether it should be managed and whether that would stifle innovation. Ownership of the knowledge, and whether it was indeed the individual's or the organisations, was another issue raised.

Knowledge was perceived to provide individuals with power, as one participant indicated:

> "Well, I mean knowledge is power. And that's true" (Case 2.1, 2007:p.12).

Given the nature in which academics work as self-sufficient units, it was suggested that it was easier to create 'fiefdoms' within this context and hence, the saying "knowledge is power" would be true within this context. KM, however, relies on collaboration and an environment of sharing, and hence, the fact that academics are not opposed to the idea of sharing would suggest that opportunities need to be created for this to occur more regularly.

B) KNOWLEDGE MANAGEMENT

Knowledge Management was perceived as 'what HEIs do already'; however, this research aimed to understand the practices and perceptions of all forms of knowledge, and, in particular, organisational knowledge, looking at factors that would hinder or promote the management of organisational knowledge. A number of perceptions emerged:

– FACILITATE THROUGH CREATING OPPORTUNITIES FOR SHARING

The perception was that HEI staff do communicate; however, more opportunities needed to be created and the communication designed in such a way so as to enhance and support the aims of KM, enabling the institution to achieve its aims and

objectives in a manner that was effective and efficient. On the other hand, the perception was that Knowledge should be managed on some level, as the consequences for the lack of managing it could lead to duplication and inefficiencies. Staff assigned the responsibility of KM indicated that they were not actual managers of the knowledge within the organisation, but provided the platform for others to manage their own knowledge, with the knowledge managers potentially becoming conduits of information and knowledge.

– CHAMPION NEEDED TO ENCOURAGE KM

The perception was that a central role for KM was essential to initiate and advance KM across institutions, especially within large institutions. Only two institutions had official and formal persons responsible for KM; another had a Dean who was informally responsible for KM-type activities within the faculty. The perception within these institutions was that, by definition, the institution recognised the importance of KM by investing resources into a position for it, to improve its chances of KM being implemented across the University compared with it emerging haphazardly. This investment in a role for KM was deemed vital to advancing the KM agenda as the perception was that KM type activities would not just happen, and that it did require a champion.

– STRONGER RELATIONSHIP BETWEEN SIZE OF INSTITUTION AND KM AND THE GOVERNANCE, CULTURE AND ORGANISATIONAL STRUCTURE OF AN INSTITUTION

In terms of *KM and the size of an institution*, the perception was that there was a stronger relationship between KM and the governance, culture and organisational structure of an institution than between KM and its size, except within specific areas. In terms of change, the perception was that it could be brought about quicker, with a higher ease of implementation within a smaller institution than a larger one, which normally required more formality, with complex processes and procedures, and extensive consultation. However, the perception was also that, if there were powerful, influential personalities at the larger institution, with lasting relationships and reputation, built up over time, they could bring about change as quickly within the larger organisation.

In terms of *communication*, the perception was that the smaller the institution, the easier it was to share in an informal way; hence, informal communication could occur more frequently than in a larger institution. Despite the ease of communication and implementation within a small institution as compared with a

larger one, the contention was that organisational culture as well as governance had more influence on the implementation of KM than size. If the culture of an institution did not encourage and support sharing and communication in an open and trusting environment, then, irrespective of the size of the institution, KM would not be successful.

– PERCEIVED CHALLENGES

Very clear challenges emerged from the interviews for KM implementation within the HEI context. It was noted that more challenges emerged than the perceived benefits for this context. This could possibly be due to the lack of understanding of what KM is and what benefits it could provide for an HEI environment:

i). Absolute convincing of benefits required

A gap between explaining what KM is and considering how it would benefit an institution on a day to day basis was noted. A senior staff member had this to say,

> "There is quite a gap between explaining what KM is and seeing how it would benefit an institution on a day to day basis. I do not think that I will be able to convince someone. In a sense we have a KM strategy… I am not sure that I know what KM means…." (Case 1.6, 2007:p.12).

The perception was that, if the value added to the institution in terms of efficiency and added market advantage was clear and obvious, then people would be persuaded to employ KM as a tool. Also "if there was little cost in the way of time and resource – because you need to find resources and money to do these sorts of things…. ", then KM would possibly be considered. The perception too was one of uncertainty as to whether staff would grasp what additional activities they would need to do as one person expressed:

> "But I think…I'm not sure if people would have a real grasp of…the substance of what it is. What is it that you are asking us to do that we don't do now?……What extra…what more can we do?" (Case 2.1, 2007:p.19).

The perception was that staff needed to understand what the benefits of KM were, how they would benefit individually, and what the benefits to the institution were, and what the priorities, processes and systems were that would best ensure that they reach their expected goals for the institution. The contention was that certain institutions would have undergone major, radical change over the past years and hence, were not in a position to undertake any change that was not deemed a

priority or was not a directive from the Government or Funding Councils. There were therefore two issues here, one that suggested that staff needed convincing of KM's benefits before undertaking it, and the other which suggests that in some way, staff were not confident enough in KM or its terminology to convince others of its benefits.

ii). Aspects of cultural, procedural and technical change needed to enable KM

The perception was that some change would need to occur within the HEI context to enable KM. Some level of procedural, technical and cultural change would need to occur to begin to accommodate for KM which relies on a culture of sharing. Cultural and organisational aspects of an institution are difficult to change; however, the perception was that it would be difficult to change the culture of any organisation, not only HEIs.

iii). Resistance to managing knowledge formally within this context and concern for information overload

There are many situations that call for better decision making and better actions based on access to the appropriate information and knowledge. However, the contention was that there needed to be some way of preventing information overload that could occur given the amount of information that could be easily accessible. An example was given of a faculty that could be ignorant of certain activities and processes within another faculty due to a lack of communication, the consequence of which would lead to duplication of effort and reduced productivity within this environment. However, being able to identify mission critical knowledge and information for sharing would be crucial, as sharing all forms and types of information could lead to information overload and hence, not provide the added value to the organisation.

iv). KM is perceived as information management, librarianship and information technology

Knowledge and Knowledge Management have very different definitions, both in theory and in practice. Within this sample of HEIs, KM was perceived to be information management and the ability to use it, 'as knowledge resided in people's heads and could not be unpacked'. Another perception was that KM was librarianship. These different perspectives of KM present challenges to its implementation as the actual benefits, together with the potential added value,

juxtaposed against just managing information, were not clear within this context. One participant had this to say:

> "I could think about it in an IT sense, and I can think of it as a librarianship area, but on the other hand I can think of it in a very esoteric way…" (Case 6.1, 2007:p.5).

v). KM needs to be light touch and not forced

It was suggested that the implementation of KM needed to adopt a 'light touch' approach, as opposed to being forced on staff. The perception was that it should be promoted in such a way that staff could embrace it as part and parcel of what they do, hence, as second nature to what they do on a daily basis. The workforce within an HEI environment is largely professional, and highly skilled; hence, enforcing anything as large as KM onto staff would not achieve the best results as encouraging and making suggestions for change and improvement, and ensuring that understanding of the benefits at an individual level.

vi). KM not considered a priority within this context

When discussing KM with participants, the perception was that it was not a priority for most institutions; it was viewed as not being on top of the priority list, as there were many external pressures on institutions not only to account for activities but also to compete and ensure their continued level of operation. KM was not viewed at the time as being a tool to assist in achieving or addressing some of the external pressures. A university member contended:

> "And our priority is to develop the infrastructure and increase the number of staff at the institution" (Case 2.1, 2007:p.15).

There were some concerns about how to balance the budgets against the many priorities and to balance decision making around potential priorities.

vii). Leadership has a strong role to play in influencing the use of KM within institutions

Given that leadership creates and sets the culture, structure and priorities for an institution, the leaders have a very strong role to play in the decisions around priorities for any given academic year. However, there are different views about how much influence they actually do have within an institution. It was clear at the institution where KM was a priority that its priority and implementation was largely due to a strong leadership push to elevate the importance of managing 'all things

considered knowledge' at that particular institution. A participant conveyed the view that, without leadership support for KM, promoting KM from the bottom up would only work up until a point where policy changes; thereafter procedural and technical change, and resources are needed for it. Getting leadership to commit to KM, amidst the vast number of external pressures in terms of resources and finance, was perceived to be a challenge which would require more understanding of KM to make clear the potential benefits of KM. This understanding was deemed necessary, not only at the senior leadership level, but also at the middle management level.

A Vice-Chancellor of an institution was perceived by some to have a direct influence on whether KM was a priority at the institution. A collaborative culture is required for KM and Callahan *et al* (2009) agree that leadership is key to establishing collaborative cultures, especially in teams and communities within organisations. The opposing view was that, despite this being the case in certain institutions, in others, it is not the influence of the Vice-Chancellor alone, but a blend of influential people, who, over time, change the way organisations work.

A participant contended that leaders enter universities with a specific skill set, based on work experience, life experience and experience of what works and does not work that translates into their priorities set for an institution. Being able to capture leadership best practice and experience was seen to be a difficult task and one that was not always undertaken.

In terms of leadership using performance management as a tool to support the KM initiative, HEIs were perceived not to have a history of embracing or utilising this tool to ensure that staff remain on target, and are inspired to work as a collective to achieve common goals, as opposed to meeting their own faculty or department goals. As part of the accountability of staff, HEIs utilise personal development tools and training to ensure that staff are encouraged to progress and to achieve personal and institutional goals. These tools are not used as personal measurements of success, but to address any areas that require improvement.

How communication occurs, and what formal procedures are in place to ensure the cascading of information, is often left to the middle managers of institutions, which does not always guarantee that the information and knowledge will cascade down to staff, as it largely depends on the style of leadership, as well as formal and informal processes in place.

viii). Managing information or knowledge can stifle innovation

There was a perception that, once there is some thought about managing knowledge or 'shipping' information to different departments, accessibility issues arise and decisions need to be made, leaving the control of these information decisions with a few persons. This could stifle innovation as the information decision makers and distributors would then be the ones able to decide on what information should be accessible, and to whom. Tiwana (2000) also contends that excessive formalisation prevents people from behaving in ways other than those that are negotiated ahead of time and too much focus on formal knowledge leaves little room for informal, tacit, and socially embedded knowledge, which is where the *know-why* lies and the most significant work gets accomplished.

ix). No incentives to encourage KM

Currently, in the institutions that have KM as a priority and those moving towards it, the interviews showed that no incentives were in place to embrace KM, which was viewed as a job in addition to their work and not part of their normal work. In the main, academic staff receive recognition through their research and publications, which often relies on researchers being able to claim ownership of the original ideas, and hence, KM within this context is not always considered beneficial, except after the research is complete and for distribution of the research after completion. There were opposing views as to whether different forms of incentives should and could be included within this context; however, incentivisation, and reward procedures within universities, is generally a contentious issue. Traditionally, progressive scale structures are used, where academics and other staff can arrive at the top of the scale, even if very little is done, or outputs achieved. Certainly, few financial incentives are built into the system; however, one Dean acknowledged using positive reinforcement as a tool within his faculty, a strategy he found brought about remarkable results.

x). KM requires additional resources

The perception was that KM was not currently practised as part of what University staff members do on a daily basis, and was perceived as additional workload outside of the current remit and would therefore require additional resources. Within a cash strapped environment, one which requires staff to do more with less, additional resources are usually a scarcity. Some of the perceptions were as follows:

> "They don't have the resources to dedicate to it. So they are starting the process…… But it is not enough saying that through our normal processes all these changes will be managed" (Case 1.2, 2007:p12)

Another indicated,

> "…because you need to find resources and money to do these sorts of things" (Case 2.1, 2007:p.19)

KM was viewed as needing additional resources and hence, in certain cases, KM was not being considered due to the perception of the additional resource of time and money required, and the lack of both within this context. Carla O'Dell (2004:p.19) suggests that "Knowledge Management works to the extent that it helps people achieve their work objectives in support of the organisation's mission. Overlaying additional work on top of the old ways of working will not produce new results."

xi). Taxonomy and a common language needed

Taxonomy is defined by Rumizen (2002) as a hierarchical structure for a body of knowledge, which provides a method for classifying and grouping knowledge and how different items relate to each other. With the sample of HEIs studied, it was clear that there were different perceptions of KM and knowledge, terms were also used interchangeably to describe KM, and hence, the perception was that some common language was required; knowledge and the management of it, especially within the HEI context (designed to create and distribute knowledge), were viewed and perceived very differently across the University. The perception was that the terminology used should be changed to accommodate the HEI context, as there was resistance to it. Scepticism for KM was thought to be a consequence of the KM terminology not being clearly understood and the lack of clarity as to the difference in relation to Information Management and practices within HEIs:

> "I am not uncomfortable with the words as they are. I am aware that there is a certain natural resistance to the idea" (Case 5.1, 2007:p.10).

It was clear that a common language, a taxonomy, would certainly help the institution with its understanding and hence, the implementation of KM. At each institution, the researcher expounded on the view of KM which the research would be concentrating on and using as a general framework; most institutions either indicated that they liked that pragmatic view of KM, and would consider adopting the view (those without definitions but with a KM strategy), or indicated that they

had a very similar, practical view of KM as a definition. The perception was that a *definition for KM* would be helpful for this context as KM has different meanings to different people. A strategy to guide the thinking was needed to encourage a common view of what KM could and should be, and an understanding of how it was different to what was already being done within this context.

> "You could seriously say that the University here would benefit from a written, and universally supported by senior management, policy on approaching knowledge management " (Case 5.1, 2007:p.16).

Even though one institution had the KM strategy for a few years, it was still deemed experimental, and a variety of changes were taking place to best place KM, its terminology and its practices within the institution.

xii). Tension between the business, IT and ownership of new projects

Within the HEI context, it was clear that the practice was for the Information Technology and Management Information System departments to initiate and manage technological and infrastructural change, and the 'business' or functional units were considered to be not interested or not sufficiently knowledgeable. The perception was that this practice has changed, with the 'business' more involved and responsible for driving change projects across institutions and IT supporting it rather than driving it. This was, however, seen to present a tension between these units, as a senior executive explained:

> " And that is a historical thing that I think ….(he) … is going to have to deal with. And it is part of knowledge management. Until my generation of people, in the tradition of IT is separate, people who were in computing services and management information drove all the technical, technology-based and infrastructure-based, changes. And saw that as their role. And the business wasn't a bit interested or knowledgeable either….So we have this tension" (Case 1.2, 2007:p.14).

xiii). Training required

Training was suggested as a tool to enhance awareness of the softer skills required for Knowledge Management; how to capture the human element, which Nonaka (1998) terms as 'tacit' knowledge. The perception was that there were benefits associated with capturing the knowledge deemed implicit to an individual; however, this would require some process change, and improvement and, if there were very different views of what KM was and there was a lack of understanding of the clear

benefits for this context, as well as how it differed from IM, then some form of training was required to engage staff with the KM agenda and its benefits.

> "There is quite a gap between explaining what KM is and seeing how it would benefit an institution on a day to day basis."(Case 1.6, 2007:p.4)

There was recognition that training does not always necessarily imply improved understanding for implementation; however, it was suggested that training would improve the common understanding of KM and provide platforms for discussing issues of contention. It would also provide a platform for discussing how the benefits of KM could be utilised for HEIs, more broadly, and more specifically, for individual academics.

xiv). Transport of experience difficult

Experience and skills are important aspects of what Stewart (2001) refers to as part of an organisations intellectual capital. Transporting that experience, however, was perceived to be a very difficult task. Staff within HEIs are generally highly skilled professionals, each with their own personality, experiences, background, perspectives and world views, and each would therefore have a very different skill set which could be extremely important to share with others within an institution. Transporting that experience and knowledge deemed critical to an organisation's well-being, and understanding best practice to improve outcomes within an organisation, could be advantageous; however, the perception was that herein lies the challenge.

> "And then the real question, the one that I think is the most difficult to solve, is how you make that transportable between people. Because you cannot transport the experience. You can transport the outcomes of the experience and the knowledge of what does and doesn't work through coaching, mentoring, teaching, that sort of thing. But really it would be something of an ambition for all of us to find some vehicle through which we can define the portfolio and understand what we ourselves have, and what we haven't got" (Case 5.1, 2007:p.7).

6.2.2 PRACTICES OF KM

CONCEPT 2 – PRACTICES OF KM WITHIN HIGHER EDUCATION INSTITUTIONS EMPHASIZE INFORMATION MANAGEMENT MORE THAN KNOWLEDGE MANAGEMENT. HOWEVER, POCKETS OF KM EXIST MOSTLY WITHOUT THE NAME OR TERMINOLOGY.

– PRACTICES EMPHASIZE INFORMATION MANAGEMENT MORE THAN KNOWLEDGE MANAGEMENT, PRACTICED WITHOUT TERMINOLOGY

The perception within the sample of HEIs interviewed was that KM activities were happening in the HEI context. This is in keeping with Rowley (2000) who contends that universities do have a significant level of Knowledge Management activities. The research suggests that these activities in the main are implemented without the label KM and are linked more to the spread of ideas linked to good practice on how to manage processes, as a participant contended:

> "Lots of KM activity occurs within institution without the link to the name which is partly linked to the spread of ideas linked to good practice on how to manage processes, one of them being the involvement of user communities, and setting up communities, either virtual or physical"(Case 1.1, 2007:p.2).

In most of the institutions considered, except two, KM was not linked to a KM manager, and hence, if KM type activities were implemented within these institutions, it was without the name. Examples given of KM type activities included setting up communities of practice with the purpose of facilitating communication and best practice. Pockets of KM-like activities were considered to be practised in an *ad hoc* fashion across institutions without KM strategies, dynamically, being 'made up as they go along', without the name. One institution focused on creating a knowledge product from their core business, their lecture notes, to be able to re-use modules even when key staff were sick or had resigned from the institution. As academic staff generally remain within the employ of a University for relatively long periods of time, when they do eventually resign or move on to another university, all their expertise, knowledge - both organisational and content specific knowledge – and their relationships go with them unless there is a focused and clear succession management strategy, with the appropriate KM strategies to document critical and useful knowledge from the person.

All of the institutions within the sample had information strategies, and indicated that their strategy was predominately about information rather than knowledge management. The view was that, if KM was simply called IM, there would have been

much more consensus, and using the word 'knowledge' created an unnecessary difficulty, as most resist managing it:

> "If we had to simply call it information management we could have all agreed on it but promoting it to Knowledge, - which most people would resist the concept of managing has created an unnecessary difficulty for us in realizing the vision of it" (Case 1.6, 2007:p.1).

Universities also found themselves in positions that required them to be more entrepreneurial in nature and, hence, some have taken on consultation work with businesses within the regions, which included advising businesses on their actual knowledge products and how best to use these.

A Dean expressed the need for evidence-based decision making and hence, formal process mapping of certain student processes occurred within this university context to improve processes and efficiency. The submission made for the RAE was also considered as being part of achieving some of the aims of KM as it required analysis of specific data sets, which needed to be submitted. This analysis could be used and transformed into knowledge to enhance and support decision-making.

Emphasis was placed on creating additional spaces for sharing communities within HEIs for staff and students, through creating coffee lounge areas for meetings which could take on a formal or informal nature, conducted within an informal setting. Within certain departments, it was noted that a culture of open communication and sharing was practiced; however, within other departments this was not the case. The old fashioned form of communicating and sharing, which is simply speaking to each other, was mentioned as a form of sharing that could be used more often as well.

A variety of technological tools were mentioned as being used to support communication; however, this does not present a comprehensive list of all the technological solutions implemented within higher education, but indicates those highlighted within the discussions and during the interviews. Some of the technology discussed and of interest for this context are listed:

- EMAIL – for day to day sharing and communicating activities between staff, and students and between students themselves;
- CUSTOMER RELATIONSHIP MANAGEMENT *(CRM),* (used within specific units, under a different name - here this technological solution is another that creates discourse due to its name, however, its functionality is widely

accepted as being beneficial to the HEI sector. The word under contention here is 'customer'; educationalists do not like to refer to students or any other stakeholders within the HEI context as customers. If it had a different name, for example Learner Relationship Management (LRM), the opinion was that term would meet with less resistance than the C in CRM. However, it is not only learners who have a relationship with HEIs, as can be seen from the relationship which KT units have with business and HEIs;

- MANAGEMENT INFORMATION SYSTEMS – data warehousing was highlighted as a tool used to store data which allowed mining of the data for decision making and other uses;
- PORTALS - certain institutions were using portals, and others recognised the need to move towards using portals;
- INTRANETS - provide institutions with the ability to create organisational wide platforms for sharing data and information, and institutions within the sample were using it;
- FRAGMENTED SYSTEMS VS ENTERPRISE RESOURCE PLANNING (ERP) SYSTEMS – traditionally systems developed in an *ad hoc* fashion, driven by departmental needs across universities, which would be picked up by central IT units for further development or system deployment. However, this created a plethora of fragmented systems and the need to create systems which would alleviate duplication of effort, and duplication of data and financial resources. Some of the institutions had modules of ERP systems, addressing specific functional needs, but it was not evident within this sample of institutions that one ERP system was used to address all functional areas;
- TEACHING AND LEARNING TOOLS – a variety of teaching and learning tools were mentioned as being used within this context, with all universities within the sample using the same student information system which assisted institutions to report to government on a variety of indicators. Virtual Learning Environments (VLEs) were used to support the teaching and learning process and the administration of the teaching and learning process. The use of digital repositories were increasing which assists in the teaching and learning process as well. Content management and e-learning tools, like webCT and Blackboard, were also used within the HEI context as tools to enhance learning and teaching.

An in-depth analysis of how these tools were being used, the frequency of its use, whether each were being used to its full potential to enhance the KM agenda, was not possible within the limitations of this research.

– THERE IS A SLOW ADOPTION OF 21ST CENTURY BUSINESS METHODOLOGIES LIKE KM. HOWEVER, CAUTION AND A PATHFINDERING IS REQUIRED.

There was no one single reason given as to why HEIs were not embracing KM as a tool to be used more widely; however, the perception was that HEIs were slowly starting to pick up business and corporate methodologies and using them to achieve results. This was evident by four of the institutions within the sample having either created a KM strategy and executive role for KM or having adopted other business management tools like Lean management to improve efficiencies and eliminate waste. Due to the very different missions of HEIs and business, resistance to adopting and utilising business methodologies exists. Universities by and large are institutions with a vast number of students and staff within them, also having different structures rather than most having devolved structures than centrally controlled ones. Also, given the nature and extent of change experienced by universities, some require the 'pathfindering' of tools by other more established stable and elite universities, before adopting it.

6.2.3 PERCEIVED BENEFITS OF KM

Despite the lack of a common understanding of KM within this context, benefits were understood to be linked to using KM. Participant views, emergent themes and concepts are discussed below:

– CAPTURE AND REUSE OF GOOD MANAGEMENT PRACTICE, AND CORE KNOWLEDGE PRODUCTS, CAN LEAD TO BETTER OUTCOMES:

Managers and academics are recruited with a set of tools which encapsulates their experience of what works and does not work within a given situation or environment. Each, therefore, will have a skill set which would be used within his or her particular role, and is transportable to other roles undertaken. If these were known to another manager or academic considered new to a position, this would alleviate duplication of effort and time, and speed up the time to deliver effectively and efficiently, within the role and, more strategically, improve outcomes for the university at large.

– COMPETENCE OF STAFF AND THEIR MANAGEMENT, ENHANCE COMPETITIVE ADVANTAGE:

When asked the question, "In a global economy, does knowledge provide an institution with a competitive advantage", participants were of the opinion that the abilities of staff and the organization, and how best these were being managed, provided the institution with the competitive advantage. This emphasized both the

competencies of staff, and the effective management of staff possessing those competencies. The perception was that knowledge resides with people and institutions, and, hence, how best these are managed within this context will provide the competitive advantage. The *European Guide to Good Practice in Knowledge Management* (2004) defines competence as an appropriate blend of knowledge, experience and motivational factors that enable a person to perform a task successfully. Hessami and Moore (2009) contend that a competent person requires a number of requisite qualities and capabilities that fall into three broad areas - behavioural, evidential, and contextual. They further purport that "the right blend of these abilities renders a person competent in that he (or she) would achieve the desired outcomes consistently, efficiently, every time or more often than not satisfying or exceeding the expectations of the clients over varying circumstances" (Hessami and Moore, 2009:p.25).

Despite HEIs being very different in nature and mission from businesses, HEIs have to be competitive to attract good students, staff and financial resources, placing them in a position to consider how they should reinvent themselves so as to be competitive in today's local, national, international and global knowledge economy. HEIs considered highly reputable understood that they were not immune to the pressure of having to be competitive and increasingly recognised that they could not afford complacency in their struggle to remain competitive.

– KM CAN REDUCE DUPLICATION AND ALLOW FOR OPEN USE OF RESOURCES:

The University as an organisation is a very large one, one that includes a varied number of disciplines, each with a different set of expertise. It also includes a number of service units which have different functions within the university. With the devolved way of working within universities, it has become apparent that faculties may operate as separate business units, and, over time, departments have developed different systems and processes to address their own immediate needs, leading to duplication with regards to systems and processes across universities. Some institutions within the sample employed very clear measures and tools to start to address this problem, and KM was viewed as being able to assist institutions to achieve this goal. A member of staff had this to say with regards to duplication of effort:

> "The idea of recreating things every single year is just plain silly" (Case 5.1, 2007:p.4).

– IMPROVED COMMUNICATION CAN LEAD TO IMPROVED EFFICIENCIES:

Within the HEI context, staff do not communicate regularly and openly, as part of a formal procedure or process, across boundaries, that is boundaries of discipline, and type of work. There may be committee meetings that address certain procedural and academic issues; however, staff do not naturally communicate openly across faculties with the express purpose of sharing knowledge for the better good of the university. As discussed before, staff are not opposed to the idea of sharing; however, for this to happen, opportunities need to be created to encourage, facilitate and support it. There are many benefits arising from this form of open communication, some of which include less duplication with regards to spending and development, and more combined efforts to improve overall outcomes. Often duplication is a consequence of departments losing confidence in the ability of 'the centre' to provide them with what they need; hence, they either source it themselves or develop it, which could happen in more than one department. A participant contended that, from an excellence viewpoint, the need is picked up locally, but from an efficiency standpoint it falls down. Open communication is key to understanding what other units are doing within the institution so as to be able either to work jointly on areas that can benefit from cross faculty or department collaboration, or to capture best practice and thereby to avoid encountering the same challenges and difficulties if possible.

6.3. SUMMARY

Chapter 6 presented the findings of the qualitative phase of the research, yielding rich emerging themes and concepts. The chapter expounds on the substantive theory developed by discussing each concept individually, presenting the underlying themes which eventually built up to create the substantive theory.

These themes, categories and concepts were grouped and regrouped several times, over a long period of time, and eventually the overarching theme emerging from the case study and data, led to the substantive theory. Conclusions from Phase I were incorporated into the model, and new ideas and themes were given prominence where appropriate; conclusions already identified were subsumed into the lower levels of the model under the already generated categories. The final substantive theory was presented as:

21st century management tools like KM are **being considered** within the HEI context; however, the **KM terminology is contentious**, there is a stronger **emphasis on IM** more than KM currently, and **practices** are largely in **pockets** rather than being implemented systemically across institutions. Contributing contextual and other factors impact HEIs ability to implement KM systemically, however, KM is perceived to yield benefits linked to **quality, improvement and learning**, hence, to improved **institutional performance and competitive advantage**.

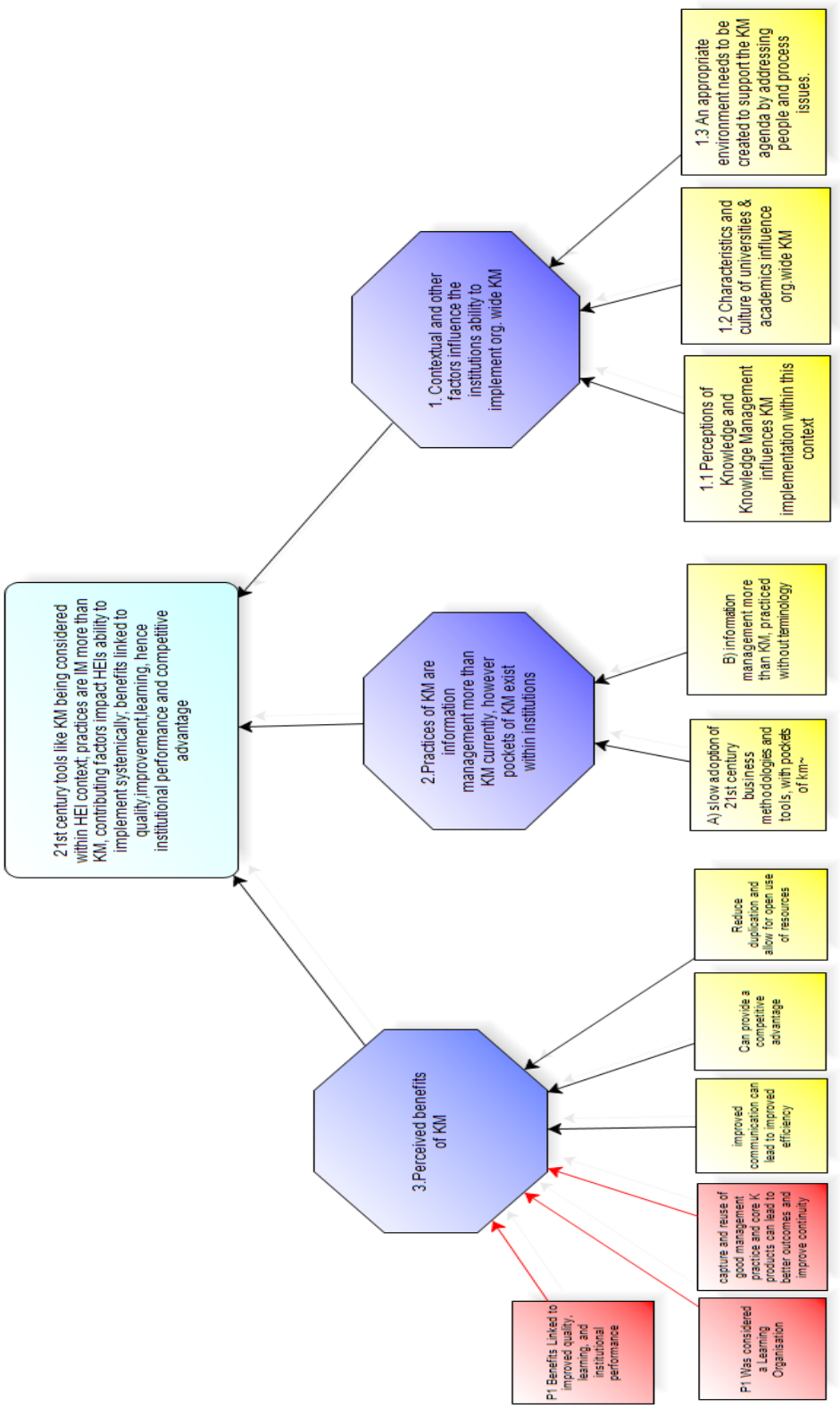
The substantive theory above has four aspects to it (see Figure 6. 4 on page 254):

- KM is being considered as a management tool within HEI; however, the terminology introduces contention;
- The emphasis of practices are on IM more than KM;
- Contextual and other factors impact on HEI's ability to implement systemically;
- Perceived benefits are linked to quality, improvement and learning, increasing institutional performance and competitive advantage.

This substantive theory provided a rich understanding of the current state of KM practices and perceptions in Higher Education in the UK. As such, it contributes to the understanding of the applications of KM within this context, shedding specific light on the factors that contribute to implementation success or failure, which ultimately contributes to the overall understanding of university management, and how best institutions should begin to harness their knowledge assets, in particular, to improve institutional performance and achieve competitive advantage. The substantive theory therefore provided an explanation as to the current state of KM within HEIs within the UK, with specific emphasis on the perceptions and practices of KM within this context today, and thereby making a theoretical contribution to the fields of Knowledge Management and Higher Education (see Chapter 8 for a further discussion on the contribution to knowledge).

Chapter 7 follows, in Section III, and presents a summary of the data analysis and findings of the research, providing summative arguments, while Chapter 8 introduces some conclusions, discusses the contribution this research makes to knowledge, with several suggestions and recommendations added.

FIGURE 6. 4 LEVEL 0 SUBSTANTIVE CODE MODEL



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SECTION III

SUMMARY AND CONCLUSIONS

OVERVIEW

Chapter 7 of the research thesis presents a summary of the research as a whole. The chapter starts with a reminder of the research aims and objectives, and presents a summary of the findings as it links to the research aims. The chapter concludes with a pictorial summary of the results of both the phases of the research, bringing together the main research elements of each phase.

Chapter 8 provides the concluding comments for the research, in particular addressing the contribution the research has made to the field of Knowledge Management and Higher Education, limitations of the study, the empirical evidence and how it supports the arguments presented in the research. The research is located in the literature, and a reflexive account is given. The chapter concludes with suggested recommendations for further research.

Chapter 7

A SUMMARY

SUMMATIVE COMMENTS

CHAPTER 7

7. SUMMATIVE COMMENTS

7.1. INTRODUCTION

This research study aimed to investigate the perceptions and practices of KM within the context of universities within the UK, amidst the challenges and turbulent changes that universities have had to endure: massification of higher education, globalisation, the knowledge economy, ubiquitous computing, marketization, and increased competition within an environment that traditionally was collegiate in nature. The research therefore considered the contributing factors that hindered or promoted the use of KM, especially in this turbulent environment of change. The purpose of the sequential, mixed, methods study was, as a first, to explore and gain an overview of the perceptions and practices of Knowledge Management within HEIs within the UK (in Phase I). A survey was used within this phase to collect the data on the practices and perceptions of KM within this context, and possible contributing factors that hindered or promoted KM use within the HEI context in the UK. Next, with the assistance of this oversight, and the findings of Phase I, institutions expressed their willingness to participate in the second part of the study, Phase II, to develop and expand on the findings of Phase I, using face-to-face interviews to further explore certain contextual aspects, as well as perceptions of KM implementation within HEI within the UK.

The research design incorporated both quantitative and qualitative data to embrace the analysis strengths of each, so as to enhance the understanding of the practices and perceptions of KM use within HEIs in the UK, and to understand the contributing factors for the use or lack thereof, of KM within this context. Given the infancy of the body of literature on KM within HEIs, and more specifically KM within HEIs in the UK, the choice of the research methodology was crucial; Grounded Theory was the research methodology of choice, following an inductive approach to analysis.

PHASE I therefore aimed to provide a general overview of the position of KM within the UK HEI context. This was considered a necessary phase as the researcher did not have a body of secondary data that could be used to provide this general

overview and position of KM within the UK. Although the two phases were separate phases, each utilising different methodologies (Quantitative approach and methods of analysis in Phase I, with Phase II using the Grounded Theory methodology) the individual institutional responses from Phase I enabled further exploration of issues within the case study in Phase II. Once the Phase II analysis was completed, findings and conclusions from Phase I providing new and different dimensions to Phase II, were included as data and incorporated into the Substantive Theory.

7.2. A SUMMARY OF THE RESEARCH QUESTIONS

The research aimed to investigate the current state of KM use within the context of Higher Education and particularly, universities, within the UK. Given the tremendous amount of change that universities have undergone over the past few decades, and the suggested changes that they will continue to face, the research aimed to understand whether universities were driven to embrace management tools like Knowledge Management as a way in which to cope with the impact and consequences that some of the external pressures were having on it. In the previous chapters, we have discussed that the role of universities in society is being questioned; however, their basic function is not questioned, and that is to share knowledge. The research, however, was keenly interested to understand to what extent universities were sharing all forms of knowledge to enhance its competitive advantage, especially in an environment that demanded it to be more entrepreneurial in nature. As a reminder, the research aimed:

> To investigate Knowledge Management practices and perceptions within the UK HEI context.

More specifically, the research aimed to investigate:

1. Whether Knowledge Management was being used as a management tool within Higher Education Institutions in the United Kingdom, to enhance competitive advantage;

2. What the contributing factors were, that hindered or promoted the implementation of Knowledge Management within the HEI context;

3. What the perceptions and practices of KM were, within this context.

This chapter brings together the research elements of Phase I – the Quantitative Phase, and Phase II – the Qualitative Phase, highlighting the emerging concepts. A discussion of these follows.

7.2.1 RESEARCH QUESTION 1:

IS KNOWLEDGE MANAGEMENT USED AS A TOOL WITHIN HIGHER EDUCATION TO ENHANCE COMPETITIVE ADVANTAGE?

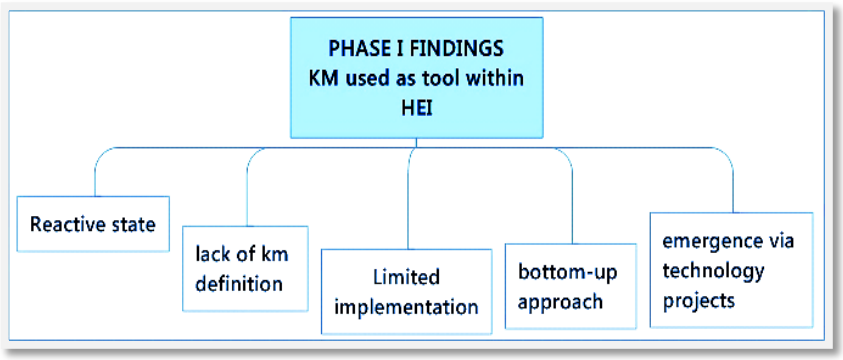
Within the first phase of the research, the survey revealed that KM was indeed being used as a management tool; however, it was not being used extensively, and was implemented in pockets rather than on an institutional-wide level, implemented mostly in departments like the IT department and the library. This is in keeping with Tippin's (2003) article "Implementing Knowledge Management in Academia: teaching the teachers", in which he suggests that, while academics have become astute at teaching and conducting research related to KM, they have been much slower at adopting the concept. Only two institutions indicated that they had a KM strategy in place. This was a surprising finding, in that having KM strategies in place implied that a very high value was placed on the formal and explicit and conscious management of knowledge within these institutions, and that it received the very highest level of support. These institutions had an exceptional reputation for excellence and quality, were well respected, and were placed very high up on the league tables. A further six institutions indicated that they were in the development stages of working towards a KM strategy; however, none of these institutions took part in the case study and hence, the research could not follow up with these institutions as to what that development entailed.

The research suggests that the emergence of KM implementation was by way of technology projects and did seem to emerge from the bottom up- rather than the top-down. A relatively large proportion of the institutions (45%) fell within the 'Reactive State' of KM within the institutions, implying: that these institutions were at the beginning stages of an integrated approach to KM; that enterprise wide systems were in existence, but awareness and maintenance were moderate; that the organisation collected and understood metrics for KM; and that managers recognised the roles of, and encouraged, knowledge sharing.

The research also suggested that there was a lack of KM definition within this context, even within institutions that had a KM strategy in place. This was surprising,

as institutions of higher learning share knowledge as a basic function, and the expectation would be that if a KM strategy was in place, that there would be a clearly defined KM definition as well. In both cases where a KM professional was in place, these positions were in its infancy, and the roles and responsibilities and how best to promote KM across the institution, were being discussed. There was some overlap in the usage of the terms, data, information and knowledge within different sectors. There was also some misunderstanding about what a KM strategy was and should be, and confusion on how it differed from an Information Strategy, was also apparent.

FIGURE 7. 1 PHASE I: SUMMARY OF FINDINGS: KM USED AS TOOL



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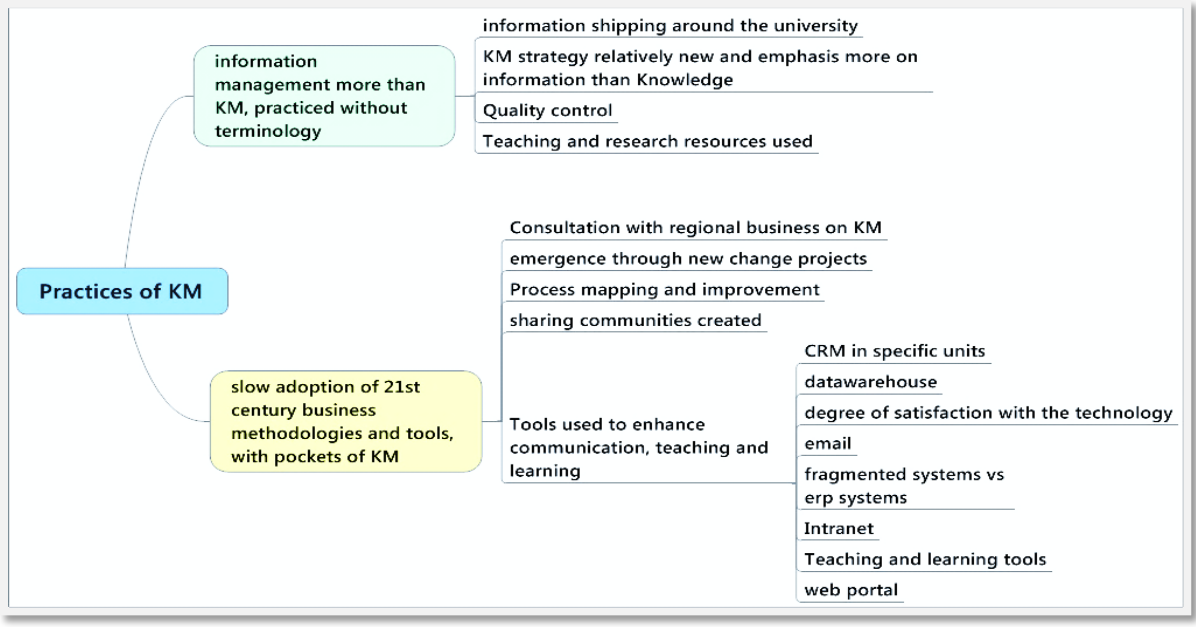
Even though there are two schools of thought on how to implement KM, a distinction should be made between information management and KM; a distinction not clearly made within this context. Again, the apparent lack of understanding here was also in itself significant.

In Phase II, the research supported and expounded on the findings of Phase I, and suggested that these universities were slowly adopting 21st century management tools like KM to enhance competitive advantage, and that pockets of KM implementation existed within this context. The findings of Phase I suggested that only one of the institutions taking part in the case study had a KM strategy and senior staff member responsible for KM; however, at the time of the interviews, a second institution had promoted the role of the IT Director to that of senior executive, with the responsibility of KM in its title and charge.

The findings of this research, are in keeping with Slater and Moreton's (2007) case study conducted. They too found in their case study that within HEIs there were

several practices consistent with KM principles, but without reference to a specific KM strategy. This research however, did reveal that participants were of the opinion that a KM strategy would greatly assist KM implementation within the institution.

FIGURE 7. 2 PHASE II: PRACTICES OF KM WITHIN HEI CONTEXT



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7.2.2 RESEARCH QUESTION 2:

WHAT WERE THE CONTRIBUTING FACTORS THAT HINDERED OR PROMOTED KM WITHIN THE HEI CONTEXT?

Phase I of the research identified a number of factors that hindered the use of KM within this context. Phase II added to this, and provided a deeper understanding of some of those factors considered to be contributing to the ability of an HEI to embrace KM on an institutional-wide level, and identifies certain factors to enhance the implementation of KM within the HEI context.

Phase I identified five factors that hindered the HE context from implementing KM:

- The benefits of using KM within this context was not clearly understood;
- The organisational structure had a clear role to play in supporting or not supporting the implementation of an institutional-wide KM implementation;
- The lack of an overseeing unit hindered the implementation of KM, especially in such a large, complex organisation;
- Politics and the resistance to change, and

- The Information and knowledge distinction was not clear.

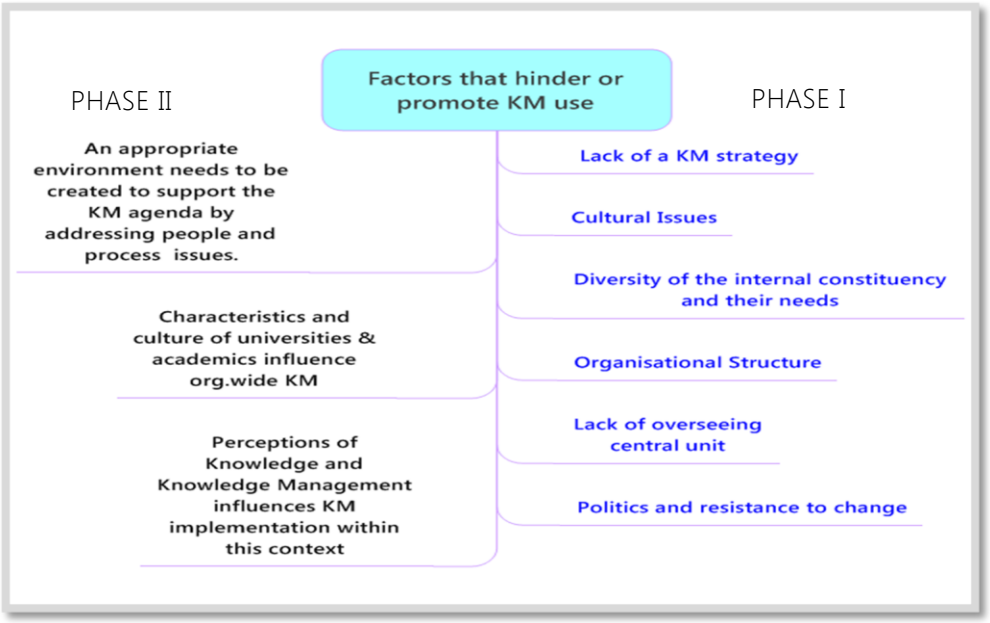
Phase I identified challenges to implementing KM within this context:

- A lack of KM strategy (59%);
- Cultural issues (56%);
- Diversity of the internal constituency and their needs (56%);
- Organisational structure (33%);
- The lack of a central unit taking the responsibility to drive the agenda (30%), and
- Politics and resistance to change.

These factors were considered as factors that hindered HEIs ability to embrace KM on an institutional-wide level. Phase II of the research suggested that:

- An appropriate environment needed to be created to support the implementation of KM within this context, by addressing people as well as procedural issues;
- The characteristics of universities and the nature of academics and their work had a strong influence on an institutions ability to implement KM systemically;
- The perceptions of knowledge and Knowledge Management within this context were contributing factors to HEIs ability to implement KM on an institutional-wide level (as can be seen in Figure 7. 3 below).

FIGURE 7. 3 PHASE I AND PHASE II-FACTORS THAT HINDER / PROMOTE THE USE OF KM IN THE HEI CONTEXT



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Phase I factors were included in the overarching factors that hinder or promote KM identified in Phase II. A summary of each of these factors is provided next.

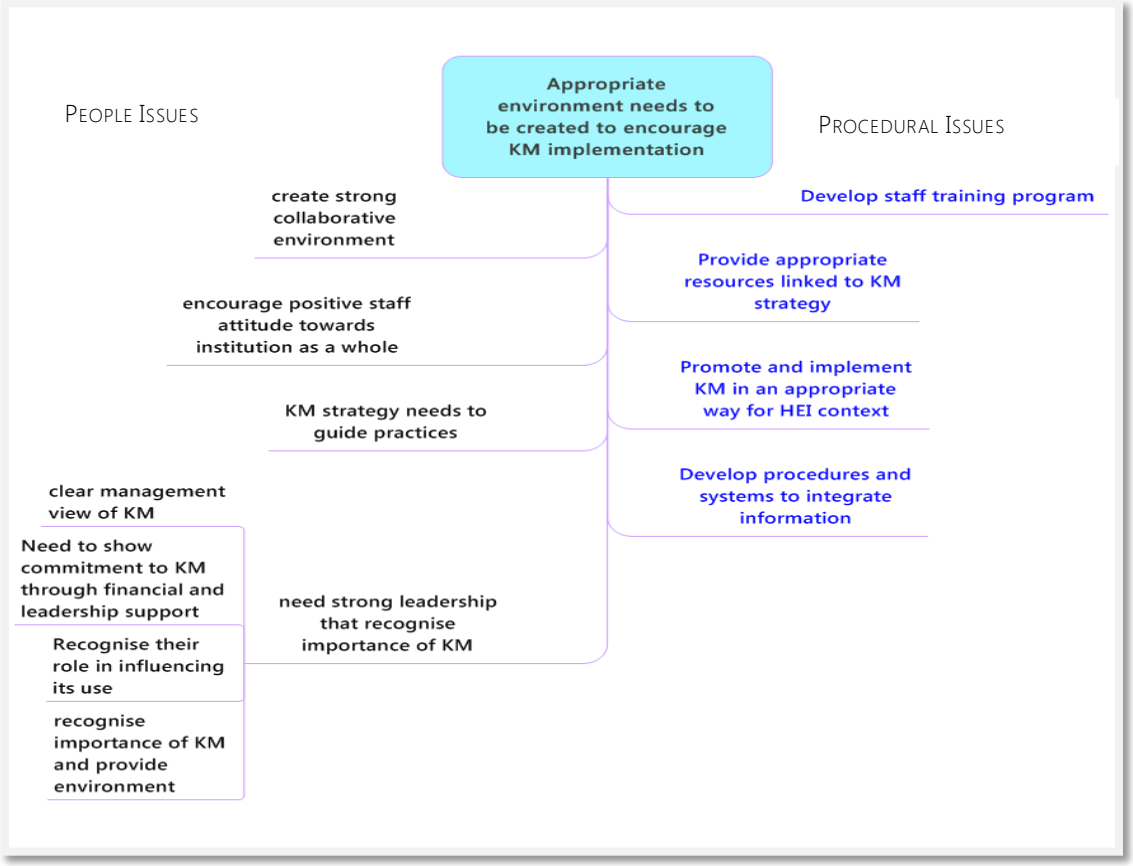
7.2.2.1. FACTORS THAT PROMOTE KM USE

- AN APPROPRIATE ENVIRONMENT NEEDS TO BE CREATED TO SUPPORT THE KM AGENDA BY ADDRESSING PEOPLE AND PROCESS ISSUES

Slater and Moreton (2007:p.381) conducted a case study within an IT department at Wolverhampton University in the UK, and they concluded that a trusting and open environment must be created that encourages and supports sharing of knowledge, with appropriate rewards and recognition. Although this research could not identify the rewards and the type of recognition perceived appropriate for this context, as there were conflicting thoughts on whether participating in the sharing of knowledge should be rewarded, it did identify that an appropriate environment needed to be created, one that addressed some of the challenges that academics and administrative staff within this context, face. One of these challenges being that the nature of academic work has created an environment that supports academic staff working in silos, and in some cases, the creation of fiefdoms around their disciplines, creating what Slaughter and Leslie (1997) refer to as tribes and territories. As a consequence, academics associate and identify with their discipline first, before identifying with the institution as a whole. KM implementation, on a system-wide level, would require staff to understand the organisational benefits for adopting KM principles as opposed to only the individual benefits. The research suggests that creating a positive staff attitude towards the institution as a whole, was considered key to enabling KM and creating more of a collaborative environment. It was clear that both issues relating to people and process needed to be addressed to create this environment needed for KM to be supported within this context. In terms of the people issues, it was clear that this environment needed strong leadership to support it, and required a KM strategy to guide the practices and principles. It was also clear that this environment required KM to be implemented within it in a way that suited this particular organisational culture and context, taking into account the history of HEIs, and the traditional principles of academic freedom and collegiality, two tenets upon which HEIs were built in the past. Although it was felt that, having management programs offered as a course did not necessary imply that the practicalities of management would be without fault, a staff training program was considered to be a useful technique that could be used to raise awareness of KM within institutions. There were others who considered that KM

should be implemented within this context without the terminology, but that, the outcome or benefits of it should be promoted.

FIGURE 7. 4 FACTORS – APPROPRIATE ENVIRONMENT



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7.2.2.2. FACTORS THAT HINDER KM USE WITHIN THE HEI CONTEXT

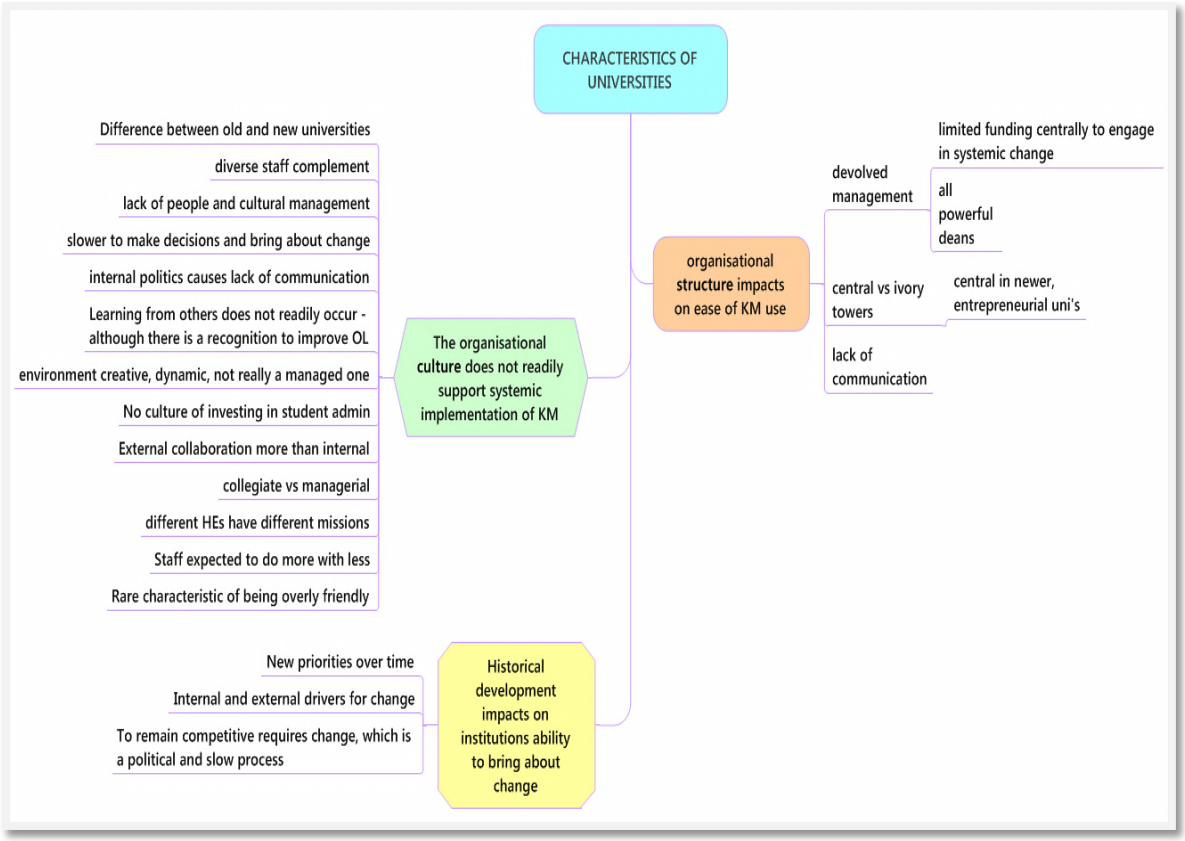
- CHARACTERISTICS AND CULTURE OF UNIVERSITIES & THE NATURE OF ACADEMIC WORK, INFLUENCE ORGANIZATIONAL WIDE KM IMPLEMENTATION

The culture of an organisation is an extremely difficult aspect to change. Although change could possibly be achieved over a long period of time, it cannot happen overnight. KM also cannot be seen as an overnight solution for HEIs, and requires a period of time (Slater and Moreton, 2007). The research suggests that the organisational culture of HEIs does not readily support the systemic implementation of KM for a number of reasons. Firstly, the nature, culture, organisational structure, characteristics and history of universities as a whole, does not lend itself naturally to the principles of KM. Universities also have a very diverse staff complement, with at times competing and opposing ideas on sharing. Learning from others was said to not happen readily within this context, especially given that academics are

considered to be experts in their field, and as Rowley (2000:p.332) contends, "this cult of the individual expert could be seen to be at odds with a knowledge based culture". There was however, recognition that improvement needed to occur within the Organisational Learning framework.

HEIs were also deemed to be extremely slow to bring about change and to make decisions; there seemed to be a lack of people and cultural management within this context. Differences between older and newer universities were highlighted, and the research suggested that internal politics, at times, was the reason for the lack of communication.

FIGURE 7. 5 FACTORS - CHARACTERISTICS OF UNIVERSITIES



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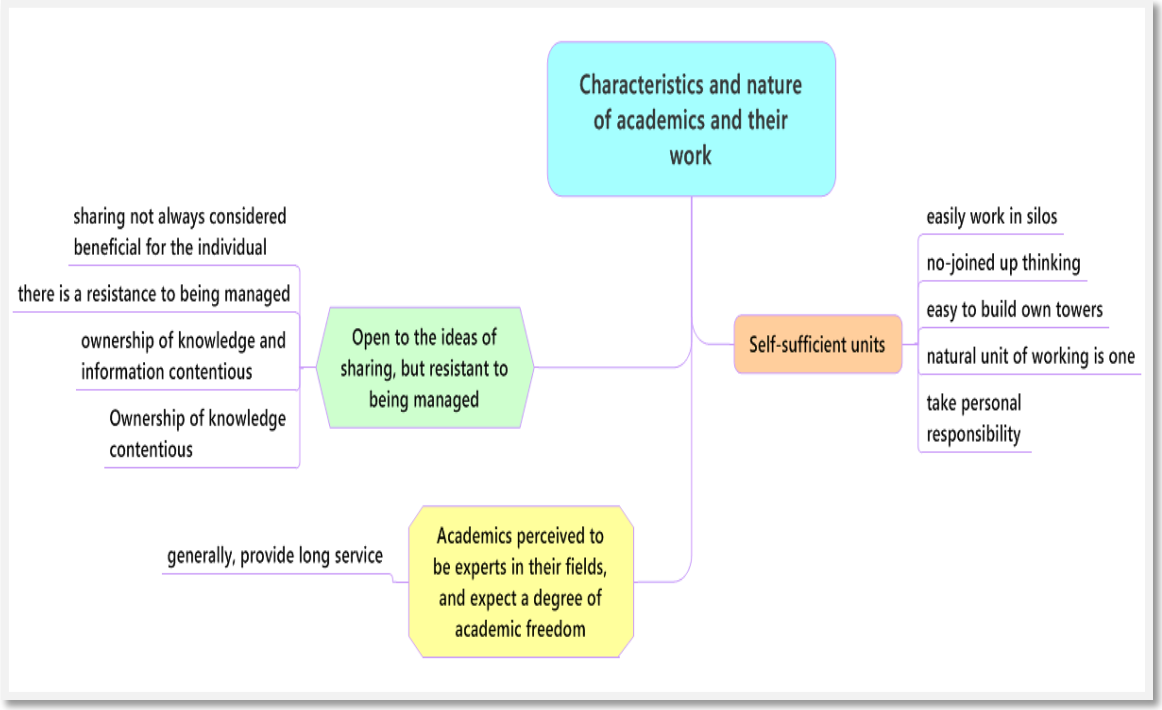
Another aspect highlighted was that HEIs currently favour a devolved structure, enabling Deans to manage their faculties with their own budgets, and hence, empowering them to make decisions. This particular factor does not lend itself well to the easy implementation of KM on an organisational level, as the centre does not have the power and money to support such implementation, and would need to

gain the interest of all the Deans, as well as a portion of their budgets for it. Even within those institutions that had a KM strategy and KM role in place, these participants echoed the same challenge. The research also identified that the historical development of an institution had a great role to play in its ability to bring about change, with the post-1992 universities having to operate within a more financially constrained environment; it was also suggested that they did not have the luxury of adopting management tools that was not tried and tested by others, or that were not seen as a priority.

FIGURE 7. 6 FACTORS- CHARACTERISTICS AND NATURE OF ACADEMIC WORK



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Within the area of research, collaboration is more evident than in any other area within the university; however, the research suggests that, generally, a stronger, collaborative culture, that embraces the sharing of knowledge as opposed to the hoarding of it, should be encouraged within all areas, not only within research. The evidence suggests that strong leadership support for KM implementation goes a long way to ensuring that KM is addressed within this context, and that the role and style of leadership are fundamental to its success. It was also clear that, in such a large organisation, a KM strategy would help to guide the thinking around KM and the eventual practice, especially given the different perspectives and perceptions around what knowledge is.

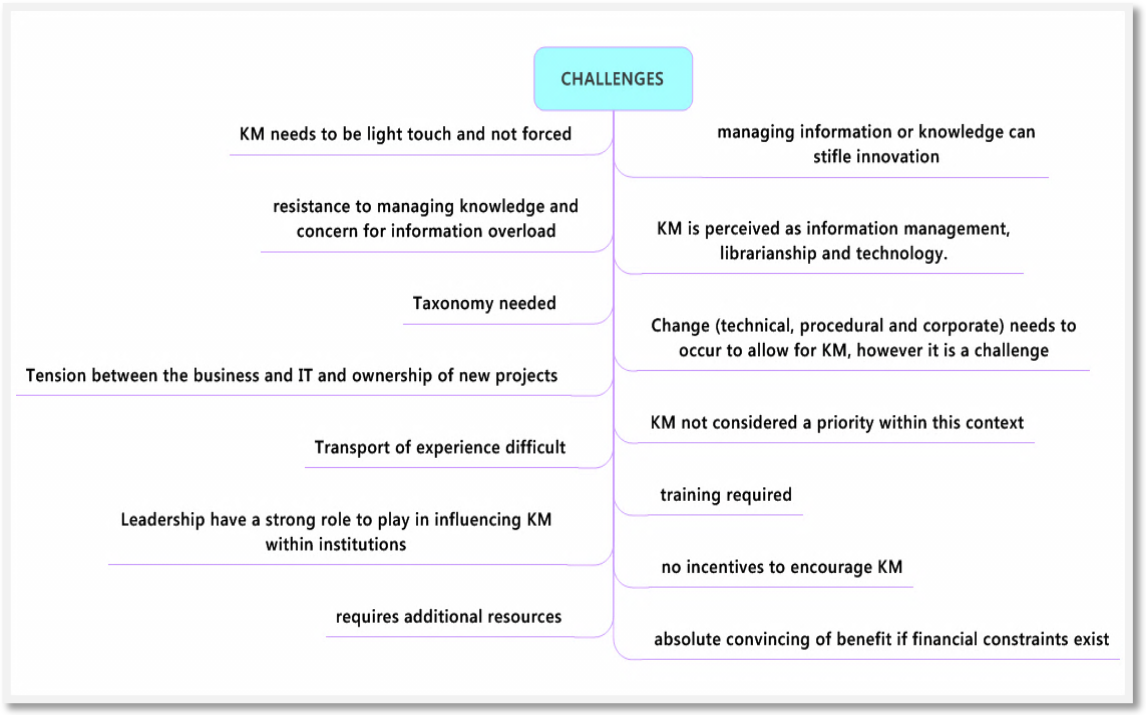
In terms of processes, it was evident that the HE context required KM to be promoted and implemented in a way that fits the organisational culture, and that adopting a 'business approach' that forced a particular technique would not work. There was also concern for the lack of understanding of the terms and terminology, and a suggestion that staff development programs could possibly assist in this. The suggestion was also made that appropriate resources needed to be attached to KM implementation, and equally linked to the university strategy.

The research shows a range of characteristics for the nature of academic work (see Appendix C). In summary, the research suggests that academics are considered experts in their field, and hence, a level of expectation that they enjoy a degree of academic freedom, was clear. The perception was that academics generally provide very long service, and hence, managing this intellectual capital to ensure that crucial knowledge is retained when they leave, was a concern. In terms of sharing knowledge, the perception was that academics were open to the ideas of sharing knowledge, but quite resistant to the terminology of KM, in particular the management of their knowledge; the issue of ownership was raised. Another perception was that the nature of academic work allowed or enabled academics to work in silos; the environment enabled the creation of building their own empires. This type of working goes against the basic premise of KM, which is to enable collaborative environments for knowledge sharing.

– PERCEPTIONS OF KNOWLEDGE AND KNOWLEDGE MANAGEMENT INFLUENCES KM IMPLEMENTATION WITHIN THIS CONTEXT

The research revealed that the perceptions of Knowledge and Knowledge Management within this context had a great influence on HEIs' ability to implement KM on a systemic level, in particular the perceived challenges. A summary of the perceptions and practices of KM is addressed in section **6.2.1.3** and section **6.2.2** on pages 236 and 247 respectively, as it overlaps two research questions: i.e. research question 2 and research question 3, however, a summary of the perceived challenges is presented on the next page.

FIGURE 7. 7 FACTORS - PERCEPTIONS OF CHALLENGES



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7.2.3 RESEARCH QUESTION 3:

WHAT ARE THE PERCEPTIONS AND PRACTICES OF KM IN THE HEI CONTEXT WITHIN THE UK.

The research suggested that although the terminology of KM was not used extensively by all staff members within these universities, pockets of KM existed, and the shift towards formally including KM as a strategy, and providing staff with the responsibility for it, was still in its infancy, yet emerging. Practices therefore varied amongst the universities, and ranged from having a person responsible for KM with strong leadership support and recognition for its value, to there being no clear ideas on what KM was and how it could assist a university, with participants responding to a question about KM implementation in a matter of fact manner suggesting that universities do share knowledge already; the essence of KM therefore not being clearly understood. It was clear within the HEI context, that KM needed to create opportunities for sharing, as it would not just happen within a large organisation like a university, and did require a champion to encourage and guide its implementation. Staff perceived KM to be able to yield some benefits; for example, reduce duplication of effort, allow for the open use of resources, reduce inefficiencies, and provide an institution with a competitive advantage. Staff

generally agreed with these benefits, however, it was clear that in order to gain institutional-wide acceptance of KM implementation within this context, staff needed to be convinced of its benefits. The research identified a list of perceived challenges (see Figure 7.7 on page 269), which is discussed in detail in Chapter 4, section **4.3.5** on page 167, and chapter 6, section **6.2.1.3** on page 236. A summary of the perceptions of Knowledge Management within this context is provided in Figure 7. 8 below.

FIGURE 7. 8 FACTORS - PERCEPTIONS OF KNOWLEDGE MANAGEMENT

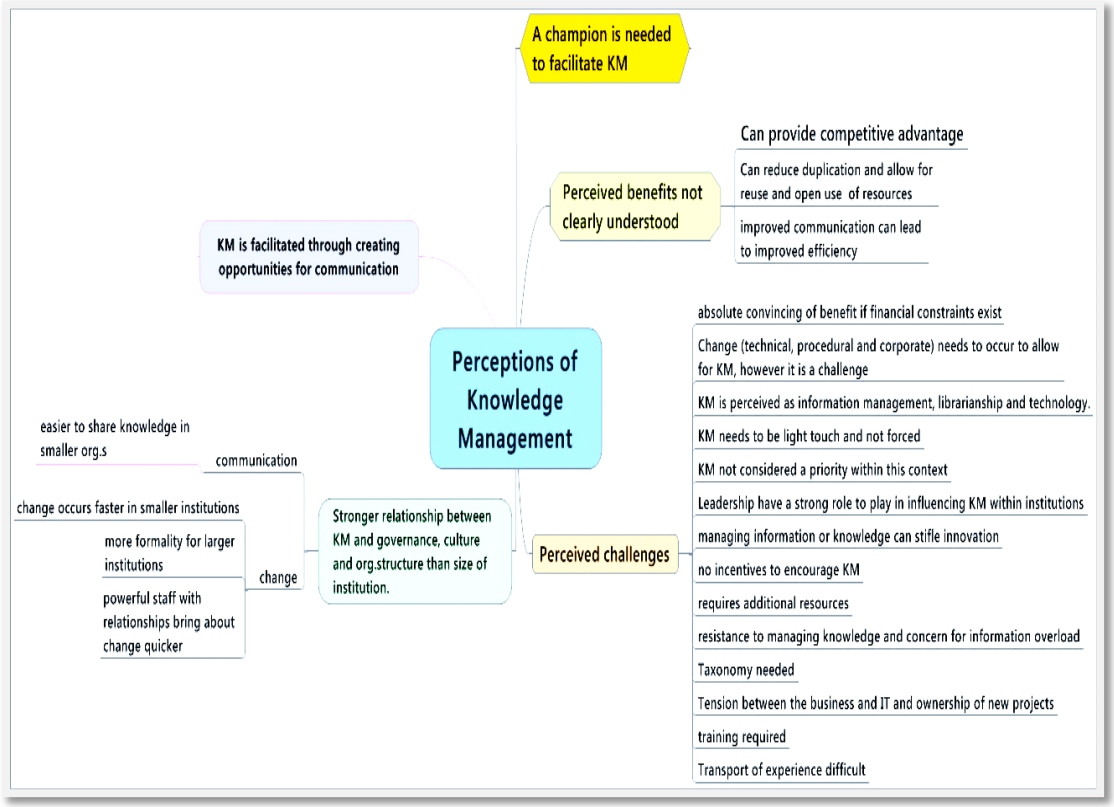

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FIGURE 7. 9 SUMMARY OF RESEARCH FINDINGS – PHASE I

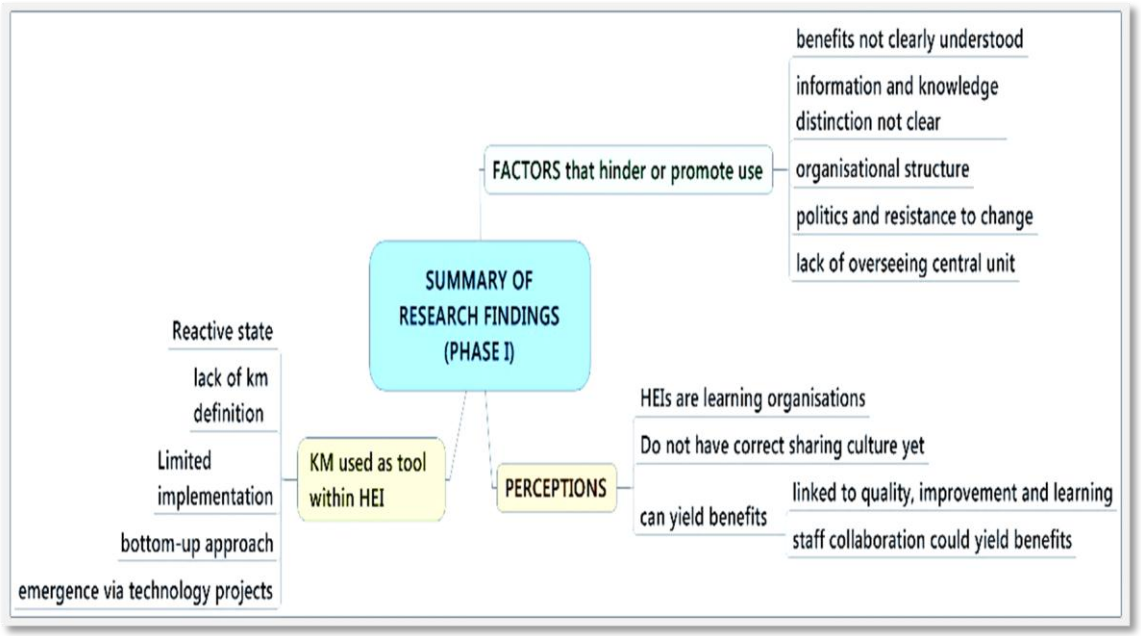

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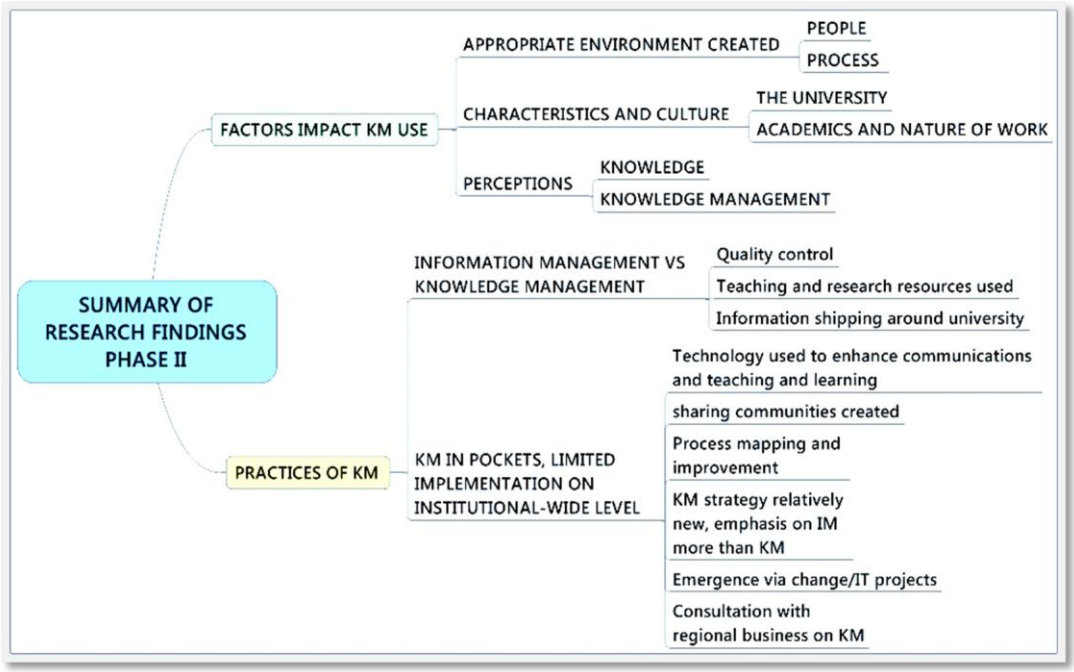
FIGURE 7. 10 SUMMARY OF RESEARCH FINDINGS – PHASE II



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7.3. SUMMARY

This chapter presents a summary of the findings of the research conducted, addressing each phase of the research, and the findings associated with each phase. These findings were presented against the research questions, of which there were three main questions. A summative view of the findings of each phase is presented in Figure 7. 9, and figure 7. 10, on page 276.

The chapter brings together the findings of Phase I and Phase II, with new dimensions from Phase I highlighted in the substantive model, developed largely from Phase II, yet informed by Phase I.

Chapter 8 presents some concluding comments, addressing the limitations of the research as well as the contribution made to the literature.

Chapter 8

CONCLUSIONS AND SOME RECOMMENDATIONS

CONCLUSIONS AND RECOMMENDATIONS

CHAPTER 8

8. CONCLUSIONS AND RECOMMENDATIONS

8.1. INTRODUCTION

A doctoral thesis has at least two meanings; the one refers to the actual document which presents the research, the research process and outcome of the research; the other refers to the argument that the research proposes, that Murray (2006) suggests should be able to stand up to critique. A thesis is, therefore, essentially an argument that concerns the nature of a phenomenon, designed to persuade others that the proposed conclusions have been supported by evidence and are better argued than any other proposals (Francis, 1997). Murray further contends that a thesis makes a proposition which takes into account a range of views, including opposing views; it is an argument that allows researchers to "show, suggest, and make reasonable and reasoned interpretations of what we find in our analysis of texts, substances, people or events" (Murray, 2006:p.107). The research embraced an epistemology that favoured the constructionist view rather than the objectivist leanings, and hence, during the interviews questions were asked in relation to the participants meaning and perceptions of KM, continually. An interplay between the researcher and the participant ensured which enabled a rich interaction and trend of questioning, which, at times, was pursued as a consequence of the researcher's own experience, however, this was done to further understand certain participant perceptions. The researcher, was therefore not a passive observer, and played a role in following trends of questions, to be able to enhance understanding. The researcher did not take the view that a single truth existed 'out there to be uncovered', but did agree with the view that meaning was constructed through the interplay between the researcher and participant. This view was continued into the analysis phase, where codes, concepts, and categories were generated, from data, during the theoretical coding phase, and during the conceptualisation phase. The role the researcher had on the research is highlighted in the Research Design Framework, Figure 3. 3 on page 97.

The research used a mixed methodology approach, using both quantitative and qualitative methods of data collection and analysis to uncover answers. Phase I was

a necessary phase that provided crucial information to the second Phase. The four pillars of KM were used in the second phase, as a lens to guide the research, i.e. Technology, Organisation, Learning, and Leadership pillars, identified by Stankosky (2005) and his team, as categories into which most areas of KM could fit into, areas that need addressing when considering the implementation of KM.

Chapter 7 presented a summary of the analysis and findings of the research based on models created and presented in chapter 6, presenting evidentiary comments made from the interviews, as well as from the findings from Phase I as presented in chapter 4. This final chapter concludes the thesis document with an indication of the contribution made to the field of Higher Education and Knowledge Management, addressing the significance of the research. It presents the limitations of the research, and positions the research within the literature; however, the researcher is cautious of not embarking on another literature review here, and refers the reader to the literature review in chapter 2, where required. This chapter also reflects on the objectives of the research and whether each of these were addressed in the research; it also provides a reflexive account of the researcher's view of the process of the research, presents several recommendations, and finally suggested recommendations are made that could further the research.

8.2. CONTRIBUTIONS TO THE FIELD AND SIGNIFICANCE OF RESEARCH

Francis (1997:p.26) contends that "an argument is essentially an example of rational and logical thinking about belief in a proposition. To persuade the research community that any proposition should count as an addition to knowledge, it is necessary to assemble and evaluate the evidence used to support it and to consider it against plausible alternatives".

Crouch and McKenzie (2006:p.492) purport that "it is in the nature of exploratory studies to indicate rather than conclude". They further suggest that, such exploratory studies "formulate propositions rather than set out to verify them – or, at least, convincingly demonstrate them (through reliance on 'representativeness' and the persuasive weight of large samples)". The results of this research study suggest that it could assist to advance the understanding of the relationship between Knowledge Management and the University, and provide significant input into the development of the theory of Knowledge Management and Higher Education, as such the research study:

- PRESENTS a substantive theory on KM as applied within HEIs in the UK context, hence, contributing to both the KM and the HEI body of knowledge;
- It provides an OVERVIEW of KM as a management tool within the context of HE;
- It identifies FACTORS that influence KM use on a systemic level;
- The PRACTICES and current state of KM implementation within the UK HEI context, has been identified;
- RECOMMENDATIONS are highlighted:
  - The Context of HEI is unique and needs to be taken into account when considering KM implementation;
  - Implementation of KM within this context is in its infancy, HEIs are in a reactive maturity state currently, with emergence mostly through projects, however, practices do exist albeit in pockets mostly, and emphasis being on IM more than KM.
  - Specific factors have been identified that either hinder or promote its use on a systemic level, and hence, these need to be addressed. Certainly an appropriate environment needs to be created within this context which involves addressing people and process issues.
  - Cultural, organisational and technological change would need to occur for KM implementation.

What evidence was used to support the research? The next sections address these questions.

8.2.1 SUMMARY OF THE EMPIRICAL EVIDENCE USED TO SUPPORT THE RESEARCH

The study aimed to investigate the Knowledge Management practices and perceptions within the UK HEI context, and to understand whether KM was being used within the HEI context, given the turbulent environment within which it needs to operate. The specific questions that were raised in the aims of the research, and the answers to those questions, are summarised next, with reference given to the detailed discussions of each aim of the study as presented elsewhere in the thesis document:

AIM 1: WAS KNOWLEDGE MANAGEMENT BEING USED AS A MANAGEMENT TOOL WITHIN HIGHER EDUCATION INSTITUTIONS IN THE UNITED KINGDOM, TO ENHANCE COMPETITIVE ADVANTAGE?

Chapter 6 (Emergence of themes and concepts) presented the findings from an empirical investigation of the attitudes and the awareness of individuals' within HEI towards KM. Section **6.2.2** on page 247 specifically addressed this aim, and a summary is given in chapter 7, section **7.2.1** on page 265. Chapter 4 provided an overview of KM within the HEI context and answers this question in section **4.4.1** on page 178. In summary, the research suggests that Knowledge Management is being considered within a limited number of HEIs within the UK, that the terminology of KM is highly contentious within the context of HEI, however, the notion of sharing knowledge is not opposed to, but also not cultivated or practiced on a wide scale. The HEI context also places a stronger emphasis on IM more than KM, currently.

AIM 2: WHAT ARE THE CONTRIBUTING FACTORS THAT HINDER OR PROMOTE THE IMPLEMENTATION OF KM WITHIN THIS CONTEXT?

The research suggests that academics and universities have a particular culture and characteristics that influence the widespread adoption of KM and its terminology currently. The research suggests therefore, that an appropriate environment that takes into account both people and procedural concerns, is required to be cultivated to increase the acceptance of KM as a management tool to be used within this context more readily. The research also suggests that the perceptions of KM within this context are a contributing factor to the acceptance of it as a useful management tool, as well as the nature, culture and history of universities, and the nature of academic work.

The contributing factors were presented in the literature review in chapter 2 which expounds on the current and past historical changes HEIs within the UK have undergone, addressing future suggestions of change. The literature review also presents the challenges that HEIs within the UK have had to face, and continue to face. A discussion of the findings of the research suggesting the contributing factors that hinder the implementation of KM on an institutional wide level is presented in Chapter 6, section 6.2.1 on page 214 and the challenges are addressed in section **4.3.5.2** on page 168. A summary of the factors are also presented in Chapter 7.2.1 on page 265.

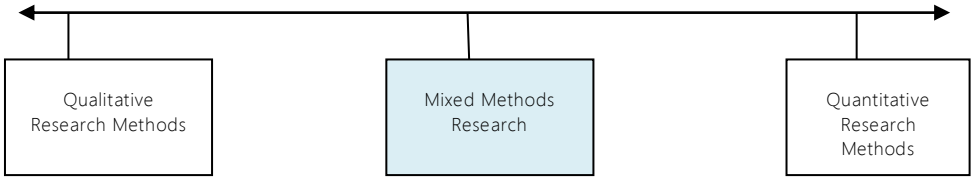
AIM 3: WHAT ARE THE PERCEPTIONS AND PRACTICES OF KM WITHIN THE UK, HEI CONTEXT?

Participants expressed a view of KM that suggested that the benefits of it were not clearly understood. However, the underlying principle of sharing knowledge was acknowledged, yet not developed fully within the context. A detailed discussion of the perceptions of KM as portrayed by the participants of the study, is given in chapter 6, section 6.2.1.3, on page 236. The practices of KM suggests a stronger focus on IM more than KM, with pockets of KM occurring within this context, and a minority of institutions having an institutional focus for KM. A discussion with participant commentary evidence can be found in section 6.2.2 on page 247.

8.2.2 WERE THERE ANY PLAUSIBLE ALTERNATIVES TO THE RESEARCH DESIGN

Mixed methods research is defined by Johnson *et al* (2004:p.17) as " the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language to a single study", with the goal being to harness the strengths and minimize the weakness of each in a single research study. They continue to add that if the research methods are visualised on a continuum, with qualitative research methods anchored on the far left and quantitative methods on the far right, mixed methods research cover the large set of points in the middle areas (as can be seen in Figure 8. 1 below).

FIGURE 8. 1: CONTINUUM OF RESEARCH METHODS



Source: after Johnson and Onweguegbuzie (2004)

The researcher agreed in principle with Johnson *et al* (2004) in that research methods, or the choice thereof, should follow the research questions in a way that offers the best possible chance to obtain useful answers. Given the chosen research questions, and the relative infancy of the research area within the particular context of HEIs within the UK, the researcher was certain that the chosen research design was the best possible one to yield the best possible answers. A discussion with

regards to the reasons for the particular quantitative and qualitative methods chosen, can be found in chapter 3, on page 81.

8.3. LIMITATIONS OF THE STUDY

Within any given research, there would be certain constraints within which the researcher would need to work, and particularly so for a PhD research project. Some of the constraints which the researcher needed to work within were:

a) The constraint of time

Although an interview protocol was used to frame the interviews, the nature of the interviews was semi-structured, hence, allowing for spontaneous communication to occur. The consequence of this being that more emphasis was placed on particular issues than others and the interview protocol was not completely answered, in every interview. The sample size was also small, and hence, every participant did not necessarily have the opportunity to address some of the issues on the interview protocol. Although this was the case, the nature of the interviews allowed for an open and free discussion about issues, which might not have been the case in a structured interview setting. This had implications when analysing the data. However, Crouch and McKenzie (2006) argue that interview protocols in this type of research are best analysed in ways that do not depend on delineated categories and the numbers of 'hits' in them, but rather on thematic strands extracted from the material by way of the researchers' interpretive and conceptual efforts. The researcher embraced this view and strove to extract thematic strands from the interview data rather than aiming to reach substantial representivity for each category or concept.

b) The constraint of the sample size of the study

Although the sample size of the study was relatively small, with 18 interviews scheduled and 7 case universities included, the methodology undertaken was aimed at understanding and investigating KM implementation within HEI rather than determining exactly how many persons within the different cases held the exact same view of a particular concept or idea. This view is in keeping with Crouch and McKenzie's view (2006) who place a greater significance on the ideas and concepts that exist and are uncovered, rather than the representativeness; therefore, not referring to the number of respondents or 'cases' but to the uncovered dimensions

and aspects of the situation under investigation. They further contend that "in principle, just one 'case' can lead to new insights… if it is recognized that any such case is an instance of social reality" (Crouch and McKenzie, 2006:p.493). Although, the sample size was initially considered as a limitation, given Crouch and McKenzie's view, categories and concepts were uncovered which provided a rich insight into the perceptions and practices of KM within the HEI context in the UK.

c) The constraint of a limited number of participants.

The researcher was able to secure eighteen interviews across seven case sites, with senior manager-academics in the main. Although each of these participants was an academic at some point, the one group that was not represented within this sample was the practicing academic. Although their voice or views were conveyed through the voices of the manager-academics, it would have been interesting to note if there were differences in the views of the manager-academics and practicing academics conducting academic work in the main, and not managerial and administrative work as well.

8.4. POSITIONING THE RESEARCH WITHIN THE LITERATURE

Throughout the analysis chapters, the researcher aimed to anchor the findings against research conducted by scholars and their suggested findings, and compared it with the research considered in this thesis. At the onset of the research, in October 2005, it was clear that Knowledge Management implementation within Higher Education was not an area that was well researched, or documented. Although the number of articles on KM escalated over the years, the same degree of escalation did not occur with regards to a systemic view of KM implementation within the HEI context. Corral posed the question in 1999, whether HEIs were in the knowledge business. In 2000, Kidwell *et al* also asked whether HEIs were ready to embrace Knowledge Management, and suggested that HEIs were starting to develop the culture that could support KM. Corral argued that KM did not have much impact at the time on the HEI sector, but that there was some evidence of involvement in research into KM within HEIs in the UK and mentioned three universities in particular; however, the involvement was within specific departments within these universities, and did not address an organisational-wide view of KM implementation, nor a holistic view taking into account the organisational, technological, leadership and learning aspects of KM.

The literature review in chapter 2 suggests that the prolific increase in information technology has impacted on the way people conduct their work, including universities. Certain technologies are taken for granted within HEIs and are used as part of the daily work; for example email technologies, data storage, web portals, and the internet, to name some of these technologies, are used on a daily basis. Each of these technologies can be considered as enhancing and supporting the aims of KM, and hence, in terms of technology, to support KM; certainly there is evidence that HEIs have adopted technology to support many of its functions. However, KM is not only about technology. Given the array of external factors that have impacted on HEIs today, this research, focused on whether HEIs within the UK were beginning to appreciate the need to embrace the philosophy of efficiency and effectiveness; looking at ways in which to incorporate management methods and models from the business world to ensure an ability to respond to change. When the adoption of business management models is discussed in relation to HEIs, it is inevitable that the mission and purpose of HEIs is raised, and the distinction made between non-profit and for-profit missions. This research addressed one business management tool – Knowledge Management - specifically investigating whether HEIs within the UK were adopting tools like KM on a systemic level to enhance its competitive advantage.

The election of the Conservative government in 1979 changed the relationship between universities and the state in the UK, where funding per student was cut, academic autonomy started to shrink, HEIs started to become subject to management and governance regimes derived from the private for-profit sector, and the HEI sector changed from an elitist system to one accessible to the masses (Deem *et al.*, 2007). The consequence of these changes was that HEIs started to face significant challenges. Girard (2005a:p.15) contends that "Knowledge Management will be one way that leaders of the future may conquer the many challenges confronting their organisations", but did the leaders of HEIs within the UK embrace KM as a tool to assist to address some of the challenges they face? Were management regimes, like KM, being considered within HEIs? Kidwell *et al* (2000:p.33) suggest that "Knowledge Management should not strike HEIs as a radically new idea; rather it is a new spin on their *raison d'etre*". A survey of the KM literature addressing KM implementation on a systemic level within universities, and in particular in the UK, has suggested that there was a gap in the literature on systemic implementation of KM in HEIs. Scholars like Metcalf (2006), Serban and Luan (2002a), Kidwell *et al* (2000), Cronin and Davenport (2001), Stankosky (2007),

Tippins (2003), Milam (2001), Slater and Moreton (2007), to name a few (see Appendices for list of scholars who influenced this research), have all contributed greatly to the field of Knowledge Management and Higher Education; however, none has addressed the systemic implementation and application of KM within the HEI context, focusing on the contributing factors that would hinder or promote its use on a systemic level within this context. The research therefore aimed to answer some of the questions posed by scholars in the early 21st century.

8.5. A REFLEXIVE ACCOUNT OF THE RESEARCH

Reflexivity emphasizes the importance of self-awareness, and reminds the researcher to be attentive to and conscious of the political, cultural, social, linguistic and ideological origins of their own perspective and voice, as well as those of the interviews, and those to whom the report is intended (Patton, 2002). As part of the research design, the researcher included the potential researcher biases (see Chapter 3, section 3.5, page 91) that could influence the research. One of these biases which, in the researcher's opinion could have had the most influence was the work and training experience the researcher gained over the years, and the informational challenges and other cultural and political challenges experienced. The researcher needed to constantly ensure that the data underpinned the arguments put forth from the research and that conclusions were not based on the researchers own experience within the context of HEIs. Consciously, the issues of bias was considered to be minimal; however, it is the researcher's contention that the nature, actions , behaviour, and thought processes of an individual, are cultivated over time and are so embedded that any research cannot be totally without any subjectivity or some unconscious form of bias. It is the researcher's contention that it is this very aspect that lends itself to the richness of the research. Within this explanatory research study, propositions were put forward, no truth claims were made, and through the interviews, the researcher hoped to uncover and get to know the state of affairs with regards to KM within HEIs. Crouch and Mckenzie suggest that

> "We may indeed be in error in some or all of what we conceptualize and put forward. However, the possibility of erroneous conclusions is logically independent from the objective existence of the state of affairs under investigation, and does not in principle negate any knowledge we may obtain of them" (Crouch and McKenzie, 2006:p.489)

Although the research and the research design can be defended, in terms of the choices made for the research design, upon reflection, there was a missed opportunity to enrich the research even further, by not being able to include the only private university within the UK. The researcher was unable to secure the only private university within the UK to participate in the case study, despite the participant expressing an interest on the questionnaire. The reasons for this are not clear. Universities in general, despite having to take on market like behaviours to gain additional funding through different means, are still fundamentally and largely supported by the government and hence, public funds, and are essentially non-profit public organisations, fundamentally different to the private university. Phase I suggested that this private university did have KM implementation in place; however, the level and detail of that implementation, and the perceptions and practices, and factors that contributed to supporting its delivery or not, could not be uncovered.

Another aspect perhaps out of the researcher's control at the time, yet an important lesson to be learnt, is to consider the timing of the research and governmental pressures and priorities placed on universities when conducting research. The survey was distributed a few months before the RAE submission was due for universities, hence, placing pressure on universities to report on their achievements in 2008, with a large number of universities expressing their inability to participate in the study as a result.

When using Grounded Theory as a methodology, the iteration between the data collection and analysis phases is crucial, with sampling and data collection occurring until saturation. This is not always completely possible if there are a given number of participants and cases agreed beforehand, with only one participant available at a particular case. Although, the researcher was able to add one case to the study based on the analysis of some of the initial interviews, and could tailor the questioning for future interviews based on the interviews conducted in the past, this was not possible on a large scale, and hence, the case study was bound by time and specific cases, with the number of participants and cases not able to be continually added to, based on the analysis of the interviews and data collected.

8.6. SUGGESTED RECOMMENDATIONS

Knowledge Management is not a 'fad' offering a quick solution to the 21st century problems of information overload, but is rather a deliberate and rational approach to identifying the knowledge required for an organisation to flourish, both in terms of performance and revenue. Knowledge Management requires understanding of a number of related disciplines, such as human psychology, human resources issues at play within the management arena as a means of encouraging collaboration and sharing that is consistent with the overall objectives, priorities and environment of the organisation (Slater and Moreton, 2007).

Although knowledge based organizations, like universities, might seem to have the most to gain through Knowledge Management, effective Knowledge Management may require significant change in culture and values, organizational structures and reward systems (Stewart, 1997). The research has shown that, whereas there is significant KM activity and awareness within the HEI context within the UK, the potential use and benefits of implementing KM on an institutional wide level, with the necessary leadership support, has a far way to go. The research suggests the beginnings of KM implementation on a systemic level. The traditional culture of a university has its leanings towards collegiality; its historical developments and organisational structure need to be considered when attempting to embark on KM implementation within the HEI context. Geng *et al* (2005) support this view and contend that Knowledge Management priorities; are related to the organisational structure, and suggest that effective KM programs will take advantage of favourable structural components to address those priorities, for example if an institution or department has a bureaucratic structure, KM will be more successful if it is institutionalised through formal processes, but, in an organisation or indeed a department that operates as a learning organisation, KM might find more success with informal Knowledge Transfer methods.

The varied staff and their often divergent needs, especially within a large and complex organisation like a university, will require a Knowledge Champion to take the KM agenda forward within this context, and even then, as identified in the research, they too will have challenges to face when trying to promote KM within this context. As Stewart (1997:p.124) contends, "..a factory won't start producing things on its own, and Knowledge Management will not happen without knowledge managers"

"The explosion of scientific and technical knowledge, the rapid diffusion and fast-growing power of information technology, knowledge's increasing share of corporate value-added, the rise of the knowledge worker – all these work together, each simultaneously chicken and egg, horse and cart, cause and effect, to force new kinds of organisational design and new managerial methods and substance" (Stewart, 1997:p.49). The evidence of this research suggests that universities are beginning to acknowledge that new managerial methods and tools need to be used to enhance their competitive advantage, and that they cannot rely on a reputation of excellence gained in years gone by, but have to continually strive to maintain their quality of services, education and learning and student experience. This research has highlighted the factors that contribute to HEIs not using KM systemically, and highlights some of the KM perceptions and practices within HEIs currently. Given the suggested changes by the newly appointed Government in the UK to HEI funding in 2010 and beyond, it will become even more crucial for HEIs to actively ensure that they embrace management tools that support their organisational structure and culture, and that they manage their knowledge assets, and hence, their intellectual capital more strategically to enhance their competitive advantage. Stewart (1997:p.67) contends that "Intellectual capital is packaged useful knowledge"; therefore universities should, within this turbulent environment in which they need to work, begin to more actively manage their intellectual capital in ways that marry business methods like KM into their own context which has its own history, culture and organisational structure. This research can be furthered by repeating the research in 2011 or beyond to compare the changes in perceptions and practices within the HEI context, with more emphasis on the strategies to enhance the intellectual capital management, more specifically the human capital, structural capital (intellectual property) and customer capital (client relationships) (Stewart, 2001).

8.6.1 FINAL COMMENTS

Universities have an extremely important role to play in society. What sets one university apart from another, will not be its management techniques and tools used, but the quality and range of services it provides to students, the range, depth and quality of its offerings, the social impact it has on the community and region it serves, the excellent research it engages in and conducts, and its innovations and knowledge and intellectual products. The underlying work of any university is underpinned by the quality of its researchers and academic staff, who depend on

efficient and effective organisational support, hence, relying on the organisational processes to be such that enhances their work, enabling the organisation to fulfil its mission. A very different kind of management is required within this context; one that acknowledges and embraces the uniqueness of this environment and adopts tools to support its uniqueness. Given the turbulent environment within which universities now operate, it is imperative that universities more actively address ways to remain competitive, ways in which to address more systemically and effectively its intellectual capital, especially its knowledge assets, including ways in which to retain the 'knowledge that walks out the door' when long standing staff members leave the university. This research study has provided initial empirical evidence within a sample of HEIs in the UK, that Knowledge Management activities are occurring, and more importantly, are beginning to occur on a systemic level, with evidence of some formal roles for KM introduced. There is scope to continue this research in ways that identify the progression of KM since the research study, as the momentum for change accelerates.

SECTION IV

APPENDICES

- APPENDIX A – THE SURVEY
- APPENDIX B – THE CASE STUDY
- APPENDIX C – NVIVO MODELS
- APPENDIX D – PREVIOUS RESEARCH
- APPENDIX E – PRESENTATION OF RESEARCH
- APPENDIX F – REFERENCES

APPENDIX A

A. THE SURVEY DOCUMENTS

A.1 LETTER OF INVITATION

A.2 QUESTIONNAIRE

<<date>>

<<university>>
<<vc name>>
<<address 1>>
<<address 2>>

Dear <<vc name>>

RE: Knowledge Management Survey

My name is Desireé Joy Cranfield. I am currently on Sabbatical from a South African University to pursue a PhD research degree under the direct supervision of Professor John Taylor, Director of the CHEMPaS (Centre for Higher Education Management and Policy at Southampton) unit, based at the University of Southampton. I am writing to you, as Vice Chancellor of <<university>> to ask for your assistance, as well as your university's input to my research which aims to understand knowledge management practices, both current and intended, within the Higher Education context in the United Kingdom; also looking at the contributing factors that hinder or promote its use as a management tool for competitive advantage.

Knowledge Management means very different things to different people and organizations, and is most probably used within your institution in one way or another. Your assistance with this survey will be of enormous benefit as it will allow me to map the current and intended UK Higher Education KM environment. With this in mind, can I please ask whether you would be able to ask the most relevant person(s) within your university responsible for the overall Knowledge Management activity to complete the survey, which should not take longer than 20 minutes. If an online version is preferred, it is also available (details in information pack). My research will not only focus on the technological aspects underpinning the implementation of KM, and hence, I am hoping to obtain a broader perspective of KM practices within HEI's through this survey.

I will be surveying all universities within the United Kingdom during the period of 07th May – 21st May 2007 and hence, would kindly ask that your institutional response to the survey be either sent to my postal address as stated on the information pack or completed online before the 21st May 2007 if at all possible. Please do not hesitate to contact Professor John Taylor, Director of the CHEMPaS

(Centre for Higher Education Management and Policy at Southampton) jtaylor@soton.ac.uk, if further information or clarification is required about the research.

Please find the information pack enclosed within the envelope. Thank you so much for your assistance in this matter. It is highly appreciated and will be of enormous benefit to the research.

Sincerely

Desireé Joy Cranfield

PhD Student – University of Southampton, CHEMPAS (Centre for Higher Education Management and Policy at Southampton University)

desiree@soton.ac.uk (mobile 07877658475)

KM Survey #1 – May 2007

SURVEY

OF

KNOWLEDGE MANAGEMENT PRACTICES IN HIGHER EDUCATION

Dear Prospective Participant

This survey forms part of a PhD research project that aims to investigate

1) Knowledge management practises within Higher Education institutions in the United Kingdom,
2) What the contributing factors are, that hinder or promote the implementation of knowledge management and its success,
3) Whether there is a common approach towards this new management tool called Knowledge Management within the context of Higher Education, and
4) Whether knowledge management is used as a management tool for competitive advantage.

This research is being undertaken under the supervision of Professor John Taylor, Director of the Centre for Higher Education Management and Policy at Southampton (CHEMPaS); further information is available from Professor John Taylor.

There are various definitions for Knowledge management. Some believe that "Knowledge management does not start with technology but with the business objectives and processes and a recognition of the need to share information"; others believe that knowledge management is nothing more than managing the information flow, getting the right information to the people who need it so that they can act quickly, thereby increasing "institutional" or "corporate IQ" (Gates, 1999). Still others believe that knowledge management is something much more than just managing information, and involves the management of both tacit as well as explicit knowledge (see (Nonaka Ikujiro, 2007)) and the creation of communities of practice. Donald Hislop (2005) indicates that depending on your perspective of knowledge, whether objectivist or practice-based, this will influence the definition you chose for knowledge which in turn will impact on your perspective of knowledge management.

Knowledge management might not be a term used within your institution, but it probably is implemented in some way or another. This survey forms part of an initial investigation into knowledge management practices - in which ever form you implement it within your institution, within the Higher Education context. It is a component of a PhD research study based at Southampton University. A follow up investigation - a series of in-depth case studies, will be conducted at three Higher Education institutions and hence, if you are willing to put your institutions name forward to take part in the case study (which will build on the results of this survey and provide a more detailed investigation into knowledge management within higher education), please indicate positively at the end of this survey.

The study is divided into sections, each focusing on a different aspect of knowledge management. Your input will be treated with the research and ethical considerations necessary and your institutional data will be kept confidential and only be used for this research study.

The survey should not take longer than 20 minutes, however if you prefer to use the online version of the survey please go to http://www.surveymonkey.com/s.asp?u=707193740266. The password to use the online survey is *surveykmphd*.

Thank you very much for your time and your willingness to participate in this survey. Your input will be of enormous benefit to the research.

Sincerely,
Desireé Joy Cranfield (PhD Student – University of Southampton)
CHEMPAS (Centre for Higher Education Management and Policy at Southampton University)
desiree@soton.ac.uk 07877658475

GENERAL

There are various definitions for the term Knowledge Management. Two very broad definitions are listed here.

- "Knowledge management is about connecting people to people and people to information to create competitive advantage" (referenced in Servan 2002)
- "Knowledge management is the systematic process of identifying, capturing and transferring information and knowledge people can use to create, compete, and improve" (referenced in Servan, 2002)

SECTION A– DEFINITIONS

A1) Has your organisation adopted a particular definition for Knowledge Management?

yes	☐	no	☐	Do not know	☐

A2a) If YES, please describe briefly in the textbox below.

A3) Which of the terms below best denotes knowledge in your organisation (please tick all that apply):
(**tacit knowledg**e represents the knowledge that people possess, but which is often difficult to codify or sometimes express; it incorporates both physical / cognitive skills and frameworks (value systems etc)
explicit knowledge - knowledge that can be easily documented and transferred to others, hence, easily codifiable, easily articulated, transferred and stored in certain media)

Information technology	☐	Tools and methodology	☐	Core competence	☐
Organizational knowledge	☐	Individual knowledge	☐	Intellectual capital	☐
Tacit knowledge	☐	Explicit knowledge	☐	Organizational learning	☐
Knowledge creation, dissemination	☐	Organisational memory	☐	Codifiable	☐

A4) What are the elements of knowledge within your institution? (Please tick all that apply)

Personal experience and skill	☐	Action based	☐	Regarded as objects or facts	☐	Personal	☐	Difficult to share	☐
Tacit knowledge	☐	Conceptual	☐	Derived from an intellectual process	☐	Impersonal	☐	Easy to share	☐
Explicit knowledge	☐	Cultural	☐	Subjective	☐	Context independent	☐		
Interaction and networking	☐			Objective	☐	Context dependent	☐		

A5) Please tick all the boxes that best describe your institution's perspective of knowledge management

Objectivist perspective (knowledge can exist in a fully explicit and codified form, and can exist independently of human beings)[24]		Practice-based perspective (knowledge develops through practice)			
Convertion of tacit into explicit knowledge	☐	Knowledge sharing through rich social interaction	☐	Knowledge sharing through rich social interaction	☐
Capture of relevant knowledge	☐	Knowledge sharing through immersion in practice – watching and doing	☐	Knowledge sharing through immersion in practice – watching and doing	☐
Knowledge collected in central repository	☐	Management role to facilitate social interaction	☐	Management role to facilitate social interaction	☐

SECTION B: POLICY, STRATEGY AND STANDARDS

B6) Does your organisation have a Knowledge Management strategy or plan?

yes	☐	no	☐	In the development stages	☐	Do not know	☐

If NO, please move to question B12; if YES, please answer all of the questions numbered B7a - B11e, below

B7a) If YES, please outline very briefly, including any progress achieved to date.

B8b) Please indicate which year this was instituted

[24] HISLOP, D. 2005. *Knowledge Management Organisations*.

Before 2000	☐	2000-2004	☐	2005	☐	2006	☐	2007	☐

B9c) If your KM policy or plan is available to others please email it to desiree@soton.ac.uk, or provide a link in the text box below.

B10d) Who are the drivers of the knowledge management strategy? (please tick all that apply)

IT specialists /directors exclusively	☐	Institutional planners	☐	Vice Chancellor	☐
Librarians	☐	Academics	☐	Senior management	☐
Institutional research staff	☐	Administrators	☐		

Other	☐	(Please specify)

B11f) Who is the formal person responsible for KM in your institution?

Institutional Planner (Head of strategy)	☐	Registrar	☐	Head of Library	☐
IT Director (Head of information and Communications)	☐	Vice-Chancellor	☐	No one person assigned this role	☐

B12) Are there any local Knowledge Management plans or strategies in departments or areas of the administration?

yes	☐	no	☐	Do not know	☐

B13a) If you have answered yes to the previous question please describe briefly – by including the department name / or unit and then a brief description, in the text box provided and include progress achieved to date.

B14) At your institution is there a primary coordination point or role for Knowledge Management strategy implementation?

yes	☐	no	☐	Do not know	☐

B15a) If YES, please indicate the Job Title?

B16b) Please give a brief outline of the job description of this role.

B17). Does your organisation use any standards to achieve the KM objectives?

yes	☐	no	☐	Working/ will be working towards standards	☐	Do not know	☐

If YES (or working towards standards) then please answer the questions below.

B18a) Please indicate which standards your institution has made use of or will be making use of.

GKEC (The Global Knowledge Economics council)	☐	SAI (Standards Australia International)	☐	CEN (Comité Européan de Normalization)	☐	ISO (International Standards Organsation)	☐
Other (please specify)	☐						

B19) Is your institution involved with any KM projects regionally or nationally?

yes	☐	no	☐	Do not know	☐

B20a) If yes please describe briefly in the text box provided below.

B21) If you do not have any KM projects in place, do you think there needs to be?

yes	☐	no	☐	Do not know	☐

B22) If your institution chose to not implement any KM projects, please tick off one or some of the reasons for the decision.

Lack of funding	☐	Lack of leadership support	☐	Return on investment considered a risk	☐	Culture not suitable for KM	☐	Do not know	☐
Lack of infrastructure	☐	Benefits not clearly understood	☐	Failed KM projects at other institutions had an influence.	☐	Political /competitive environment will prevent successful KM implementation	☐	Other factors	☐

SECTION C: ORGANISATIONAL CULTURE

Please answer these questions using the chart below:

	In use before 1999	Used since 1999	Plan to use in the next 24 months	Don't know / not applicable
C23.1) The institution facilitates knowledge sharing.	1 ☐	2 ☐	3 ☐	4 ☐
C23.2) The institution encourages experienced staff to transfer their knowledge to new or less experienced workers.	1 ☐	2 ☐	3 ☐	4 ☐
C23.3) Dialogue is encouraged and facilitated.	1 ☐	2 ☐	3 ☐	4 ☐
C23.4) Networks of common interests or the idea of communities of practice is encouraged by the institution.	1 ☐	2 ☐	3 ☐	4 ☐
C23.5) Knowledge management activity is encouraged by linking it to employee advancement within the institution.	1 ☐	2 ☐	3 ☐	4 ☐
C23.6) In your institution staff share knowledge or information by regularly updating databases of good work practices, lessons learned, or listings of experts	1 ☐	2 ☐	3 ☐	4 ☐
C23.7) In your institution staff share knowledge or information by	1 ☐	2 ☐	3 ☐	4 ☐

preparing written documentation such as lessons learned, training manuals, good work practices, articles for publication etc (organizational memory)								

Please answer these questions by selecting all options that apply.

C24) How is knowledge sharing facilitated within your institution?

Multimedia presentations	☐	Reflective learning processes	☐	Workshops	☐	Forums	☐	Video conferences	☐
handovers	☐	Creativity techniques	☐	Training needs analysis	☐	Mentoring and coaching	☐	Team briefings	☐
Other (please specify)	☐								

C25) What approach is being used to encourage knowledge management within your institution?

Top down encouragement	☐	Individual encouragement	☐
Top down enforcement	☐	Group encouragement	☐
Other (please specify)	☐		

C26) Knowledge management practices are:

a responsibility of managers and executives	☐	a responsibility of academics	☐	a responsibility of the knowledge officer or knowledge management unit	☐	Explicit criteria for assessing worker performance	☐
Other (please specify)	☐						

SECTION D –TECHNOLOGIES, PRODUCTS, MODELS AND PROCESSES

D27) Within your institution, what is the level of integration of the various information systems between functional areas?

Fully integrated system	☐	Integration within some functions	☐	Very little integration	☐	No integration	☐	Do not know	☐

D28) Please specify the technologies used within your institution to support knowledge management :

Business Intelligence	☐	Knowledge Base	☐	Collaboration	☐	Content Management	☐
Document management	☐	Portals	☐	Customer relationship	☐	Data Mining	☐

				management			
Creativity techniques	☐	Workflow	☐	Search	☐	E-learning	☐

Other ☐ please specify

D29) Can you list the different systems you are using to support your knowledge management initiatives

D30) How satisfactorily does the use of technology facilitate knowledge sharing and transfer within your institution

Very satisfactorily	☐	Satisfactorily	☐	Unsatisfactorily	☐	Very unsatisfactorily	☐	Unsure	☐

D31) How is EXPLICIT knowledge captured within your institution?

D32) Existing knowledge groups or communities of practice (interest) are supported by technology tools.

Strongly agree	☐	Agree	☐	Disagree	☐	Strongly disagree	☐	No opinion	☐

D33) How is TACIT knowledge captured within your institution? (please tick all that apply)

Inductions	☐	Formal interactions	☐	Exit interviews	☐
Performance appraisals	☐	Formal process for sharing of knowledge within a project group	☐	Formal process for documenting tacit knowledge	☐
Information interactions	☐	Interviews	☐	Not captured	☐

Please note any other means if appropriate

D34) Has your institution embarked on a project to map all its administrative processes?

Yes	☐	No	☐	Do not know	☐

D35) Do these administrative processes mentioned above incorporate KM?

Yes	☐	No	☐	Do not know	☐

D36a) If Yes, please describe briefly below:

D37) Does your institution use a KM framework to implement the KM strategy or project?

Yes	☐	No	☐	Do not know	☐

D38a) If YES, please specify below:

SECTION E – RESPONSIBILITY FOR KNOWLEDGE MANAGEMENT PRACTICES

E39) Who are the **drivers** of the knowledge management technology? (please tick all that apply)

IT specialists /directors exclusively	☐	Institutional planners	☐	Vice Chancellor	☐
Librarians	☐	Academics	☐	Senior management	☐
Institutional research staff	☐	Administrators	☐		

E40) Who is the **formal** person responsible for the knowledge management technology?

IT specialists /directors exclusively	☐	Institutional planners	☐	Vice Chancellor	☐

Librarians	☐	Academics	☐	Senior management	☐
Institutional research staff	☐	Administrators	☐		

SECTION F – BENEFITS AND CHALLENGES

F41) What are the key benefits of a systemic knowledge management system? (Please tick all that apply)

Improved efficiency	☐	Improved management learning	☐	No known benefits	☐	Reduced operating costs	☐
New and improved processes	☐	Improved organizational learning	☐	Improved quality of service	☐		
Other (please specify)	☐						

F42) What are the key challenges preventing the effective use of KM principles within your institution?

Lack of an appropriate IT infrastructure	☐	Cultural issues	☐	Politics and resistance to organizational change	☐	Diversity of the internal constituency and their needs.	☐
Lack of appropriate software tools	☐	Lack of KM strategy	☐	Power issues	☐	Organizational structure	☐
Lack of support from senior management	☐	No central unit taking responsibility to drive the KM agenda.	☐	No known challenges	☐		
Other (please specify)	☐						

SECTION G – DEVELOPMENT WITHIN THE INSTITUTION

G43) How has knowledge management developed within your institution?

As part of an IT project.	☐	As part of a change management programme	☐	As a supporting mechanism to an existing business process	☐
As part of the service planning process.	☐	As part of a corporate knowledge management or other strategy	☐		
As part of a grass roots or bottom-up process.	☐	As a side effect of another strategy or initiative (please name	☐		

Other (please specify)	☐	

G44) What **external factors** or agendas have influenced the emergence of knowledge management in your institution (please specify)?

Competitive markets	☐	Pressure from government for better accountability.	☐	
Availability of funding	☐	Demands for more openness / transparency	☐	
Criticisms from external (or internal) stakeholders	☐	Other external factors	☐	

G45) What internal factors or agendas influenced the emergence of knowledge management in your institution? (please specify)

The availability of IT software to facilitate it.	☐	Embedded processes that facilitated sharing and organizational learning.	☐	Internal pressure to collaborate	☐
An organizational culture that values and supports sharing and re-use.	☐	Other internal factors	☐		

G46) Does your institution have an Institutional Research unit?

yes	☐	no	☐	Do not know	☐

SECTION H – PROGRESS

H47) Which of the following knowledge management maturity levels best describes your institution?

Default	☐	• Complete dependence on individual skills • Organisational knowledge is fragmented and in small pockets and within peoples heads. • Formal training is believed to be the only way in which learning can take place.
Aware	☐	• The organization shares knowledge purely on a needs basis. • Routine and procedural knowledge is shared • Able to repeat basic business tasks of the institution
Reactive	☐	• Beginnings of an integrated approach to knowledge management life cycle. • Enterprise wide knowledge systems are in existing (awareness and maintenance moderate) • The organization collects and understands metrics for knowledge management. • Managers recognize the role of and encourage knowledge sharing.
Convinced	☐	• Enterprise wise systems are in place – quality, currency, usage are high • Organisational boundaries breakdown as barriers. • High ability to leverage internal and external expertise • The organization realizes measurable benefits for knowledge sharing
Sharing	☐	• Culture of sharing institutionalized, sharing becomes second nature

to all
- Organisational boundaries are irrelevant.
- Streamlined processed for leveraging new ideas for business advantage
- Knowledge return on investment is integral to decision-making.

H48) When did your institution start considering knowledge management as a tool to be used?

Before 1995	☐	Between 1995 - 2000	☐	Between 2000 - 2004	☐	Between 2004 - 2006	☐

SECTION I – MEASUREMENT

I49) Has your institution ever undertaken any form of knowledge management audit?

yes	☐	no	☐	Do not know	☐

I50) If you have answered yes to questions 38, can you indicate when this was done?

Before 1995	☐	Between 1995 - 2000	☐	Between 2000 - 2004	☐	Between 2004-2005	☐	Between 2006-2007	☐

SECTION J– REASONS FOR USING KNOWLEDGE MANAGEMENT PRACTICES IN YOUR INSTITUTION

Please answer these questions using the chart below:

1)	In Use before 1999
2)	Used since 1999
3)	Plan to use in the next 24 months
4)	Don't know / not applicable

	In use before 1999		Used since 1999		Plan to use in the next 24 months		Don't know / not applicable	
J51.1) To improve the competitive advantage of your institution	1	☐	2	☐	3	☐	4	☐
J51.2) To help integrate knowledge within your institution	1	☐	2	☐	3	☐	4	☐
J51.3) To improve the capture and use of knowledge from sources outside your institution	1	☐	2	☐	3	☐	4	☐
J51.4) To improve sharing and transfer of knowledge with external stakeholders	1	☐	2	☐	3	☐	4	☐
J51.5) To increase efficiency by using knowledge to improve student processes	1	☐	2	☐	3	☐	4	☐

J51.6) To protect the institution from loss of knowledge due to staff departures		☐	2	☐	3	☐	4	☐
J51.7) To training staff to meet strategic objectives of the organization.	1	☐	2	☐	3	☐	4	☐
J51.8) To increase staff acceptance of innovations	1	☐	2	☐	3	☐	4	☐
J51.9) To improve staff retention	1	☐	2	☐	3	☐	4	☐
J51.10) To identify and protect strategic knowledge present in your institution	1	☐	2	☐	3	☐	4	☐
J51.11) To ease collaborative work of projects or teams that are physically separated (different campuses)	1	☐	2	☐	3	☐	4	☐
J51.12) To promote sharing of knowledge with all stakeholders	1	☐	2	☐	3	☐	4	☐

SECTION K– COMPETITIVE ADVANTAGE

Please answer the following questions about competitive advantage.

	In use before 1999	Used since 1999	Plan to use in the next 24 months	Don't know / not applicable	NO
52.1) Does your institution have a unit that is dedicated to market research - looking at competing HE institutions?	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
52.2) In your opinion, does your institution use knowledge management principles as a management tool to enhance its competitive advantage?	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
52.3) Would you consider your institution to be a learning organization - one that is continually expanding its capacity to create its future[25]	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
52.4) Would you consider your institution to have the correct culture to utilize KM principles for competitive advantage?	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

Please answer the following Yes/No questions

53.1) Do you think that HE institutions generally are not as competitive as businesses and hence, do not need to compete for students?	yes	☐	no	☐	Do not now	☐

[25] Senge, P 1999: " The fifth discipline"

53.2) Do you believe that an institution can create competitive advantage through staff members collaborating in a way that would create it?

yes	☐	no	☐	Do not now	☐

53.3) Do you believe that the external environment and pressure on HE institutions is changing and hence, knowledge management as well as competitive intelligence[26] is key to its survival?

yes	☐	no	☐	Do not now	☐

53.4) Do you believe that an organisation can utilise its internal and external information and knowledge to gain a competitive advantage

yes	☐	no	☐	Do not now	☐

SECTION K(L)–SPENDING ON KNOWLEDGE MANAGEMENT

K54) Do the knowledge management practices currently in use in your institution have dedicated budgets?

yes	☐	no	☐	Do not know	☐

K55) If you have answered YES, to the previous question then, in the next 24 months do you anticipate the knowledge management practices share of the budget to :

increase	☐	decrease	☐	Stay the same	☐	Don't know	☐

K56) If you have answered NO to the previous question, then in the next 24 months do you anticipate the knowledge management practices to have dedicated budgets or spending.

yes	☐	no	☐	Don't know	☐

K57) Can you estimate the cost of expenditure on your KM project?

£200K – £500 K	☐	£500K – £1M	☐	£1M – £2M	☐	£2M – £3M	☐	£3M – £4M	☐	>£4M	☐	Do not know	☐

SECTION L(M)–INCENTIVES TO IMPLEMENT KNOWLEDGE MANAGEMENT PRACTICES

L58) What would motivate your institution to implement or to increase knowledge management practices(please list in the box below)

[26] Competitive Intelligence :- Information that helps managers to compete better. (Bateman T , et al 2007)

SECTION M (N)– UNIVERSITY AND PERSONAL DETAILS

M59	**PERSONAL DETAILS**	
59(a)	FULLNAME OF PARTICIPANT (optional)	
59(b)	DEPARTMENT	
59(c)	TELEPHONE NUMBER	
59(d)	JOB TITLE	
59(e)	EMAIL ADDRESS	
M60	**UNIVERSITY DETAILS**	
M60	UNIVERSITY NAME	
M61	TYPE OF UNIVERSITY	55a) PRE-1992 ☐ 55b) POST-1992 ☐ 55c) RUSSELL GROUP ☐
M62	SIZE OF UNIVERSITY	56a) Less than 10,000 students ☐ 56b) 10,000> and <15,000 students ☐ 56c) >15,000 and < 20,000 students ☐ 56d) >20,000 and < 30,000 students ☐ 56e) > 30,000 students ☐
M63	NUMBER OF STAFF MEMBERS	57a) Less than 500 ☐ 57b) 500> and <1000 ☐ 57c) 1000> and <1500 ☐ 57d) 1500> and < 2000 ☐ 57e) > 2000 ☐

SECTION N (O)– CASE STUDY NOMINATION

N64) Would you be willing to nominate your institution to be part of a case study to further the research within the area of knowledge management within higher education?

yes	☐	no	☐	Interested but would need to seek permission	☐

N65) Could you suggest any staff members within your institution that could be contacted to participate in the case study?

	Surname and name of person	Position	Contact details (email or tel number)
N2a)			
N2b)			
N2c)			
N2d)			

N66) Please indicate how long it took you to complete this survey : _____ minutes

N67) If you would like to receive summary results from this survey then please check

yes	☐	no	☐

Thank you so much for taking the time to fill in this questionnaire. Your input will add much value to this study of knowledge management within higher education.

PLEASE RETURN YOUR QUESTIONNAIRE TO:

Ms Desireé Joy Cranfield
University of Southampton
Building 4, room 4001
Highfield
Southampton
SO171BJ
United Kingdom

Email : desiree@soton.ac.uk

Tel : +44 (0)7877658475
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-References:

1. Gates, B. (1999). Business at the speed of thought-using a digital nervous system, Penguin Books.
2. Hislop, D
3. Mitchel, John "Knowledge Management survey of local authorities, 2006"
4. Nonaka Ikujiro, K. I., Ed. (2007). Knowledge Creation and Management: New challenges for Managers. Knowledge Creation and Management: New challenges for Managers, Oxford university press.
5. Serban Andreea, 2002 : Knowledge Management: Building a Competitive Advantage in Higher Education
6. Science Innovation and Electronic Information Division, "Knowledge Management practices, 2001"

APPENDIX B

B. THE CASE STUDY

B.1 PARTICIPATION EMAIL CONFIRMATION

B.2 PARTICIPANT INFORMATION SHEET

B.3 INTERVIEW GUIDE

Dear <<university name>>

I am writing to thank you for completing the survey sent to your institution on Knowledge Management practices in Higher Education in the UK. Thank you for putting your university's name down to possibly take part in the case study. I am in the process of making initial contact with institutions who have indicated that they would be willing to participate and was wondering if you could confirm your institutions willingness to participate in the case study. I would compile an information pack and send it to you closer to the time however was hoping to schedule the case study as soon as possible.

I would be delighted if your institution confirms and if so could you indicate your availability for an interview please?. I would possibly need to speak to some other staff members as well and would need your guidance on whom else to interview at your institution. I am hoping to spend a day or two at your institution, and am hoping to complete all interviews in the period 24th July - 20 August 2007.

Hoping to hear from you soon.

Best wishes and sincere thanx.

Desiree Cranfield

07877658475

University of Southampton
Highfield
So1 BJ
July 2007

Participant Information Sheet

Thank you for nominating your institution to be part of the knowledge management research study. This information sheet provides more details of the research I am conducting and what the research involves. Once you have read through the information sheet and have confirmed that you would like to participate, please sign the consent form electronically (if you do not have a signature your name would be acceptable) and return to me via email. I will collect the original consent form with your signature at the interview session.

Research Overview

I am a PhD Candidate at the Centre For Higher Education Management and Policy at the University of Southampton. I am conducting research to determine how and if knowledge management principles are being used within Higher Education institutions as a management tool within the 21st century. The research project will focus on what the contributing factors are that hinder or promote the implementation and its success. It will use the Stankosky and Calabrese Knowledge Management pillars to enterprise learning which include;

- *Leadership* –drive the values for knowledge creation and sharing thereby cultivating the business strategy.
- *Organization* – Organise to support the values (i.e knowledge creation and sharing), through business process improvements (procedures and processes), Metrics, TQM, workflows, communications.
- *Technology* – connect knowledge through a network to allow the breadth of knowledge that is the sum of the collective enterprise (through various technology).
- *Learning* – cultivate and utilize virtual (or other) teams and exchange forums for shared results and innovation.

The study will cover issues including:

- Current knowledge management practices within Higher Education.
- How effectively knowledge management principles are being applied within the higher education context as a management tool (explicitly or not).
- Whether knowledge management can be "effectively" applied within a Higher Education Environment.

- Factors that hinders or promotes knowledge management within this context.
- Knowledge Management challenges.
- Whether KM is considered critical to the growth, competitiveness and performance of HEI's.
- To understand whether Knowledge Management practices play a role in supporting quality management practices within HEI's?
- To establish a broad knowledge management framework that could be implemented within a HE environment.

This study is an exploration of knowledge management practices within Higher Education. You do not need to consider yourself an expert in knowledge management to participate in the study. This study is concerned with your experiences and perceptions of how to manage for success and is not an assessment of your skills or knowledge about the subject.

By participating in this research you and other participants will be contributing to the development of a common understanding of what knowledge management practices are or could be within Higher Education, and how best to utilize it to enhance competitive advantage within this context. You will also be expanding our knowledge of the implementation and the perception of Knowledge Management and its benefits and challenges and to the understanding of whether Higher Education has the organizational culture to utilize it.

What the research involves?

Participation in the research will involve one interview and possibly a follow-up interview at a later stage. The interview will aim to better understand some of the survey responses and will hope to gain a broader perspective of the understanding and practices of knowledge management from the leadership, technology, organization and learning perspective within the institution. The interview will be carried out in a private setting and at a time and venue convenient to you and to the organization. The interview will take approximately 45 minutes to 1 hour and will be recorded on a voice recorder.

Participation in this study is voluntary. You are free to choose to take part and can withdraw your participation at any time without providing any reason.

What about my confidentiality?

Any personal information about you or the organization that is obtained in connection with this study will remain strictly confidential and will be disclosed only with your written permission. Pseudonyms will be used when discussing or writing up the information you offer to protect your anonymity.

How do I agree to participate?

If you agree to take part in this research study I request that you please sign the attached consent form and email it back to me or hand it to me at the interview.

Further information

I am very happy to answer any questions you have about participating in this research. I will be available for any questions throughout the research process. I can be contacted on the details provided below.

Contact Details:

Desireé Joy Cranfield, PhD Researcher
Centre for Higher Education Policy and Management at Southampton University
University of Southampton
Highfield, SO17 1BJ
Phone: 07877658475
Email: desiree@soton.ac.uk

Thank you for being willing to participate in this study. I look forward to meeting you.

Yours sincerely,

Desireé Joy Cranfield

PhD Researcher

Note: *This study has been approved by the University of Southampton research unit CHEMPAS. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Director of the unit Prof John Taylor (telephone: 02380 595000). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.*

THE UNIVERSITY OF <<name>>

PARTICIPANT INFORMATION STATEMENT AND CONSENT FORM (continued)

Knowledge Management Practices Case Study

You are making a decision whether or not to participate. Your signature indicates that, having read the information provided above, you have decided to participate.

.....	.....
Signature of Research Participant	Signature of Witness
.....	.....
(Please PRINT name)	(Please PRINT name)
.....	.....
Date	

REVOCATION OF CONSENT

Knowledge Management Practices Case Study

I hereby wish to WITHDRAW my consent to participate in the research proposal described above and understand that such withdrawal WILL NOT jeopardise any treatment or my relationship with The University of Southampton.

.....	.....
Signature	Date

.....

Please PRINT Name

The section for Revocation of Consent should be forwarded to Ms Desireé Cranfield email desiree@soton.ac.uk

University of <<name>>

Notes: For the purposes of this interview a particular view of KM will be taken and the questions asked in the context of Stankosky Knowledge Management pillars to enterprise learning (Stanskosky, 2005):

Leadership	: drive values for knowledge creation and sharing thereby cultivating the business strategy. *Business culture, Strategic Planning, Climate, Growth, Segmentation, Communication*
Organisation	: Organise to support the values (i.e knowledge creation and sharing) *BPR, metrics, TQM, workflow, communications.*
Technology	: Connects knowledge through a network to allow the breadth of knowledge that is the sum of the collective enterprise. *Email, OLAP, data warehousing, search engines, decision support, process modelling, management tools, communications*
Learning	: Cultivate and utilise teams and exchange forums for shared results and innovation *Intuition, innovation vs invention, learning community, virtual teams, shared results, exchange forums, communications*

For the purposes of this case study a particular view of knowledge and its "management "has been adopted:

Knowledge derives from information as information derives from data (Davenport and Prusak). For information to be transformed into Knowledge it requires human intervention, hence, humans apply their skills, ability, experience, know-how, values and culture via some transformation (comparison, communication, connections, and consequences) to change the information into knowledge. The case study will primarily look at organisational knowledge but acknowledges the psychological debates around what knowledge is. However for the purposes of this study, it recognises that each individual has abilities, skills, experience, values and a particular work ethos and culture which each uses to transform information into knowledge which can be acted upon and which can become part of the broader organisational knowledge. Knowledge Management therefore draws from existing resources that an organisation may already have in place - good information systems management, organisational change management, and human resources management practices". It is essentially about what people do, focusing on knowledge sharing mechanisms and practices,

and a recognition that it needs to be valued as a key asset and starts and fails at the personal level yet aims at organisational change, improvement and success.

INTERVIEWEE:

Interview Questions:

A Personal / designation and role

1. How long have you been working at the institution?

2. What is your formal job title?

3. Briefly indicate what your job entails?

B. Knowledge Management

4. Do you think it important to manage knowledge within an institution?

5. There seems to be accepted definitions for data and information. However, there does not seem to be an accepted definition for what knowledge is. Do you think there is a difference between knowledge and information?

6. Based on your responses to the survey, your institution does not have a KM plan, or an accepted definition, or a central person responsible for KM, yet it seems to value the sharing of knowledge through various means (networks, best practices, database, etc), can you elaborate on this please?

7. Perceptions:
   a. Do you agree with the saying "In a global economy, knowledge may be a company's greatest competitive advantage?"

   b. You have indicated that you believe that an institution can utilise its internal and external information and knowledge to gain a competitive advantage, do you have any processes or systems in place to do that?

   c. Why do you think KM has not been accepted more broadly in Higher Education?

   d. Do you think there is a relationship between the size of an institution and its need for KM implementation or its ability to successfully implement KM?

   e. Do you think KM should be treated as a separate function or embedded within existing functions and roles and strategies?

C Leadership

(Creates the culture within which the institutions works. It stresses the need for integrative management principles and techniques, primarily based on systems thinking and approaches. Deals with the decision making processes involving values, objectives, knowledge requirements, knowledge resources, prioritisation, and resource allocation of the knowledge assets within the organisation.)

1. The institution is a relatively small institution, old, first institution in Scotland, and has a reputation for excellence; what kind of management tools and techniques is being used to ensure that the institution remains competitive and at the leading edge? Or do you think that despite the management tools and techniques used, an institution will achieve its reputation and maintain it through other means?
2. Lack of KM strategy and the appropriate culture are listed as the main challenges of KM implementation in HE. What is your opinion of this finding?

3. The vision and culture of an organisation sets the tone for much of what occurs within the organisation, influencing most strategic activities. What kind of vision and culture do you think leadership should set to progress knowledge management?

4. Does the leadership at your institution value knowledge and knowledge sharing? If so, in your opinion, since when were these values instituted?

5. What kind of culture do you think needs to be created to enable the sharing of knowledge and working in a collaborative way to ensure the institutions success?

6. In your opinion do you think information hoarding occurs very rarely or very often within your institution, and then in Higher Education more generally?

7. How important do you think organisational culture is to effective implementation of KM?

8. IN your opinion do you think that there are formal procedures to encourage the sharing of knowledge within the institution?

9. Do you think there should be incentives for knowledge sharing? If so what kind of incentives do you think will work within this environment?

10. In your opinion why do you think Higher Education in general have failed to appreciate the full potential of knowledge management? Do you think that Higher Education in general will ever appreciate the full potential of KM?

11. Do you think that a structured KM academic programme within institutions will assist the understanding of KM?

D. Organisation development (understanding the organisation)

(For knowledge management to be successful, organisational learning and a research culture must support it.)

1. Do you think a Knowledge audit is required within the institution to better understand what kind of knowledge is critical to the institution and where it is and how to best utilise it?

2. Do you have any institutional wide (or smaller) change management projects or any other projects information management projects at St Andrews University?

3. Do you have any processes to support the sharing of knowledge within your institution?

E. Technology (SECTION D)

1. Are you satisfied with the technology infrastructure of the institution to support knowledge and information sharing?
2. Does the institution use any performance management tools? Would you link it to creating a culture of sharing?
3. The survey conducted showed:

E-learning	72%
Content Management	62%
Collaboration	48%
Document management	45%
Portals	41%
Business Intelligence	41%

CRM, data mining and workflow was utilised much less within the institutions. Each extremely important. Why do you think this is the case?

Knowledge Base	31%
Search	28%
Customer relationship management	21%
Data Mining	17%
Workflow	17%
Creativity techniques	3%

4. Are there any other technologies that you think should be utilised to further the KM agenda at your institution?

F. Organisational behaviour (Learning)

1. Why in your opinion is culture listed as one of the main challenges within Higher Education (52%)? What in your opinion is the culture of Higher Education institutions?
2. What kind of culture do you think is required to ensure a conducive environment for KM?
3. You have indicated that you consider your institution to be a learning organisation, what kind of processes or systems are in place to support this culture?

Thank you so much for your time and willingness to assist in the case study.

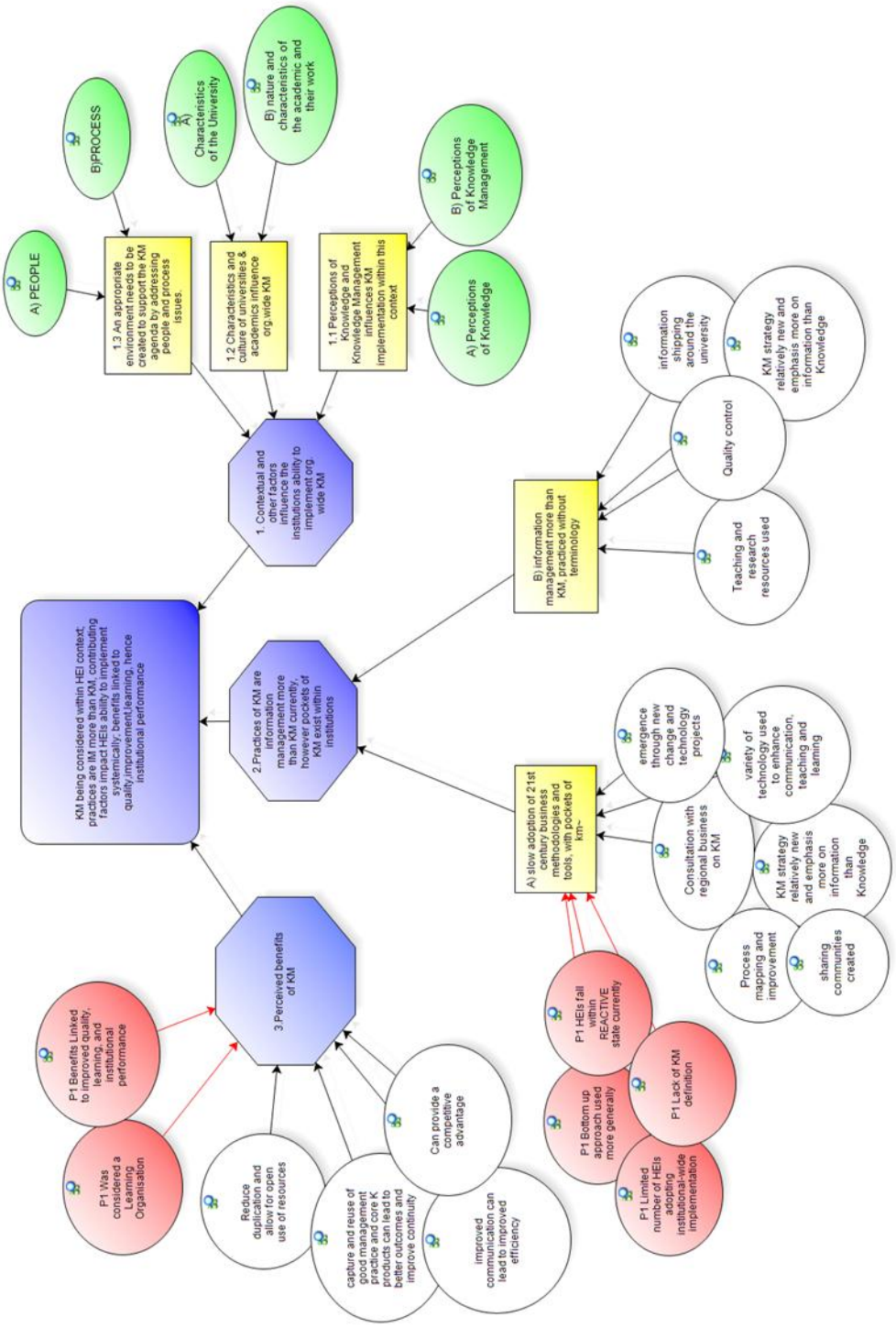
APPENDIX C

C. NVIVO MODELS

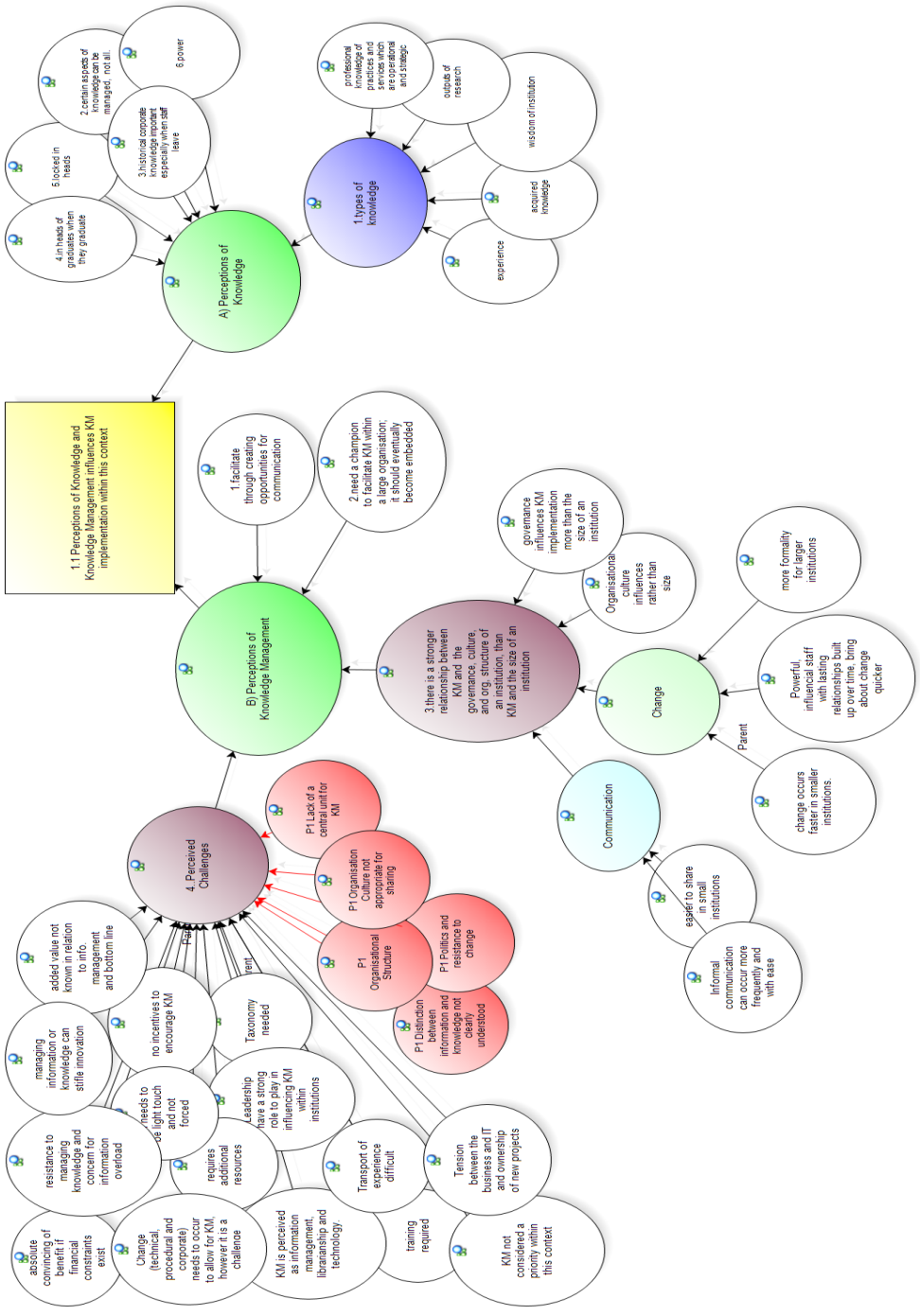
C.1 MODELS

C.2 NVIVO CODES GENERATED

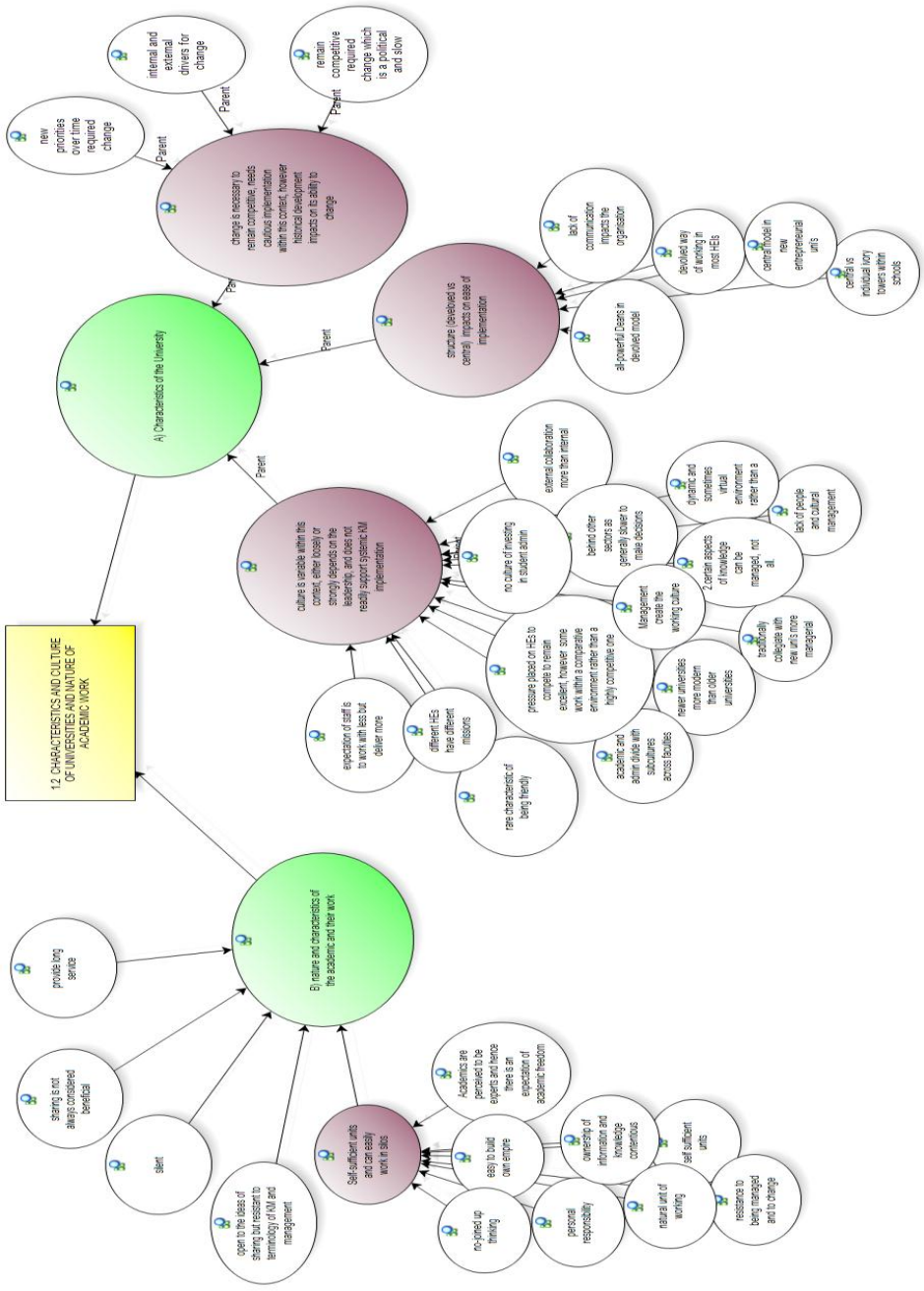
SUBSTANTIVE MODEL - NVIVO LEVEL 3



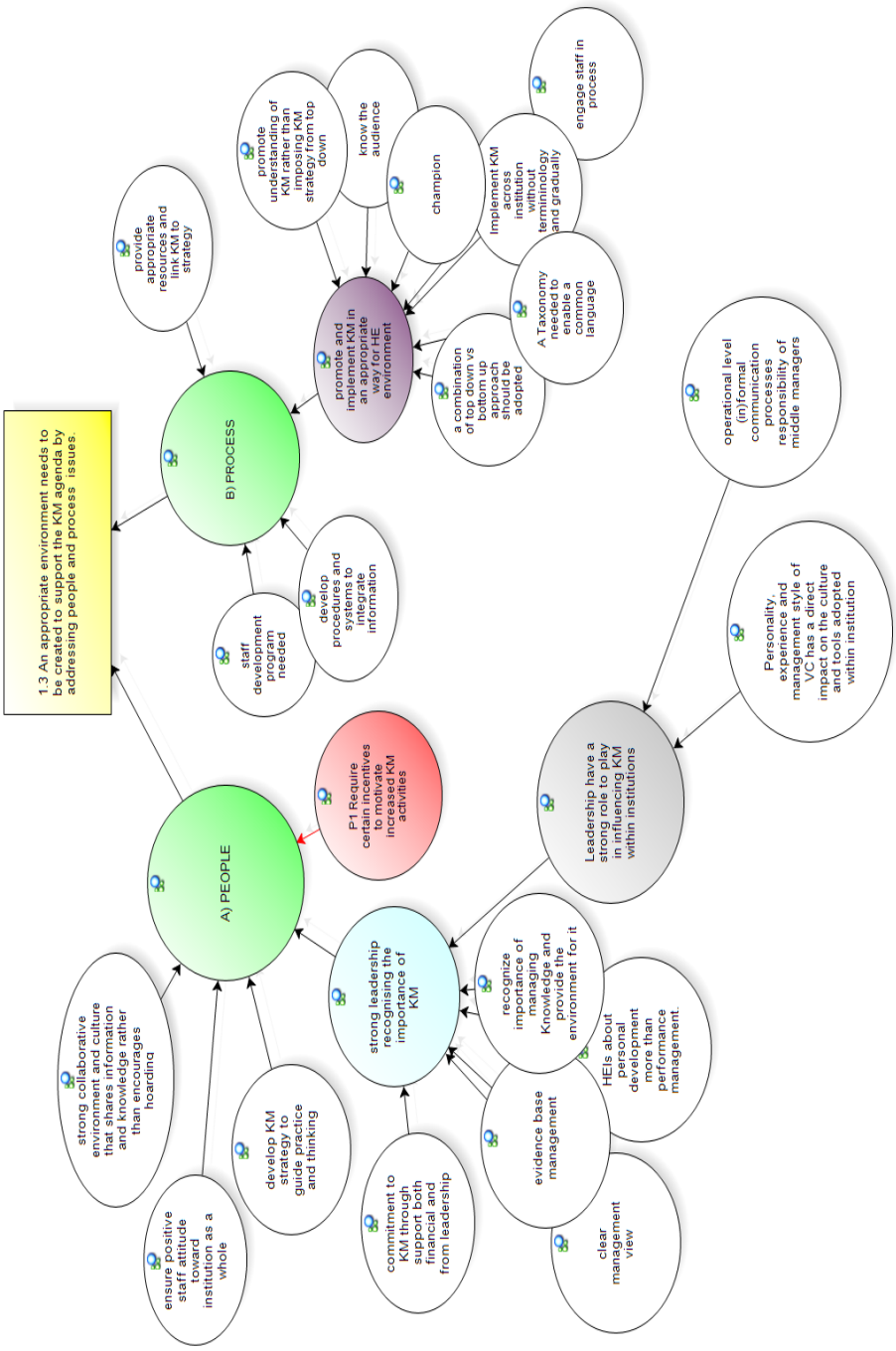
MODEL - PERCEPTIONS OF KNOWLEDGE AND KNOWLEDGE MANAGEMENT



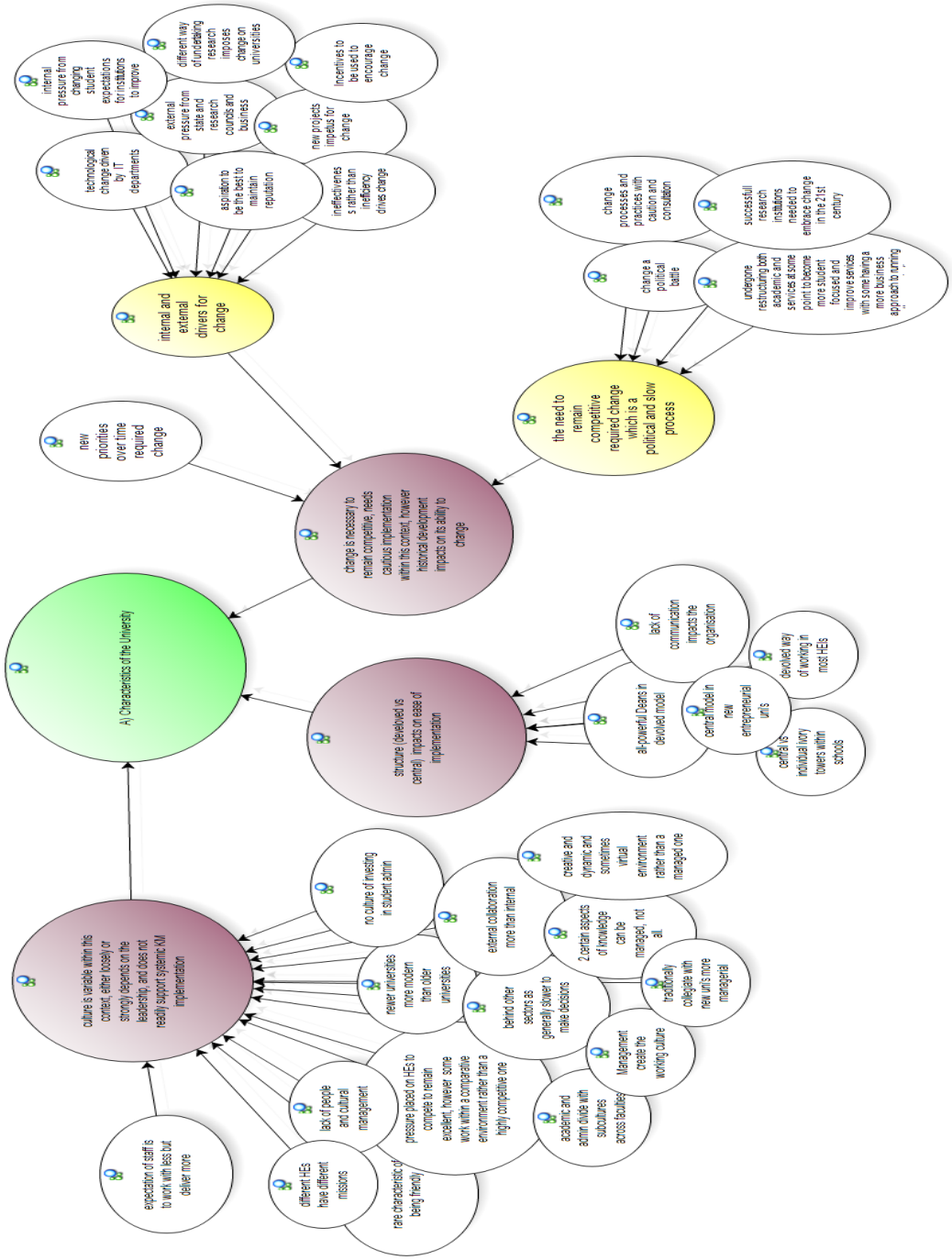
MODEL – CHARACTERISCTICS AND CULTURE OF UNIVERSITIES, AND NATURE OF ACADEMIC WORK



MODEL - APPROPRIATE ENVIRONMENT



MODEL - CHARACTERISTICS OF UNIVERSITIES (WITH DECOMPOSITION)



NVIVO CODES GENERATED

Type	Name
Tree Node	21st century management tools like KM are being considered within the HEI context, however practices of KM are IM more than KM and there are contributing contextual and other factors that impact HEIs ability to implement KM systemically
Tree Node	Contextual and other factors influence the institutions ability to implement org. wide KM
Tree Node	An appropriate environment needs to be created to support the KM agenda by addressing people and process issues.
Tree Node	PEOPLE
Tree Node	develop KM strategy to guide practice and thinking
Tree Node	ensure positive staff attitude toward institution as a whole
Tree Node	strong collaborative environment and culture that shares information and knowledge rather than encourages hoarding
Tree Node	strong leadership recognising the importance of KM
Tree Node	clear management view
Tree Node	commitment to KM through support both financial and from leadership
Tree Node	middle management need to embrace KM as well
Tree Node	more understanding of KM at top level
Tree Node	evidence base management
Tree Node	HEIs about personal development more than performance management.
Tree Node	Leadership have a strong role to play in influencing KM within institutions
Tree Node	operational level (in)formal communication processes responsibility of middle managers
Tree Node	Personality, experience and management style of VC has a direct impact on the culture and tools adopted within institution
Tree Node	recognize importance of managing Knowledge and provide the environment for it
Tree Node	PROCESS
Tree Node	develop procedures and systems to integrate information
Tree Node	promote and implement KM in an appropriate way for HE environment
Tree Node	a combination of top down vs bottom up approach should be adopted
Tree Node	A Taxonomy needed to enable a common language
Tree Node	change the KM terminology
Tree Node	definition for KM
Tree Node	has different meanings to different people
Tree Node	champion
Tree Node	engage staff in process
Tree Node	Implement KM across institution without terminology and gradually
Tree Node	know the audience
Tree Node	promote understanding of KM rather than imposing KM strategy from top down
Tree Node	provide appropriate resources and link KM to strategy
Tree Node	staff development program needed
Tree Node	Characteristics and culture of universities & academics influence org.wide KM
Tree Node	Characteristics of the University
Tree Node	change is necessary to remain competitive, needs cautious implementation within this context, however historical development impacts on its ability to change
Tree Node	internal and external drivers for change
Tree Node	aspiration to be the best to maintain reputation

Tree Node different way of undertaking research imposes change on universities

Type	Name
Tree Node	declining population
Tree Node	institutional boundaries disappearing for research

Tree Node external pressure from state and research councils and business

Type	Name
Tree Node	international and national alignment
Tree Node	nature of country & politics has an impact on the HEIs agenda

Tree Node Incentives to be used to encourage change
Tree Node ineffectiveness rather than inefficiency drives change
Tree Node internal pressure from changing student expectations for institutions to improve
Tree Node new projects impetus for change
Tree Node technological change driven by IT departments
Tree Node new priorities over time required change
Tree Node the need to remain competitive required change which is a political and slow process

Type	Name
Tree Node	change a political battle
Tree Node	change processes and practices with caution and consultation
Tree Node	most have undergone restructuring both academic and services at some point to become more student focused and improve services with some having a more business approach to running the organisation
Tree Node	successful research institutions needed to embrace change in the 21st century

Tree Node culture is variable within this context, either loosely or strongly depends on the leadership, and does not readily support systemic KM implementation

Type	Name
Tree Node	behind other sectors as generally slower to make decisions
Tree Node	difference between old and new universities

Type	Name
Tree Node	different HEs have different missions
Tree Node	management style was traditionally collegiate with newer inst. more managerial, however moving towards business-like approach

Type	Name
Tree Node	metric driven and more businesslike approach, being responsive and reactive to change
Tree Node	need to meet complex multiple objectives
Tree Node	traditionally collegiate, with newer inst. more managerial, and others aspiring to be a hybrid of the two.

Tree Node newer universities more modern than older universities
Tree Node Post-92 institutions operate within a more financially constrained environment
Tree Node staff were generally content with old-fashioned fragmented systems and services in the past

Type	Name
Tree Node	fragmented systems create duplication of effort, many copies of the same thing, and provides unsatisfactory services to the student at times.
Tree Node	MIS problems
Tree Node	power struggles for technology project funding
Tree Node	queues for matriculation

Tree Node traditionally collegiate with new uni's more managerial
Tree Node diverse body of staff

Type	Name
Tree Node	academic and admin divide with subcultures across faculties
Tree Node	creative and dynamic and sometimes virtual

					environment rather than a managed one
				Tree Node	diversity of staff and disciplines hence systemic implementation a challenge
			Tree Node	external collaboration more than internal	
			Tree Node	internal politics causes lack of communication and at times requires external project staff	
			Tree Node	lack of people and cultural management	
			Tree Node	Management create the working culture	
			Tree Node	pressure to be more competitive	
				Type	**Name**
				Tree Node	expectation of staff is to work with less but deliver more
				Tree Node	lack of support and resources for lower priority issues
				Type	**Name**
				Tree Node	financial resource
				Tree Node	lack of resources
				Tree Node	lack of senior support
				Tree Node	no culture of investing in student admin
				Tree Node	resource of time
				Tree Node	tradition of no investment in services
				Tree Node	pressure placed on HEs to compete to remain excellent, however some work within a comparative environment rather than a highly competitive one
				Type	**Name**
				Tree Node	comparison rather than competition
				Tree Node	local, regional and global competition
				Tree Node	student expectations will change and place pressure on institutions to improve
				Tree Node	using different ways to enhance efficiency and effectiveness within administration of relationships with stakeholders
			Tree Node	prove success with academic systems	
			Tree Node	rare characteristic of being friendly	
			Tree Node	Recognition to improve Organisational Learning however learning from others does not occur naturally within this context and occurs more within projects	
				Type	**Name**
				Tree Node	academic KM program will not necessarily improve KM practically at uni.s
				Tree Node	deliberate learning within projects
				Tree Node	org.history not always considered relevant
				Tree Node	organisational learning a challenge as not very good at learning from others, but trying to adopt the best of what business is doing into own environment
				Tree Node	recognise the need to learn from business best practices
				Tree Node	respond to environment
		Tree Node	structure (devolved vs central) impacts on ease of implementation		
			Type	**Name**	
			Tree Node	all-powerful Deans in devolved model	
			Tree Node	central model in new entrepreneurial uni's	
			Tree Node	central vs individual ivory towers within schools	
			Tree Node	devolved way of working in most HEIs	
			Tree Node	lack of communication impacts the organisation	
	Tree Node	nature and characteristics of the academic and their work			
		Type	**Name**		
		Tree Node	Academics are perceived to be experts and hence there is an expectation of academic freedom		
			Type	**Name**	
			Tree Node	provide long service	
		Tree Node	open to the ideas of sharing but resistant to terminology of KM and management		
			Type	**Name**	
			Tree Node	ownership of information and knowledge contentious	
			Tree Node	resistance to being managed and to change	
			Tree Node	sharing is not always considered beneficial	
		Tree Node	Self-sufficient units and can easily work in silos		
			Type	**Name**	
			Tree Node	easy to build own empire	

	Tree Node	natural unit of working
	Tree Node	no-joined up thinking
	Tree Node	personal responsibility
	Tree Node	self sufficient units
	Tree Node	silent

Tree Node — Perceptions of Knowledge and Knowledge Management influences KM implementation within this context

Type	Name
Tree Node	A) Perceptions of Knowledge

Type	Name
Tree Node	1.types of knowledge

Type	Name
Tree Node	acquired knowledge
Tree Node	experience
Tree Node	outputs of research
Tree Node	professional knowledge of practices and services which are operational and strategic
Tree Node	wisdom of institution

Tree Node	2.certain aspects of knowledge can be managed, not all.
Tree Node	3.historical corporate knowledge important especially when staff leave
Tree Node	4.in heads of graduates when they graduate
Tree Node	5.locked in heads
Tree Node	6.power
Tree Node	B) Perceptions of Knowledge Management

Type	Name
Tree Node	1.facilitate through creating opportunities for communication
Tree Node	2.need a champion to facilitate KM within a large organisation; it should eventually become embedded
Tree Node	3.there is a stronger relationship between KM and the governance, culture, and org, structure of an institution, than KM and the size of an institution

Type	Name
Tree Node	Change

Type	Name
Tree Node	change occurs faster in smaller institutions.
Tree Node	more formality for larger institutions
Tree Node	Powerful, influential staff with lasting relationships built up over time, bring about change quicker

Type	Name
Tree Node	Communication

Type	Name
Tree Node	easier to share in small institutions
Tree Node	Informal communication can occur more frequently and with ease

Type	Name
Tree Node	governance influences KM implementation more than the size of an institution
Tree Node	Organisational culture influences rather than size
Tree Node	4..Perceived Challenges

Type	Name
Tree Node	absolute convincing of benefit if financial constraints exist

Type	Name
Tree Node	added value not known in relation to info. management and bottom line

Type	Name
Tree Node	Change (technical, procedural and corporate) needs to occur to allow for KM, however it is a challenge
Tree Node	KM is perceived as information management, librarianship and technology.
Tree Node	KM needs to be light touch and not forced
Tree Node	KM not considered a priority within this context
Tree Node	Leadership have a strong role to play in influencing KM within institutions

Type	Name
Tree Node	commitment to KM through support both financial and from leadership

Type	Name
Tree Node	middle management need to embrace KM as well
Tree Node	more understanding of KM at top level

Type	Name
Tree Node	HEIs about personal development more than

						performance management.
					Tree Node	leadership management a challenge
					Tree Node	operational level (in)formal communication processes responsibility of middle managers
					Tree Node	Personality, experience and management style of VC has a direct impact on the culture and tools adopted within institution
				Tree Node	managing information or knowledge can stifle innovation	
				Tree Node	no incentives to encourage KM	
				Tree Node	requires additional resources	
				Tree Node	resistance to managing knowledge and concern for information overload	
				Tree Node	Taxonomy needed	
					Type	Name
					Tree Node	change the KM terminology
						Type Name
						Tree Node redefined term but still used
						Tree Node unfortunate name
					Tree Node	common language
					Tree Node	definition for KM
					Tree Node	has different meanings to different people
					Tree Node	terminology not understood, hence some scepticism
					Tree Node	Would benefit from a KM strategy
						Type Name
						Tree Node experimental
				Tree Node	Tension between the business and IT and ownership of new projects	
				Tree Node	training required	
				Tree Node	Transport of experience difficult	
			Tree Node	5..Perceived benefits of KM		
				Type	Name	
				Tree Node	Can provide a competitive advantage	
				Tree Node	capture and reuse of good management practice and core K products can lead to better outcomes and improve continuity	
				Tree Node	improved communication can lead to improved efficiency	
					Type	Name
					Tree Node	create opportunities for communicating
				Tree Node	Reduce duplication and allow for open use of resources	
Tree Node	Practices of KM are information management more than KM currently, however pockets of KM exist within institutions					
	Type	Name				
	Tree Node	information management more than KM, practiced without terminology				
		Type	Name			
		Tree Node	information shipping around the university			
		Tree Node	KM strategy relatively new and emphasis more on information than Knowledge			
		Tree Node	Quality control			
		Tree Node	Teaching and research resources used			
	Tree Node	slow adoption of 21st century business methodologies and tools, with pockets of km				
		Type	Name			
		Tree Node	Consultation with regional business on KM			
		Tree Node	emergence through new change projects			
			Type	Name		
			Tree Node	MIS project		
			Tree Node	Student Information project		
			Tree Node	Web development content management and research profiles		
		Tree Node	KM strategy relatively new and emphasis more on information than Knowledge			
		Tree Node	Process mapping and improvement			
		Tree Node	sharing communities created			

Node

Type	Name
Tree Node	an open knowledge sharing culture
Tree Node	communal social space
Tree Node	speaking to each other

Tree Node — variety of technology used to enhance communication, teaching and learning

Type	Name
Tree Node	costly
Tree Node	CRM in specific units
Tree Node	datawarehouse
Tree Node	degree of satisfaction with the technology
Tree Node	email
Tree Node	fragmented systems vs erp systems
Tree Node	Intranet
Tree Node	Teaching and learning tools

Type	Name
Tree Node	content management and e-learning

Type	Name
Tree Node	WEBCT and Blackboard

Type	Name
Tree Node	digital repositories
Tree Node	SITS
Tree Node	VLE
Tree Node	web portal

APPENDIX D

D. PREVIOUS STUDIES OF KM IN HEI

D.1 A LIST OF STUDIES OF KM IN HEI THAT INFLUENCED THE RESEARCH

Knowledge Management case studies						
	year	author	article title /	country	participating university	summary
1	2007	Witt, N *et al*	A Knowledge Management approach to developing communities of practice amongst university and college staff	Singapore	University of Plymouth and 75 CELTS	The Higher Education Learning Partnerships Centre for Excellence in Teaching and Learning (HELP CETL) supports staff involved in the delivery of higher education level Foundation degrees through a network of nineteen further education colleges.. A KEN (Knowledge Exchange Network) was designed and implemented to assist these geographically dispersed campuses to share teaching and learning material, as well as ideas and experiences.
2	2004	White, T	Knowledge Management in an academic Library	UK	Oxford University	A case study within the Oxford University Library Services. Conclusions: Academic needs KM, Km works better when initiated as a pilot project work under one framework
3	2008	Wright, Harvey	Tacit Knowledge and Pedagogy at UK universities: Challenges for Effective Management	UK	Huddersfield University	This paper suggests that more emphasis should be placed on tacit knowledge in KM courses at universities as well as management. The paper argues for a realignment of KM and its education to take account of the importance of tacit knowledge to and within organisations and society. It presents the problem certain hierarchies have within communication or the lack there of and uses the frozen gateau model of communication and presents an organisational structure with potential for greater tacit KT.
4	2005	Sarrafzadeh	The Implications of Knowledge Management for the Library and Information Professions.	Australia, New Zealand, UK, Ireland, USA	RMIT	Research of the perceptions of LIS professionals in the 5 countries as to the relationship between KM and LIS professionals. Addressing also the issue of the potential benefits that KM could bring to the KM professional and libraries
5	1999	Corral, S	Knowledge Management: Are we in the Knowledge Business?	UK	Reading University	Sheila Corral Is a University Librarian, and her paper suggests that the core skills of library and information professionals are both relevant and essential to knowledge management, however suggests that they are underutilised and under-valued. She further suggests that there are few KM initiatives in HE at present however contends that many universities are using technologies to manage some types of explicit knowledge.
7	2006	Chen, F an Burstein	A dynamic model of knowledge management for higher education development	China and Australia	Monash University, and Hefei University of Technology	This paper suggests a dynamic model of Km for HEIs, which uses three factors - people, technology and policy. It also suggests eighteen steps to include when considering implementing KM within HEI

8	2004	Geng &Townley et al	Comparative Knowledge Management: A Pilot Study of Chinese and American Universities.	China and America		A comparative study of KM in two countries, addressing KM priorities, needs, tools, and administrative structure components. An interesting find was that differences in national economic, cultural and structural environments, do affect KM priorities, needs, tools, and support
9	2003	Oliver, G	Towards Understanding KM Practices in the Academic Environment: The Shoemaker's Paradox	Australia	University of New South Wales	A case study - which pursues the perceived importance and perceived implementation to academic staff of knowledge management within higher education / research. It presents a framework adapted from Handzic . It also suggests that there was scope for a study that examined perceptions from both the individual and organisation points of view. The findings highlight a high level of awareness of importance, but a low level of implementation - hence being in the formative stages of KM practices.
10	2002	Slater and Moreton	Knowledge Management in Higher Education: A Case Study in a Large Modern UK University	UK	Wolverhampton University	This paper considers KM as applied within UK HE, and considers it within an IT department at Wolverhampton university, UK. It presents a set of guidelines for developing KM within an IT service department.
11	2009	Cheng et al	Knowledge Sharing in Academic Insititutions: A Stdy of Multimedia University Malaysia	Malaysia	University Mayalsia (private)	Suggests factors that contribute to academics sharing or not sharing knowledge and these factors are grouped into 3 areas: namely organizational factors, individual factors, and technical factors. Reports on a case study investigating the implementation of ShareNet - a knowledge management system, at the university enabling staff to upload research. The research also investigates the measures for knowledge contributors. It was found to NOT be a source of information for academics at the institution with only 10% indicating usage of it.
12	2007	Basu et al	Assessing Success Factors of Knowledge Management Initiatives of Academic Institutions – a Case of an Indian Business School	India	IBS Kolkata (private business school in india)	This paper is a result of an exploratory study that tries to explain the factors influencing the success of knowledge management initiatives in a business school to distinguish itself in the academic market place. A generalised model has been constructed highlighting possible antecedents and consequences of a business school
13	2001	Milam, J	Knowledge Management for Higher Education.	USA	University of Virginia	This paper offers a basic introduction to the potential of KM for higher education.
14	2009	mehralizadeh, et al	A study of the evaluation of Knowledge management in Higher Education Institutions: Shahid Chamran University case study	Iran	Chamran University	A Case study within a university in Iran investigating the practices of KM within it, and how the IR units contribute to the realisation of Km implementation within the university.

15	2007	Moss et al	Knowledge Management in Higher Education: a comparison of individualistic and collectivist cultures	UK		The pressure on HEIs to increase research output is emphasised and justification for placing the focus on HEIS teamwork is provided - research is enhanced through a collectivist culture of team work, the output being increased as compared to individual research output.
16	2004	Leitner, Karl-Heinz,	Intellectual capital reporting for universities: conceptual background and application for Austrian universities	Austria		This paper presents the IC model used for reporting in Australian Universities, used for reporting to government.
17	2007	Lin et al	The Path to Intelligent Decision-Making in Higher Education	University in the North west United States		This paper suggests that universities do not currently make effective use of the academic staff within the university to contribute to decision-making. The suggestion is that the appropriate IC within a university, including all academic staff not only manager-academics, could contribute to effective decision making within it. It proposes that universities become real learning organisations, using Peter Senge;s 5 principles of OL and suggests ways in which to do this.
18	2007	Rajan et al	Knowledge-Driven Change in Academic Organizations: A Knowledge management perspective	India		This paper takes a critical look at the several new initiatives spurred by information technologies undertaken in institutions of higher education, argues that a technology centric approach can lead to wastage of resources, and advocates a knowledge-based approach to the reorganization and functioning of the university system.

APPENDIX E

E. PRESENTATION OF RESEARCH

Three articles were written, and two international conferences were attended.

E.1 JOURNALS

1. ECKM JOURNAL

   Cranfield, D. and Taylor, J. (2007) *"Knowledge Management Practices within Higher Education Institutions in the UK".* KMPro, Vol.4, No.2, pp.6-15.

2 KMPRO JOURNAL

   Cranfield, D. and Taylor, J. (2008) *"Knowledge Management and Higher Education: A UK Case Study".* Electronic Journal of Knowledge Management.

3 INSIDEKNOWLEDGE MAGAZINE

   Cranfield, D. and Taylor, J. (2009) *"Higher Ed adapts slowly to global challenges". InsideKnowledge, Vol 12., Issue 5.*

E.2 CONFERENCE PRESENTATIONS

1. Cape Town South Africa

   4th International Conference on Intellectual Capital, Knowledge Management and Organizational Learning Conference, 15-16 October 2007, hosted by the Stellenbosch Business School, Cape Town, South Africa

2. Aveiro, Vienna Portugal

   Teaching and Learning conference - Achieving Excellence and Quality in Education, May 26th – 28th 2008, hosted by the University of Aveiro, International Association for Scientific Knowledge(IASK)

APPENDIX F

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