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Possibilities of applying some Knowledge Management techniques within the Higher Education domain in South Africa: a literature survey

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By

Susanne Noll
(BCKSUS003)

Supervisor : Professor Peter Underwood
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DECLARATION

I know that plagiarism is wrong. Plagiarism is to use another's work and pretend that it is one's own.

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All my other friends and colleagues, who were probably wondering what has happened to me.

DEDICATION

This dissertation is dedicated to my beloved mother Doris Bock.

ABSTRACT

This dissertation explores by way of a *literature survey* the concept of Knowledge Management (KM), and in particular whether it would be a suitable tool in the Higher Education (HE) environment in South Africa (SA). Traditionally KM was used in the business world, for some institutions with great success. This dissertation, however, argues that KM is only partially applicable to the HE field in general and in particular in SA. The dissertation will be introduced with the background of knowledge and management. Organizational knowledge, organizational learning and organizational memory are explored. KM and bureaucratic organizations are critically discussed. The HE sector in SA is defined in terms of lifelong learning and learning societies. HE in Africa and specifically SA play a special role against the background of colonization and apartheid. The developments and different approaches by various ministers of education in HE in SA since 1994 are critically discussed. Details from the arguments above will follow by interpreting KM and key issues in HE in SA, such as the academic quality of school leavers, Information and Communication Technologies (ICTs), transformation, and succession planning.

The portrayal of a systems model and an attempt to define 'learning organizations' according to Senge's concept shows that any system has implications on structure and management of organizations. Four KM models are described and examined in general.

Lastly, the question is asked whether KM has anything to offer to HE. After defining a 'world-class' university, the four models discussed earlier are adapted to the HE situation in SA. The findings reveal that not one model is really suitable to use, but possibly a combination of all. The author of this dissertation found that the HE situation in SA undoubtedly is in disorder at the present moment and needs some further research to analyze which tools and techniques would be appropriate to use.

Notes:

1. During the apartheid era the designations white, black, coloured, Indian, and Asian were terms descriptive of the so-called race groupings into which the population was divided for all purposes.
2. These terms, subsequent to the abandonment of apartheid, have been retained for a description of population characteristics and demography.When citing a web source that lacks pagination a locator, consisting of a neighbouring heading or paragraph number, has been provided, as recommended in Rule 16.14 of the *Chicago manual of style*.

GLOSSARY

AI	Artificial Intelligence
CPUT	Cape Peninsula University of Technology
CoP	Communities of Practice
FSPI	Faculty Scholarly Productivity Index
HE	Higher Education
HESA	Higher Education South Africa
IC	Intellectual Capital
ICT	Information and Communication Technology
IRM	Information Resource Management
IT	Information Technology
KM	KM
LO	Learning Organization
NEPAD	New Partnership for Africa's Development
NGO	Non Governmental Organization
NQF	National Qualifications Framework
NSFAS	National Students Financial Aid Scheme
OA	Open Access
OBE	Outcomes based education
PKM	Personal KM
SA	South Africa
SECI	Socialization-Externalization-Combination-Internalization
SME	Small and medium sized enterprises
UCT	University of Cape Town
UKZN	University of Kwazulu-Natal
UOFS	University of the Free State
UP	University of Pretoria
WITS	University of the Witwatersrand

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CHAPTER 1
INTRODUCTION

1.1 Introduction and background

With neither hypothesis testing nor theory development in mind, this dissertation is a journey into the existing literature on Knowledge Management (KM), be it in the form of journal and newspaper articles or monographs and websites. Journal articles and monographs have investigated various views of knowledge and management, specifically since the concept became a term of interest in the mid-1990s, when Nonaka and Takeuchi postulated it. Since the last 15 years, it has evolved into a dynamic concept together with the development of information technology (IT) that has caught the interest of many kinds of organizations, also in SA. From a general point of development that started the interest in KM in commercial organizations and its successes to the testing of KM in educational organizations and NGOs to a practical tool for a successful business plan. The inherent complexities of knowledge are also considered because of the role of universities as creators, keepers and distributors of knowledge. The South African (SA) Higher Education (HE) environment is explored by investigating latest news items as well as keeping updated via RSS feeds and other alerts. HE in SA is vibrant and critical, sometimes even volatile and explosive, and latest decisions are important. Four potentially effective models are discussed. Lastly, an attempt to combine the most constructive aspects of the models is suggested.

A number of obstacles are discussed that hinder the implementation of KM, the main one being the bureaucracy in organizations as defined by Max Weber. Bureaucratic organizations usually consist of strict hierarchical structures with a stringent management style that prevents employees from using own creative measures. They are typically regulated by rules and regulations and punishment if these are not adhered to in the strictest sense. In the past universities were run along collegial lines that emphasized creativity; increasingly their response to market forces and the need to increase throughput has resulted in a shift towards stronger management intervention.

1.1.1 Knowledge

Knowledge means different things to different people and definitions vary. Most theorists agree, however, that in knowledge basic thoughts must be true, justified and believed. For

some philosophers or epistemologists this definition is not deep enough and they would like to add that knowledge is always limited to the society it exists in, dependent on the people who define it, and dependent further, on the specific historical period in which it is present. For some, knowledge is a societal phenomenon and is dependent on the societal and historical inter-connection (Landwehr, 2007: 801). If this view is accepted, and if the intention is to consider knowledge processes in a particular country, it becomes important to consider the social and historical circumstances of that country. This is the position adopted by the writer of this dissertation.

McCarthy (1996) believes that knowledge refers to socio-cultural realities. Knowledge is a human product and is the basis for social action. Knowledge can, therefore, be part of an organizational culture which also contains its own rituals, customs, beliefs and traditions, even if we see them only as work-related practices. For Davenport, De Long & Beers, '[k]nowledge is information combined with experience, context, interpretation, and reflection. It is a high-value form of information that is ready to apply to decisions and actions '(1998: 43). Nonaka & Takeuchi (1995: 59) distinguish between explicit, or codified, knowledge which refers to knowledge that is transmittable in formal systematic language and tacit knowledge has a personal quality, which makes it hard to formalize and communicate. Polanyi (1967: 4) defines the term tacit knowledge and argues that people are not often aware of the knowledge they possess or how it can be valuable to others. According to him, tacit knowledge is considered more valuable because it provides context for people, places, ideas, and experiences. Effective transfer of tacit knowledge generally requires extensive personal contact and trust. His famous sentence '[w]e know more than we can tell', suggests that tacit knowledge often consists of habits and culture that we do not recognize in ourselves: 'Knowledge – the insights, understandings, and practical know-how that we all possess - is the fundamental resource that allows us to function intelligently' is the definition given by Wiig [1996?]. Davenport & Prusak (1998: 5) define knowledge as a 'fluid mix of framed experience, values, contextual information, and expert insights that provides a framework for evaluating and incorporating new experiences and information'.

There are many more definitions and discussions about knowledge and what it is, but for the purposes of this dissertation the focus will be on the tacit/explicit explanation of knowledge that was developed by Polanyi and accepted and further developed by Nonaka &Takeuchi.

In simple terms, then, knowledge is what we know. Knowledge implies processes of comprehension, understanding and learning that happen in the mind. To express knowledge by articulating messages we use oral, written, graphic or body language.

1.1.2 Management

It is not easy to find a definition of management either. Many learned theorists and pragmatists tried to outline management clearly, yet many differing descriptions are found. Generally it is agreed that management involves planning, organizing, staffing, leading, directing, and controlling an organization (a group of one or more people or entities) or effort for the purpose of accomplishing a goal. Resources for this include the deployment and manipulation of human, financial, technological, and natural resources.

Management is also basically the organization and coordination of the activities of an enterprise in line with certain policies and the achievement of clearly defined objectives. Management, to be effective, requires know-how and intellectual capital. Management involves directors and supervisors who have the power and responsibility to make decisions necessary to manage an organization. As a discipline, management comprises the interconnecting functions of formulating corporate policies and organizing, planning, controlling, and directing the organizations resources to achieve these policies. The size of management can range from one person in a small firm to hundreds or thousands of managers in multinational companies. In large firms the board of directors formulates the policy which is implemented by the chief executive officer. Some business analysts and financiers accord the highest importance to the quality and experience of the managers in evaluating an organization's current and future worth (Wikipedia contributors, 2010a).

Several people have attempted to define management from the sociological viewpoint in which it is widely believed that it is the art of getting things done through people.[1] Henri Fayol (1841–1925) considered management to consist of seven functions: planning, organizing, leading, co-ordinating, controlling, staffing and motivating. This is now considered as an over-simplified but clear view and still has relevance today. In his later years Max Weber (1864–1920) studied the development of capitalism and the influence of

[1] The definition is widely attributed to Mary Parker Follet (1868-1933) but no definitive account of it has yet been discovered by her biographers.

bureaucracy in organizations though most of his research and studies deal with religious topics. His theories are still used in the management of organizations. He recognized aspects of social authority, including charismatic, traditional, and legitimate forms of authority. For Weber, bureaucracy was the ideal management style for large organizations. He valued the idea of authority because it represented principles and systems that had been carefully considered. His main idea was, thus, the application of fairness for all through rules. Bureaucracy, as a concept covering a form of organization, should be distinguished from bureaucracy, the term used as a negative, critical description. In this dissertation, it is the former meaning that applies. Other scholars, such a Frederick W. Taylor, (1856–1915) and Sun Ya-tsen (1866–1926) in China, further developed their studies of management. Hofstede (1994) has established that no universal, timeless, worldwide management science exists. Very much differentiated views on management exist and will continue to exist, depending on their cultural dimension. Hofstede maintains that management is not a happening that can be isolated from other practices taking place in society. Management interacts with what happens in a family, at school, in politics and government. It is also related to religion and beliefs about science.

Managers in the United States are perceived as a special class of people whose presence is supposed to be a precondition for other people to do their work (Hofstede, 1994: 5) – or simply, they are expected to lead by example. In Japan, employees share the responsibility for common tasks, whether they are in management positions or not (Capurro, 1998: 351). In France employees are classified according to their education, not according to managerial tasks (Capurro, 1998: 351). Similar differences can be observed in other countries. The only component common in all cultures is the employed person. For Hofstede (1994) the management style of any organization is dependent on the culture in which it is located.

Peter Drucker also acknowledged as a management guru, examined management, the individual and society. He turned around the rigid top-bottom structure of management and developed the idea of the advantages of management as social function and liberal art. He re-defined the purpose and objectives of business, looking at the social impacts and social problems and developed new paradigms and entrepreneurial strategies. He encouraged individuals to be proud of their contributions, to examine their strengths and values and keep on educating themselves. Lastly, he portrayed the emergence of a knowledge society, in which the knowledge worker functions and performs best. A knowledge worker, according to

Drucker (2001), is someone who asks himself at all times: 'What is the task?' A knowledge worker focuses on the duty he is assigned, commits himself to, and is responsible for his own productivity. In such a way he manages himself. While concentrating on the task a knowledge worker becomes innovative and learns new skills and competencies along the way, which she is able to teach and demonstrate to others. Drucker (1999) emphasizes that it is not only the quantity a knowledge worker learns, but – almost more importantly – the quality of knowledge. In an ideal institution a true knowledge worker becomes an asset to the organization and not a cost. The concept of instilling pride and honour in the task of being a knowledge worker for an institution is a key concept. A knowledge worker is one of the cornerstones of KM.

1.1.2.1 The functions of management

The major functions of management occur in both the operating and the internal environments, but at different levels of detail:

- **Planning** – All resources are limited, so planning is principally concerned with choosing priorities and setting goals or objectives and determining how to achieve these. Resources needed timescale for development and determining means of assessing progress are important aspects.

- **Organizing** – this involves making sure that the resources available are suitable to meet the objectives of a project and sharing out the resources available according to priority.

- **Leading** – leading is about deciding on direction and persuading people to follow that direction. Leadership may be exercised by a titular leader (e.g. Head of Department) or may arise as a natural consequence of group behaviour.

- **Controlling** – consists of monitoring the use of resources and intervening when better or more efficient uses to meet the objectives present themselves.

Individuals are connected to each other through communication and channels of communication through which they distribute their knowledge. Mostert and Snyman (2007: 7) suggest that that, in order to maximize the skills and knowledge of employees, it is

necessary to manage explicit and tacit knowledge. They developed a model for organizational knowledge that processes tacit and/or explicit knowledge. They maintain that a knowledge process is tacit when it is an individual knowledge process and explicit if the process is mostly an implemented organizational process. These processes are knowledge acquisition, evaluation of knowledge, knowledge storage and retrieval, knowledge utilization and creation, knowledge application and KM.

Since the realization is that the SA HE system is partly open, it can be stated that the process of knowledge creation and subsequent transfer is rather difficult. It seems that those who have knowledge are not aware that others do not possess it and might need that knowledge. To a great extent knowledge is still not disseminated efficiently to those who require it and can therefore not be applied usefully. For quite some time now the knowledge economy world worked on the concept of codifying tacit knowledge in order to make it explicit and therefore exploitable and compatible.

The systems model categorizes the levels and structures implicit in organizational management, and Mostert and Snyman (2007) provide a process for information and knowledge flows. The way in which way an organization can link these aspects together to provide an environment where learning is a constant activity will be explored below.

1.2 Knowledge society

The ideal environment for a knowledge worker would be a knowledge society. What is a knowledge society? In a knowledge society it is knowledge which is the major element of any human activity. The question is: Whose knowledge? In the UNESCO report *Towards knowledge societies* (2005 : 5) there is a discussion of the term, but it is admitted that no satisfactory definition is presently possible: 'Which types of knowledge are we talking about? Do we have to endorse the hegemony of the techno-scientific model in defining legitimate and productive knowledge? And what of the imbalances that access to knowledge and the obstacles confronting it, both locally and globally' While knowledge societies is an appropriate term, the same cannot be said of its content, around which a number of debates could take place. It could be considered relevant to concentrate on ascertaining types of knowledge. Of equal importance would be the debate around the knowledge found in emerging societies. To remain human and liveable, knowledge societies will have to be

societies with shared knowledge…and the need for accepted diversity (UNESCO, 2005: 5). While a knowledge society grows, because of technologies which make it so much more effortless to become knowledgeable, the digital divide is a factor that cannot be ignored. The concept of a united knowledge society might now be an idealistic dream, but is something that is not entirely unimaginable. The concept of KM, if handled wisely, could be influential on the development of a future society. Practically, it would mean basic education for all, promoting lifelong education for all, encouraging the spread of research and development efforts in all countries of the world so that even the most disadvantaged countries will become part of a knowledge society. The UNESCO report identifies three pillars on which genuine knowledge societies for all can be built:

- A better valuation of existing forms of knowledge to narrow the knowledge divide;
- A more participatory approach to access knowledge; and
- A better integration of knowledge policies.

Koichiro Matsuura, the Director General of UNESCO, writes in the preface of the UNESCO World Report (2005: 5) that the emphasis lies in the need to renew an ethic for the guidance of emerging knowledge societies, an ethic of freedom and responsibility. An ethic that, let us repeat, will rest upon the sharing of knowledge.

1.3 What are the basic concepts and definitions of KM?

KM, according to Nonaka, emerged as a discipline in 1991 and involves a variety of activities: on-the-job discussions, formal apprenticeship, discussion forums, corporate libraries, professional training and mentoring programmes. More recently, with the increased use of computers in the second half of the twentieth century, specific adaptations of technologies such as knowledge bases, expert systems, knowledge repositories, group decision support systems, intranets and computer-supported cooperative work have been introduced to further enhance such efforts. (Wikipedia contributors, 2010b).

1.3.1 Definition of KM

There are several definitions of KM. Laszlo & Laszlo (2002) ask if KM is an ‘evolutionary process’. KM is difficult to define, because it has so many branches and domains. Hildreth

& Kimble (2002) describe it as having a high degree of ambiguity and declare that all definitions are context-driven. The term knowledge already has a duality consequent to the distinction between explicit and tacit knowledge or hard and soft knowledge. The most simplistic understanding of KM is that tacit knowledge is turned into explicit knowledge because it then can be codified and used, i.e. stored, classified, disseminated and retrieved. KM is, however, only an attempt to do something useful with knowledge (Davenport & Prusak, 1998), to accomplish organization objectives through the structuring of people, technology and knowledge content. For Davenport & Prusak (1998) KM is a technology tool and involves the creation of repositories, or databases of knowledge. Organizations store almost every imaginable variety of knowledge, including best practices, competitive intelligence, observation about customers, learning from previous projects, and similar types of knowledge (Davenport, 2005: 91). This exercise, however, generally fails, purely because employees do not have the time to give knowledge (Riege, 2005) or, specifically in the western world, are not willing to share knowledge. For McDermott & O'Dell (2001: 76) organizational and corporate culture is often seen as the key inhibitor of effective knowledge sharing, although according to Cabrera & Cabrera (2002: 688), 'the exchange of information among employees constitutes a key component in the creation and management of collective wisdom, and, consequently, the availability of tools that support such exchanges facilitates tremendously the implementation of KM systems'. Riege (2005: 19) agrees, saying that in 'a knowledge-driven economy, organizations intangible assets are increasingly becoming a differentiating competitive factor, particularly in services industries'.

For the purposes of this dissertation, KM can be defined as the process of transforming information and intellectual assets into enduring value. It connects people with the knowledge that they need to take action, when they need it. In the corporate sector, managing knowledge is considered key to achieving breakthrough competitive advantage (Sharma, 2007: 375). Data, information, knowledge and expertise are what an organization needs to solve its tasks. Individual knowledge and skills are anchored inside the organization. KM in an organization is supposed to use individual knowledge and skills (human capital) analytically on different levels of the organizational structure. Knowledge inside an organization can be seen as a production factor and stands on equal level as assets and labour. The strategic foundation for KM is found in the knowledge based in an organization. Information is therefore an operational resource. Information systems are used for networking employees and to store and make information accessible. This again underlines the

competitive nature of this view of the evolution of the organization – a contrast to the general view of information sharing.

KM is also defined by Gupta, Iyer & Aronson (2000: 17) as ‘a process that helps organizations find, select, organize, disseminate, and transfer important information and expertise necessary for activities such as problem solving, dynamic learning, strategic planning and decision making’.

Through a supportive organizational climate and modern information technology, an organization can bring its entire organizational memory and knowledge to bear upon any problem anywhere in the world and at any time. For organizational success, knowledge, as a form of capital, must be exchangeable among persons, and it must be able to grow. Knowledge about how problems are solved *can* be captured.

1.3.2 When and why did it start and what does it claim to solve? What are the theories and ideas behind KM?

KM developed gradually from different areas. Some definitions derive from intellectual and philosophical developments, others from a pragmatic viewpoint and are real requirements of expertise in the workplace. Some awareness of it grew out of necessity from educators and business leaders. The most recent driving forces stem from the field of economics to increase effectiveness (Wiig, 2000) and include organizational psychological concepts like Artificial Intelligence (AI) and the advent of Learning Organization (LO). The roots of KM and the developments, changes, the progress and improvements, but also the criticisms, are discussed by many authors (Senge, 1990).

Most companies that experiment with KM tailor practices to their needs. Some develop systems of knowledge sharing, some concentrate on the technological aspects. Mostly, KM systems are developed to increase productivity and to improve economic results.

1.3.3 What is a knowledge-based economy and what does it claim to achieve and improve?

In the 1990s, the term ‘information society’ was bandied about, now there is talk of a ‘knowledge-based economy’. To provide a definition of exactly what a knowledge-based economy entails is problematic. Again, it is Drucker (1969) that developed the term

‘knowledge-based economy’. It revolves around the economic benefits to an organization if it applies its knowledge base in such a way that an economic advantage grows. Knowledge becomes an instrument and develops into an economic resource. The huge advantage of this resource is that it exists in all organizations in manifold forms. Many authors question the difference between these terms and doubt that clear borders can be drawn.

1.4 Organizational learning

KM has existed as a distinct concept since the 1980s. It refers to methods and techniques about how organizations gather manage and use knowledge that sits inside the organization. KM includes techniques aimed at improving organizational performances by applying specific methods and techniques to capture knowledge, skills, know-how, expertise and other intellectual capital and for making this knowledge accessible for other parties in the organization for the benefit, advantage and profit of the establishment. KM usually starts by stating the organizational objectives of improving performance and to have a higher form of competitive advantage. Knowledge transfer has always existed in all organizations in one or other way, for example, through interpersonal informal on-the-job discussions or formal professional training or mentoring. Since the advent of computers also through knowledge bases, expert systems, repositories, electronic mailing lists, online discussion groups, blogs, e-mails, and other services. KM, ideally, is put into practice to evaluate and manage the processes of collecting and applying this intellectual capital mainly to continuously improve the performance of employees to the benefit of the organization. These developments brought the concepts of knowledge workers and knowledge economy into existence.

1.5 Organizational knowledge

Knowledge in organizations can take different formats:

- Technical knowledge, which involves knowledge on how to use equipment, programmes, databases, understand data and numbers and being able to interpret these facts.

- Scientific knowledge, which is the expert and professional knowledge of each employee. It includes the importance of the qualifications and specialist knowledge that has been gained at university or other tertiary institutions. The responsibility of

managers lies in combining the different expertise, in administering people's skills and in supervising progress or regress.

1.6 Organizational memory

According to the BusinessDictionary.com (2010) the definition of organizational memory is '[l]argely undocumented experience, insights, knowledge and skills acquired over the years, passed on to the newcomers through personal contacts, meetings, training courses, and mentor-protégé relationships. Corporate memory (unless pooled and recorded in a readily accessible form such as a database) is destroyed through excessive downsizing, frequent layoffs, unmanaged employee attrition, and/or disasters'. This signifies both the organizational memory in its entirety of all components that add to the collection of paperwork - acquisition, maintenance and search and retrieval - as well as organizational memory which includes the separate recollection of all the employees relating to work with the organization.

1.7 Competitive advantage

Michael Porter (1990) elaborates on the idea of competitive advantage: according to the competitive advantage model he suggests a competitive strategy is any action - aggressive marketing or protective policies towards its business to create a defensible position in an industry - used by an organization in order to deal with competitive forces and generate a superior Return on Investment.

Porter examines three methods for creating a sustainable competitive advantage:

i. Cost leadership - cost advantage occurs when a firm delivers the same services as its competitors but at a lower cost;

ii. Differentiation - which takes place when a firm delivers superior services for the same price as its competitors;

iii. Focus (economics) - a focused approach requires the firm to concentrate on a narrow, exclusive competitive segment, also called a market niche, hoping to achieve a local rather than industry-wide competitive advantage.

This model seemed ideal for KM and Davenport & Prusak (1998) adopted it in their book, *Working knowledge: how organizations manage what they know,* while Halawi, Aronson & McCarthy (2005: 75) agree, saying, 'we are not only in a new millennium but also in a new era: the knowledge era'. Sustainable competitive advantage is dependent on building and exploiting core competencies.

1.8 Intellectual assets

Huang (1998) writes that '[k]nowledge is power – the power that has become the driving force in our economy'. He clearly portrays the world we live in and mentions globalization, technological fundamentals and competition. This is a reason why a huge and still relatively vague concept like KM had the opportunity to be instigated. Benefits were realized, namely that 'individuals from different disciplines and teams could work together to share and improve their collective knowledge and that this knowledge can be applied worldwide in a repeatable and sustainable manner'. As stated by Huang, if knowledge is managed properly the benefits would include efficient use of time, enhanced client satisfaction, wider use of resources and the generation of new business. For Huang, KM is congruent with intellectual capital. This means it can be used like a resource, or wealth, or money. This also means it adds value to the enterprises. It increases effectiveness, productivity and quality and is a dynamic asset that needs constant attention to improve results (Huang, 1998: 582).

1.9 Criticism of KM

In their paper, 'The duality of knowledge' Hildreth & Kimble (2002) discuss the one-sidedness of some views. As KM developed for a few, it also raised criticism at the same time. Initially KM was seen as an extension of Artificial Intelligence (AI) where knowledge was merely viewed as information: a commodity that can be codified, stored and transmitted. Expert systems were created to capture the knowledge of experts. Capturing knowledge in databases, books and reports and then sharing it in a hard form sounded so uncomplicated. These knowledge assets were supposed to be tangible and could be structured and codified. Knowledge as an object, however, is destined for critical review. For Wilson in his article 'The nonsense of "KM"' (2002), as one of the strongest critics of KM, it is the undifferentiated definition of knowledge which is not adequately distinguished from data and information. Knowledge cannot be structured and be put into defined compartments and KM cannot be Information Resource Management (IRM) with a new label. Soft knowledge or

tacit knowledge and its importance must be included and be reinforced in, for example, the idea of Communities of Practice (CoP) and, even then, the question remains whether KM is something different from IRM or Information Management (Hildreth & Kimble, 2002).

Another criticism would be the constricted view of KM. For Wright (2005) not only one form of KM exists: there is much more to it. He distinguishes between corporate KM and personal KM (PKM), which would include the management of e-mails, documents; RSS feeds personal collections of newspaper snippets etc. He expands on the original narrow definition of KM and discusses the work and learning processes of individual, highly- skilled knowledge workers to support their day-to-day work activities. They develop distinctive types of problem-solving activities with specific cognitive, information, social and learning competencies, supported by individual, social and organizational enablers.

1.10 Bureaucratic organizations

Paul du Gay (2000) writes in the introduction to his book *In praise of bureaucracy*, that it is about bureaucracy and ethics…the ethos of bureaucratic office. He is of the opinion that he should defend bureaucratic ethics, and wants to prove that bureaucracy is highly ethical contrary to the belief of many. Not only does he defend the ethics of bureaucracy, but the effectiveness of a bureaucratic system, one that it is systematic and controllable, economical and efficient, which generates a ' body of scientific and above all social scientific knowledge organized and understood as comprising a set of universal law-like generalizations'. He bases his defence of bureaucracy on the Weberian model: Litwak (1961: 177) explains that Weber's model of bureaucracy can be characterized by: impersonal social relations, appointment and promotion on the basis of merit, authority and obligations which are specified *a priori* and adhere to the job rather than the individual (i.e., separation of work from private life), authority organized on a hierarchical basis, separation of policy and administrative positions, the members of the bureaucracy being concerned with administrative decisions, general rules for governing all behaviour not specified by the above, and, finally, specialization. If the organization is large and structured by these ideal conditions, it will be more efficient than any other kind of organization.

It has been suggested that one of the most well-known models of KM, that of Nonaka and Takeuchi, whilst offering many valuable insights into the value of managing knowledge

transfer, is difficult to apply in societies outside of its native Japan, mainly because of a difference in culture over the understanding of what 'knowledge sharing' constitutes. However, so well-known is the model that it will be included in this study, and discussed in Chapter 4.

A KM model, as maintained by Gilbert Probst at the University of Geneva, conceptualizes a knowledge circle: a functional inner circle and a strategic outer circle. In these circles the main questions are: what are the knowledge objectives that the organization needs? What is the quality of the existing knowledge base? How will knowledge be acquired? How will it be developed inside the whole organization? What form should the technological infrastructure take in order to be able to disseminate knowledge? How will knowledge be used? How will it be stored and how can it be measured (Probst, 1998)?

For the purposes of this dissertation it will be assumed that KM is a field that is apparently highly desirable for the reasons discussed, but that at the same time it is realized and acknowledged that knowledge cannot be quantified and captured. Reasons to apply KM successfully can be summarized as follows:

- The adoption of KM influences change;
- Mission statements will have to be adjusted to the advantage of an organization;
- A competitive edge will be generated;
- Performance in the organization will be improved; and
- The organizational capacity will be enhanced.

From these intentions it is, however, not necessarily clear that KM is the ideal solution for the challenges experienced in all countries.

It is true that, to a great extent, knowledge lives in people. Nevertheless, it is a challenging task to extract this knowledge and bring it to paper to be able to codify it, store it and make it accessible to others. The role of KM can be summarized as to 'make the right information available at the right time to the right person' (Duffy, 2001). This is an echo of the view of Francis K. W. Drury in the 1930s and, later, of Ranganathan, whose research in library

science could be summarized in this quotation. Many organizations, whether in the profit-making world or in the educational sector have embraced KM as a tool. Most organizations probably still struggle to understand the concept of KM for several reasons: the difficulty of finding a clear definition; the ambiguity which is brought with each case; and the organizational and managerial background of each individual institution, association or any other group.

1.11 Summary

A brief history of the terms ‘knowledge’, ‘management’, ‘KM’ and the development throughout organizations of these concepts are sketched in this chapter. Criticism of their usefulness and existence are mentioned, and sometimes it is argued that KM is essentially nothing more that Information Management. A short description of bureaucratic organizations is given, offering an important outlook on the developments of the chapters that follow.

CHAPTER 2
OVERVIEW OF HIGHER EDUCATION IN SOUTH AFRICA

2.1 Introduction

This chapter will be devoted to an overview of higher education from a brief historical perspective in general, in Africa and in South Africa. In order to understand the uncertain situation in which South African higher education finds itself today, a developmental outline specifically from 1994 onwards will indicate issues that society in South Africa faces. The background to each period will be presented to highlight how social and demographic trends have affected the education system. Consideration will be given to possible remedies for problems which have been identified.

2.2 Defining Higher Education

Higher education usually involves teaching, learning, scholarship and research by young people who have completed their secondary schooling and seek further education. It is partly higher education in the classical sense, and partly training, which involves skills development. Not only is it important for the individual to start an independent life with skills that he/she acquires during his/her higher education years, but it is for the local, provincial and national benefit of a country to have a cultured, well-educated and skilled nation.

A general definition of Higher Education (HE) can be found in the Encyclopedia Britannica Online: Higher education is ‘any of various types of education given in postsecondary institutions of learning and usually affording, at the end of a course of study, a named degree, diploma, or certificate of higher studies. Higher-educational institutions include not only universities and colleges but also various professional schools that provide preparation in such fields as law, theology, medicine, business, music, and art. Higher education also includes teacher-training schools, junior colleges, and institutes of technology. The basic entrance requirement for most higher-educational institutions is the completion of secondary education, and the usual entrance age is about 18 year’ (Encyclopedia Britannica, 2009a).

HE is generally thought to incorporate research, teaching and social services. Usually a university offers academic, which means theoretically oriented education, while vocational

higher education institutions like technical colleges (the South African term is 'technikons' suggest a mixture between theoretical and practical modules. The term 'technikon' is peculiar to South Africa and were institutions that provided hands-on education and training that focused on technology). Students typically gained skills and know-how that were required specifically for their workplace. Technikons were similar to polytechnics in other countries, in that they offered vocational training, but never offered the variety of degrees that universities do. In South Africa this binary line has now been abandoned with the advent of universities of technology.

Assié-Lumumba (2006: 7) defines HE as: 'The term higher education is taken to embody all organized learning and training activities on tertiary level. This includes conventional universities (i.e. those with conventional arts, humanities, and science faculties) as well as specialized universities (like institutions specializing in agriculture, engineering, science and technology). The concept also includes conventional post-secondary institutions (like polytechnics, colleges of education and *grand-ecoles).* Under the umbrella of higher education come all forms of professional institutions . . . Even this wide spectrum does not exhaust the possibilities of forms of higher education'. It is an extensive field and has been confronted with many crises. Redefined and repackaged, with added and subtracted concerns, historical, political and economical developments, we still have difficulties finding a precise term or definition of higher education.

2.3 Lifelong learning

Learning should continue throughout one's life. Lifelong learning means that one does not only learn during a short period of time, in school or at university, but learning is a continuous activity. Lifelong learning involves skills of how to learn and what to learn, to prioritize what is more important to learn than something else. Su (2007: 197) writes that 'one does not learn merely in the sense that one learns new things; one also learns them and prepares for relearning them, as one knows that what is learnt could soon become inadequate'. Our learning is provisional because of rapidly changing times and paces. The success of learning lies in the capability to learn flexibly. Learning also became individualized into what one learns, the combination of learning patterns, and how something is learnt and is dependent on the approach of each individual learner. Each individual has the power of control over her/his learning choices. An example of a learning pattern could be

information retrieval techniques and how and when to use them. Learning is not only the gaining of knowledge but, rather, the skill to decide what is important to learn and what not. This also includes the skills to seek for more reliable sources of information, to discard apparently worthless information; and to have the discipline to evaluate information.

2.4 Learning society

A learning society is not only an educated society but a society that consists of individuals who are constantly in the process of learning and contributing to the common learning process. A learning society is a proactive society and individuals, while in the process of learning, are sharing knowledge themselves. It is also an interactive society. The advent of technology with more and more computer-literate people makes a learning society that much more possible. In the South African context the learning society is an appropriate development: the need to foster a better understanding and respect between cultures. There are the many diverse people that need to get into a relationship with each other: learning from each other to be able to understand each other. The development of a learning society should be a primary concern of government which should ensure, because of the huge costs of technology, that the tools to learning are not just in the hands of the wealthier part of society,

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It would be ideal to strive for a learning society and present lifelong learning for all. Schofer and Meyer (2005: 917) argue that 'countries with educated people and highly schooled elites could build a future out of expanded "human capital" to manage society rationally. Indeed, the expansion of education has clearly been involved in the extraordinary modern expansion of the professions and other formerly elite occupations.

2.5 HE in recent times

Traditionally higher education was available at universities, but many other post-school organizations such as colleges, or private institutions or Non-Governmental Organizations (NGOs), or independent research bodies are involved in higher education.

Over the last three decades it became clear that even in developed countries the necessity of adaptation and adjustments to the new world, the global world with all its technologies and changes became a priority. The term 'mass higher education' (Gibbons & others, 1994: 7) entered the literature in 1985 in Britain, coined by Guy Neave, and the struggle to find a

comprehensive model continues. In Germany the term *Gesamthochschule* is such an attempt to produce the model many countries are searching for. In the United States, junior or community colleges provided access to higher education for millions, but baccalaureate programmes are still a challenge to plan and manage with changes developing as well. 'Many two-year colleges are now recruiting students who fit the traditional profile of baccalaureate undergraduates: 18- to 24-year-olds who have strong high school records and are moving directly into higher education full time' (Frerking, 2007), and in the United Kingdom it is still predominantly students with middle-class backgrounds that populate higher education institutions (Connor & others, 2001).

2.6 HE in Africa

One important book has covered the development of the African higher education issue since its very beginnings quite extensively. This is Y.G-M Lulat's *A history of African higher education from antiquity to the present* It is a chronology and covers higher education in premodern Africa, Afro-Arab Islamic Africa and Anglophone Africa, Europhone Africa, which includes French- and Portuguese-speaking ex-colonial states. One of its most important arguments concerns the possibility that the reliance on foreign aid (however well-intentioned) may weaken independence and autonomy and develop a culture of dependence and compliance. Lulat (2005) discusses the need to consider the inheritance of the colonial legacy and to think beyond its confines. Foreign aid created a dependency culture often which still persists.

Summarizing approximately 200 years of development in education, the following key points emerge as problems:

- Colonial domination of African peoples tended to produce a populace that had little more than primary education

- The role of missionaries and mission schools tended to reinforce this partial system of education and to overlay it with religious overtones

- Colonialism perpetuated this system whilst, at the same time, developing higher education institutions that were largely restricted to the white population

- Growing administrative expenses required training of local people so that they could assist at lower staff costs

- Colonial powers were reluctant to offer opportunities for Africans to have higher education, because the need was more for cheap labour to produce products

- Racism and racist feelings grew with time and the awakening of Africans in all aspects, not only educationally, but politically and economically

- In the meantime, the power and trade balance between the Western and Eastern economic regions has been changing

- Africans became more aware of the need for higher education and for its extension into all areas of society: the concept of a right to education became more prevalent and, at the same time, the dangers of cultural imperialism (Lulat, 2005:17) were highlighted

- More recently, the recognition of the special needs of higher education to address the specific needs of Africa has become more evident

Jared Diamond (1997) suggests that gaps in power and technology between human societies originate in environmental differences, and not in the learning and knowledge of a sophisticated and scholarly society, a point that is largely supported by the 'Eurasian civilization' depiction used by Ayaji, Goma and Johnson (1996: 201): who have argued 'that the basic reason why poor countries remain poor is unquestionably because they lack knowledge, and the ability to utilise available knowledge effectively'. It is the question of the knowledge gap between the have and the have-nots of 'know-how'. Ayaji also mentions the 'knowledge frontier' as a benefit for mankind. There is market in knowledge and it has become a commodity which is sellable and tradable. Universities are one of the creators of knowledge: it can be argued that this knowledge should be available and used for the benefit of society in general rather than being locked up in a commodity market. Can finances be generated to use knowledge in a market related and constructive way? A brief discussion of commodification of knowledge in general is necessary, because it is a major driver of change in attitudes.

2.7 The commodification of knowledge

According to socialist and Marxist beliefs, there are things in life which should not be for sale. Information is one of them. Knowledge in the academic sense is acquired by individuals and then shared among the community. However, we do not only live in a socialist or Marxist setup, but we also live in an information society, in which information has become a sellable commodity. 'Information is considered an economic resource, somewhat on par with other resources such as labour, material, and capital' (Encyclopedia Britannica, 2009b: Information processing). This view stems from the evidence that the possession, manipulation, and use of information can increase the cost effectiveness of many physical and cognitive processes. The rise in information-processing activities in industrial manufacturing as well as in human problem solving has been remarkable and gives rise to the so-called information society. Further to this definition is that 'information is an economic commodity, which helps to stimulate a worldwide growth of a new segment of national economies – the information service sector. Taking advantage of the properties of information and building on the perception of the individual and societal utility and value, this sector provides a broad range of information products and services' (Encyclopedia Britannica, 2009b: Information processing).

According to the view that 'information as commodity', someone, somewhere, pays for information, whether a book or a journal is bought, whether an institution pays for a subscription or whether so-called free information is available on the internet. Information has become one of the most valuable assets for businesses and is often protected against unauthorized access (Lipton, 2002: 53). Information is like property – it belongs to someone who has purchased it and with this purchase has paid for rights that are justifiable in a court of law. However, information 'supply' cannot be diminished in the way stock in stores can. This is what makes the 'commodity' aspect of information such a difficult topic. Intellectual Property legislation, both national and international, attempts to protect the ownership of information. It is, however, a complicated topic and of no immediate relevance to the present discussion, so will not be addressed further in this dissertation.

Lipton (2002) identifies the most common forms of sellable information:

- commercial and technical know-how
- business methods
- payments systems
- telecommunications systems and services
- electronic and other databases
- information about customers and their needs
- computer software

To summarize Lipton's argument, it can be said that HE conducts research in these and cognate areas and may thus be considered as a potential producer of commodified information – if it chooses to be in this market.

2.8 HE in South Africa: problems facing deliverable HE

Higher education faces many social, economical and political challenges in South Africa. The development of HE, as with many other aspects of government, is inhibited by the recent global financial collapse. Universities are not isolated from effects of such events but in keeping with their social mandate; wish to guarantee their full support for the development of the people in SA. That there have been deep divisions in the provision of HE in South Africa is beyond dispute. The following sections summarize the reasons and identify the strategies introduced to remedy the effects.

2.8.1 Before 1994 in the apartheid era

The education system in SA before 1994 was, on the one hand, geographically and physically divided because most (eight) education institutions for black people existed in the homelands which were created to separate white and black people. Examples are Fort Hare University in the Ciskei (now Eastern Cape), University College of the North at Turfloop and University College of Zululand. Coloureds and Indians were to have their own establishments in the Cape and Natal respectively. Only some tertiary educational institutions in the rest of the

country allowed a few black students (University of the Witwatersrand, University of Cape Town). The system fostered emotional and mental division, which resulted in a deeply fragmented, divided, unbalanced, undemocratic society: white young people had huge privileges and opportunities, while black youngsters struggled to gain a foothold.

In the years before 1994 many policies were designed and discussed by stakeholders outside the then Government of the Republic of South Africa, These aimed to address these deficiencies and rectify injustices. The knowledge used was fragmented and not based on research, mainly because such research was not politically-acceptable in apartheid South Africa. Policies therefore tended to be idealistic and euphoric. They addressed 'employment opportunities and economic development', 'career paths', and the 'redress of discrimination' (Maja, 2004: 95), without considering also the political realities and social forces in operation at the time.

2.8.2 Bengu era : 1994-1999

Sibusiso Bengu became the first Minister of Education of the post-apartheid Government of National Unity in 1994, serving in this position until 1999. An early decision of the newly-appointed Minister of Education in 1994 was to embark on an interim revision of school syllabuses in order to remove inaccuracies and redundant and controversial content - with the important proviso that amendments made would not necessarily require the production of new textbooks. (Siebörger, 2000: 39). As an example of the problems of this approach, Siebörger portrays the membership of a subcommittee considering the history syllabus: it consisted of a departmental official who had served on apartheid-era syllabus committees, five representatives of teacher organizations, a high school and a university student. There were no academics and no representatives of professional history bodies or history teaching associations.

2.8.2.1 Massification

Policy discussions in the first phase after apartheid were about how to increase the numbers of African students entering the HE system. It was the firm belief of policy makers that equity could only be achieved by the 'more is better' view and to try to bring the demographic profile of HE more in line with that of the nation and correct the uneven enrolment of students: while Africans were about 70% of the total population they made up less than 50% of higher education enrolments (Bunting, 2006). Bunting mentions the *Education White*

Paper 3: a programme for the transformation of higher education (South Africa, Department of Education, 1997), which concentrates on the massification principle. However, the massification mechanism was not accepted, mainly for financial reasons: the South African government did not have the financial means to support the massification proposal. According to the White Paper, eliminating apartheid inefficiencies were the fundamental preconditions for achieving equity while maintaining financial sustainability.

Massification mechanisms were introduced to a certain extent, but the rate of increase of enrolments into higher education institutions was lower than expected (Bunting, 2006).That schools needed to recover from the apartheid system before student numbers would grow was increasingly recognized.

2.8.2.2 Mode 2 knowledge production

Mode 2 knowledge production is a new way of knowledge production. 'It is context-driven, problem-focused and interdisciplinary' (Wikipedia contributors, 2010c) or, as Gibbons and others (1994: 17) put it, 'this dispersed and transient way of knowledge production leads to results which are also highly contextualised. Due to their inherent trans-disciplinarity they greatly enhance further diffusion and production of new knowledge through techniques, instrumentation and tacit knowledge which move to new contexts of application and use'. This way of knowledge can be differentiated from traditional knowledge which is 'academic, investigator-initiated and discipline-based' knowledge production (Wikipedia contributors, 2010c)

Mode 2 knowledge production was considered in South Africa as ideal, because the 'new mode of knowledge production is intrinsically trans-disciplinary, trans-institutional and heterogeneous . . . a problem-solving knowledge' (Kraak, 2000: 2). It was internationally seen as a new paradigm, because it involves globalization and the democratisation of access, which are powerful sources for changes in structure, and functioning of higher education institutions. It adds to the massification ideal, because it involves the extension of these ideas.

Kraak (2000: 189) deepens the criteria:

- It would be an open system in contrast to the closed system for the elite which existed before.

- It would be programme-based and not discipline based. Knowledge would be exchanged that produces problem-solving skills and would involve people from various institutions in the educational field but also from government, from industry and NGOs.

- It would involve partnerships with the industry.

- The knowledge structures would have moved from formal and academic to hybrid, which mixes academic and professional/tacit knowledge.

- The mode of delivery would have moved from discipline-based degrees to diverse modes: distance and resource based learning, recurrent and adult learning programmes, lifelong learning, and short courses training.

- Knowledge production would happen across disciplines and not be strictly divided and belong to one discipline only.

- The access would be extended to a diverse learner constituency and especially for members of the previously marginalized group of people such as workers women and 'blacks'.

- The knowledge would not be 'insular' but socially useful.

- The quality control would not be peer reviewed judgements by individuals but would answer questions like:
    - Will the solution be competitive in the market will it be cost-effective?
    - Will it be socially acceptable?

- Quality would be of a more composite multidimensional kind.

2.8.2.3 Outcomes-based education (OBE)

OBE was supposed to be the cornerstone of the efforts of a new education system after the apartheid era. It is a curriculum reform and its main aim was the encouragement of the development of skills throughout the school-leaving pupils, black and white. Concentration was on what learners can *do* with their knowledge to improve the preparation of South Africa's workforce for the participation in an increasingly competitive global economy

(Mason, 1999: 137). Jonathan Jansen, a highly respected scholar in the higher education field in South Africa, warned from the beginning that the implementation of Curriculum 2005 would fail, mainly for philosophical and political reasons. The main idea behind OBE was to dispense with the rote learning that was typical under apartheid schooling. Jansen (1998: 325) warned that the language and terminology of OBE were too difficult for under-resourced teachers, that under-qualified teachers would not be able to handle the 'dramatic changes in social relations in the classroom' and also the change from the hierarchical structured transmission model of teaching to a mediational and facilitative role and that OBE would multiply the administrative demands on teachers. His views seem to have eventually prevailed: the OBE system is to be scrapped (South African Press Association, 2010). He suggested that a huge renovation in the educational field will have to take place and that South Africa at that stage neither has the financial means nor the political will.

2.8.3 Asmal period: 1999 - 2004

The period of Professor Kader Asmal as Minister of Education was marked by controversies and disagreement, as well as respect and high esteem. In his tenure he tried to eradicate the legacy of apartheids education system further by closing teacher training colleges and amalgamating higher education institutions.

2.8.3.1 Amalgamation

'Asmal's strategy of changing the landscape of higher education by merging institutions has not addressed the issue of integration' (Moja, 2008). Since 1994, the higher education sector of South African has been actively searching for a solution for the apartheid-influenced education system. Many discussion papers, Green Papers, White Papers and Acts have been created. Higher education institutions were merged and reduced from thirty-six to twenty-one. 'When *institutions* merge, numerous aspects such as the curriculum, efficiency, equity, staffing, students, organizational integration and physical integration effects can be either negatively or positively affected' (Mfusi, 2004: 98).

Hay, Fourie and Hay (2001: 100) argue that as long as all participants are content and their personal factors and fears have been taken into consideration the idea of institutional mergers is a sensible one for almost obvious reasons:

- Fragmented higher education inherited from the previous dispensation could be combined with common objectives in mind;

- Inequities can be better addressed on common grounds
- Poor communication exists between various types of higher education institutions
- The presence of many under-prepared students from poorly socio economic and academic backgrounds
- Poor quality of secondary school systems with the resultant high failure rates
- Unequal distribution of resources and subsidies
- Declining state subsidies resulting from a general decline in the country's economy
- Questionable appointments
- Production and dissemination of knowledge not only by traditional higher education institutions but also by new types of institutions
- Increased completion in the system from particularly international and private further and higher education systems
- Declining student enrolments

Mfusi (2004) adds that theoretically the idea of mergers was a good, but unrealistic one. He sums up: merged higher education institutions would ideally concentrate on

- Quality undergraduate programmes
- Research related to curriculum, learning and teaching with a view to application
- Comprehensive post-graduate taught and research programmes up to doctorate level
- Extensive research capabilities

Unfortunately, however, the policy documents never deliberated what should happen to the curricula of the merged institutions, no guidelines were spelt out and those on the receiving end were left in a void. The result was disarray: it was unclear who had to decide which programmes were to be continued/discontinued; what the course material would look like;

and how degrees and diplomas would be achieved and distributed. The college-versus-university sense of inferiority continued to be prominent and power relations reached a point of crisis (Mfusi, 2004: 107). Mfusi quotes Jansen (2003: 44): who writes that 'the impact of mergers on staff has been devastating for the emotional and professional lives. Careers ended abruptly or were suddenly redirected in ways that were traumatic to the affected staff'. Students were not involved in the decision -making processes at all.

What can be concluded from these studies is that the government throughout the last fifteen years, specifically when the idea of merging institutions arose, appeared to act with a restricted view of the issues and scarcely involved higher education practitioners and experts, students and professionals and all those who have the development of South African higher education into a functional system at heart.

Minister Kader Asmal had two main objectives in respect of the country's higher education in mind, namely, to restructure national development and for the institutions to be globally competitive. 'The restructuring of higher education has been driven by twin goals of global competitiveness and national development. It is very clear from the succession of policy documents that the task of positioning South Africa for technological and economical competitiveness was a crucial goal of the new government . . . universities play a crucial role as sites of new knowledge production and technological innovation' (Jansen, 2003: 304).

However, the problems that amalgamations encountered along the way, besides the societal differences, were vast, starting with the different educational cultures of the different institutions with research-based and analytical versus practical courses under one roof. Further, the geographic distance between the campuses of amalgamated institutions in some cases hindered cooperation by deterring people from attending meetings.

2.8.4 Pandor (in the Mbeki – quiet diplomacy) period: 2004-2009

Minister Naledi Pandor succeeded Kader Asmal as Minister of Education in 2004.During her period, a feeling began to be expressed that the responsibilities of the Ministry of Education were too large and diverse and that reasons for the increasingly poor matriculation results were not being adequately identified and addressed. The success rates of higher education institutions in this phase, however, were not improving at all, in fact, the reverse was evident. Charlene Smith (2009) writes, '[w]e begin 2008 with dreadful matric results — 21

500 young people failed in Gauteng alone. How is that possible in the wealthiest, best resourced, province in Africa? In all more than 200 000 matriculants failed . . . We are simply not educating enough young South Africans to take charge of this economy'. Pandor herself admits that 'another problem is that national and provincial education departments are not administering or supporting the system with the high levels of administrative efficiency and service that should accompany a demanding curriculum and a high-stakes examination . . . many schools spend two to three terms without textbooks, teachers get very little curriculum support, and teachers in grade eight and nine do not view their teaching as part of a skills-development continuum feeding into grade 12 and beyond' (Smith: 2007).There is little evidence that , despite knowledge of the severity of the problem, the Ministry did anything about it.

Minister Pandor concentrated on the financial aspects of HE but 'neglected' other aspects – the approach was diplomatic (Gower 2009) which brought little real changes and, in particular, under her governance the main problem of transformation and the burning issues of real changes were only addressed on a much too small scale in form of a Ministerial Committee on Progress towards Transformation and Social Cohesion and the Elimination of Discrimination in Public Higher Education Institutions in March 2008. It reported in November 2008.

One of the most difficult tasks to deal with, when universities merged and became 'comprehensive' institutions, was that they also had to merge their courses, programmes, modules, credit systems and other, similar, aspects. Often it transpired that this was hardly possible even if the will was there. Purely in terms of the philosophy of a university and a college or technikon the programmes differentiated so much that rationalisation was difficult: confusion and chaos were the order of the day. Professor Joe Muller, director of the University of Cape Town's Graduate School in Humanities is interviewed in the online article *Hard programme choices for 'comprehensive' universities* (2008). 'What kind of knowledgeable, qualified person is each programme trying to produce?' he asks. He argues that 'hard choices will need to be made, to create institutional niches on the basis of intellectual competency' (Hard programme choices . . ., 2008: para 19).

2.8.4.1 National Qualifications Framework (NQF)

Although originally proposed in 1997, a higher education qualifications framework (the National Qualifications Framework – NQF) was eventually initiated under Minister Naledi Pandor. It was supposed to lay a foundation for credit accumulation and transfer by developing points of articulation between educational programmes. All institutions would have to restructure their programmes and register them officially. This order caused alarm because it eliminated some qualifications like the BTech. Degree offered by 'applied' universities, or former technikons (MacGregor, 2008c). It s implementation took as long as it did long because to find agreement on many points was difficult, if at all possible.

Quality assurance in South Africa is the responsibility of the statutory advisory body, the Council on Higher Education. Its Higher Education Quality Committee, or HEQC, conducts audits of universities. It also accredits courses and does national reviews, quality promotion and capacity development. The Council sets the standards and controls the implementation of strict rules and regulations, which higher education institutions have to follow and report back on the process.

Pandor said that the 'qualifications framework is thus designed to be readily understood and to ensure a consistent use of qualification titles and their designators and qualifiers'(MacGregor 2008d). According to her, 'within the common parameters and criteria of qualifications under the new system, diversity and innovation would be encouraged'.

The framework sets minimum admissions requirements for all programmes, but leaves it up to universities to set their own admissions policies beyond those minimums. It allows recognition of prior learning and work-integrated learning.

Maja (2004: 95) comments, further, that processes are taking too long, that bureaucracy is too costly and labour-intensive, the jargon alienates more than it combines people. Jansen (2004: 88) adds to this criticism that the funding issue was not thought through properly and the massive amount of money needed to reform was completely underestimated: 'standards' and 'learning and knowledge acquisition' concepts were not clearly defined and bureaucracy and administration overpowered the original set of good ideas.

2.8.5 Nzimande: 2009 - present

Two separate education ministries have now been created in South Africa, namely, Higher Education and Training and Basic Education. Minister Blade Nzimande became the new Minister of Higher Education in May 2009 and he inherited a deeply divided and still hugely fragmented HE system. Some injustices have changed and some have just been replaced by other dysfunctional systems. His appointment is generally seen as a positive one, and hopes that he will revolutionise the higher education systems are high. The main benefit is that one minister can concentrate on the enormous tasks of getting the HE field in order. The disadvantage is that it will be an expensive undertaking to keep two ministries up and running with qualified staff, which was a problem for one ministry already. Currently the term 'basic education' refers to schooling up to grade 9, while grades 10 to 12 fall along with skills provision in colleges, into further education and training. With further education joining higher education there is uncertainty about into where the last three years of school will fit, about whether further education will continue to be run by provinces and where adult education will end up. Some skills training comes under the Department of Labour and its education and training authorities.

Minister Nzimande's main concern will still be transformation and he will have to address academic freedom. His immediate plans are the call for a fee-free first degree (MacGregor, 2009b) because, in the eyes of many, high university fees seem to be one of the reasons why previously disadvantaged students do not have access to HE. The other reason is the failure of Outcome Based Education.

The following difficulties were identified as main obstacles in the development of a functioning HE system at present:

2.9 Main obstacles in the HE sector in SA

2.9.1 Failure of OBE

'The single most important legacy of OBE is another lost generation in South Africa's poorest schools', says Cornia Pretorius (2008), an associate editor of the *Mail & Guardian* newspapers education unit, who has covered the topic since 1995. 'These are the children who still cannot read, write, and do math – the all-important keys that are critical to unlocking the door in acquiring knowledge' (Mgibisa, 2009). OBE is characterised by several

commentators as a failure in the South African context. It was supposed to release the South African education system from its apartheid past: it is based on the assumption that all students are capable of learning and achieving success. In OBE, the classroom is theoretically closely linked to the real world, and students are encouraged to adopt an investigative approach to learning over rote learning. The main strengths of the OBE are, supposedly, its flexibility. The system was introduced with the aim of moving away from the strict and rigid system that was known until then and which was deemed unsuitable for the new South Africa with its many unprivileged and poor children. The argument was also that the OBE system should provide teachers and pupils with the opportunity to deal with the curriculum with their own ideas, by being creative and advocating creative thinking. The well-meant initiative is considered to have failed: classes are and were too full for a free-minded education system like OBE, teachers are not trained well enough, and the failure rate is shockingly high. Accordingly, Dr. Mamphela Ramphele, an academic and former anti-apartheid activist and one of its most prominent critics, has argued that OBE is the worst education system ever used in the pre- and post-apartheid eras. 'We have chosen the worst curriculum policy that you could ever imagine. Canada tried it, and they dumped it. The UK, the Netherlands, and New Zealand tried it, and they dumped it. But not us', Ramphele told an education symposium in Cape Town (Mgibisa, 2009).

Unfortunately the OBE system has failed the South African education system: essential resources, such as libraries, were still largely absent, just as in apartheid times. The benefits of OBE are again only noticeable in schools where mainly white children have the means to go to, where there are small classes and well-trained teachers and where the support systems are in place.

One of the main reasons why OBE failed is the acute shortage of teachers. When universities, colleges and technikons merged, teacher colleges, popular in the apartheid system, were incorporated into the new system. This now has proved to be detrimental to the amount and quality of teachers. In 2008, then Minister of Education, Naledi Pandor, told Parliament that her department was investigating options to re-establish some colleges in view of the teacher shortage (MacGregor, 2008b). Teacher colleges were largely created under apartheid to train primary school teachers, and were administered by provinces in a system that Naledi Pandor described as dysfunctional. When it was decided during the 1990s to close them, she added, colleges were training too many teachers in a fragmented and un-coordinated system.

2.9.2 Academic freedom

Black academics in South Africa were extremely few in number and only in 1996 was Mamphela Ramphele appointed to the post of Vice-Chancellor of the University of Cape Town, thereby becoming the first black woman to hold such a position at a South African university (Ramphele, 1995: *viii*).

Only in 2009 the first black academic leader was instated as Vice-Chancellor of the University of the Free State (MacGregor, 2009c). Prof Jonathan Jansen (2009), a strong opponent of racism in general and specifically in higher education, a higher education scholar with many publications, was appointed to a university that was plagued by discrimination in the worst sense. He has often been called in to advise on issues of transformation in many different institutions because of his extensive experiences as an academic inside and outside the apartheid system.

Under the previous Minister of Education, Naledi Pandor, the *Report on transformation and social cohesion and the elimination of racial discrimination in public higher education institutions* was initiated, and in June 2009 the current Minister, Dr Blade Nzimande, announced the release of the report. The report is meant to 'provide a way forward for engagement and debate amongst higher education stakeholders and provides a vehicle to assist to continuous transformation of the sector' (South Africa, Department of Education, 2008). This report could be a working document for all stakeholders in government, as well as the higher education institutions. It involves the extensive and exhaustive collection of data which 'included institutional, organizational and individual submissions, documentary analysis, institutional visits, consultations with national student organizations and trade union' (South Africa, Department of Education, 2008). It acknowledges changes and attempts to address inequalities but it also states 'that discrimination, in particular with regard to racism and sexism, is still pervasive in our institutions'. The report was also presented to the Council of Higher Education South Africa (HESA) with a few instructions that involve more intense concentration on transformation in HE institutions. Issues from the report to be discussed are language policies, performance measures of people involved, monitoring the socialization of students.

The case of Prof Nithaya Chetty concerns academic freedom in South Africa. He states in his T. B. Davie Memorial Academic Freedom Lecture (delivered at the University of Cape Town) on August 2, 2009 that there 'has always been a struggle for academic freedom at South African universities over the years. Even though the social and political struggles have changed fundamentally over the course of the past half century, the quest for an intellectually freer university system still continues unabated to this day. As time has evolved and as our circumstances have changed, so too has the nature of the threats to academic freedom - the only constancy has been the fragile state of academic freedom itself' Chetty (2009). He was the victim of a withdrawal of his right to academic freedom when he publicly announced his dissatisfaction with aspects of academic administration and treatment at the University of KwaZulu-Natal to the media. As a result he resigned.

The danger of limiting academic freedom is that a culture of fear will prevail. One of the most significant points in the definition of higher education is academic freedom which is conducive for scholars in teaching and research. A higher education institution is not fulfilling its duties if academic freedom is curbed. In the case of South Africa, in which strong disciplinary control was the order of the day before 1994, the point of academic freedom is a very sensitive one and must be handled with caution.

As with any other concept, one needs to understand the origin of higher education in South Africa to get a better insight of where it is going. Higher education in South Africa has come a long way since its beginnings and took a turn to the worse for many South Africans in the apartheid era. Over the past fifteen years, many proposals have been developed and initiatives commenced. Research suggests that higher education in SA has developed in some areas but that some initiatives turned out to be detrimental for the development of well-functioning institutions.

2.9.3 Academic quality of school leavers

In August 2009 Karen MacGregor (2009d) and Burnett (2009) reported that 'HESA chairman, Professor Theuns Eloff, told Parliament's Higher Education Committee that most first-year students could not adequately read, write or comprehend -- and universities that conduct regular competency tests have reported a decline in standards'. Quantitative literacy and numeracy skills as well as language development are the main problem areas. The introduction of Outcomes Based Education (OBE) has been cited as a principal factor in this

failure: as noted in Chapter 2, it has been decided, after twelve years of experimentation, to abandon OBE (Mahlangu, 2010). However, its consequences will persist for many years.

2.9.4 ICTs

Statistically, South Africa has more fixed lines, mobile subscribers and internet users than other countries in Africa (World Bank, 2009). Despite this apparent advantage, Brown and others (2008) suggest that key issues persist. Even though South Africa has this considerable advantage over other African countries in the progress of its ICT systems the following troublesome issues continue to exist (Brown & others, 2008):

- The number of Internet users is higher than the availability of personal computers. This means that people are dependent on organizations and institutions for the use of the Internet

- The Internet costs are among the highest in Africa, even in the world

- Limited bandwidth hinders use for teaching and learning (although the SEACOM cable and the West Coast SAT-3 cable should alter this quite quickly)

- Internet access levels remain an unbalanced divide between demographic groups.

It is not only the infrastructure that hinders e-learning and teaching, it is also misconceptions and lack of integration of e-learning and other teaching and learning strategies (Brown & others, 2008; Czerniewicz & Brown, 2009). Students value ICTs highly, and would be willing to use them for formal, informal l and social and collaborative learning. However, some academics express irritation because of the lack of technological integration between home and work (Czerniewicz & Brown, 2009). A study by Czerniewicz and Brown (2009) has demonstrated that students from particular groups are disadvantaged in terms of their ICT access, particularly with regard to ability and support. Institutions have a crucial role to play in assisting disadvantaged students to build confidence and skills, and enabling their access to communities of practice. A significant advantage would also be collaboration between institutions, joint research projects and the sharing of good practice.

2.9.5 Transformation

Transformation remains one of the greatest obstacles in the progression of an acceptable higher education system in South Africa. Although the yearly intake into universities steadily climbs by enrolling more non-white students, the majority of lecturing staff in South Africa is still white (Hay, 2008), thus a western world view tends to be perpetuated. Further research is needed on the extent to which existing modes of learning and learning materials are appropriate and encourage knowledge exchange between cultural groups.

Kadalie (2009) suggests that the basic education system in the last 15 years has deteriorated, which means that more students are ill-equipped for study in HE. Junior lecturers and teaching assistants have to spend valuable time teaching the basics and fail to reach the core of subjects while lecturers and senior academic staff members teach third and fourth year students and post-graduates whose numbers have diminished considerably, because of high drop-out rates by the time students reach that level of seniority. Kadalie also notes that transformation is mainly sought after and implemented in former white universities and that former black universities are left behind. She argues, further, that the 'nurturing' role, which many young female academics perform, namely to give remedial teaching to first-years, hinders them from achieving one important transformation goal: to do research and publish. For Kadalie the transformation process is not working, because it became a 'politically correct', issue without tackling the real problems which start with the basic education schooling system and which should be implemented with the same vigour in previously black universities as it is in the white universities.

Hand-in-hand with the slow transformation is the concern with racism. The Reitz incidental the University of Free State caused the then Minister of Education, Naledi Pandor, to create the 'Committee on Progress Towards Transformation and Social Cohesion and the Elimination of Discrimination in Public Higher Education Institutions', chaired by the University of Cape Towns Professor Crain Soudien, which highlighted lingering campus racism (South Africa, Department of Education, 2008) and recommended that an oversight body be set up to facilitate transformation.

According to *Business Day*, Minister Nzimande outlined five key issues he expected vice-chancellors to cooperate on regarding transformation. They include:

i. Developing a transformation link between universities and government

ii. Holding vice-chancellors responsible for transformation in performance management contracts

iii. Universities must consider the extent to which curricula have been transformed in accordance with the constitution

iv. Proposals for a four-year undergraduate degree

v. Implementing a language policy, particularly when language is used as a means of exclusion (MacGregor & Makoni, 2009)

Minister Nzimande also emphasized that lack of finance should not be an impediment to acquiring HE, and scarce and critical skills, 'despite the well-acknowledged fact of poorly prepared first year students' (MacGregor & Makoni, 2009: para 13).

A large number of children are ill-prepared for tertiary education. 'The persistence of former racial inequalities is reflected in extremely poor pass rates in mainly black schools (the majority of schools), with high standard deviations' (Van der Berg, 2007: 849).

2.9.6 Succession planning

Among the numerous commitments that were discussed by the New Partnership for Africa's Development (NEPAD) and the G8 countries, the following resolution in connection with higher education was drawn up after the summit in 2006. Its fifth objective is 'to support the creation of the next generation of scholars and teachers and thereby to address the greying of the professoriate' (Sawyerr, 2004). This implies the realization that high level research expertise must be replaced with young talent. It requires careful succession planning and financial support.

Apparently, some South African universities have developed such a model for academic succession planning. MacGregor, however, identifies many shortcomings in the higher education sector and reports from a meeting of the University Leaders Forum, titled

‘Developing and retaining the next generation of academics’, held in Ghana from 22 to 25 November 2007, that ‘all Sub-Saharan Africa nations appear to face the problems of ageing faculty, brain drain, academic shortages and difficulties in attracting and holding on to young scholars’ (MacGregor, 2008c: para 3).

This implies that strategies and programmes are urgently required to improve succession in higher education. There is a pressing need to grow postgraduate numbers and to identify potential academic candidates. Environments and opportunities for doctoral students with the promise of scholarships and financial support and acceptable salaries should be established. The collaboration with other African countries in that respect is highly desirable, as well as exchange programmes and scholarly discussions across the borders, to enable the sharing of share academic and research activities and insights. It is imperative that the number of young academics is increased so that the challenges of the new generation can be faced... This ‘greying’ and the potential loss of skill is identical with the points made by Kaye& Cohen (2008) (mentioned earlier) and the concept of Intellectual Capital.

For HE institutions to remain competitive and, at the same time, for the sector to improve its performance, knowledge formerly kept within institutions needs to be shared. It is this knowledge that makes the difference in comparison with another institution, even though the product is similar or, even, the same. This is specifically evident in the South African context. Despite the huge upheavals that the South African HE system is presently facing, it is the knowledge in higher education that must be preserved and used. Until now HE institutions have managed their knowledge in different ways. Some have researched methods of managing knowledge; others have used knowledge on the trial and error basis, only concentrating on the difficulties of the day.

The literature study has revealed that knowledge sharing is a highly significant issue: it is one that also challenges the competitive nature of the present HE market and this implied conflict will need to be resolved at political and institutional levels. A model of KM to transfer knowledge from experienced stakeholders to less experienced ones can be developed. Communication in the written or oral format must be elaborated on a wide basis and encompass language, different cultures, experiences, backgrounds, upbringing, skills and understanding. All are issues that can be overcome to reach a common goal: the prosperity of a country.

2.10 Summary

In this chapter an overview of the HE environment on SA is outlined, starting with a general introduction into HE. HE in Africa has been a complex development through the years – and particularly in SA - because of its challenging and difficult legacy before 1994. All its intricate complexities can be followed throughout the last sixteen years with no real solution in sight as yet. Attempts by the respective ministries during their time of administration have failed, more or less all. Four important key issues in HE in SA were also identified: the academic quality of school leavers, ICTs, transformation and succession planning. It leads into the next chapter of KM in general since the inception of the concept.

CHAPTER 3
KNOWLEDGE MANAGEMENT

3.1 Introduction

KM has been used in organizations as a tool to transcribe implicit knowledge that lies within people into a manageable recordable format so that it does not get lost. This chapter surveys the development of KM and the role it plays in corporate businesses, where knowledge is shared and transferred from experienced older colleagues to younger ones. Probst (1998: 17) says 'the goal of KM is a practical one: to improve organizational capabilities through better use of the organization's individual and collective knowledge resources. These resources include skills, capabilities, experiences, routines, and norms, as well as technologies'. Companies want to capitalize on the huge potential that technology can deliver. Universities, although having structures and objectives that are markedly different from the corporate sector, also want to capitalize on the substantial knowledge base they have developed.

3.2 Definition of KM

The development of KM has been evolutionary. As a consequence, there are many definitions. The following table will show similarities and differences of various definitions of KM as it evolved.

Table 1: Definitions of KM by various authors

Author	Similarity	Distinctive Difference
Nonaka and Takeuchi	Tacit and explicit knowledge process	SECI – model 'Ba'- model
Davenport	Intellectual assets for organization Art of creating value from intangible assets Use of intellectual capital	Improving knowledge work processes; Use of existing knowledge
Sveiby	Change personal knowledge into corporate knowledge	Create circumstances to share knowledge; people oriented
Stewart and Losee		Economic value
Skyrme	KM is a process	Creation of new knowledge
Senge	Focus on knowledge assets	Learning organization Culture that supports learning Five learning disciplines
Argyris	Cultivate channels through which knowledge flows	Organizational Learning
Hildreth and Kimble		Academic use of KM
Kok	Communities of Practice Intellectual capital	KM in higher learning

Nonaka and Takeuchi (1995) developed the SECI and 'Ba' models; Davenport (2005) explains KM in terms of existing knowledge in an organization. Sveiby (1997) illustrates the value of sharing tacit knowledge and reiterates the importance of human memory and thought. Stewart and Losee (1994) concentrate on the economic value of KM, while Skyrme (1997) shows again that creation of new knowledge will be to the advantage of an organization. Senge (1990) is the founder of the 'learning organization' and developed the five learning disciplines. Argyris (1999) defines 'organizational learning'. Hildreth and Kimble (2002) consider the academic use of KM and Kok (2007) investigates KM in higher learning.

3.3 KM in organizations

KM is the factor in an organization that keeps it competitive in the new global market. Organizations should recognize and acknowledge knowledge as a resource, and develop models to take advantage of the collective intelligence of employees to widen the knowledge base of the organization. KM practices improve on a constant basis and become increasingly sophisticated and demanding (Wiig, 2000) and the debates continue. Until the need for a formalized set of tools and techniques was recognised some fifteen years ago, knowledge was implicit and unsystematic. Once it was realized that knowledge-based organizations enjoy economic advantages, a move towards systematization of its management prevailed.

Organizational knowledge includes all the tacit and explicit knowledge that individuals possess about products, systems and processes and the explicit knowledge codified in manuals, databases and information systems (Bryant, 2005: 320). The priority becomes that of managing this tacit and explicit knowledge: in particular, finding channels for its sharing and transfer so that newcomers with new skills can quickly gain a better understanding of the context of the organization and ensuring that it is not lost when people leave the organization. Managing organizational knowledge includes, therefore, the creation of knowledge, the sharing of knowledge and making the most of that knowledge. Opportunities and technologies of KM could assist by highlighting the fact that if people resign or move on from organizations a loss of knowledge will be experienced. Another danger in many organizations lies in the loss of knowledge because of an ageing society. Many employees from the 'baby boomers' (that is, those born immediately after World War II) period will reach retirement age in the next ten years. Kaye and Cohen (2008: 30) argue: that '[i] n short,

you will have a clear competitive advantage if you invest time and effort in the care and nurturing of your boomer employees' cumulative brain power, talent, and skills. This intellectual capital must not be taken for granted. Boomers are, in fact, the 'institutional memory' of your organization. If they have no reason to stay loyal to you, they may take their wisdom elsewhere, and along with it, their market tips, trade secrets, and friends'. Moreover, it is not only the boomers, who form the 'institutional memory' - every employee has this potential.

3.4 Ways of managing knowledge in organizations

Organizations have to find techniques and technologies suitable for their specific objectives to manage knowledge. Some organizations are only interested in capturing explicit knowledge and some are aware of the importance of the collection of tacit knowledge. Some organizations use expert systems and some use methodologies such as mentoring.

Desouza and Awazu (2006) recognized the dominance of socialization in small and medium-sized enterprises (SMEs). They come to the conclusion that SMEs manage knowledge the right way, or the humanistic way: instead of relying upon technology to manage knowledge, it is created, shared, transferred and applied via people-based mechanisms. The use of technology is very limited and not used as a means to manage knowledge. Knowledge is created, shared, transferred and applied via people-based mechanisms like face-to-face meetings, observations, training methods and similar techniques and is put to practice immediately.

In larger organizations like universities the issue is much more complicated (Nonaka & Konno, 1998; Nonaka & Teece, 2001; Nonaka & Toyama, 2002). While these organizations spend huge amounts of money on expensive technology systems it does not seem that the knowledge creation of individuals is necessarily effectively disseminated or recognized, though the initiative of Open Access Repositories may eventually improve visibility. Indexes that measure quantity of academic output also exist (Faculty Scholarly Productivity Index [FSPI]), but the meaning and validity of such results is debatable, and it is difficult to evaluate academic productivity. It is unclear how effectively knowledge is communicated to others in the knowledge domain because bureaucracy may limit its activity.

Desouza and Awazu (2006: 40) agree that technology can help the process of KM by streamlining knowledge generation, storage, distribution and application. However, the humanistic aspect is missing. A comparison of a bureaucratic system and a KM system can be helpful. A bureaucratic organization according to Weber's model of 'bureaucratic rationality' suggests these characteristics:

- specification of jobs with detailed rights, obligations, responsibilities, scope of authority
- system of supervision and subordination
- unity of command
- extensive use of written documents
- training in job requirements and skills
- application of consistent and complete rules (company manual)
- assign work and hire personnel based on competence and experience

Nonaka and Takeuchi suggest that an organization that has been designed with KM in mind has characteristics that are the antithesis of a bureaucracy. However, their views must be balanced with other critiques of bureaucracy. One of the strongest is Paul du Gay, who based his defense on the ethical concepts of equality of treatment and consistency which he considers as implicit in a bureaucratic organization. In 2000, he wrote in the Introduction to his book *In praise of bureaucracy*: 'It is about bureaucracy and ethics .the ethos of bureaucratic office' (2000: 8). He defends 'bureaucratic ethics', and suggests that a bureaucratic system has the advantage of being systematic and controllable, economical and efficient. This view is supported by Alasdair MacIntyre, who founds his defense on the model of bureaucracy as originally developed by Weber in the late nineteenth century (Du Gay, 2000).

Weber's model of bureaucracy can be characterized by: impersonal social relations, appointment and promotion on the basis of merit, authority and obligations which are specified a priori and adhere to the job rather than the individual (that is, separation of work

from private life), authority organized on a hierarchical basis, separation of policy and administrative positions, the members of the bureaucracy being concerned with administrative decisions, general rules for governing all behaviour not specified by the above, and, finally, specialization. If the organization is large and structured by these ideal conditions, Weber maintains that 'it will be more efficient than any other kind of organization' (Litwak, 1961:177).

Litwak (1961:177) criticized Weber's model of bureaucracy as essentially suppressing conflict and suggested that conflict could, if properly managed, be beneficial to the exploration of new ideas and challenges to existing modes of thought in an organization (Litwak, 1961). Du Gay, in commenting on MacIntyre's statements, maintains that a bureaucracy can engender a 'body of scientific and above all social scientific knowledge organized and understood as comprising a set of universal law-like generalizations' (Du Gay, 2000: 19). This suggests that it is possible for a bureaucracy also to be an 'open system' since, for such a body of knowledge to grow, there must be organizational space for experiment, debate and disagreement: thus, the static Weberian model is transformed into one that can develop and retain the essence of its organization and an ethical stance.

3.5 Knowledge transfer

Knowledge transfer happens between two parties. It involves a sender and a receiver. It is the conveying of something known of one party to the other, and the other party listening, absorbing and re-using what has been heard or learn, 'it involves the modification of some existing knowledge to a different context' (Kumar & Ganesh, 2009: 162). Liyanage & others maintain that 'knowledge transfer involves either actively communicating to others what one knows or actively consulting others in order to learn what they know' (2009: 122).
Kumar and Ganesh express their agreement when saying that 'knowledge transfer . . . enables the exploitation and application of existing knowledge for the organizations purposes' (2009: 161).

Effective knowledge transfer is facilitated if rigid organizational hierarchies are reduced (Nonaka, 1994). Liyanage & others observe that knowledge transfer is not merely a superficial transfer of knowledge but involves the way knowledge is communicated, its contextualization, and the transformation, which is the assimilation of new knowledge. The

emphasis lies in the interpretation or translation of knowledge which is basically the linguistic transcoding from one language to another. Translation is a networking activity, which has largely been ignored by the KM community until now (Liyange & others, 2009: 124). Furthermore, the quality of the final product and the actual process involved are both important considerations if misunderstandings are to be avoided. The levels of accuracy are another important point, as is whether the knowledge is sufficient and honest. This all contributes to a smooth knowledge transfer which is the prime requirement of knowledge exchange. Knowledge transfer is an active process and requires a model or models which need to be examined to find out whether and how knowledge transfer happens in a way that is useful and functional for the organization. Knowledge transfer is an act and involves communicating to others what one knows or actively consulting others in order to learn what they know (Liyanage & others 2009: 218).

Ardichvili, Page and Wentling (2003: 64) analyzed motivation and barriers to employee participation and established that when employees view knowledge as a public good belonging to the whole organization, knowledge flows easily. However, the researchers realized that when 'individuals give the highest priority to the interest of the organization and of their community, they tend to shy away from contributing knowledge for a variety of reasons', some being that employees hesitate to contribute out of fear of criticism, or of misleading the community members, not being sure that their contributions are important, or accurate or relevant to a discussion. Research and facilitation is needed to remove these barriers and engender a condition of trust.

Organizations, therefore, must work on the creation of knowledge sharing cultures. By that they integrate new knowledge. It would require networking and communication that encourages honest knowledge sharing without the element of fear. Employees need to work together more effectively, to join forces and to learn to work in partnerships and reveal and disclose what they know.

3.6 Knowledge sharing

Knowledge sharing takes place if individuals contribute their knowledge in a conversation or if they add their information to a database. Knowledge is, if possible, shared between employees so that a flow of data and information, knowledge and wisdom exists. It is the basis of any organization and depending on the atmosphere this knowledge sharing transfer can contribute to its successful functioning. Ideally organizations should have a knowledge sharing culture. This involves team work and good working relationships.

Gurteen (1999) summarizes the reasons for knowledge sharing as:

- Intangible products are taking a growing share of global trade from the application of new knowledge

- Increasingly, the only sustainable competitive advantage is through continuous innovation

- Increasing turnover of staff. When someone leaves an organization their knowledge 'walks out of the door' with them

- Organizations do not know what they know. Expertise learned and applied in one part of the organization is not leveraged in another

- Accelerating change. As things change so our knowledge base erodes; in some businesses as much as 50% of what was known five years ago is probably obsolete today

Sharing information and knowledge allows even small remote departments to take part in the growth of an organization. The process of an effective information flow focuses on the efficient sharing and transfer of skills on information on best practices in a value-added context.

3.7 Intellectual capital

Stewart and Losee (1994) write that the notion of Intellectual Capital (IC) as a separate and recognizable economic factor was first proposed in 1958, though it can be argued that Adam Smith's *An inquiry into the nature and causes of the wealth of nations* (1776) identified a

fourth type of fixed capital, namely, ‘the acquired and useful abilities of all the members of the society’ (Smith, 1901: 228) and that this is the first formal recognition of the idea. IC as an idea began to flourish in business organizations mainly from 1994, ‘and was defined by

Laurence Prusak, a principal at Ernst and Young’s Center for Business Innovation in Boston at the time, as the intellectual material that has been formalized, captured, and leveraged to produce a higher-valued asset’ (Stewart & Losee, 1994: para 1). Before that knowledge was not necessarily recognized as a resource. The previous view of the assets of an organization was that these (apart from business goodwill) should be tangible, countable and capable of being traded, thus acquiring an agreed value. Subsequently, the concept of intangible assets also came to be recognized in some accounting conventions (Wikipedia contributors, 2010c). Stewart and Losee (1994) further argue that companies started realizing that knowledge hoarding is counter-productive and that knowledge sharing is much more conducive and favourable for the common goals of the business. The main benefit was the competitive advantage that one company had over the other with that cumulative knowledge.

Communities of Practice (CoP), embodying usually informal groups in a company who discuss common problems, strategies, happenings, new inventions and development of products relating to the company, were also introduced. ‘They have no agenda, they are defined by the subject that engages them, not by project, rank, department, or even corporate affiliation . . . the shop floor of human capital’ (Stewart & Losee, 1994: para 9). The sharing of knowledge however is not always as easy as anticipated, because of the ‘members’ motivation (or lack thereof) to actively participate in community knowledge generation and sharing activities’ (Ardichvili, Page & Wentling, 2003: 64) may critically influence to what extent this occurs. The authors continue, saying that ‘the success of knowledge exchange depends on the organizational KM systems social and technological attributes and on organizational culture and climate’. KM can be applied in organizations, but it depends on the willingness of the employees in the organization who have a lot of knowledge to share their knowledge in order to create new knowledge.

Communities and teams can improve performance and grow social capital. IC in combination with information technology is the cornerstone of KM: it is about the exploitation of the human factor in organizations and how to be able to use it to develop the organization.

3.8 Summary

This chapter presented the core ideas of KM in organizations and ways to manage knowledge. Knowledge transfer and knowledge sharing are explained briefly as well as intellectual capital.

CHAPTER 4

KM CONTEXT AND TECHNIQUES EXPLORED

4.1 Introduction

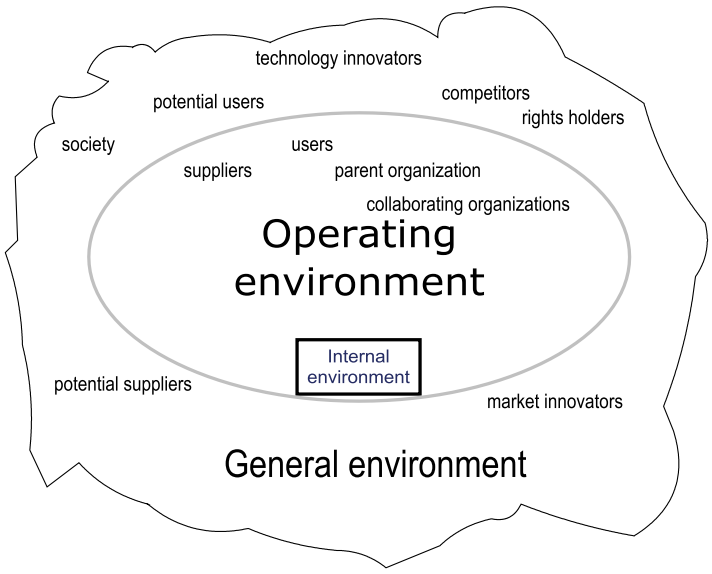
In this chapter the terms and concepts 'organizations', 'organizational knowledge', 'learning organizations' and some KM tools and techniques will be discussed. The emphasis will be on exploring systems models, especially those linked to KM, such as the SECI model of Nonaka and Takeuchi (1995), as well as Nonaka's 'Ba'model and Greiner's 'Growth' model. A brief discussion of the *Cynefyn* model will be included.

4.2 Organizations and organizational knowledge

The Ministry is one of many entities that can form part of the Operating Environment; all such entities are distinguished by being in close organizational contact with the Internal Environment.

4.2.1 A systems model

Any organization exists within a context of an environment, which may be considered at three levels: the general, the operating and the internal.



The 'internal environment' engages the working conditions of a part, division, branch or component of the main organization, thus South African HE institutions would be such a component of the whole education environment. This part or unit considered does not

function on its own but develops some working practices in accordance with those of the parent organization, as represented by the 'operating environment' and has duties and responsibilities towards that organization. The 'operating environment' is represented by the South African Ministry of Higher Education and Training. The components of the 'internal environment' receive its resources from the Ministry. They report progress and receive assessments of performance from the parent organization.

The 'operating environment' determines what the parent organization does. It includes the tasks of its members and other 'stakeholders' that have an immediate working relationship with the parent organization and directly or indirectly with the internal environment. 'Stakeholders' include those organizations that are associated with the parent organization, for example, customers, suppliers, government, society, creditors and users.

The 'general environment' contains all aspects that affect, rule, manipulate or compete for the available resources. This can include challengers, technological innovators, developers of new services, potential users and suppliers and society, including legal aspects and expectations. The 'general environment' creates the expectations by society of what the organization should achieve.

The systems model can be developed at any level that is appropriate for dealing with a management issue. It would be appropriate to consider universities and technikons, for example, as the internal environment, the government ministry as the 'operating environment' and South Africa as the 'general environment'. A 'systems approach allows the concentration on relationships between levels and the identification of common issues.

Central to systems theory is the idea of the relative openness of a system. A system which is completely open can respond as its immediate environment changes. Essentially the system responds in an appropriately in order to survive. A closed system, by contrast, does not respond and, if the environment becomes especially adverse, may be destroyed by it. A partly open system will respond to environmental change – but slowly, and not necessarily in ways that guarantee its survival. In South Africa today an 'open system' would be advisable, because of the frequent changes in policies. Too many factors play a role in these changes, be it historical, political or socio-economic. A system that could adapt quickly and adapt to changes would be the most appropriate. However, the systems model in place at this stage is

only partly open – it changes too slowly and might not survive at all. Peter Vale refers to the situation at the moment as ‘the decaying state of universities‘(Vale, 2010).

In the South African context the ‘internal environment’ is represented by Higher Education institutions of today: twenty-three merged universities and technikons which were restructured to combat the legacy of Apartheid and to give young people the opportunity and choice to obtain degrees and diplomas.

The systems model can be viewed at several levels of generality and, in this particular instance; it is the relationship between government and the social environment that is being modelled.

The country South Africa creates expectations of what organizations, in this case HE institutions, should achieve. An ‘open-systems approach’ allows for concentration on relationships between levels and identification of common issues. The SA HE environment would need to build on its good relationships with institutions in order to achieve its goals. This is not the case at present. Because of all these reasons the systems model at the moment is only ‘partly-open’.

4.3 Learning organizations

Does HE constitute a satisfactory culture for a ‘learning organization’? Is the question which needs to be asked? Higher education broadly embraces universities, colleges, technical colleges, institutes of technology, academies, graduate schools, and colleges of education, technical universities and other tertiary organizations of education. Higher education concentrates on teaching and research, applied work and social services. If we consider the following five characteristics of a learning organization defined by Senge (1990), we can decide whether they apply to HE. Senge defines five vital dimensions in building a learning organization:

4.3.1 Personal mastery

Senge defines personal mastery ‘as the discipline of continually clarifying and deepening our personal vision, of focusing our energies, or developing patience and of seeing reality objectively’ (Senge, 1990: 486). Senge observes, with regret, that many people lose their

initial enthusiasm and interest, and that their team spirit dies in organizations. This echoes the concept of needing to encourage 'self-actualization' as promoted by Abraham Maslow in his writings on motivation theory (Maslow, 1943). People should be encouraged to work on their personal mastery to be able to stay contributing and important members of the team.

4.3.2 Mental model

Mental models are deeply engrained assumptions and generalizations that influence how we understand the world. It is necessary to realize this knowledge and to be able to express it in the context of learning.

4.3.3 Building shared visions

According to Senge (1990), any successful organization has goals, visions, and missions that are shared throughout the organization. With an active and committed team it is possible to achieve these goals, because people WANT to participate.

4.3.4 Team learning

According to Senge (1990), team learning is vital, because teams, not individuals, are the fundamental learning unit in modern organizations. He argues that '[u]nless teams can learn, the organization cannot learn' (Senge, 1990:10). Team learning starts with dialogue, which is the capacity of members of a team to suspend assumptions and to enter into genuine thinking together.

4.3.5 Systems thinking

Senge (1990), further, explains system thinking the discipline that integrates the disciplines. Without systems thinking there is no motivation to look at how the disciplines interrelate. Systems thinking is about building shared vision, mental models, team learning and personal mastery to realize its real potential. Being part of a system or organism means learning how to be a human being and especially those goals can be achieved that are not possible without being in a team. In a learning organization it is the generative learning that enhances our capacity to create.

The question remains whether these characteristics apply to HE. Senge argues that learning organizations are 'organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where

collective aspiration is set free, and where people are continually learning how to learn together' (Senge, 1990: 484). This seems to encapsulate what HE should be: it is here that people do research and have the possibility to gain new knowledge, process knowledge and learn how to learn together.

According to Senge, learning organizations are possible, 'because not only is it our nature to learn, but we love to learn' (Senge, 1990:4). : This belief in a passion for excellence is shared by many academics. Most of us like to be part of a great team, 'a group of people who function together in an extraordinary way – who trust one another, who complement each others strengths and compensate for each others limitations '(Senge, 1990: 484). Senge suggests that in a team, which is a component of a learning organization, extraordinary results would be produced.

There are, however, barriers in HE institutions that often are obstacles to their being true learning organizations. White and Weathersby (2005: 292) argue that 'as academics we work in institutions that rarely practice the even simplest tenets found in the theories of learning organizations. The culture of institutions of higher education is full of examples of competitive rankings, acceptances, and rejections, and authoritarian and hierarchical structures – departmental, school, and university-wide, that shape our lives . . . we generally fly solo in our work' (2005:292). In their view, people in HE institutions do not promote the practices of learning organizations operating in the so-called knowledge age. Universities have become competitive institutions and do not act as a community of scholars but operate as 'bureaucracies where social learning is an espoused ideal rather than actual practice' (White & Weathersby, 2005: 293). They further claim that the original traditional criteria that define HE, namely 'academic freedom, intellectual development, exploration and examination, peer review, acquisition of knowledge for its intrinsic worth and collegiality' (White & Weathersby, 2005: 294) have changed. 'Academic life often fosters autonomy, competition, critical judgment, intellectual scepticism, power distance and self-interest' is what they assert (White & Weathersby, 2005: 294). They also mention that universities as examples of HE institutions are notoriously slow to change. It is difficult to break strict hierarchical structures.

In terms of the 'systems model' this could be perceived as another reason for seeing the academic institution as 'partly-closed'. Although the link with the 'general environment' is

open – papers are published, research is read, the link between the 'internal' and the 'operating environment' is rather closed. This implies little or no interaction with the other environments. It also implies bureaucratic forms of management with most of its components: these being hierarchical (political) structures, rules that control performance, employees that are utilized and paid according to qualifications and strict boundaries between groups. Environments are static. Complexities are not taken into account. This rigidness induces inflexible results. This is where the SA HE situation finds itself at the moment.

If HE institutions realize that these criteria prevent them from becoming proper learning organizations, as defined by Senge (1990), they will have to accept the challenge to change: functional communities of practice, transparency, commitment, shared practices, honesty and a common passion for excellence should be the basis of such change.

Any organization, whether it is a small, medium or large enterprise, could ideally be a learning organization. Whilst it seems obvious that an educational institution should be a prime example of a learning organization, the onset of managerialism in running HE has threatened to disrupt many of the relationships that should be implicit in such an organization (Wright: 2003). For the purposes of this argument, however, it is assumed that HE ideally consists of institutions in which learning takes place as the main action of all its stakeholders, these being students, academics and professionals that are employed by a university, who are directly involved in the learning activity. The development of a learning organization culture involves all three levels of the systems model. In the General Environment, it is requirement for accountability arising from government and society that is responsible for growing pressure on the Operating Environment. In turn, the 'professionalization' of HE management has resulted in managerialism being seen as a necessary choice for maintaining institutional health. Consequently, it is at the level of the Internal Environment – in this case the department and individual academics - that signs of resistance to managerialism have become evident.

4.4 Discussion of some modern tools that could help with KM

Rao (2005) is the editor of a book called *KM tools and techniques*. Many authors of chapters in this book discuss IT tools and techniques that continue to assist the KM process. ICTs have affected productivity and learning to a very large extent in the last 20 years. Even though

knowledge organizations, such as universities and other higher education institutions, have a minor role in the economies of developing countries they have nevertheless become increasingly important for development (Okunoye & Karsten, 2003). KM is still in its initial stages in developing countries and therefore it is difficult to compile a wide ranging framework. Many countries and researchers have recognized the potential of KM and have helped to develop and refine its techniques. Even though IT is the quintessence of KM, it is very important to understand that IT can only be developed and applied if national, organizational and professional cultures, and the willingness of all stakeholders, are regarded as of equal importance together with the technological requirements. Appropriate cultural foundations have to be built, either from scratch or re-packaged from existing structures.

Rao (2005:2) describes the growth of IT tools since the 1980s, starting off with tools for 'computation and databases, followed by publishing and communication tools, and then accompanied by sophisticated platforms for collaboration, wireless delivery, search, and network modelling'. He argues that KM tools are becoming more and more 'enablers of knowledge behaviours and value in modern organizations [and are] . . . also highlighting some of their limitations and shortcomings'. He stresses the point that the complex process of KM can work only in the right supportive cultures. There are many KM tools but, for the purposes of this dissertation, a selection has been made of those that have the strongest bearing on reinforcing knowledge behaviours that should be beneficial to the development of HE. These are chosen because they are popular, easy to use, inexpensive and appropriate for developing countries. Online communities bridge geographical gaps, and make it easy for users to publish content (Rao, 2005) There are many more. However, in the context of HE the following could be worth using.

4.4.1 Communities of Practice (CoP)

Henrich and Attebury (2010) describe CoPs in the context of an academic library, which is a small entity in a huge HE context. They see the benefits for the utilization of CoPs specifically in improved communication, interdisciplinary collaboration and bringing together interested parties from diverse positions. They claim that collaboration leads to new ideas, innovation and project success. Individuals also benefit from participation and gain job satisfaction and problem solving abilities. More knowledgeable colleagues are identified and accessed which builds trust. Although there are barriers like hierarchical structures and

different opinions about the modus operandi of CoPs, the overall impression is that, with time, patience and efforts, well functioning CoPs are not only possible, but also viable.

4.4.2 Intranet

According to Mphidi and Snyman (2004: 393) the Intranet is another tool for improved communication, increased competitive advantage, and expanded employees morale. Mphidi and Snyman's (2004) findings are also built on the results in academic libraries. They suggest that an Intranet facility - if managed correctly and accepted by most stakeholders as a significant instrument - improves quality of service and creates and maintains a learning culture. It provides people with the opportunity to make informed decisions. Criteria needed for a successful KM tool include that stakeholders are committed and dedicated; the site is updated at all times; and that the needs of all employees are addressed. If intranets can be used successfully, in academic libraries, even if differentiated from organization to organization they should be equally successful in HE institutions.

4.4.3 Social networks

Gunawardena and others discuss the value of Web 2.0 tools in enhancing the 'quality of the learning process' (2009: 13). Facebook, for example, 'enables social networking by connecting learners via personal profiles complete with photographs, and built-in methods of communicating. Interaction via profiles enhances social presence by adding a real context to the identity of each member of the Community of Practice (CoP)'. Some participants will, however, not feel comfortable sharing the same space between their personal and work identities. Spaces should, therefore, be created in which participants are encouraged to share knowledge. Applications like 'Mashups' exist 'to provide users with the ability to create comprehensive bodies of knowledge by combining the resources of various sites'. Other programmes like Del.icio.us also offer users the ability to organize links into categories to share finds and opinions, as well as taking part in discussions, tag significant knowledge sections and offer opportunities to facilitate KM. This 'collective intelligence creation in social networking environments' could be a comprehensive KM foundation specifically, because it deals with the tacit knowledge function of KM. The personal interest in taking part in a network like Facebook highlights the significance of being a member of professional associations, publishers' Facebook pages, and other sources recognized academically.

4.4.4 Wiki

Grace (2009: 65) argues that Wikis are another worthwhile KM tool, because they are user friendly and allow the community of users to be responsible for its own content, supported by an open model of knowledge creation and communication. Wikis embody the 'highest attainable information sharing dream of an organization, where a group of its members is voluntarily and unselfishly collaborating and creating knowledge and working towards a common goal to benefit the organization'. Wikis are easy to edit, links and references to other websites are mentioned in Wikis for better understanding, and changes can be tracked.Wikis are easy to use and facilitate knowledge sharing. To use Wikis as an application does however require that they be managed correctly and that everyone has to agree to be involved.

4.5 Four KM models in general

4.5.1 The Socialization-Externalization-Combination-Internalization (SECI) model

For Nonaka & Takeuchi (1995: 58) knowledge is a 'dynamic human process' and therefore a deviation from the original meaning of knowledge which emphasized the absolute, static, and nonhuman nature of knowledge, typically expressed in propositions and formal logic.

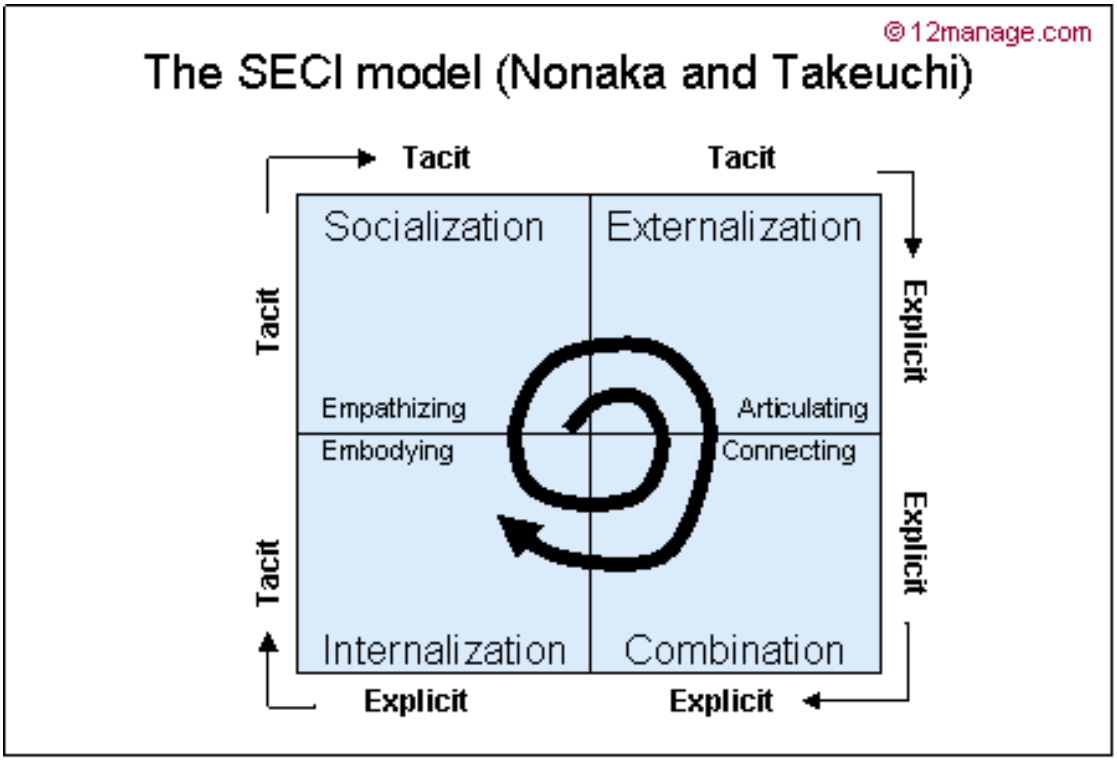
Davenport & Prusak (1998: 5), in their book *Working knowledge,* define knowledge as 'a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, process, practices, and norms'. In their view, any organization that wants to excel at managing knowledge will need to perform three KM processes well: generation, codification, and transfer of knowledge.

Knowledge can be divided into tacit and explicit knowledge. Michael Polanyi (1967) gives a valuable insight into the tacit dimension as does Sveiby (1997) and Miller (2002). Nonaka & Takeuchi (1995) studied Japanese companies and came to the conclusion that explicit knowledge is formal and written, and tacit knowledge is personal and informal and includes some technical skills. It embraces the 'know-how'. This can also be related to the systems model at the beginning of this chapter at the Internal Environment level: the knowledgeable individual may constitute a closed, or partly-closed, system because the tacit knowledge

cannot be articulated for sharing. After years of experience, people in any field become experts and are often not capable of describing objectively what they know.

The idea in Nonaka & Takeuchi's book is that tacit knowledge is transformed into explicit knowledge and used as 'new' knowledge. It also involves moving knowledge from the individual level to the group, organizational, and inter-organizational levels and is pictured as moving in a spiral-format upwards to the top management of the company. In their model they use socialization, externalization, combination, and internalization as part of the processes.

Figure 1: The SECI model.



Source: Nonaka & Takeuchi, 1995

Organizational learning became a new concept and Nonaka and Takeuchi (1995) developed a four stage spiral model. They started by separating Polanyi's concept of 'tacit knowledge' from 'explicit knowledge', and described a process of alternating between the two. In Nonaka and Takeuchi's model, knowledge becomes a continuous transformation between implicit and explicit knowledge by externalizing (from implicit to explicit), combining (explicit to explicit), internalizing (explicit to implicit) and socializing (implicit to implicit).

Takeuchi (1998) further suggested that Western companies need to 'unlearn' their existing view of knowledge and pay more attention to:

- tacit knowledge
- creating new knowledge
- having everyone involved.

Only when this has been done can the organization be viewed as a living organism capable of creating continuous innovation in a 'self-organizing manner'. Takeuchi later (2006) adds that the Japanese approach to knowledge differs from the traditional Western approach in a number of key areas. He highlights the uniqueness of the Japanese approach to knowledge as:

- A company is a living organism, rather than a machine
- Belief is much more than only seeking truth
- Tacit knowledge is more important than explicit knowledge
- Self-organizing teams, not just existing organizational structures, create new knowledge
- Middle managers resolve disagreements between top management and front-line workers
- Knowledge is gained from outsiders as well as insiders.

4.5.1.1. Socialization

Socialization, according to Nonaka & Takeuchi (1995) allows people to come together and share experiences orally. It is difficult for an individual to monopolize knowledge within a group where members share common ground and interests. Socialization, in the form of apprenticeship, often provides the channel for knowledge dissemination. Knowledge is difficult to be monopolized, and flows freely between members of the group mostly on familiar grounds about familiar topics. This view of 'free flow' is, perhaps, driven by Nonaka & Takeuchi's perception of the Japanese ideal. Socialization often happens in the conventional form of apprenticeship. Apprentices learn from their masters by being taught and showed what to do hands-on, while the knowledge of the master is communicated orally.

No textbooks or manuals are used. Socialization also happens outside the workplace by discussing world views and opinions and common outlooks on life are shared. These conversations happen between people who trust each other and have loyalty and faith in each other.

4.5.1.2 Externalization

In this process tacit knowledge is expressed as explicit knowledge. Knowledge becomes clearer if made explicit. It is only then shared with others and becomes the basis of new knowledge (Nonaka and Takeuchi, 1995). Often people can explain situations and circumstances better if they create a map, a mind map, or write some words. This creates new models and can be used to facilitate product development.

4.5.1.3 Combination

In this process the explicit knowledge gained in the above process transforms into new explicit knowledge. It is a combination process, in which departmental reports, for example, are consolidated into one joint report. This can happen through the exchange of documents or through electronic networks. This knowledge can be collected, sorted, categorized, and combined to create a mutual knowledge denominator. The merging of disciplines, such as information systems and computer sciences, or accounting and information systems, or marketing and economics or organizational psychology are examples of new knowledge that is created. Usually networks and large databases are used to combine disciplines. The analysis of concepts such as the mission statement of an organization and the products offered creates a new set of explicit knowledge. Databases and computerized networks and technology assist with this process.

4.5.1.4 Internalization

Nonaka and Takeuchi (1995) state ‘that [i]nternalization is the process of making explicit knowledge part of tacit knowledge. Through this explicit knowledge is formed throughout an organization and changed into tacit knowledge by people/individuals’.

Internalization could be explained as the concept of learning by doing. Knowledge is internalized and becomes part of the tacit knowledge of a person. An example would be the reading of a book. Internalization is the new experience of something that has been expressed by others and converting what they have written into tacit knowledge. There is an

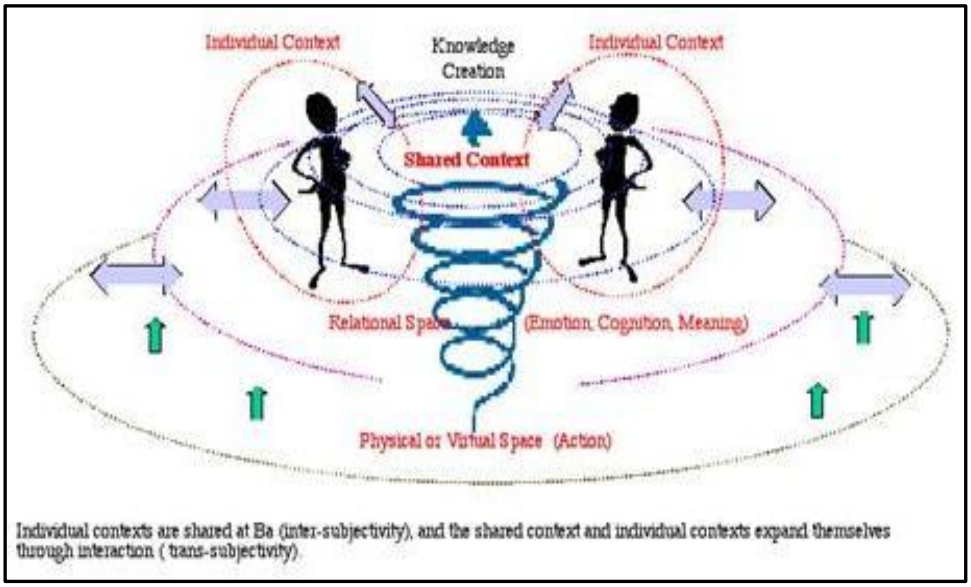
understanding between reader and creator of that book or his/her knowledge. In training programmes, for examples, the trainee understands what he is supposed to learn and adds that to his tacit knowledge. Additionally, with newly-learnt facts, methods and details about new perceptions a person can contribute to the common knowledge foundation of an organization. This could be the generation of a new set of knowledge.

4.5.1.5 Interaction inside the SECI process

Knowledge creation is a continuous process between tacit and explicit knowledge. The movement between the four modes of knowledge conversion, according to Nonaka and Takeuchi, is spiral. It is important to understand that it is not circular. The interaction between tacit and explicit knowledge is increased constantly. The spiral grows bigger and moves upwards. New meaning is added to existing knowledge and thus adds new insights and experience. New knowledge in the SECI process is the beginning of a new spiral of knowledge and increases horizontally and vertically across the organization. This process starts with each individual person and is multiplied many times throughout the organization. It is a dynamic and lively, constantly changing process. It crosses sections and departments and does not stop at boundaries if let run freely. Ideally, creating organizational knowledge like this is an ongoing and never-ending process that improves company or organizational knowledge continuously. (Nonaka & Takeuchi, 1995: 88) state that this ‘interactive and spiral process, which we call cross-levelling of knowledge, takes place both intra-organizationally and inter-organizationally’. In this way everyone, even customers and competitors, can contribute to the improved performance of any company... A new spiral of tacit and explicit knowledge would start a new process with new insights and new reactions.

4.5.2 ‘Ba’ model

Figure 2: ‘Ba’ as shared context in motion



Source: Nonaka & Konno, 1998

Nonaka and Konno’s (1998) ‘Ba’ model could be tested as a theoretical basis for the knowledge-creating process. Nonaka, as the main developer, determines that ‘Ba’cannot be separated from the SECI model. The underlying idea of ‘Ba’ is that knowledge must be created in context. An environment should exist to facilitate knowledge creation. ‘Ba’ is the Japanese word for ‘place’ and suggests a space and time for the SECI process. This place can be thinking, or a similar mental process that produces knowledge. In knowledge creation, generation and regeneration, the ‘Ba’ concept is the key, because ‘Ba’ provides the energy, quality and places to perform the individual conversions and move along the knowledge spiral ((Nonaka & Teece, 2001). The context in which knowledge creation takes place has a social, historical, economical context, because this is the background against which the SECI process happens. ‘Ba’ is not only a physical space, a campus or a meeting room but rather explains the time and space concept. ‘Ba’ sets boundaries for the SECI process, but also gives participants the freedom to contribute as much and as intensely as they are able to. Knowledge in its entirety has no boundaries and is vigorous and forceful and cannot be stored neatly. ‘Ba’ serves as a host within which knowledge can function. ‘Ba;’ allows knowledge to exist in time and space.

In another article Nonaka & Toyama (2002: 1000) expand on ‘Ba’. The concept sees knowledge as being context specific, as it depends on a particular time and space. Knowledge is created in situated action. ‘Ba’ offers context. ‘Ba’ is a place where information is given meaning through interpretation to become knowledge, and new knowledge is created out of existing knowledge through the change of meanings and contexts. It is found not only in physical space but more the interactions between individuals, working groups, project teams, informal circles, meetings, e-mail groups and the interaction with patrons and customers. Ba is the knowledge vision, ‘the creative routines, its incentive systems and its distributed leadership’ (Nonaka & Toyama, 2002: 995). The knowledge vision, they argue, determines the mission of the organization. The knowledge vision also serves to coordinate knowledge creation within the organization. It fosters spontaneous commitments of individuals and groups that are involved in knowledge creation, and is a long-term process. Nonaka and Toyama (2002) argue that the knowledge vision gives the direction to the knowledge spiral. They discuss four types of ‘Ba’ which were proven successful in Japanese business contexts.

The phases in ‘Ba’ are the following:

4.5.2.1 Originating ‘Ba’

Originating ‘Ba’ is individual and face-to-face interaction. Individuals share experiences, feelings and emotions and it happens usually while socializing. From this process care, love, trust and commitment emerge and that is the basis for knowledge conversion among individuals.

4.5.2.2 Dialoguing ‘Ba’

This is defined by collective and face-to-face interaction. The tacit knowledge of individuals is shared and articulated through dialogue among participants. It is a more planned and consciously constructed interaction. Specific individuals who are known for their knowledge about something are selected for that process.

4.5.2.3 Systemizing ‘Ba’

This is defined by collective and virtual interactions. It occurs in the context of the combination of existing explicit knowledge which can be relatively easily disseminated to a large number of people in a written format. Information technology offers such an

environment with mechanisms like online networks, groupware databanks, electronic mailing lists etc. Participants can change information or answer each other's questions to collect and disseminate knowledge and information effectively and efficiently.

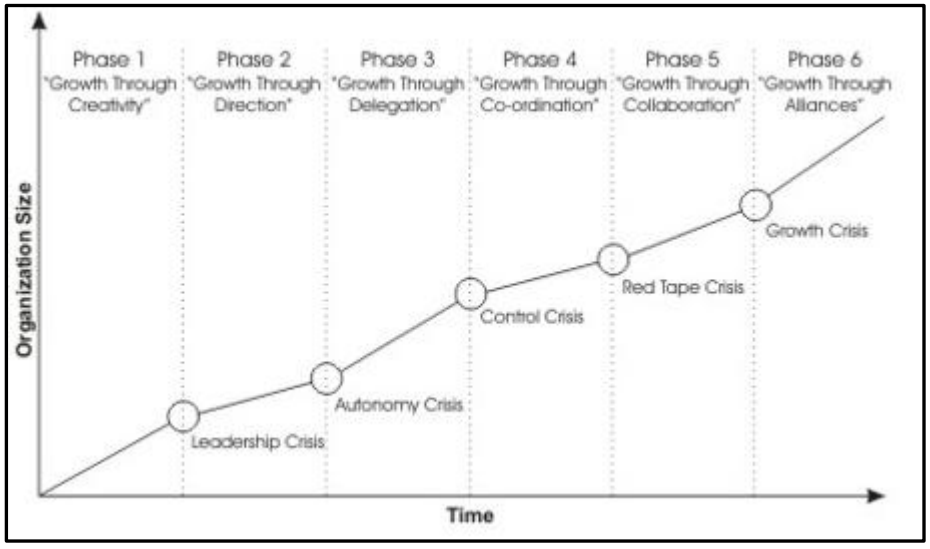
4.5.2.4 Exercising 'Ba'

This is defined by virtual and individual interactions. Individuals represent explicit knowledge that is communicated through virtual media such as written manuals. It is reflected by action.

4.5.3 The Greiner model

A third model that is worth examining is the Greiner model. The components of this model are often apparent as a company or an organization grows and is generated through the 'chaos' that is involved. For Greiner (1972), both evolutionary as well as revolutionary stages are essential to the chaos and the subsequent growth of an organization:

Figure 3: The 'Greiner Curve'



Source: MindTools.com, 2010

Each growth phase is followed by a phase of relative stability, until another crisis happens which would be a turning point for a new phase. Organizations must change when a crisis occurs, although a crisis does not necessarily mean that panic needs to erupt.

These are the phases Greiner identified:

4.5.3.1 Growth through creativity

In this phase organizations create products. Usually the number of staff is still few, and communication is informal. As the organization grows, staff numbers grow and the communication has to become more formal. More capital is needed and sources for that are developed. The phase ends in a 'leadership crisis', and professional management is required. The best solution is to bring someone in from outside the boundaries.

4.5.3.2 Growth through direction

The organization grows through formal communication, planned budgets, marketing and production. Usually production and processes become too much for management to handle and end in the 'autonomy crisis'. New delegation structures become necessary.

4.5.3.3 Growth through delegation

Organizational structures are formed with upper management and middle management, as well as employees who do the job. Upper management are left to oversee the running of the business, while middle management have opportunities to be creative and form new relationships with clients and suppliers. Middle managers often have to take quick and decisive decisions. At this stage the 'control crisis' happens, because upper management might feel that they are losing control. A more refined control centre, as well as better co-operation between all is needed.

4.5.3.4 Growth through co-ordination and monitoring

The organization grows through re-organizing dissembled units while finances are managed centrally. Return on investment becomes the common goal, profit sharing happens, incentives are shared. This frequently leads to bureaucracy and the shifting of the organizations aims and objectives and leads to a 'red-tape crisis'. One might argue that at this point the red-tape crisis has been reached in Universities such as the University of Cape Town, and that some of the merged institutions are still in an earlier phase, thus adding to the strain experienced at the 'operating' level by the whole HE system in SA – as suggested by the 'chaotic' segment of the *Cynefin* model, shown below.

4.5.3.5 Growth through collaboration

Growth happens by replacing bickering professionals with the aim of handing over assignments in a matrix structure backed by significant information systems. This phase leads to the 'internal growth crisis'. Greiner warns that in this phase real growth can happen only if partnerships with opposing organizations are formed.

4.5.3.6 Growth through extra-organizational solutions

Greiner suggests that growth will happen through merger, outsourcing or networks as necessity arises. Phases differ in length and sometimes the order of the phases varies. It is advisable to react on crises as soon as they are identified, because extending problem indefinitely might lead to insoluble situations.

4.5.4 The *Cynefin* model

Figure 4: *Cynefin* model

Source: Snowden, 2003

The *Cynefin* model (Snowden, 2003), might be another model worth testing. This model is used to describe problems, situations and systems. It was originally designed in the areas of KM, cultural change and community dynamics. It is a strategy model, because it examines, besides simple organizational structures, complicated, complex and chaotic domains. Snowden identifies three generations of KM and the SA HE situation finds itself in the third generation, which requires a separation of context, narrative and content management. A sense-making model is created that utilizes self-organizing capabilities and identifies a natural flow model of knowledge creation, disruption and utilization. Snowden (2003: 28) summarizes this thus '[b]y enabling descriptive self-awareness within an organization . . . it

provides a new simplicity, without being simplistic, enabling the emergence of new meaning through the interaction of the formal and the formal in a complex ecology of knowledge'.

This model recognizes the progression of human knowledge and is bounded by new insights and legitimized by new boundaries. A natural flow of knowledge within an organization is the basis of understanding. If properly identified within the *Cynefin* model, communities will be formed naturally and voluntarily. IT can be used in this model to create formalization. The framework of this model develops from simple, to complicated, to complex and to chaotic. All domains have a relationship between cause and effect, depending on which state they are in. A fifth dimension has been identified. .This is called 'disorder', and the causality it cannot be recognized in it. In this state people fall back into their own comfort zone and fail to function productively. The boundary between simple and chaotic is perceived as catastrophic, because once the 'disorder' state is reached, people become complacent and that leads to failure. This model can be applied in organizational strategy and a suitable use of KM. This, then, could be the fate of SAHE, as Rowan Philip mentions 'South Africa's future as a knowledge economy is in the peril, with fewer than 400 South Africans graduating each year with top degrees in the science and engineering fields' (2010, 8 : para 1).

4.6 Summary

This chapter has been concerned, in the first instance, with the portrayal of a systems model. An attempt follows to define 'learning organizations' according to Senge's concept of, and the implications for, structure and management. A link between a systems model and the characteristics of a learning organization has been suggested and this has been elaborated through examination of four models that have a bearing on KM.

CHAPTER 5
DOES KM HAVE ANYTHING TO OFFER HE?

5.1 Introduction

One of the main aims of this study is to discuss whether KM would be suitable in the SA HE environment. The meaning of a university in the twenty-first century is important, as is the definition of a 'world-class' university and to what extent SA HE fits this definition. It will also be necessary to explain why 'world-class' is a significant factor. Mission statements of five SA universities will be analyzed briefly. Finally a decision has to be made whether KM would be an appropriate management tool to overcome existing challenges. KM has been tried in some other countries in education, such as the United Kingdom (Slater & Moreton, 2007), United Stats (Milam, 2001) and also in South Africa (Van Wyk, 2009), but it is still an innovative and untested strategy. KM, in general, is understood as a tool for improving organizational productivity and achievement. Various types of organizations have adopted and understood the concept of KM. Several researchers, however, maintain that difficulties with knowledge sharing present the most significant obstacle for KM (Hansen, 1999; Szulanski, 1996). If the decision has been made to use KM as a tool, it is of fundamental importance to encourage knowledge sharing among stakeholders to guarantee KM success. The present research suggests that KM as it exists is not a viable technique in today's HE environment in South Africa. The HE landscape is presently too disordered. However, a new model will be proposed, which is a blend of older, proven, models adapted to fit a complicated and challenging scenario.

According to Kidwell, van der Linde & Johnson (2001: 28) the main purpose of KM is 'transforming information and intellectual assets into enduring value'. Intellectual capital, suggests Metcalfe, is a hidden asset of many businesses, and KM 'seeks to bring this essential knowledge to light in order to make organizations more competitive'. In the context of HE KM is publicized as a method that will increase institutional innovation (Metcalfe, 2006:2). Metcalfe further quotes from Getz, Siegfried and Anderson (1997: 605): '"higher education occupies a strategic role in productivity growth, not only because it is an industry in itself, but also because it is a source of new ideas and trains managers that affect productivity throughout the economy" '.

Universities and colleges are the institutions that are traditionally recognized as producers of knowledge. Historically their social duties include the dissemination of knowledge. The economic shift of universities, which once were self-supporting institutions, has changed significantly in the last fifty years. Many are now state-supported, while the private sector, often the fund donor for research, demands a return on investment from HE. Public and private investment in HE is thus, increasingly, being measured in terms of productivity and research leading to ideas and products capable of being classed as Intellectual Property. Metcalfe (2006: 3) argues that the use of 'information technology has provided more opportunities to measure and codify the production capacities of higher education institutions, from the learning mission to research output'. With IT it is possible to 'gather and evaluate financial aid formulas, institutional rankings, state appropriations and other knowledge based decisions that affect higher education'. According to Metcalfe (2006) it is the technological development on the side of KM that has changed academic institutions just as it has changed every other organization. Inherent to KM implementation is the co-ordination of IT systems and those who manage them. It is in this way that intellectual capital of academic institutions, which was once considered a public good, now is a 'knowledge asset' that could potentially benefit new revenue streams. Metcalfe (2006: 4) further states that 'KM as it has been defined and shaped by the private sector is thus being employed in the public sphere in order to capture these assets and codify them into tangible objects with market value'.

Metcalfe, in addition, discusses the 'economics' of KM, the 'politics' of KM, and the 'sociology' of KM: these disciplines collectively explore motivations for choice of technology within an organization. Metcalfe (2006b: 17) warns that the 'aspects of market-value, political power and social stratification will impact the development of any technological solution;' and asks the important question 'who will reap the reward when our knowledge is "captured"'.

5.2 Definition of a 'world-class' university

Four South African universities are ranked in the top five hundred of the 2007 Shanghai Jaio Tong rankings: Cape Town, Witwatersrand, Kwazulu-Natal and Pretoria (MacGregor, 2007b). Altbach (2004) writes that every country wants at least one world-class university. The problem is no-one knows what a world-class university is, but everyone refers to it. He questions whether anybody knows what world-classness is. It seems that world-classness

might reside in the, apparently, elitist and wealthiest institutions. This proves how difficult it is to lay down criteria for world-classness. Has it to do with finances or good leadership? Is it the academic outcome or social responsiveness? Altbach argues that it is the 'judgement of others that carries a university into the rarefied ranks of world-class institutions' but no clear lines or criteria exist internationally to include every country. Who are these 'others', who are the judges and what the factors they perceive are?

Altbach suggests a few criteria, which he acknowledges to be his own:

- Excellence in research and teaching
- Research can be measured and communicated. Aspects need to be taken into account that make outstanding research possible
- Top quality professors
- Academics who are able to work under the favourable circumstances, like job security, salary and benefits
- Academic freedom and intellectual excitement are the ideal conditions for academics
- Knowledge must be gained freely and results must be published without restraint
- The governance of the institutions should be significant and have ideally a great component of self-governance and an entrenched academic life
- Adequate resources for academic work such as libraries and laboratories , as well as internet access and electronic resources are essential
- Adequate funding to be able to attract and keep staff and finance expensive resources and equipment is highly important

5.3 Mission statements

The mission statements of the following five South African universities, the first four of which are classified as 'world-class', will be examined to identify shared aims that have been mentioned. Shared aims would provide a common goal in the SA HE setup. Because of the challenges and failures in some HE areas a comparison of mission statement could shed some

light on problems. The University of the Free State in Bloemfontein has been added because of its controversial position, showing, in its mission statement it wants to concentrate on national issues and restructuring. All mission statements declare their universities' commitment to academic excellence, research, transfer of knowledge and community commitments. The question is, in how far they succeed and how deep the cooperation is, to avoid mistakes that have been made.

Table 2: Mission statement of South African Universities

University	Mission	Values	More Values
University of Cape Town (UCT)	Become a premier academic meeting point between South Africa, the rest of Africa and the world; Innovative research and scholarship; Grapple with the key issues of our natural and social worlds.	Graduates whose qualifications are internationally recognized and locally applicable; Engaged citizenship and social justice; Promote diversity and transformation.	
University of the Witwatersrand (WITS)	Promote freedom of enquiry and the search for knowledge and truth; To maintain and enhance its position as a leading university in South Africa...; Africa and the world by sustaining globally competitive standards of excellence in learning, teaching and research.	Takes account of its responsibilities within South Africa; Centre for education and research of highest quality.	
University of Kwazulu Natal (UKZN)	Promotion and development of a culture of quality; Review and conduct institutional audits.	Improve quality of teaching, learning, research and service; University responds effectively to national and international requirements; Leadership on the development and implementation of quality management; Practical support and advice on all quality related activities; Quality through institutional policy	
University of Pretoria (UP)	Be an internationally recognized South African teaching and research university; Member of the international community of scholarly institutions; Creation, advancement, application, transmission and preservation of knowledge.	Providing an excellent academic education; Developing their leadership abilities and potential to be world-class, innovative graduates with competitive skills; Excel in sport, cultural activities, and the arts; Promotion of equity, access, equal opportunities, redress, transformation and diversity; …and some further six attributes	Flexible, life-long learning; Stimulation of critical and independent thinking; Academically rigorous and socially meaningful research; Become well-rounded, creative people, responsible, productive citizens and future leaders.
University of the Free State (UOFS)	Creation, integration, application and transmission of knowledge; Research; Community service; Development of the total student as part of its academic culture.	Academic freedom and autonomy ,Excellence, Fairness, Service, Integrity; Academic culture; Critical scientific reflection; Relevant scientific education; Pure and applied.	

5.4 HE situation now

Minister Blade Nzimande's 'Keynote address to the stakeholder summit on higher education transformation' in April 2010 is a summary of the current HE situation in SA in 2010 (South Africa, Department of Education, 2010). He mentions that some transformation has taken place since 1994. He also mentions that National Students Financial Aid Scheme (NSFAS) has worked to a certain degree. In the main, however, he points out that, according to the Soudien Report, racism still exists. In formerly black rural institutions the infrastructure is still lacking. Access to HE institutions because of affordability is still a concern. Low academic success and high drop-out rates suggest the need for curriculum reform and improved student support. What is of particular interest in this discussion is his mention of the lack of the 'expansion of intellectual horizon and critical faculties', as well as the lack of 'research and innovation' (2010: 7). He argues that research and innovation make an 'invaluable contribution to our economic and social development and assist our country to compete internationally' (2010: 7) and links this with a recognition of the loss of academic skills as older academics retire and the need for succession planning. He also maintains that the forums that were established long ago to discuss inequalities in education did not function, commenting that he wonders 'if this is not the major contributory factors to the frequent conflicts and confrontations in universities?' (2010: 9). He is concerned about corruption and violence, all issues that are possible in a non-functioning system. A new model is desirable to approach the troubled state of affairs.

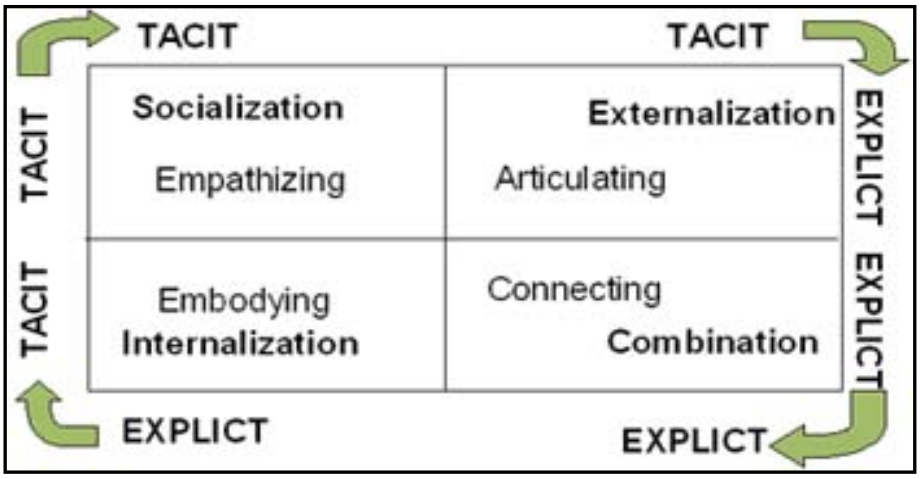
5.5 Adapting the models

Previous discussed KM models, SECI, 'Ba', Greiner and *Cynefin*, will now be adapted to the SA HE situation to explore whether they would be constructive in helping to solve the complicated challenges.

5.5.1 SECI

The SECI model of Nonaka and Takeuchi (1995) is the most straightforward model and was the first of its kind in the field of KM.

Figure 5: SECI model



Source: Nonaka &Takeuchi, 1995

The model suggests that, for the SA HE environment, an atmosphere of *socialization* must be generated, a basis from which tacit knowledge of everyone involved can be exchanged in an *empathizing* manner. People of all races, classes and walks of life can come together and talk, converse and be open with each other about experiences, feelings and emotions in a structured and fruitful manner. On a small scale, Khuluma workshops at UCT are at an embryonic stage of this phase (see Hall, 2008). This initiative aimed to achieve discussions in an open environment for a better understanding between the University Executive and all levels of staff: 'The objective of Khuluma is to effect a lasting, sustainable, set of changes in institutional culture. The approach is to develop these qualities through the work of supported task groups that cut across the universities organizational divisions of Faculties and departments, academic and PASS staff. In this way, Khuluma will develop the qualities of diversity as assets in the university's key purposes of teaching and learning, research and social responsiveness.' (UCT website, 2010).

Such tacit knowledge could be recorded and transcribed and will be made explicit for others to read and react upon with comments, opinions and consequential deeds. The step would be the *externalization* phase, in which first-hand knowledge and views are *articulated*, usually in a written format. It is condensed and becomes collective group knowledge. From this phase several processes from the externalization phase are joined. IT is an important tool at this part of the model and combined with other sources forms new combinations.

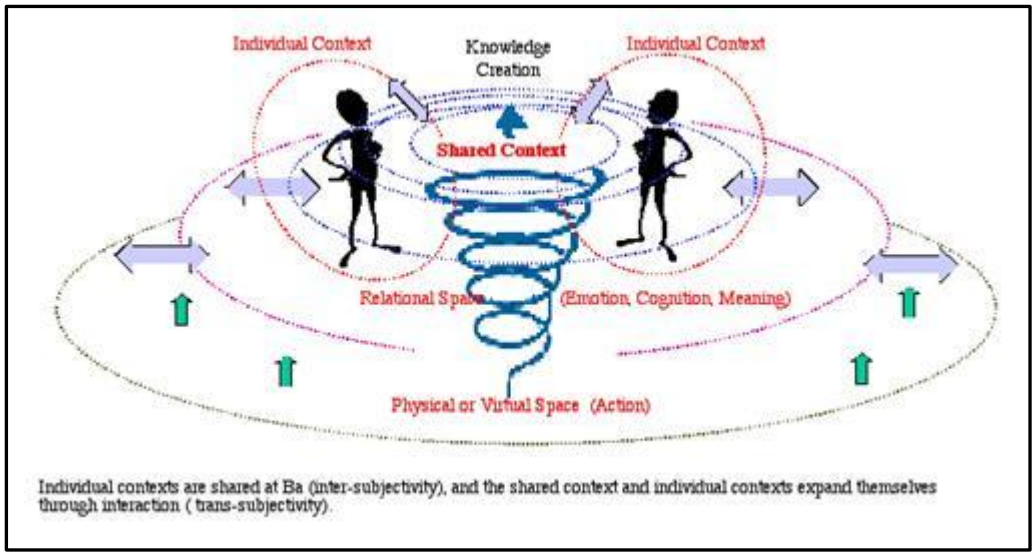
In the last phase, the *internalization* phase, explicit knowledge is internalized and processed and represented or *embodied* in such a way that the process can start again: everyone has an opinion about results and findings and is encouraged to express it with new tacit knowledge. Although In the South African HE setup it can be suggested that a start has been made with the application of the SECI model. It is not yet a shared process among stakeholders (specifically the Ministry of Higher Education and Training), so it is difficult to detect progress in the combination and internalization phases. No official decision has ever been done.

If these two phases were consciously to be worked on, progress might be made. In the SA HE setup, it is not enough to embark upon the knowledge-creating process, because we find too many levels involved, such as an individual level, a group level, an organizational level and an inter-organizational level. To apply the SECI steps on all these levels seems unrealistic at this stage, because the simple basis of individuals with a common goal in mind has not been established. Individuals still have a too diverse perception of reality and a more integrated model is required.

5.5.2 The 'Ba' model or 'shared spaces'

'Shared spaces' is a concept present in every aspect of HE, namely, physical (common offices, rooms), virtual (e-mail, social networking) and mental (opinions, experiences, culture and, specifically, 'organizational culture'. Knowledge is 'embedded' in these spaces. Theoretically, a model like 'Ba' could help the SA HE situation to overcome those serious challenges discussed in Chapter 3.

Figure 6: 'Ba' and knowledge creation



Source: Nonaka & Konno, 1998

Higher Education in South Africa faces many challenges. These include historical shortcomings and long distances separating the campuses of some of the amalgamated institutions. The ultimate goal, however, is knowledge creation for the benefit of the country in the long term. New knowledge acquired against the odds could possibly be gained by amalgamating competencies and abilities of all stakeholders.

'Ba' is not limited to a single aspect of a single organization but can be created across the organizational boundary. 'Ba' can be built as a joint venture, an alliance or an interactive relationship within patrons, universities, local communities or the government. Everyone can transcend these boundaries and enter the next 'Ba'. 'Ba' gives organizations the capability to synthesize. Knowledge creation, specifically in an HE system, is a dynamic human process and all participants grow in that process. Managers become leaders and grow their capabilities to synthesize 'Ba' through experience and participation. Nonaka keeps on emphasizing the synthesizing capabilities of 'Ba', and that is what is of utmost importance in the SA troubled and agitated situation. However, in the SA HE context, the difficulty of adapting a model like 'Ba' lies in the following:

5.5.2.1 Physical space

The very basis of the model, which is defined as 'physical' or 'virtual space' – or action' by Nonaka, exposes a huge challenge in the SA context: the physical distances between not only

faculties of one HE institution, university or polytechnic, but between universities in general are vast. To call for meetings and conferences, to get together for discussions is a major problem. Transport opportunities are often weak and irregular. Time and commitment is required to get together.

5.5.2.2 Relational space

In the SA context the 'relational space' which involves 'emotion, cognition and meaning' is explosive: it is the historical background of many South Africans that still evokes emotions that have not been dealt with. There are still issues like transformation and employment inequality that need to be rectified before any actions like knowledge creation in the Nonaka sense can be embarked on. It also involves the unresolved issues found in the merger of universities and technikons and all the problems that accompany these mergers. The significance of these issues may not be underestimated in SA: even sixteen years after the official end of apartheid the historical residue is anger and resentment. People want to be recognised and accepted, before the next step, namely common goals like knowledge creation, can be started in a meaningful way.

5.5.2.3 Shared context

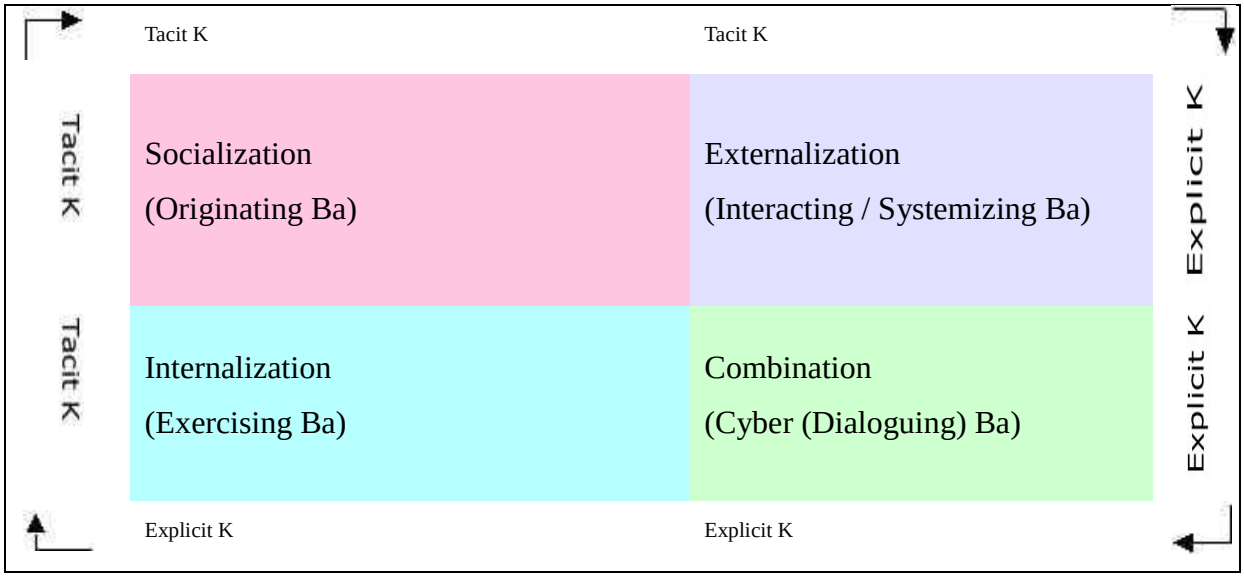
The shared context in SA HE is apparent: education, secondary and tertiary specifically, lags behind. Poverty, crime and disease delay SA development in all aspects, more obviously in the economic development for all. If a shared context could be achieved many concerns could be better dealt with. According to Nonaka, shared context is crucial for significant knowledge creation.

5.5.2.4 Individual context

Individual contexts are shared at' Ba', and individual contexts expand themselves into shared contexts by expressing emotions, by being understood and accepted. The opportunity to share experiences and skills, talents and competencies from whichever background each individual comes is quintessential for knowledge creation.

The two models in which Nonaka is involved, SECI and 'Ba', have been merged and in a combined model format look like this:

Figure 7: Nonaka's SECI and 'Ba' Models combined

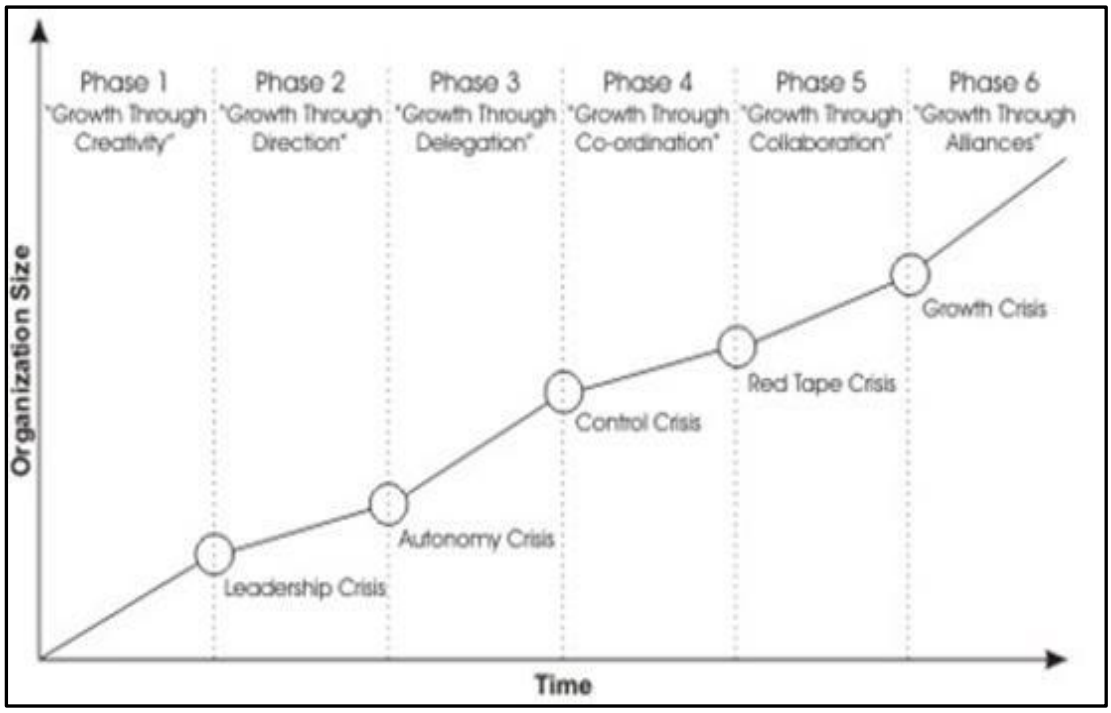


A combination of the models matches the SA HE circumstances to a certain degree. Steps in the 'socialization' and 'externalization' phase have taken place since 1994. HE institutions are, officially, open to all, and everyone has the opportunity to interact with everyone else. Attempts are made to integrate and share, whether in residences or class rooms, research outings or common interest groups. The 'combination' phase is also beginning. However, some signs of stress can be observed: dialogues are often stagnant, because of different opinions of the past that are still entrenched. Previously disadvantaged people tend to bring up SA's horrific past in arguments; people with a less stressed history tend to say 'let's move on'. Unless a common understanding is found here, the fourth stage of 'internalization', or the stage in which common knowledge can be used or 'exercised', will not be able to emerge in the sense of constructive development of the future.

It is necessary, therefore, to look at other models, models which address the stagnation. The Greiner model shows stages necessary to overcome this.

5.5.3 The Greiner model

Figure 8: Greiner model



Source: Greiner, 1972: 41

Relating to Greiner's five phases of growth to the state of SA HE, the following points may be made:

5.5.3.1 Growth through creativity

In this early stage there are only a few people involved. They know each other well and share their suggestions, experience, knowledge, and skills. All relevant issues are discussed among all people and not many differences in opinions are experienced. This is the typical creative start-up culture. This phase was exemplified in the period before 1994. Creativity took place in meetings and gatherings and production expanded as capital was injected. HE for a few South Africans was high-quality, superior and affordable. However, according to Greiner the leadership crisis occurs in this phase and after 1994, when SA had to change its HE policies, testimony of such a crisis is evident if one looks at the different leadership styles of the Ministers of Education, and now of Higher Education and Training. Professional management would be necessary, but politics and factions have prevented this. Often

someone new would generate a new style of management and Minister Blade Nzimande has committed himself to major changes.

5.5.3.2 Growth through direction

In SA the HE sector realized that a more formal and structured manner of communication was necessary specifically after Minister Sibisiso Bengu (until 1999) held the portfolio. In his term as Minister of Education crucial changes seemed too slow in the making and not central enough. That era was more characterized by a phase of sudden independence and impulsive management. Issues became so numerous that there was not enough time to change the situation more urgently. New structures were called for to speed up the process. It could be called, as Greiner suggests, the 'autonomy crisis'.

5.5.3.3 Growth through delegation

By way of delegation and new proposals in the era after 1999, the Minister Kader Asmal era, changes were more evident. Professor Asmal had to delegate and restructure to be able to bring his new idea of the merger of higher education institutions to fruition. Admission for all would improve, integration would be speeded up and, most importantly, resources would be more efficiently accessible. A crisis, however, was imminent. According to Greiner, the crisis could be called a 'control crises as the anticipated 'massification' failed (Elliot, 2005) and the amalgamation of higher education institutions resulted in a struggle to find appropriate people to manage and lead these institutions. Organizations have their own identities. Beelen (2007: 2) maintains that 'one partner usually turns out to be more influential in shaping the post-merger organization … perceptions of pre-merger status differences and dominance appear to be two of the most important antecedents to take into accounts when studying social identification in the context of a merger'.

If , as Greiner calls it, the crisis that goes with this phase is the 'control crisis', the question that needs to be asked is 'Who controls whom and who is in charge of whom?' and 'Whose authority is to be recognised and who will employees follow?'In terms of the South African scenario this is a very delicate issue, considering the historical legacy of apartheid. A more sophisticated management and leadership approach is required.

5.5.3.4 Growth through coordination and monitoring

Growth continues by coordinating the re-organized units. In the case of SA HE it was Minister Asmal who attempted the coordination of the re-organized higher education units, but less successfully than he had anticipated. During the time when Naledi Pandor was Minister of Education (2004-2009), growth in the HE sector was not being managed, because the attention of the Ministry was turned towards trying to implement the OBE system in schools. Greiner suggests that this should be called the 'red-tape crises.

5.5.3.5 Growth through collaboration

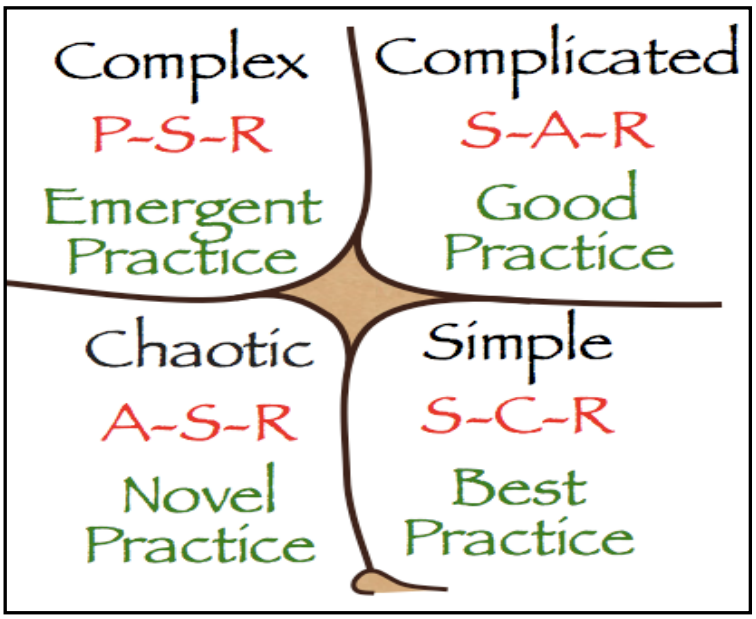
Ideally, the controls of phase's two to four are replaced by recognition of professional significance and re-groupings, and restricting staff to deliver projects in a matrix structure supported by sophisticated information systems and team-based financial rewards. This seems to be one of the main objectives of Minister Blade Nzimande who has declared that '[u]niversities will be expected to transform further, a new funding system will be explored, and there will be reviews of student housing, health sciences provision and the role of African languages in higher education' (Makoni & MacGregor, 2009).

Greiner discusses the 'internal growth' phase and does not call this a 'crisis'. Growth can happen only by developing partnerships with supportive organizations, something that would be an ideal situation in the SA HE context, one in which a common goal between HE institutions, as well as the relevant Department could be formulated.

The stages of 'delegation',' co-ordination' and 'collaboration' could assist with the challenges that are experienced in the SECI and 'Ba' models after the first two phases: professional re-groupings to break deadlocks.

5.5.4 The *Cynefin* model

Figure 9: *Cynefin* model



Source: Snowden, 2003: 24

In developing the *Cynefin* model, Snowden (2003) aimed at exploring complexities and developing tools for 'sense making'. This approach is based on the observation 'that we all have multiple pasts of which we are only partly aware: cultural, religious, geographic, tribal, etc.' This can be directly transferred to the SA society with its diverse cultural, religious, geographic and tribal backgrounds. South Africans live in a very complex environment in general and this complexity can, to a large extent, be experienced in the HE field. Organizations like HE institutions are complex and dynamic with numerous different interactions. People with so many differing backgrounds and beliefs are unpredictable and impulsive and emotional, and this is particularly noticeable in South Africa with it legacy of apartheid. Impulsive characteristics emerge. What the *Cynefin* model further suggests for a positive outcome to happen is that it is important to bring significant facts to the centre of attention, to match the speed and to avoid collision. These criteria must be well-known to stakeholders and decision makers. In the South African HE case the Minister of Higher Education and Training and his team must keep these criteria in mind. Competent intervention is part of the paradigm to keep the developments moving towards set goals.

The *Cynefin* model goes another step further than the SECI,'Ba'and Greiner models. It addresses the chaos that inevitably had to happen: historical differences are just too vast to be

speedily overcome s: nevertheless, the HE field needs to be brought to a level that makes it competitive with that of the rest of his world.

5.6 A new model

Only a combination of the models discussed could offer some solutions for the SA HE environment. A new KM model is needed.

After analyzing the four models mentioned above it appears generally as if the Greiner model could offer some solutions in the case of the SA HE It is a model which suggests that organizations go through stages of growth and need strategies to deal with the crises of each stage. Some SA HE institutions have advanced - the University of Cape Town is an example, and find themselves between the co-ordination and the collaboration phase, with the onset of a 'control and red tape crisis', one which promotes managerialism and bureaucracy. Managerialism overtakes the leadership/management style of most universities and has been perceived over time to be rather counterproductive, specifically in an academic environment. Hughes[2], writing in 2010, argues that factors like performance management, which are an integral part of managerialism, have a significantly negative effect on the growth of academic environments, as they result in the:

- Compromise of academic freedom
- Suppressed autonomy
- Performance management measures inhibit academic creativity
- Power of money becomes the only incentive
- Loss of respect towards colleagues and the institution
- Coerced manner of performance

[2] Dr K.R. Hughes, a lecturer in Mathematics and Applied Mathematics at the University of Cape Town, wrote an article in August 2010, which has not yet been published, with the title *A man-made desert OR Reflections on some causes of academic misery and how to get rid of them.*

If Maslow's Hierarchy of Needs is considered, and the highest class of needs, namely self-actualization is constantly and continually ignored and development into a fulfilled person is non-existent, despondency and non-motivation is the consequence. This phase has entered the academic environment and some feel that the point has been reached that Vale calls 'the decaying state of universities' (Vale, 2010).

Other institutions in SA have stayed in the 'coordination phase' (as is the case with the merged Cape Peninsula University of Technology (CPUT) attempting to coordinate the goals and objectives of a university with those of a technikon. They experience a 'control crisis' about as to whom should run the institution, control the diverse amount of students and control finances. Some institutions have regressed and have fallen back to the 'delegation phase' and 'autonomy crisis'. It can be assumed that the amalgamation of HE institutions and the disconcerting results of this are reasons for 'leadership' crises, 'autonomy' and 'control'' crises. According to Greiner's model, real growth, which in itself can be understood as a crisis, happens if 'alliances' are formed. In this phase progress towards a common objective with the help of team action, motivated support staff, a minimum of control mechanisms, functioning information systems and incentives can be achieved. In SA this phase has not yet been reached.

Adapting the *Cynefin* model proposes that the context of the HE situation is a 'complex' and 'complicated' one. The model is used to describe problems and situations. The translation of the word *Cynefin* suggests the sense that we all have multiple pasts in our religious, social, geographical and cultural experiences. This is true for the South African set-up in more than just the HE field. Snowden implies that this is the domain of the 'complex' social environment and "emergent" practice, because it involves new approaches to communication, decision-making and problem solving. The HE situation demands a solution. KM in its core function, as Nonaka and Takeuchi developed the concept, is a tool that can be initiated and applied in phases or domains of both the Greiner and *Cynefin* models. Both models indicate stages and consequent movements from simple crises through complex or complicated stages leading to eventual growth. Most factors that aggravate situations can be placed at a certain spot. The models complement each other in development stages and management issues. What remains a challenge, however, is the way forward, or how to implement tools. It is here that the possibility of adapting the original SECI and 'Ba'model, may be useful as this would highlight communication issues via knowledge sharing from all groups, the development

from tacit to explicit knowledge by the use of technology, and the creation of new *common* knowledge.

The most difficult aspect of finding a solution to the challenges is the three-dimensionality of the situation, namely, the timeline, the space and the almost elusive, rather conceptual, third dimension. This dimension is the psychology, the diverse forms of *Weltanschauung*, in which every member of society seeks to be an educated, participating, recognised and self-confident human being.

5.7 Summary

The ideas gained in this study have been linked in the final chapter to the present state of higher education in South Africa. It has been realized that one model described in the previous chapter on its own will be inadequate to help solve SA's HE situation. If the possibility should arise to combine models and take suitable aspects from each *and* take the appropriate steps to implement them, a new' model could be devised. This would require an in-depth study of the *status quo* in the higher education sector in South Africa.

As a suggestion the author of this thesis believes that because the idea for a synthesized new model can be derived, implementation for this model should be tested and implemented.

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