Northumbria Research Link

TECHNICAL COMPETENCIES IN KNOWLEDGE MANAGEMENT
– IMPLICATIONS FOR TRAINING

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ABSTRACT

Many organizations have started to adopt knowledge management as one of their strategic initiatives that is to create, retain, share and use the valuable knowledge assets to achieve the organisational objectives. Although knowledge management (KM) is mainly adopted by the private sectors, the Knowledge-based Economy Master Plan, which was launched in 2002 by the government of Malaysia, has encouraged the public and government sectors to value and exploit their knowledge assets. While knowledge comprises both explicit and tacit, many organisations have created knowledge management teams with various KM designations/positions, led by Chief Knowledge Officers (CKOs) to manage the organization knowledge assets.

As KM is considered a new, multifaceted and an evolving discipline, frameworks pertaining to KM activities are still lacking. Regardless of which approach an organisation embarks on, there must be a 'shared understanding' of the organisation KM direction so knowledge assets could be capitalized at every level in the organisation. It is crucial for KM team members being able to introduce and promote the organisation's KM direction; therefore, those who are responsible for managing the initiatives should have adequate skills and knowledge to perform their KM tasks. Besides having some managerial and generic competencies, KM team members must also have some essential technical skills (KM-related skills). The research highlighted two research questions - *how do KM managers interpret the essential KM-related competencies needed in supporting their KM tasks?* and *how do these required KM competencies influence KM managers' attitudes towards KM-related training needs to improve their KM understanding and implementation?* From the social constructionist philosophical stance, this interpretive study uses the qualitative research approach to explore and investigate the essential KM-related competencies required by KM managers in performing their KM tasks and how they influence the attitudes for KM related training. Adopting a qualitative case study approach, the researcher made a study of KM managers of XYZ; an organisation that adopted a strategic KM approach. An E-focus group was conducted for the pilot study and face-to-face interviews were used to understand the phenomenon based on the experience of KM managers.

Findings suggested that six essential KM-related competencies are needed by KM managers; KM overview, Corporate Taxonomy, Communities of Practice (CoPs), KM Tools, Knowledge Measurement and Information Management. This is to make sure that KM could be easily justified in the terms of the benefits to the management and employees, especially relating it to the economic gains. Those competencies were also suggested based on their difficulties in delivering some KM activities such as measuring knowledge, developing taxonomies and establishing appropriate KM tools and CoPs. Indeed as KM managers' suggestions and views on KM competencies come from their KM involvements, KM managers also admitted that those competencies had influenced their preferences towards KM-related training. KM managers prefer some advanced KM-related courses and also certified KM training.

The findings have implications for HR/KM personnel and researchers at XYZ as well as others in general. Hence, the major contributions of this research include the following:

a. KM competencies framework for KM professions which contributes to
b. Demonstrates the implications of the required KM competencies on training preferences
c. Presents the design and development of an alternative way of data collection method in conducting e-focus group using blog

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LIST OF ABBREVIATIONS

ANSI	-	American National Standards Institute
APQC	-	American Productivity And Quality Center
BPR	-	Business Process Re-Engineering
BSC	-	Balanced Score Card
BSI	-	British Standards (Formerly Known As British Standards Institution)
CBT	-	Competency-Based Training
CKO	-	Chief Knowledge Officer
CoPs	-	Communities Of Practice
DIC	-	Direct Intellectual Capital
DSS	-	Decision Support Systems
EDMS	-	Electronic Document Management Systems
EIS	-	Executives Information Systems
EVA	-	Economic Value Added
FiMIAM	-	Financial Method Of Intangible Assets Measurement
GKEC	-	Global Knowledge Standard Council
HR	-	Human Resource
HTML	-	Hypertext Mark-Up Language
IAM	-	Intangible Assets Monitor
IBS	-	Invisible Balance Sheet
ICT	-	Information And Communication Technology
IM	-	Information Management
IS	-	Information Systems
ISIS	-	Institute Of Strategic And International Studies
ISO	-	International Standards Organisation
IT	-	Information Technology
JPA	-	Jabatan Perkhidmatan Awam (Public Service Department, Malaysia)
KBA	-	Knowledge-Based Assets
KBO	-	Knowledge-Based Organisation
KEMP	-	K-Based Economy Master Plan
KM	-	Knowledge Management

KMCI	-	Knowledge Management Consortium International
KMO	-	Knowledge Management Officer
LIC	-	Library And Information Commission, UK
LIS	-	Library And Information Science
MAKE	-	Most Admired Knowledge Enterprise
MBA	-	Master's In Business Administration
MCM	-	Market Capitalization Method
MIS	-	Management Information Systems
NPC	-	National Productivity Centre
OECD	-	Organisation For Economic Co-Operation And Development
ROA	-	Return On Investment
RRIM	-	Rubber Research Institute Of Malaysia
SAI	-	Standards Australia Institute
SBN	-	Skandia AFS Business Navigator
SIRIM	-	Standards And Industrial Research Institute Of Malaysia
TB	-	Technology Broker
TNA	-	Training Needs Analysis
TQM	-	Total Quality Management
UiTM	-	MARA University Of Technology
UNIDO	-	United Nations Industrial Development Organisation
VCoPs	-	Virtual Communities Of Practice
VDR	-	Visual Discussion Room
XYZ	-	Organization XYZ

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Siti Noordin
December 2007

AUTHOR'S DECLARATION

I declare that the work contained in this thesis has not been submitted for any other award and that it is all my own work. To the best of my knowledge, the work contains no material previously published or written by another person except where due reference is made in the text of the thesis.

Name: Siti A. Noordin

Signature:

Date:

THE INVESTIGATOR – AN AUTOBIOGRAPHICAL PORTRAIT

The researcher was born in Singapore in August 1963. In 1973, moved to Shah Alam, a township located twenty-five kilometres from Malaysia's capital; Kuala Lumpur. The researcher thirteen years in schools to complete her early education. Spent three years at MARA Institute of Technology from 1984-1987, the researcher was awarded a Dip. In. Lib. Sc., with specialization in library computerization. The researcher worked for a year as an assistant librarian at the Rubber Research Institute of Malaysia (RRIM) library. The researcher was exposed to the MINISIS software package that handled the library's information storage and retrieval activities. In December 1988 the researcher accepted a post at another research institution; Standards and Industrial Research Institute of Malaysia (SIRIM) as an information executive and worked for ten years. The researcher was attached with the Technical Information Department which specialized in collecting and managing technical resources mainly patents, standards and specifications and offering access to the industrial users. Besides performing the general technical activities related to information management such as abstracting, indexing and making resources available to clients, the researcher was involved in managing the storage and retrieval activities that were developed using three software packages: MINISIS, CDS/ISIS and TECHLIB PLUS. While with the organization, the researcher spent two years at Oklahoma City University, US and was awarded an MBA-Information Systems. The researcher spent another year with the organization before working as a lecturer in 1998 with MARA University of Technology (UiTM) as a lecturer. At the School of Information Management, UiTM, the subjects the researcher has taught include: Library and Information Centre Management, Business Information, Marketing of Libraries and Information Centres, Homepage Design with HTML, and ICT for Libraries and Information Centres. The researcher developed a particular interest in knowledge management (KM) while involved in the university's initial KM Conceptual Framework in 2003. Following that, the researcher applied and awarded a scholarship to pursue my doctorate studies in KM in September 2003.

CHAPTER 1: THE WIDER CONTEXT AND NATURE OF THE RESEARCH

1.1   Introduction

This first chapter discusses the wider perspective of this research by considering the context of the study, its relevance to the researcher and issues surrounding the subject under study. The motivation to research in this area is also highlighted. This chapter also clarifies the focus of this study by defining and explaining its aims and objectives. It then briefly highlights the methodology issues undertaken in this study.

1.2   Context of the study

Knowledge is the ultimate resource that is used to achieve an organisation's strategic focus. As reported in the World Development Report (1999) between knowledge and other resources (i.e. land, tools and labours) the former has become the most important factor for many countries in today's economy, which influences the standard of living. According to Evers (2003) as the most vital resource in the current economic transformation, knowledge embedded on the final product is considered as the largest value added input of the modern intelligent production rather than the value of material used or input of capital or labour. In fact, as the driving force in the present economy, knowledge is regarded as the essential resource and leveraging knowledge is the key to gain and sustain competitive advantage (Bailey and Clarke, 2000; Bhardwaj and Monin, 2006; Chen and Edgington, 2005; Jakubik, 2007; Jashapara, 2003; Lopez, 2005). Mathi (2004), in a study on the key success factors of KM, reports that the public sector around the world is at the vanguard of implementing knowledge management (KM). KM has always been integrated in government tasks; through public policy knowledge is used by politicians and public workers to shape their domestic

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environment and to make a difference within the societal responsibilities (Bridgman and Davis, 2004). Although many academicians and practitioners have widely discussed KM, there is very little literature on KM in the public sector, and yet even less in developing countries (Syed-Ikhsan and Rowland, 2004a). Riege and Lindsay (2006) reveal that KM is not new to the public sector but how its theories and frameworks are applied in the public sector is not really understood due to limited evidence in the literature. Most KM writings focus on the business sectors, especially in trying to investigate or highlight the direct impact of KM on business performance. According to Syed-Ikhsan and Rowland (2004a), most literature and practical studies focus on private sector organizations as the benefits of implementing it can easily be identified compared to the public sectors.

The Organization for Economic and Co-operation Development (OECD) is an international organization that helps governments tackle the economic, social and governance challenges of a globalise economy and has also highlighted KM on their agenda. OECD publishes reports of KM practices in OECD member countries on their web site, www.oecd.org. There are several Special Interest Groups (SIG), on-line forums and websites being specifically created for public sector, such as www.skyrme.com, and www.knowledge-manage.com. Among the authors who discuss KM in public sector are Al-Athari and Zairi (2001), Gooijer (2000), Liebowitz and Chen (2003), McAdam and O'Dell (2000), Riege and Lindsay (2006); and Syed-Ikhsan and Rowland (2004a).

For a country like Malaysia,, the fundamental move from a production-driven economy to a knowledge-driven economy was explicitly emphasized by the government in its Budget 2000 (Sau, 2004). Although KM initiatives in Malaysia have been adopted in many private organizations, gradually more government

and public organizations have started such initiatives. Changes in the Malaysian government's agenda on the Knowledge-economy have been reflected in the development of the Knowledge-based Economy Master Plan in the year 2001. Published by the Institute of Strategic and International Studies Malaysia (Institute of Strategic and International Studies (ISIS) Malaysia, 2002) the Master Plan highlights the strategies to transform Malaysia to a knowledge-based economy, which includes developing the public sector into knowledge-based civil service and at the same time cultivating and securing necessary human resources in general through its training agenda. The plan outlines seven thrusts, which relate to seven critical areas, which are represented in Appendix A. In Malaysia some big companies had already started their KM journey; indeed the Knowledge-based Economy Master Plan had stimulated government agencies, public services as well as local companies to adopt KM (Chowdhury, 2006).

In the KM context, the 'knowledge' that is being referred to is the organizations' knowledge assets that comprise both tangible/explicit (documentation/information) and intangible/tacit knowledge which can be in the form of skills and 'growing' learning experiences and expertise of the workforces. It is a combination of experiences, values, contextual information and expert insight that helps evaluate and incorporate new 'knowledge' (Al-Alawi, Al-Marzooqi and Mohammed, 2007). Realizing the importance of knowledge as a core resource, especially the tacit knowledge, it needs to be managed strategically as it can easily become irrelevant and obsolete. According to Brooking (1999) tacit knowledge is valuable, however it will not be permanent as the type of knowledge may be obsolete over time. This is because according to Metaxiotis, Ergazakis and Psarras (2005) in the rapidly changing and increasingly complex working environments, continuously new knowledge is being created, re-defined and distorted. As an intangible resource

managing tacit knowledge could be difficult since it resides and embeds in people's brains and organization processes. More specifically, managing tacit knowledge has become the greatest challenge to organisations since it is difficult to articulate, due to the fact that it is subconsciously understood and applied (Coakes *et al.*, 2002).

As knowledge is recognized as a vital resource, structured or systematic knowledge management approaches are strategically adopted by many organizations and have been acknowledged as the Most Admired Knowledge Enterprises (MAKE) at regional or international level (www.knowledgebusiness.com/knowledgebusiness). Organizations from all over the world (including non-profit and public) were nominated and assessed by an international panel of Fortune 500 senior executives and leading KM experts on their KM initiatives. Evaluations on these organisations KM programs or activities were made based on their key knowledge performance according to a specific framework, which includes the following:

- Creating a corporate knowledge culture
- Developing knowledge leaders
- Delivering knowledge-based products/solutions
- Maximizing enterprise intellectual capital
- Creating an environment for collaborative knowledge sharing
- Creating a learning organization
- Focusing on customer knowledge
- Transforming knowledge into shareholder value

The MAKE award winners such as Hewlett-Packard, Buckman Laboratories, Ernst & Young, Toyota, Shell, BP, Accenture, Sony and PricewaterhouseCooper are organisations which success stories and examples of their strategic KM

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approaches are always being quoted and discussed in the literature by KM researchers.

1.3   Initial motivation

The impetus for researching KM technical competencies arises from both research and applied perspectives. With a background in Library and Information Sciences for more than ten years, the researcher has worked as an information professional with some managerial roles and managing information was a day-to-day activity. The researcher was involved in Information Management activities such as cataloguing, classification, indexing, abstracting as well as database systems and management, which were part of the main duties of information professionals. Later, with an MBA specializing in Information Systems the researcher worked as a lecturer in one of Malaysia's public universities in December 1998 and was attached to the Faculty of Information Management. It was in this faculty where the researcher was exposed to a range of common issues pertaining to KM. These were raised by the community of library and information professionals. Information professionals always bring to light that they have been working with knowledge long before the discipline of KM emerged and were trained to manage knowledge systematically. Initially, the researcher shared the same views since the field of KM was still very new in Malaysia. However, the researcher has come to realize that KM not only consists of explicit knowledge where library /information professionals are experts primarily in managing 'explicit' knowledge, but KM also consist of tacit knowledge - the intangible elements associated with knowledge.

In early 2003, the researcher became involved in the university's KM working committee. Its main purpose was to produce a KM conceptual paper for the

university and also be responsible for KM familiarization activities. Similar to other institutes of higher learning, the university is involved in knowledge intensive activities. Therefore in tandem with the nation's aspiration outlined in the Knowledge-based Economy Master Plan, the university has taken a responsive approach and plans to embark on KM initiatives taking into account both IT and human elements. The proposed KM concept focused on two main elements; the knowledge community (i.e. communities of practice, content developers, university-industry network, alumni network) and knowledge web (i.e. e-learning solutions, knowledge repositories, knowledge directory). The concept was a modification of the KM concept that was suggested by Ow (2001). The KM initiatives begin with familiarization activities where a series of workshop were conducted to several groups of employees to introduce and promote the KM concept. During that same year the management of the faculty has put forward to the Ministry of Higher Education for approval of a new programme, the Master's Degree in Knowledge Management. Among others, one of the challenges that the faculty had to face in developing and designing this new programme was to differentiate it with the existing programme, Masters in Information Management.

It is from these experiences as 'KM driver', that the researcher foresaw that there is a need to develop some KM-related skills. To fulfil some of these needs, several KM training courses were attended and the researcher came to realize that KM is a multidisciplinary field and 'KM drivers' involve a combination of people who have knowledge and skills from information systems/management, human resources and even strategic planning. Thus, the researcher intends, through this doctoral study, to gain better insight and clearer understanding of the technical competencies that KM drivers should have from those who are involved directly in developing and managing KM initiatives.

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1.4 Problem statement

Burns (2004) states that understanding of what constitutes knowledge and the specifics of how and when it should be managed are less clear. According to Metaxiotis, Ergazakis and Psarras (2005) the challenge in identifying knowledge partly contributes to the complexity in defining KM. The term 'knowledge management' is defined differently depending upon the context in which it is used. Not all forms of organizations' knowledge assets are easy to manage, especially those, which are intangible. For this type of knowledge, despite having the highest value, the most human contribution and the greatest contribution to decisions and actions, it is the most difficult resource to manage (Metaxiotis, Ergazakis and Psarras, 2005). That said, the capabilities of advanced and sophisticated ICT infrastructures have successfully supported the management of explicit knowledge. For many years, those from the Information System and Information Management fields have been innovatively managing explicit knowledge.

In recent years, the creation and demand for KM related professionals have grown rapidly (Al-Hawamdeh, 2003; Davenport and Prusak, 2000). To manage knowledge assets successfully, an organization has to 'create' or hire knowledge managers with a common task to organize, control, manipulate and exploit information and transform it into knowledge (Al-Hawamdeh, 2003; Davenport and Prusak, 2000; Friedman *et al.*, 1997). According to Jakubik (2007) compared to other disciplines, knowledge management is still in its infancy stage but fast developing. Therefore according to Al-Hawamdeh (2003), while KM is still evolving, KM professionals should have the necessary skills and competencies that will enable them to deal with organizational knowledge and promote KM

practices within their organization. What KM researchers and practitioners are hoping to achieve is to identify a set of features and rich skills and competencies common to organizations (Al-Hawamdeh, 2003). Successful KM professionals will need a combination of human, technical and economic skills as they are responsible for extracting and editing knowledge, facilitating knowledge networks, and setting up and managing knowledge technology infrastructure (Davenport and Prusak, 2000).

The body of literature in KM is growing yet it is still very small in comparison with other disciplines (Bose, 2004). Despite being considered as a new discipline, in general, there is still an abundance of literature on knowledge management. However, literature about the concept of knowledge and knowledge management is often confusing (Jakubik, 2007) as 'knowledge' is defined and understood differently. This, according to Metaxiotis, Ergazakis and Psarras (2005), has in some way caused complexity in developing a framework. A KM framework should explain the major elements, concepts and principles of KM domain. However, KM literature tends to show researchers' disagreements in developing common KM framework (Metaxiotis, Ergazakis and Psarras, 2005).

Indeed, as a discipline that is still evolving with interpretations from different perspectives, it is much harder to develop a KM-related competency framework for KM managers who manage KM initiatives when a common KM framework, which is supposed to be the foundation, is understood and interpreted differently. That is why it was reported that many organizations are having difficulty in identifying the appropriate competencies for their KM team members although there seems to be a general understanding of the importance of having some information skills (Abell and Ward, 2000). Research shows that KM failures are

partly caused by the differences in perspective that exist between KM team members (Storey and Barnett, 2000). According to Guptara (2000), most organizations acknowledge the importance of knowledge as one of organizations valuable assets. However, many KM projects failed due to lack of knowledge on KM which then leads to difficulty and risk in implementing KM strategies (Cheung *et al.*, 2007).

Although literature on KM is widely being discussed by many KM researchers, practitioners and academicians, there is very little literature on KM-related competency frameworks for KM managers (managing KM). Discussions on KM competencies that appear in the literature are mainly related to an organisation's competency development as a whole or competency development for managers and employees/knowledge workers in a knowledge-driven organization (Amar, 2002; Lustri, Miura and Takahashi, 2007; Pemberton and Stonehouse, 2000; Tiessen, Andriessen and Lekanne deprez, 2000). As highlighted by Al-Hawamdeh (2003), while organizations realize the benefits of KM and the need to improve KM in their operations, there seems to be very little interest in issues pertaining to the competencies that KM professionals should have. One of the important factors that contributed to the failure of KM initiative is the lack of attention given in setting up a KM team (Davenport and Prusak, 2000). Regardless of the types of organization, be it private or public, organizations will need to have well-trained personnel who have adequate competencies to promote the KM initiatives. According to Davenport and Prusak (2000), KM managers are responsible for extracting and editing knowledge, facilitating knowledge networks, and setting up and managing knowledge technology infrastructure. However, not many organizations have employees who are skilled at framing and structuring their valuable knowledge. Therefore organizations will need people who are able

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to extract this valuable knowledge and put it in a structured form, maintain and refine in from time to time (Davenport and Prusak, 2000). On the other hand, according to Jakubik (2007), efficient management of knowledge, which includes sharing, measuring, reporting and protecting knowledge, has become a day-to-day procedure for many organizations. This, together with the researcher's previous experience has provided a basis upon which to develop this doctoral study.

1.5   Research questions and objectives

This study intends to provide insight into KM practitioners' (KM managers) interpretations of the essential KM-related competencies needed by KM managers. Furthermore, the study also explores the influence of these required competencies on practitioners' attitudes towards KM related training while performing their KM tasks. Hence, it is not the researcher's intention to produce a guideline on 'how to do KM'; instead this study is focusing on two main questions:

a. How do KM managers interpret the essential KM-related competencies needed in supporting their KM tasks? (what competencies and why?)

b. In the light of these, how do these required KM competencies influence KM managers' attitudes towards KM-related training needs in order to improve their KM understanding and implementation?

Thus, the objective of this study is not only to explore the essential KM-related skills needed by KM managers but also to understand why those skills are essential in helping them to perform their KM activities. In addition, exploring the implications of attitudes towards KM training is important to gain and provide better insights into KM practitioners' training needs.

The study addresses the following objectives:

i. To identify the essential technical KM competencies required for KM managers who are involved in the KM initiatives

ii. To examine critically the justifications of how KM practitioners view these required skills to be crucial in performing their KM tasks

iii. To investigate the implications of these required technical competencies on practitioners' preferred KM-related training

iv. To interpret and assess the contribution of KM related training on KM managers

1.6   Background of the organization where the study was conducted

The purpose of this study is to understand how KM managers' interpret the essential technical competencies (KM-related) needed in supporting KM activities within KM projects/initiatives and the influences on KM managers' training attitudes. To obtain an insight into how KM managers view the essential KM-related competencies and attitudes towards training, it was decided to use the KM managers at XYZ as a case study. Organization XYZ, a Malaysian government agency established in 1959, has taken a responsive approach towards the K-economy by adopting KM initiatives since 1999 and officially launched them in October 2000. Outlined in its mission statement, organization XYZ is committed to excellence in promoting monetary and financial system stability and fostering a sound and progressive financial sector to achieve sustained economic growth for the benefit of the nation. XYZ is guided by the principle that it should act only in the economic interest of the nation and without regard to profit as a primary consideration. Hence, XYZ's functions are carried out within the context of the broader goals of promoting economic growth, a high level of employment, maintaining price stability and a reasonable balance in the country's international payments position, eradicating poverty and restructuring society (XYZ, 2006).

Experiencing the 6th year of their KM journey, there are lessons that could be learned from XYZ's failure and success stories throughout their continuing journey. Organization XYZ has 6 branches in Malaysia with one branch each in New York and London. The organization is getting full support from the top leader and the deputy who act as the Knowledge Champion and Chief Knowledge Officer. They have inspired the XYZ's directors, management team and employee to play an active role in embracing KM and were expected to fully engage themselves in building and exploiting the organization's intellectual capital (Zamani, 2000). The top management sit in the KM Committee and representatives from each department were appointed as KM Officers/Managers who run their structured KM initiative by introducing and promoting knowledge activities such developing repositories, electronic yellow pages, corporate taxonomy, visual discussion rooms, communities of practice, storytelling, and knowledge fairs, etc. Some departments have a fulltime KM officer while others perform a part-time role in running the knowledge activities. The appointed KM officers come from various backgrounds including finance and accounting, knowledge management, marketing, information management, business management and computer science. The backbone of their KM initiative is the KM Centre; which is the hub of XYZ's KM activities. Details of organization XYZ's KM structure appear in Appendix B.

1.7   The methodological orientation

1.7.1   Philosophical stance and research paradigm

Since the focus of this study is to gain insight into KM managers' interpretations of the required technical competencies (KM-related skills) and how these skills influence KM managers' attitudes towards KM training, the researcher's

philosophical assumptions underlying this research come from the social constructionism orientation. The social constructionism philosophical orientation is a sociological theory of knowledge put forward by Berger and Luckmann (1966). According to Berger and Luckmann three elements involve in analysing the social construction of reality: individuals, society and their interaction. The social constructionist orientation is employed in this research to uncover and construct meanings of KM managers' interpretations of KM competencies. The focus of social constructionism is subjective meanings - how individuals or groups apprehend, understand and make sense of social events and settings (Gephart, 1999). This research tries to go in-depth within the context of KM practitioners' social interactions and experience of KM managers who are involved in KM initiatives. Prasad (2002) suggests that contemporary interpretivist decline to be 'confined, policed and disciplined' by outdated notions of interpretivism's limitations and therefore is committed to the wide philosophy of social constructionism. As highlighted in Bahde (2003), social constructionism challenges complacency in interpreting things taken for granted. In fact it suggests taking an active role in discussing the preferred ways of exploring realities and possibilities.

Since social science research is about the study of human beings, instead of 'objects' as in natural science, the interpretive paradigm with the qualitative research approach is adopted to achieve the research objectives. KM managers' interpretations of KM competencies were interpreted as a process of sense-making in the KM social setting. Benton and Craib (2001) state that, in social science, since human beings are not the same as 'objects' of chemistry and physics, the study involves a more complex setting. Interpretivists believe that reality in social science is difficult to encounter through observation. Therefore it

needs to be interpreted. A qualitative approach has been chosen as the strategy has the potential to produce data from KM managers' natural setting. In this context, as it involves 'people' – the KM managers interpret their KM experience and attach meaning to what is going throughout their involvement in KM initiatives. In qualitative research, data are collected from people within their environment through a more flexible and open-ended method, which in this case is through semi-structured interviews. Amaratunga *et al.* (2002) argue that it has the ability to look at change in surroundings over time, understand individual meanings and adapt to new issues and ideas as they emerge. According to Merriam (1998), 'qualitative researchers are interested in understanding the meaning people have constructed, that is, how they make sense of their world and the experiences they have in the world'. Following this context, this study is exploring and assessing the managers' KM experiences in relation to KM competencies and the implication on their attitudes towards KM-related training. A more detailed examination of the approach appears in chapter 3.

1.7.2 Case study approach

Merriam (1998) states that a case study may be chosen for its uniqueness, or to reveal about a phenomenon or to explore knowledge that we might not have access to. For this research, its aim is to uncover the phenomena of knowledge management and how KM practitioners interpret the essential KM competencies needed in managing KM initiatives. The required skills to perform KM tasks would be more appropriate if being revealed by those directly involved in KM initiative setting. By adopting a qualitative case study approach, this research intends to provide in-depth interpretations of the real-life context about the essential KM competencies required by KM managers. Case study is known as a type of 'field

research' and the unit of analysis or sample of this research is the KM managers in organization XYZ.

1.8 Conclusion

Since knowledge management is about identifying, unifying and managing an organization's knowledge assets, the central activity of knowledge management is about using the knowledge to improve productivity. Based on both research and practical perspectives in KM, in this study the researcher explores the essential KM competencies required in managing KM initiatives. The study focuses on the technical competencies (KM related competencies) in managing KM initiative and the implications on practitioners' attitudes towards KM training. Addressing the research questions and objectives, this research has chosen KM practitioners who were directly involved in KM initiative and activities at organisation XYZ so as to obtain their personal views based on their experiences as KM managers. The research objectives are mainly to explore and understand what are the essential KM-related skills required for KM managers, why those competencies are important for performing their KM tasks and how they influence the managers' KM training needs.

In Chapter 2, it reviews the key concepts related to the study. It focuses on literature related to KM concept, KM professionals, Competency framework, Technical competency and Training. The chapter also presents the framework of the research.

CHAPTER 2: THEORETICAL AND CONCEPTUAL FRAMEWORK

2.1 Introduction

This chapter discusses the theoretical and conceptual framework surrounding the area under study based on the existing literature and research. It explores topics associated with KM competencies by first introducing knowledge as a resource and addressing the notion of 'technical' competency. Discussions on the lack of a KM competency framework were also addressed. The chapter also explores related issues such as KM concepts, KM initiatives, KM professionals and possible consequences caused by lack of essential KM competencies. Knowledge gaps from previous research that have studied a similar area are also discussed. Lastly, this chapter describes the conceptual framework constructed based on the researcher's interpretations from the literature and experience in KM initiatives. It explains the terms of reference or concepts that have been employed throughout the research execution.

2.2 Current research and literature associated with this study

2.2.1 Knowledge as organization core resource

In the agrarian economy, land and labour were considered as the critical production factors. Later in the 19th century when the 'industrial-based' economy took place, capital had replaced land, and it became a critical requirement for wealth generation (Boisot, 1998). Today organizations are putting more focus on their knowledge assets despite depending on traditional resources. Lytras and Pouloudi (2003) affirm that organizations have shifted their business strategy from managing the tangible resources to intangible resources. It was suggested that these intangible assets be exploited to enable organisations to stay competitive in an ever-changing world. Organisations that successfully exploit their knowledge

wealth will promote their performance (Lytras and Pouloudi, 2003). However, most knowledge assets that reside in organizations are often overlooked (Cheung *et al.*, 2007). It is because knowledge assets are mainly embedded in organizations' culture, processes and routines, as well as employees' skills, experiences and expertise. According to Skyrme (1999) focusing on knowledge is not new as Francis Bacon used the phrase 'knowledge is power' and its role and contribution in business strategy has been highlighted in recent years. Besides organizational knowledge assets in processes and products, knowledge in people is considered as one of the core levers of an organization's strategy (Skyrme, 1999).

Most KM literature has come to a consensus that knowledge is becoming the main resource for economic power (Beijerse, 1999; Davenport and Prusak, 2000; Jakubik, 2007; Kakabadse, Kouzmin and Kakabadse, 2001; Pemberton and Stonehouse, 2002; Riege and Lindsay, 2006). Unlike natural resources, labour and financial capital, knowledge capital including those, which are intangible in nature, is an important driver of modern economic growth. This intangible resource is gaining ground and has inspired people to treat it as an asset (Allee, 1997). According to Bose (2004), knowledge and its influences on all facets of an organisation have become the main focus in the 21st century. Recognizing that knowledge as a distinct feature for sustaining growth, organizations start to pay attention to better leverage their organizational knowledge to create value. However, although most organizations acknowledge the importance of knowledge as one of their valuable resources, there are still many that do not focus on managing and enhancing their 'knowledge' capital. Choppin (1996) states, although many organizations are aware of the valuable assets of human resources, not many really capture the full value of the assets. Friedman *et al.*

(1997) note that very rarely critical information is being acquired or captured, and even when acquired very seldom the critical information is turned into knowledge. According to Davenport and Prusak (2000), many organizations that attempt to manage organizational knowledge initiatives are involved in managing a mixture of knowledge and information, or to some, even data. Occasionally KM researchers use the term 'knowledge' as a collective noun to represent the knowledge pyramid that consists of three elements: data, information and knowledge (Girard, 2006). However, in practice, many managers could not make a clear distinction between data, information and knowledge (Davenport and Prusak, 2000). In fact the concepts of knowledge and information discussed in the KM literature seems to be overlapping (Singh, 2007).

Every organizational knowledge asset comprises of knowledge in the form of documentation/information and also knowledge which is set in within the organisations' culture, processes and routines as well as in the form of skills and 'growing' learning experiences, and expertise of the workforce. In trying to create value to improve performance from the knowledge assets, organisations are struggling with the intangible resource. This is because tacit knowledge is reflected through people's actions and behaviours as it is embedded in people's minds and difficult to express (Al-Alawi, Al-Marzooqi and Mohammed, 2007) furthermore is often very context-specific (Endres et al., 2007).

Brooking (1999) indicates that it is actually the employees' knowledge, the know-how, experience and competencies they possess that are more valuable and these are assets that are not permanent, but are transient. This impermanent organizational asset is easily lost and this happens every time when employees leave their organization. They will take with them their tacit knowledge. This

'knowledge-walkout' phenomenon will continue until the companies find ways to manage their organizational knowledge assets. Pemberton and Stonehouse (2002) note, employers often only recognize the value of such tacit knowledge on the departure of their personnel, especially when replacements cannot perform the given job effectively. According to Cheung et al (2007) a lot of valuable organisation's knowledge is usually not noticed, stored and utilized until the knowledge is lost when the employee leaves the organisation. To avoid this phenomenon knowledge needs to be captured, interpreted and transferred in a certain way so that it could continuously serve the organisation regardless of the initially intention of collecting it (Smith, 2004).

Given that most valuable organizational knowledge assets do not behave like physical assets (Boisot, 1998), they must be managed properly. According to Pemberton, Stonehouse and Francis (2002) through KM, organisation should exploit the potential of knowledge to achieve superior performance by not only focusing on explicit knowledge but also more importantly looking into tacit knowledge that most organisations fail to incorporate in their KM approach. The intangible characteristics of tacit knowledge such as skills, expertise and experience make it difficult to 'manage'. In fact, according to Metaxiotis, Ergazskis and Psarras (2005), it is the most difficult knowledge to manage as it originates and is applied within people's minds. Since tacit knowledge is embedded in organisational processes, systems, tools and techniques it has to be gathered and preserved for furthering organisations' objectives as well as to avoid 'knowledge lost' (Singh, 2007). To manage these types of knowledge (tacit) as well as the explicit knowledge, organizations adopt KM. However, according to Yahya and Goh (2002) knowledge-driven organisations may require a different management approach in comparison to the non knowledge-driven organisations.

Knowledge-driven organisations need to focus on developing personnel who can tap information and turn it into useful knowledge for the organisation (Yahya and Goh, 2002).

2.2.2 Knowledge Management concept

KM concepts have been defined with various interpretations that lead to several possible approaches for KM initiatives. This is because different perspectives of KM concepts can lead to different definitions (Davenport and Prusak, 2000). Arguably, it is difficult to have a general consensus since different people have their own interpretations. KM has received much attention from practitioners and scholars from various backgrounds. Hence KM will be interpreted differently depending on one's background, as Chong and Choi (2005) state that KM practitioners and researchers have a tendency to define knowledge management based on their fields and interests. Knowledge management includes managing explicit knowledge that can be readily documented and tacit knowledge that resides in the head of individual (know-what and know-how), which can be transferred through interaction and socialization (Al-Hawamdeh, 2003). According to English and Baker (2006), organisational 'know-how' is the detailed knowledge of the theory and definite practice of a procedure or process while Al-Hawamdeh (2003) describes it as details of technical expertise.

Quintas, Lefrere and Jones (1997) suggest that it is difficult to understand the possible processes involved in deciding any kind of KM initiatives or activities especially when it is difficult to determine the scope and definition of KM, which is emerging and evolving. Call (2005) reports that KM projects are increasingly ending up in failure caused by lack of understanding of what KM involves to and how it could be managed. A similar view was highlighted by Cheung et. al. (2007)

that many KM projects failed due to lack of knowledge on KM and KM organisation. According to Al-Hawamdeh (2003), Jakubik (2007) and McAdam and McCreedy (1999), KM is still an emerging field compared to those that are established. Some claim that KM is a new organizational strategy (Quintas, Lefrere and Jones, 1997), a latest information technology (Ruggles, 1997) or a business process (Goethe and Carlyle, 2007).

According to Metaxiotis, Ergazakis and Psarras (2005), KM researchers seem to have a general agreement on KM definition by Davenport and Prusak (2000) that describe KM as the efforts of exploiting and developing the organisational knowledge asset (explicit and tacit) to achieve the organisation objectives. English and Baker (2006) define KM as a set of strategies that intends to create, safeguard and use knowledge assets so as to allow it to flow to the right people at the right time. In this way knowledge can be applied to create value for the organisation. On the other hand, cited in McElroy (2003, p.54), KM Consortium International (KMCI) outlines their working definition of KM in relation to knowledge processing: 'knowledge processing is a set of social processes through which people in organizations create and integrate their knowledge. Knowledge management is a management activity that seeks to enhance knowledge processing.'

At any level in the organisation, members of an organisation deal with and manage their own knowledge at their own pace as according to Pfeffer and Sutton (1999) 'knowing' comes from 'doing'. Members of an organization use what they learn from the knowledge that is accessible to take advantage of the opportunities and solve the problems they face every day (Call, 2005). Hence McElroy (2003) notes that what KM managers do is actually managing 'knowledge processes'

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instead of 'knowledge' and the author suggests a more correct term to use is 'knowledge process management' not 'knowledge management'.

In general, any type of KM project tends to capitalize on the potential of organisation knowledge assets. Having a common KM framework that outlines its main elements, principles, and the relationship in which they interact could serve as a reference for KM implementation and application. However since KM definition varies in the literature there seems to be a major disagreement regarding KM framework (Metaxiotis, Ergazakis and Psarras, 2005). The major streams of disagreements regarding KM frameworks (Metaxiotis, Ergazakis and Psarras, 2005) include:

    a. Disagreement on the necessary elements of a KM framework
    b. Disagreement on the ordering or structuring of KM frameworks
    c. Disagreement on the terminology used on KM frameworks
    d. Disagreement on the emphasis that is given in the different KM aspects

Indeed, in general there is no codified and universally accepted KM framework being established (Maier and Remus, 2003; Metaxiotis, Ergazakis and Psarras, 2005; Rubenstein-Montano *et al.*, 2001; Weber *et al.*, 2002). Metaxiotis, Ergazakis and Psarras (2005) elaborate that there are basically three classifications of KM framework being discussed in the literature based on categorization by Holsapple and Joshi (1999): the prescriptive framework (provides general directions of KM without specific details), the descriptive framework (provides specific details of KM and how the procedures can be accomplished) or a combination of both. Generally, the majority of the KM frameworks presented in the literature are mainly prescriptive in nature (Metaxiotis, Ergazakis and Psarras, 2005).

2.2.3 Knowledge Management initiatives/projects

Acknowledging the 'power' of knowledge is not enough until an organization is committed in managing the 'knowledge processes/activities'. Organizations should strategically adopt knowledge management and at the same time incorporate and reflect the organisation's competitive strategy (Hansen, Nohria and Tierney, 1999). In this context, according to Smith (2004) adopting a strategic KM will need a corporate policy, practice, and/or procedure that make clear the details of the KM initiative and its incentive to the employee so that knowledge could be retained and used in the future. KPMG (2000) describe KM initiatives as 'systematic and organised' efforts in using organisation knowledge assets within to improve performance. Riege and Lindsay (2006) elaborate that as a starting point there must be a clearly communicated KM policy and outcomes, followed by strategies to achieve the outcomes together as partnerships with stakeholders. According to Housel and Bell (2001) although KM initiatives or projects are being practised widely, there is no comprehensive understanding of the best techniques for designing and launching KM project/initiatives. It is believed that any types of KM project will carry out a similar function – it is a 'driving force' that facilitates organizational knowledge activities and infrastructure in a knowledge-driven organisation. Clarke and Rollo (2001) state that every company tends to have its own distinctive KM initiatives, which in general are to develop the production and flow of knowledge, and the transmission and utilization of knowledge to create economic value. The essence of this is that it is a process, an activity that serves to meet stakeholder needs. However, is knowledge management a 'process' or 'function'?

In practice KM could be adopted by treating it as a 'process'. In this context, to transform an organization into a knowledge-driven organization, KM as a 'process' could be embedded within an organizations business processes since knowledge is continuously created, shared, transferred and used to perform organizational tasks. On the other hand, to have an organised and structured knowledge management initiative, KM could also be viewed as a 'function' by establishing a special unit to perform certain functions, which attempts to leverage organization knowledge assets. In other words, KM centre or unit should be set up like any other functional units in an organisation such as IT, finance, human resource, marketing, etc. This is because managing knowledge is not just developing knowledge systems, but the most important issue is facilitating people to participate actively in knowledge-related activities. Furthermore, there must be a driving force to support KM activities. Soliman and Spooner (2000) and McCann and Buckner (2004) affirm that KM initiatives must be supported by changing the structural system to provide a supportive environment of k-related activities; these will include changing the rewards and incentives systems, as well as having certain policies on k-related activities. Based on the above discussion, KM could be considered a function as well as a process. The implementation of KM initiatives will depend on the context of one's perspective of KM. Friedman *et al.* (1997) suggest that to successfully manage knowledge assets, organizations have to 'create' or hire knowledge managers with a common task to organize, control, manipulate and exploit information and transform it into knowledge. It is every employee's responsibility to perform the role of a k-worker however, 'it usually needs the efforts of some full-time knowledge personnel to manage and make KM a pervasive phenomenon' (Davenport and Prusak, 2000, p: 107).

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Prior to setting up KM initiatives it is imperative to understand KM from both systems and human perspectives. Some authors emphasize more on systems, while others focus on human perspectives. Stankosky and Baldanza (2000) place technology as an equally important pillar of KM to the other three pillars, i.e. organisation, learning and leadership. Supported by Mohamed, Stankosky and Murray (2006), the balance and intermingling connection between the four pillars is complex, IT is not the magic bullet for complete success of KM initiative but has been part of a balanced and integrated set of KM components. De Long and Fahey (2000) view KM as enhancing organizational performance by explicitly designing and implementing tools, systems, processes, structures and cultures to improve knowledge activities. From a systems perspective, Sveiby (2002) indicates that KM is about constructing information systems, artificial intelligence, re-engineering, and groupware. However, at the same time Sveiby (2002) acknowledge that KM is about people development issues - training, learning and managing competencies.

Focusing on the human behavioural approach is being driven by the failure of the early IT-based KM approach (Perez-Araos et al., 2007). However, most literature discusses KM from both systems and human perspectives such as Al-Hawamdeh (2001), Carter and Scarborough (2001), Davenport and Prusak (2000), Hibbard and Carillo (1998), Sveiby (2002) and Wiig (1999). Ow (2001) describes KM more towards the organisational behavioural approach and suggests that IT is an enabler to put in place a better platform for structured KM initiatives. According to Hibbard and Carillo (1998), making employees' share their knowledge is no longer a technology challenge – instead it is a corporate culture. Davenport and Prusak (2000) refer to KM as the exploitation and development of an organization's knowledge assets either in the form of explicit (recorded information) or tacit

(expertise, skills and competencies). From the sociotechnical perspective, Coakes, *et al.* (2002) suggest that in any system, considering the 'relationship and interrelationships' between the 'social' and 'technical' elements is an appropriate approach. Therefore adopting this approach for KM could produce an adaptable and flexible system for the people and the organization (Coakes *et al.* 2002).

Strategies to run knowledge activities will depend on the objective of KM implementation or initiatives. Gooijer (2000) states that most KM approaches are geared towards profit-making organizations, which focus on measuring intellectual capital and intangible assets on the balance sheet. He claims that these approaches have limited application for public sectors especially when measuring cultural change. Moreover, McElroy (2003) argues that KM can have a direct impact only on knowledge processing rather than on business performance. In addition, McElroy (2003) affirms that business performance greatly depends on the performance of knowledge processing or activities. According to Massingham (2004), KM not only can be implemented in the context of international business strategy, it can also be applied to other types of organizations. Wiig (2002) however suggests that the ultimate objectives of KM are to improve the effectiveness and sustained viability of any enterprise, from Commercial Corporation, part of society, a nation or citizen. Martensson (2000, p.204) considers KM as 'a prerequisite for higher productivity and flexibility in both private and public sectors'. Massingham (2004) suggests for companies that are interested in KM, there must be a framework for managing knowledge resources to enable the companies to carry out its development in a strategic manner. Therefore, for any type of organization, either private or public sector, adopting KM will enable organizations to achieve their strategic focus by making KM objectives an integral part of the overall organization's objectives.

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It is believed that KM is adopted to help organizations survive in the knowledge-economy era regardless of imprecise interpretations of its definitions. There are various approaches in implementing KM, for example, Davenport and Prusak (2000) examined 31 different KM initiatives/projects and identified that big variation among all the projects are the sources of funding. For some companies, the projects were self-funding, some contracted out the overheads while others - relied on corporate funding in the initial stage and self-funding after a period of time. Some of the projects were embarked upon as centralized projects where KM was established as a functional unit that managed and coordinated the project, while some occurred in a decentralized nature. Despite the differences in their implementation approach, Davenport and Prusak (2000) note that KM projects tend to be alike in certain ways. All the projects being identified had someone responsible of the initiatives. Besides that, most projects tend to have defined objectives. Davenport and Prusak (2000) identify common KM objectives and activities in thirty-one different KM initiatives/projects. The common objectives and activities are summarized in Exhibit 2a.

Exhibit 2 a   KM objectives and activities

KM objectives	Activities
1. Creating Knowledge Repositories	• Treat knowledge as 'entity' • Transforming (codifying) knowledge into knowledge systems for easy retrieval • Eg. Memo, reports, market research, sales presentations, product information etc.
2. Supporting Knowledge Accessibility and transfer	• Knowledge/experts network or knowledge mapping • Utilizing KM tools for k-sharing and transfer • Eg. Yellow pages, pocket guides to expertise
3. Supporting Knowledge Environment/ Culture	• Building awareness and cultural receptivity • Evaluate and value knowledge asset/k-audit • Focusing on the knowledge contribution aspects (appraisal system, etc.)

On the other hand, Bose (2004) notes three broad objectives of KM initiatives set in most organisations:

a) Leveraging the organisation's knowledge

b) Creating new knowledge/promoting innovation

c) Increasing collaboration thereby enhancing employee skill level

There are two most common knowledge activities that will support all the three KM objectives (Bose, 2004):

a) Developing knowledge repositories

b) Forming and nurturing the CoPs

Developing repositories has been part of the information systems and management activities in organisation even before the KM discipline emerged. Databases are created in various organisation systems such as the Management

Information Systems (MIS), Executive Information Systems (EIS), the Decision Support System (DSS), the Marketing Information Systems, and the Electronic Document Management Systems (EDMS), which are developed primarily to support decision-making in the organisation. Apart from those systems, libraries and information centres that operate as part of organisations are considered as focal points where knowledge is centralised through activities such as knowledge acquisition, storage and retrieval. Hence it is the role of the librarian/information personnel to create and promote the knowledge repositories to potential contributors (for content development) and future users (Jenkins, Breakstone and Hixson, 2005). Knowledge creation, capture, organization and transmission are being supported by sophisticated technology. However the biggest problem is not about searching or retrieving information but being unable to digest it due to the 'information overload' problem (Yu, 2006). The author notes that rather than focusing on information access, storage and retrieval, information services should move forward to meet users' changing needs by focusing on identifying, analysing and coordinating the needs of potential user groups.

On the other hand, as a core knowledge strategy for organisations (Coakes and Clarke, 2005), much has been written about CoPs in the literature. According to Swan, Scarborough and Robertson (2002) a CoP is one of the powerful tools that promotes learning and innovation in the organisations. A CoP is 'a group of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis' (Wenger, McDermott and Snyder, 2002, p.4). According to Coakes and Clarke (2005) CoPs interact, learn and rebuild relationships while they practise their skills in terms of certain related subject matter within which they are formed. If conventional CoPs are mainly formed through face-to-face interactions, 'virtual'

CoPs (VCoPs) use ICT as their primary mode to compensate/complement factors such as geographical dispersion and busy schedules for effective interactions (Dube *et al.*, 2005). Arnison and Miller (2002) however suggest that VCoPs should not totally replace the conventional CoPs. Rather the 'flexibility' of VCoPs should complement the conventional CoPs. For example, members of a CoP can support the transformation of tacit knowledge into information by having a shared interaction space facilitated by technology such as emails, teleconferencing, videoconferencing and on-line chat (Coakes, 2005).

A more comprehensive knowledge activity was suggested in Ow (2001) that outlines the 8 key-foci of KM. According to Ow (2001), organizations' knowledge activities (elaborated in Appendix C) have to be aligned with their strategic focus and KM policy. The 8 key elements suggested by Ow (2001) as the focus of KM includes:

- K-identification
- K-acquisition
- K-application
- K-sharing

- K-development
- K-creation
- K-preservation
- K-measurement

Several of the 8 key-foci are very close or overlapping such as the k-identification, k-acquisition, k-development and k-preservation. For example, as we acquire new knowledge to address our knowledge gaps, we are also developing our existing knowledge. However, putting it under a separate knowledge activity will give a clear direction of each activity.

According to Metaxiotis, Ergazakis and Psarras (2005) the second-generation of KM emerged around 1996 when emphasis was given to the development of KM practices, measurement systems, tools and content management. Today, one of the critical KM challenges for organisations who embarked on KM journey is to

develop some methods that could measure the impact of KM and tie it to organisational outcomes (Strategic Direction, 2004). Chourides, Longbottom and Murphy (2003) report findings of research on measuring KM performance. It identified that organisations are aware of the need to demonstrate clear links between KM and performance. Furthermore, since the costs invested on KM are often substantial (Spender, 2006), they need to benchmark their KM initiatives with high-performing knowledge-oriented organisations. This is because from benchmarking they could identify '...useful business practices, innovative ideas, effective operating procedures and winning strategies that can be adopted by an organization to accelerate its own progress by ensuring quality, productivity and cost improvements' Henczel (2002, p.12).

It is important for knowledge activities to be audited through systematic and scientific examination/evaluation in order to provide an evidence-based assessment of the organisation's tacit and explicit knowledge (Cheung *et al.*, 2007). In fact, according to Rodov and Leliaert (2002) there is no one standardized measurement system that is sufficiently developed and globally accepted to measure intangible knowledge. However according to Butler, Letza and Neale (1997), Balanced Score-Card (BSC) has been adopted widely many by organisations as it appears to meet several management needs.

Rodov and Leliaert (2002) discuss the advantages and disadvantages of ten measurement methods that are currently used by organisations to measure intangible assets. These include:

- Invisible Balance-Sheet (IBS)
- Intangible Assets Monitor (IAM)
- Balanced Score-Card (BSC)

- Economic Value Added (EVA™)
- IC-index
- Technology broker (TB)
- Return on assets (ROA) method
- Market Capitalization Method (MCM)
- Direct Intellectual Capital method (DIC)
- Skandia AFS Business Navigator (SBN)

Cheung *et al.* (2007) reveal that, although there are many models for knowledge auditing being proposed, they either have limitations in implementation or are too theoretical. In terms of benchmarking KM with other organizations, identifying benchmarking partners is difficult, as it needs sufficient information about the processes used by benchmarking partner (Henczel, 2002).

While knowledge activities suggested by Bose (2004), Davenport and Prusak (2000) and Ow (2001) are determined by organisations' KM objectives, this does not mean that knowledge activities only exist when KM concepts start emerging. This is because knowledge is always being acquired, created, used and transferred or shared for generations after generations. In other words, knowledge activities do exist even without a structured/planned KM initiative being introduced in an organisation. This leads to the question: why now? According to Singh (2007, p.172) 'KM is not about better things, but knowing how to do things better'. Cheung *et al.* (2007) note that KM can lead an organisation to a way in identifying what they know, and what they do not know. The authors suggest that a systematic/structured approach to KM initiatives will foster the emergence of sharing and the diffusion of knowledge among employees.

Based on the above discussion, KM is a subset of an overall organisational strategic focus, therefore having a series of knowledge activities as part of the organisation planned strategies will facilitate the knowledge-driven organisation achieved their aims and objectives.

2.2.4 KM professionals

KM initiatives, similar to other change initiatives such as BPR, TQM and Learning organisation, will have to face challenges such as the organization's culture, behaviour and environment. Cicmil (1999) states that clearly we need to have different approaches for different types of organisational projects, which also require different skills to deal with the associated levels of ambiguity and uncertainty throughout the project phases. Basically there are four types of projects categories: engineering, new product development, system development and organizational change projects (Cicmil, 1999). Although the level of complexity and ambiguity varies, Saka (2003) suggests that successful change initiatives are commonly associated with the change agents whose role is to facilitate the change process. According to Tan and Kaufmann (2004) project managers involved as change agents should be people who are 'subject-matter' experts in the respective area of responsibility. Having managers who have an excellent project management skill is not enough if detailed understanding of the subject area is lacking (Tan and Kaufmann, 2004). The authors note that having the subject matter expertise will bring together the credibility and respect needed in performing their role.

The emergence of KM has generated new professions in many organisations. Various job titles pertinent to KM practices have been created such as Chief Knowledge Officer, Knowledge Director, Knowledge Architect, Knowledge

Strategist, Knowledge Specialist, Knowledge Manager, and Knowledge Technologist. Al-Hawamdeh (2003) suggests that, even though it is not required to set up KM departments similar to IT centres (which are set up for IT related activities), having specific KM professionals to play the role as facilitators and communicators is important. Different firms will have different job titles and job descriptions for their KM managers. For example Andersen Consulting has 'Knowledge Integrators' who are sufficiently expert in particular domains to determine what knowledge are most valuable and synthesize it. Authors such as Davenport and Prusak (2000) describe 'knowledge administrators' as those whose work focuses on capturing, storing, and maintaining the knowledge that is generated by individuals. Al-Hawamdeh (2003) suggests that KM professionals should actively promote KM practices within the organization. The author also suggests that the responsible professionals should have the necessary skills and competencies to enable them to deal with organizational knowledge (Al-Hawamdeh, 2001). As more and more organizations are transforming themselves to become knowledge-driven organizations, knowledge related jobs are becoming one of the highly demanded positions in knowledge enterprise.

As reported in Davenport and Prusak (2000), any organizations, which show their seriousness towards KM, will need to have 'someone' to undertake the executive level tasks. Although most organizations tend to realize the benefits that knowledge can generate and the need to improve their KM practices, many still place little emphasis on who should be in charge of KM or what criteria or profile KM professionals should have (Al-Hawamdeh, 2003). Depending on the objectives of the KM initiatives any organization adopts, 'change agents' are assigned to perform the appropriate KM roles. Saka (2003) suggests that successful change initiatives are commonly associated with the change agents

whose role is to facilitate the change process. Jones, Herschel and Moesel (2003) refer to change agents such as Chief Knowledge Officers (CKOs) and KM executives as 'knowledge champions' who are responsible for facilitating the acquisition of new knowledge from innovators as well as managing the complex process of knowledge activities such as acquisition, storage/archiving and dissemination. Earl (1999) suggests that the leadership role of CKO is important in KM infrastructure as he/she is responsible for the development and accomplishment of KM goals through strategic initiatives. Al-Hawamdeh (2003) highlights that for an organization where KM is not really integrated throughout the entire workforce there is a need for KM 'champions' to run the initiatives. These KM 'champions' form a KM team that will perform the function of co-ordinating and integrating the organizational knowledge assets and activities.

While literature on KM is continuously being published, not many sources discuss KM professionals. As a field that is still evolving there is limited literature expressing terms such as knowledge managers, knowledge professionals, KM practitioners, KM leaders and KM members in a concise manner. Even where there is, the meanings or definitions described by one author are different from another. Al-Hawamdeh (2003) indicates that knowledge professionals should be distinguished from knowledge workers, and he further emphasizes that knowledge workers are anyone in organisations that deal with knowledge-intensive work. On the other hand, knowledge professionals are those who manage the KM initiatives/projects, who could act as a bridge between knowledge workers and top management. Allee (1997) use the term 'knowledge managers' to address those involved in the development and implementation of KM supporting technologies and infrastructure.

Davenport and Prusak (2000) classify those involved in managing KM projects as KM workers and Knowledge project managers. KM workers are those who run the day-to-day KM work such as developing knowledge content and designing and restructuring the knowledge based system. Conversely, KM project managers are those who perform the typical project management functions such as developing project objectives, assembling and managing the KM teams, determining and managing customer expectations, monitoring budgets and schedules of the project, and identifying and resolving problems throughout the project. They are considered as the middle level of the KM infrastructure (Davenport and Prusak, 2000). It seems that setting up a responsibility team at early stage in the plan to develop and implement KM is important and should never be ignored at any cost in the making of a successful and competitive organization. On the other hand, other authors such as Malhotra (2002) uses different terms for describing personnel involved in the KM project. He addresses those who are involved in the development and design of any type of KM systems as KM executives. Tiessen, Andriessen and Lekanne deprez (2000) view knowledge professionals differently by stating that they can be anyone in an organization where their job involves largely converting data and information as well as other intangible factors such as feelings and ideas, into meaningful knowledge. Knowledge professionals are those who are highly trained personnel with specialist backgrounds with a specific aptitude for knowledge (Tiessen, Andriessen and Lekanne deprez, 2000). This definition is consistent with the definition of knowledge workers written in much KM literature (Al-Hawamdeh, 2003; Allee, 1997; Davenport and Prusak, 2000; Singh, 2007), which refers to the employees of the knowledge-based organisation. There should be a distinction made between the role and competencies of knowledge workers and those of knowledge professionals (KM professionals) as knowledge workers are people in the organisation involved in knowledge-intensive

work while the knowledge professional is someone who acts as intermediary between knowledge workers and decision-makers (Singh, 2007).

There are growing numbers today of knowledge enterprises that set up special teams to manage their KM initiatives. More companies are aware that KM initiatives must be properly structured so they could be adopted successfully. KM could be viewed as another change project. Therefore there is a need to have managers with a background in project management and change management as well as technology management (Davenport and Prusak, 2000). Ruggles (1997) reported in one of his KM surveys that among the eleven biggest difficulties in KM practice is that of identifying the right team/leader for knowledge initiatives. Identifying suitable candidates to manage KM is getting critical today especially for those organisations that are just about to start adopting KM. According to Broadbent (1998), KM does not belong to any particular group or even any specific profession or industry. However librarians or information specialists have solid and long-term values in organizing and codifying information sources. For example, core knowledge activities such as improving access to information, managing a collection and developing knowledge solutions and content are fundamental work of information profession (Milne, 2007). Indeed according to Milne (2007) the information profession has a core contribution in developing an organisational taxonomy. Organizational taxonomy is a classification system which aspires to be: 'a correlation of the different functional languages used by enterprise ... to support a mechanism for navigating ... authority for tagging organisation's documents and information objects...knowledge maps ... a knowledge base in its own right' (Gilchrist, 2001, p.101). According to Chaudhry and Higgins (2003) there is evidence that suggests that information professionals are prepared to take up the roles as KM professionals and in fact indicates that

the Information Studies (IS) education programme should respond to changes as the KM discipline emerges. Singh (2007) suggests that designing the IS education programme should incorporate KM-related competencies since KM is multidisciplinary and interdisciplinary in nature.

The confusion of the term used for KM professionals will remain. However there is a need to have appropriate KM knowledge and skills that are accountable for KM managers' given tasks, KM expenditure and their performance to the stakeholders.

2.2.5 Technical competency

According to Fowler *et al.* (2000) competencies are intangible and dynamic but, identifying them is a vital yet an elusive and growing problem for management. The lack of a precise and commonly accepted definition of the term competences, competency and competencies in the literature is regarded as problematic and reflects conceptual ambiguity (Garavan, 1997; Hoffmann, 1999; Iles, 2001; Robinson *et al.*, 2007). Although there are a number of sources that study this area there is little agreement or consensus on the precise definition of the word competency (Hoffmann, 1999; Schippmann *et al.*, 2000). In fact the words competence, competency and competencies are used interchangeably in the literature. The researcher thus uses the word interchangeably according to the terms used by authors. According to Hoffman (1999) since the word 'competency' has not been clearly defined the meaning of competency has evolved based on authors' focus and context of work.

Rowe (1995) gives emphasis to the need for a clear terminology that would make a distinction between the representation of the context with regards to the terms

competences and competencies. The author defines 'competences' as a set of skills, which are satisfactorily performed; while the term 'competencies' represent the behaviour adopted in competent performance. Hoffmann (1999) concludes there are two approaches to defining the concept of competency. One is defined as the inputs-based approach which is predominantly an American approach and concern - the underlying attributes that are required to attain competent performance. The other approach is the output-based approach, which is proposed mostly by English authors that describe competency as a set of performances and standards. Definitions of the term competencies vary from 'behaviours or actions', 'underlying abilities or characteristics' to 'the outcomes of actions' (Iles, 2001). Similarly, drawing on the work of others, Hoffmann (1999, p.276) summarizes the categorizations of definitions for the term competency as:

- observable performance (Boam and Sparrow, 1992; Bowden and Masters, 1993)
- the standard or quality of the outcome of the person's performance (Hager, Anthanasou and Gonzi, 1994; Rutherford, 1995)
- underlying attributes of a person (Boyatzis, 1982; Sternberg and Kolligian, 1990)

Other literature that elaborates about competencies includes the works of Garavan and McGuire (2001) which categories it into three distinct perspectives based on the Boon and Van der Klink (2001) concept of competencies. The authors define competencies:

- as characteristics of individuals
- as characteristics of organisations (resource-based perspectives, e.g. a competent employee creates competitive advantage)
- as a mode of discourse between education and labour market (educational sector as a partner in the creation of knowledge and development of human resources).

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From another perspective, Murray (2003) described competencies in terms of two broad definitions:

- Personal (or managerial) competencies – comprised of personal attributes, skills, and behaviours to perform a function or task of a job
- Organisation competencies – defined by processes, systems and practices that enable the organisation to turn personal competencies into organisation-wide competencies

UNIDO (2002, p.8) defines competencies as '... a set of skills, related knowledge and attributes that allow an individual to perform a task or an activity within a specific function or job'. UNIDO (2002, p.10) classifies competencies into three :

- *Managerial competencies* – competencies that are considered essential for all staff with managerial or supervisory position, i.e. analysis and decision-making, team leadership and change management.
- *Generic competencies* - competencies, which are considered essential to all staff, regardless of their function or level i.e. communication, word processing.
- *Technical/functional competencies* - specific competencies essential to perform any job in the organization within a defined technical or functional area of work.

According to Boam and Sparrow (1992) the term 'technical competency' will again muddle the definition of the word 'competency' which already involves confusion. According to May (1999) technical competencies are part of 'management competencies'. Some technical competencies are 'unique to a business or a sector' (such as regulatory requirements for financial services industries) while some technical competencies are 'occupation– related' (e.g. an HR manager has to have knowledge of employment law) while other technical competencies are common competencies to all managers regardless of discipline or organisation,

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such as IT user competencies (May, 1999). Boam and Sparrow (1992, p.19) describe technical competencies as 'skills and abilities apply particularly to those jobs with a professional component'. For example the job of a solicitor demands a specific set of technical skills and knowledge such as knowing the law of tort and how to draw up a will (Boam and Sparrow, 1992). In a similar context UNIDO (2002) defines technical/functional competencies within a defined technical or functional area of work, and include skills like Investment Management, Human Resource Management or Accountancy. According to Bratton (2004, p.4) technical or functional competencies are '... the attributes that differentiate one job from another – the things that make a customer service representative different from a systems analyst or HR manager.' In a KM context, technical competencies would be skills and knowledge within the specific KM subject matters.

According to Homer (2001) competency management is now being acknowledged as an important process to ensure that training plans are aligned to an organisational strategic focus. The author reveals that competencies could help in implementing cost-effective and meaningful training programmes and development practices, determining changes in employees' performance and also help in the selection of better candidates. The use of competency frameworks as a basis for workplace learning initiatives is now relatively commonplace in organisations (Garavan, 1997). They are use as part of the human performance improvement process through education or training (Hoffmann, 1999). According to Cowling, Newman and Leigh (1999) they are used as a means to achieve higher standards of performance through improved selection, training and reward management in various types of organisations regardless of whether these relate to industry, commerce or public services.

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(Cheung *et al.*, 2007; Rodov and Leliaert, 2002). However several discussions on KM roles and technical competencies are of great length and can be found in the work of Al-Hawamdeh (2003), Davenport and Prusak (2000) and, Abell and Ward (2000). Abell and Ward (2000) report findings of research funded by the UK Library & Information Commission on KM practitioners' roles. It identified that KM practitioners may perform the role of a knowledge leader, knowledge manager, knowledge navigator, knowledge synthesizer, knowledge broker, content editor or even web master. Davenport and Prusak (2000) explore four levels of KM roles: knowledge-oriented personnel, KM workers, knowledge project managers and chief knowledge officer. Exhibit 2b is constructed based on Davenport and Prusak's (2000) discussion on the KM roles. The descriptions of KM personnel that involve in each level are:

a) Knowledge-oriented personnel – involves individuals who manage knowledge within their own job.

b) KM workers – involves people who perform the more technical and specific function in KM activities i.e. writing the HTML files and developing knowledge content systems.

c) Managers of knowledge projects – involves people who will manage the flow of the KM project itself. It will include specific knowledge in project management, IT management and change management. Davenport and Prusak (2000) point out that, ideally, the knowledge project managers should have a background that focuses on the creation, use and distribution of knowledge.

d) Chief knowledge officer (CKO) – a senior management position which is complex and multifaceted that needs a blend of technical, human and financial skills. The person holds three critical responsibilities: creating knowledge infrastructure, building knowledge culture and making all the investment in KM pay off economically.

Exhibit 2 b   Knowledge Management roles

Level 4
Chief Knowledge Officer
Creating KM infrastructure, building overall k-culture
and making KM investment pay off

Level 3
Knowledge project managers
Managing the flow of KM projects

Level 2
Knowledge management workers
Performing technical and specific functions of KM activities

Level 1
Knowledge-oriented personnel
Managing knowledge within their own job function

The study for organisational change projects shows that choosing the right people who are motivated, able and competent to carry out the change is critical (Cicmil, 1999). This is important to minimize risk and failure while helping the organization to achieve its strategic focus. In the study on 31 KM projects, Davenport and Prusak (2000) reveal that one of the KM pitfalls is when an organisation does not have personnel (knowledge champions) whose primary job is to extract and edit knowledge from others who have it, facilitate knowledge networks and set up and manage knowledge technology and infrastructure. According to Pemberton, Stonehouse and Francis (2002) to become a knowledge-driven organisation, one of the potential barriers to achieve KM objectives is when there is no 'knowledge champions' who are supposed to facilitate KM. Jones, Herschel and Moesel (2003) describe knowledge champions as change agents who facilitate knowledge acquisitions from knowledge innovators and at the same time facilitate knowledge sharing and the effective use of organizational memory by codifying and institutionalising new knowledge. According to Davenport and Prusak (2000), the role in managing KM projects will demand an unusual mix of psychological,

technological and business skills. Some KM managers' skills, which were highlighted in KM sources, are summarized below (Exhibit 2c):

Exhibit 2 c   KM skills

KM Skills	KM literature
1. Able to frame and structure valuable knowledge (k-mapping)	(Al-Hawamdeh, 2003; Clarke and Rollo, 2001; Davenport and Prusak, 2000; Housel and Bell, 2001; Singh, 2007)
2. Able to enhance the transformation of data to information and then knowledge (difference between IM and KM)	(Al-Hawamdeh, 2003; Chaudhry and Higgins, 2003; Clarke and Rollo, 2001; Davenport and Prusak, 2000; Friedman et al., 1997; McElroy, 2003; Plessis, 2007; Singh, 2007)
3. Able to recognize the potential of technology	(Al-Hawamdeh, 2003; Coakes, 2005; Housel and Bell, 2001; Ow, 2001; Singh, 2007)
4. Able to work within the organizational KM structure and team, facilitate and enable CoPs	(Al-Hawamdeh, 2003; Coakes, 2005; Davenport and Prusak, 2000; Ow, 2001; Pemberton et al., 2007; Pemberton et al., 2002; Plessis, 2007)
5. Able to facilitate knowledge acquisition, sharing and application	(Al-Hawamdeh, 2003; Allee, 1997; Bouthilier and Shearer, 2002; Clarke and Rollo, 2001; Jones et al., 2003; Ow, 2001)
6. Able to facilitate the k-measurement and policy issues	(Cheung et al., 2007; Davenport and Prusak, 2000; Ow, 2001; Rodov and Leliaert, 2002)
7. Able to understand the primary business processes	(Chaudhry and Higgins, 2003; Davenport and Prusak, 2000; Jones et al., 2003)
8. Able to develop taxonomy	(Chaudhry and Tan, 2005; Gilchrist, 2001; Milne, 2007)

Those who are initially involved in KM activities are mainly the information technology (IT) or information management (IM) professionals. However since many are aware that KM is not just about systems, KM concerns other specialists as well, including those from business management and human resources. Information professionals who are trained in managing explicit knowledge could

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utilize their skills in various aspects of KM activities. Koenig (1997) claims that authors in the business community are just in discovery process of venturing KM while information professionals/librarians have been in KM business for years. Researchers and practitioners in computer and information science have well defined skills and expertise in information management that will make a huge contribution to KM theory and practice (Brogan, Hingston and Wilson, 2001). For instance, Bouthilier and Shearer (2002) highlight that skill held by information professionals, such as knowledge identification and acquisition can benefit KM practices as they facilitate a comprehensive KM initiative. However, according to Al-Hawamdeh (2003) although having information management skills is vital for KM practices, they are not sufficient. This is because information professionals are well trained for managing the explicit part of knowledge. Activities such as cataloguing, classifying, indexing, abstracting, and other related information 'storage and retrieval' activities are associated with Information Management. In general, creating a knowledge environment requires an understanding of huge complexity of knowledge and information resources and the dynamic interactions of people as well as information. It requires a new combination of roles, responsibilities and skills (TFPL, 1999). Therefore, having a standard competency model or framework could help organisations in building organisational capability. This is because a competency framework could assist an organisation in its recruitment and selection process. Furthermore according to a report by the Institute of Health Care Department, UK (1998) competency frameworks could also support and facilitate organisations in drafting job and role specifications as well as in their development and training strategies.

2.2.7 KM-related training

As part of organizational learning initiatives, training may build skills and knowledge levels that could support an employee's productivity. In a broader sense, training can be defined as any effort to improve managers' or employees' job-related knowledge and skills (Kitching and Blackburn, 2002). Martin *et al.* (2007, p.578) refer to training as 'the transfer of information in a formal setting for the purpose of increasing human capital'. Training is 'a planned activity conducted over the short term to impart specific job-related knowledge, skills and attitudes (KSA) (Corbridge and Pilbeam, 1998, p.222). Training involves any learning activity whose intention is to allow the acquisition of specific knowledge and skills related to certain jobs or tasks (Cole, 1997). The significant element emphasized in defining training is that it involves learning activities that focus on job-related knowledge and skills.

Roberts (2006) affirms that training is needed to equip employees to perform their tasks so that the desired performance can be achieved. For that reason, successful companies emphasize training and development seriously (Development and Learning, 2004). Big companies like Motorola believe that training could develop key attributes such as responsiveness, adaptability and creativity (Read and Kleiner, 1996). However the authors affirm that since training is crucial and costly, organizations should capitalize on this investment by making it as effective as possible. Supported by Brown (1994), training is appropriate when organizations can expect to gain more benefit from the cost they invested in it. What is most important to be aware of is that there is no 'one-size fits-all' concept in addressing skills gaps (Longenecker and Fink, 2005). The authors elaborate that in terms of training, different level of managers will have different

views and needs which must be recognized and addressed. It is important for organisations to make sure that employees are given appropriate training. Nevertheless how could employers/employees know whether training is needed? According to Laird (2003) if the answer to: "Does the employee know how to meet the performance standards for an accountable task?" is *No*, than training is needed besides other interventions such as counselling, job redesign, reward systems etc. Delker (1990) in his study on basic skills education programmes in business and industry highlights that successful training programmes are those that are competency-based. Further Sullivan (1995) suggests that training courses will be effective when a competency-based training approach is adopted, as it first has to identify the essential competencies of the job.

Much KM literature mention training within the context of developing organisational or employees competencies and creating KM awareness among employees in knowledge-based organisations such as in Gorelick and Tantawy-Monson (2005), Hung *et al.* (2005), Nargund and Thomas (2007) and Psarras (2006). There is also KM literature that focuses on KM training and education in the area of curriculum design such as in Al-Hawamdeh (2005), Al-Hawamdeh (2001), Chaudhry and Higgins (2003), and Mark, Philip and Vicky (2001). KM training and awareness courses are essential in order for staff to understand the KM development philosophy that the organization has adopted and are considered to be one of the key success factors for KM implementation (Jennex and Zakharova, 2005; KPMG, 2000). Suggestions that KM training programmes are essential for employees to become totally and intensely familiar with the organisational KM concepts are also highlighted in Akhavan, Jafari and Fathian (2006) and can be found in much KM literature. Nevertheless this type of training is more about KM familiarisation activities for employees or knowledge workers as

the organisation moves towards becoming a knowledge-driven organisation. Newman (2002) argues that KM is a broad spectrum and identifying appropriate KM education or training is not a straight forward process as some employees might need specialized training in specific methods or practices or a fundamental understanding of principles of KM in general. Based on that reason it is important for individuals or organisations to understand which training is appropriate in improving their KM skills and would help them to perform their KM tasks.

To fulfil the growing demand for skilled and knowledge professions and the rapid shift towards a knowledge economy, besides consulting firms, a number of universities are taking the opportunities to offer KM in their education programmes. According to Newman (2002) there is a range of KM related courses from PhDs and certifications to any specific KM courses offered by industry groups, consulting companies, non-profit associations and universities. Recent development shows that there is a trend where many KM certification programmes are being offered, as there is demand for such programmes. According to Lambe (2006) KM novices often seek certification programmes and there are so many training providers that cater for such a demand yet the merits of certification programmes need to be clearly understood. Lambe (2006) identifies four groups that seek certification KM programmes and note their reasons:

- Novices who would like to have an immediate and reliable foundation in KM general awareness and concepts
- Practitioners who intend to have their own practice certified or validated against professional standards and commonly agreed approaches
- Practitioners who view career opportunities from obtaining professional recognition embodied in the certification process

- Consultant who would like a qualification that gives them competitive selling edge.

As training providers who are responsible for providing adequate KM knowledge and skills, these bodies are faced with big challenges in moulding future KM professionals as KM is interpreted and practised in various ways. Therefore training programmes should meet the industry/KM practitioners' need. Ignoring the needs of the industry will lead to the problems of irrelevancy in training and education programmes and which will then cause a lack of KM competencies among those involved in managing KM initiatives.

2.3   Past research investigating similar or related topics

TFPL's KM skills map is one of the key results of international research established in 1999 by TFPL Ltd. and the UK Government's Library and Information Commission (LIC). The KM skills map was produced in 1999, which was then updated in 2000. The objective of the research (TFPL, 1999) which was carried out between November 1998 and June 1999 covers: review and identification of the required skills in KM and exploration of the need for the current levels of provision for continuing professional development and recommendation for appropriate ways to meet and improve those needs. The research which identifies sixteen competency groups ranging from information mapping and business analysis to interpersonal skills and team networking, and technology understanding (Lambe, 2006) divides the skills required in KM into 3 categories (TFPL, 1999):

- Core competencies – educational, professional and technical background and expertise
- Survival skills – skills required in any role so that core competencies could be applied effectively

- KM enabling skills - mix of change management skills and those associated with information and resource management skills

The rationale of the above study was to explore the characteristics of KM adopters within the objectives and to investigate the roles, skills and required training in as many sectors as possible. Five hundred organisations participated in the study. Details of the methodology adopted in the study are presented in Appendix D. The research methodology involved three phases (TFPL, 1999):

- Phase 1 – Project initiation
- Phase 2 – Desk research
- Phase 3 – Data collection and analysis
  - *In-depth case study*
  - *Questionnaire survey*
  - *Workshops and consultations*
  - *Review*

The scope of skills and competencies studied is broad and the findings reveal the roles and responsibilities of KM teams with relevant competencies including those, which are KM related, but mainly still focusing on the managerial and generic skills. Furthermore since it is difficult to have a clear boundary for each category of competencies, it is difficult to see the justification of certain skills being clustered into certain categories. For example 'IT application competency' is considered one of the *Core business/enabling skills* while the 'IT application understanding' is categorized under the *KM enabling skills*. On the other hand *Information Management skills, writing/journalism* is another category that lists skills such as abstracting and codifying, building taxonomies, document management and vendor management. 12 people (an average) were interviewed in each organisation while for the questionnaire survey 78 questionnaires were collected from 500 hundred distributed (400 Europe and 100 US). The analysis

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was mainly based on the qualitative data while the quantitative data from the questionnaire serves as a background to develop the KM activities and roles.

2.4   Gaps in knowledge of KM competency framework

In general the definition of the word competency is unclear; the definition of 'technical' competency is even vaguer. Therefore, there is a need to know and understand how it is being interpreted by those who are directly involved in a workplace. Secondly, in general the competency literature adopts the positivist tradition of research, which adopts the quantitative approach despite the fact that the view and understanding of competence and competencies should not ignore the internal organisational context along with employees' roles and experiences of work (Garavan and McGuire, 2001). Therefore, this research intends to explore the technical competencies within KM initiatives based on the practitioners' experience by adopting the qualitative approach.

Within the context of KM, literature and works relating to KM competency are very limited. Based on a bibliography on KM by Rollet (2004) that covers 1089 publications from 1998 until 2003, and also another annotated bibliography on the learning organisation in relation to international development by Hovland (2003), none of the sources gives a direct focus on or reference to KM managers' competency. Some literature on competencies refers to developing organizational competencies. Still, little consideration is given to researching KM managers' technical skills in the literature from 2004 onwards, and even where there is, it is only being discussed as a small part/section of the whole discussion of a KM article. For example, it appears indirectly in an article that discussed KM in general, or on developing taxonomy or CoPs.

Literature on KM competencies in general discusses enhancing or developing organisations' or employees' competencies through KM such as in Lucarelli and Peters (2001), and Lustri, Miura and Takahashi (2007). However, books by Davenport and Prusak (2000) and Al-Hawamdeh (2003) tend to elaborate the discussions on KM managers' skills and role. On the other hand, literature on developing competencies for Library and Information Science (LIS) professionals with their new roles in KM can be found in Abel et al. (2003), Al-Hawamdeh (2005), Chaudhry and Higgins (2003), McNeil and Giesecke (2001) and Sajjad (2006). Therefore, it is the intention of this study to gain insight into the KM practitioners' technical competencies involved in managing KM. One comprehensive study, the TFPL research, was established in November 1998 and ran until June 1999. Considering in 1998/1999 the second generation (human approach) of KM was just about to emerge (Carter and Scarborough, 2001; Koch, 2002) perhaps most KM practitioners were experiencing the first generation of KM (systems approach) when the study was conducted. According to Metaxiotis, Ergazakis and Psarras (2005) only during this time was KM research focusing on KM implementation, measurement, tools and content management. Furthermore, although CoPs exist even before KM emerged, according to Koch (2002) it was during this time (i.e. the second generation of KM) that the concept of CoPs being created and developed by Lave and Wenger (1991) and was being increasingly noted as an important element in KM. Also, during the last few years developing knowledge taxonomy has become a focus of KM (Wyllie, 2006). Therefore when TFPL established the research work, these new issues were considered as 'new' issues in the second generation of KM. With the development, according to Garavan and McGuire (2001), competencies that were considered significant in the past would become outdated easily through changes of the organisations' surroundings. Organisations' strategies and policies have to be dynamic in

responding to business trends and surroundings, therefore competencies need to be evaluated and identified according to current situation. Furthermore, XYZ is already in its 6th year of its KM establishment and issues such as CoPs, developing taxonomies and content have already become the common issues in KM. Therefore, this study intends to understand what competencies are required by KM managers in managing a structured, systematic and planned KM initiative.

Although the TFPL research on KM competencies claims that it is a major international research project that aims to explore KM roles and skills, the data were collected from companies and individual around Europe and US only. As the adoption of KM in Malaysia was a bit later than organisation in the west, the researcher believes that there is a need to conduct a research, which aims to explore the insights of KM within Malaysian context. As the first research on KM managers' competencies established in a Malaysian government agency, it is important to make sure that the research perspective addresses the specific issue of KM as close as possible within the setting of a Malaysian organization so that a more local and practical approach could be taken.

The TFPL research participants were mainly the information professionals (Library and Information Science, Information Management and IT personnel) and from a broader perspective (regardless of the type or level of KM implementation/adoption). However from the literature, managing KM involves people from various backgrounds and fields. Therefore XYZ's KM managers (consisting of people from various disciplines) who were in the team that managed a structured and planned KM initiative (equipped with a KM policy, objectives and roadmap) were chosen as the unit of analysis.

2.5 Developing the conceptual framework of the research

2.5.1 The research framework

The researcher follows the concept mapping approach proposed by Burton (2007) that clarifies the research purpose and the relevance of the literature. The author notes that the conceptual framework should link the literature, core concepts and the research questions, which will then develop as data being gathered and analysed. A concept map is a 'kind of diagram' that outlines main ideas related to certain area or topic and at the same time shows relationships between these ideas (Burton, 2007).

Discussions from previous sections show that there is no clear definition; in fact there are some overlapping perspectives in categorisations and explanations of the term competency, competencies and competence which is why in some literature the words are used interchangeably. In fact it is not restricted to these three terms; they were also used interchangeably with the terms 'knowledge' and 'skills'. In response to lack of consensus, the definition of competencies remains ambiguous, as competencies are 'tacit' in nature. UNIDO's (2002, p.8) concept of 'competencies' defines competencies as '... a set of skills, related knowledge and attributes that allow an individual to perform a task or an activity within a specific job function' as describe earlier. This is adopted at the same time as addressing the other authors' definition of competencies. UNIDO's concept outlines competency in terms of three main categories:

- *Managerial competency* – Competencies, which are considered essential for staff with managerial or supervisory responsibility in any service or programme area, including directors and senior posts.
- *Generic Competency* – Competencies, which are considered essential for all staff, regardless of their function or level.

- *Technical/Functional Competency* – Competencies, which are specific and are considered essential to perform any job in the organization within a defined technical or functional area of work.

From the understanding of literature on competencies, a competency framework is constructed as in Exhibit 2d. The overlapping areas of the circle are addressing the ambiguity of definition taking into account that it is tacit and subjective in nature as said in much literature. Therefore based on the ambiguity in definition as other authors have highlighted it is difficult to draw a definite line in between categories. For example, IT skills could be 'generic' to the HR personnel but 'technical' to the IT personnel based on the level of application. With three categorizations, this study is only focusing on the 'technical' elements or the KM-related competencies.

Exhibit 2 d   Competency Framework
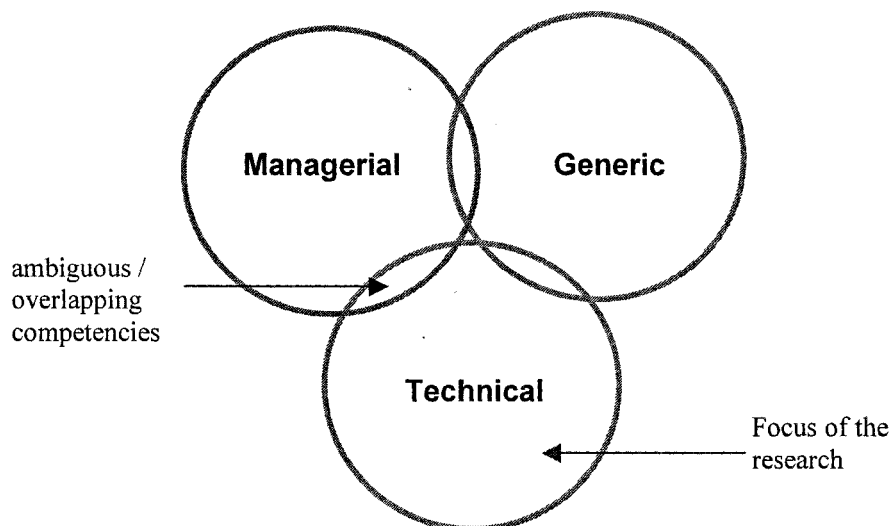
The overall conceptual framework of this study is constructed from both theoretical and applied perspectives, which include the theoretical discussions earlier, as well

as the researcher's perspectives as a KM practitioner. The research conceptual framework (Exhibit 2e) explains the focus of the research and determines the directions of how the research work is conducted. Exhibit 2e is constructed mainly from Davenport and Prusak's (2000) description of KM objectives and activities and linking it with the UNIDO (2002) competency framework the contribution of training in developing competencies.

Since knowledge has been recognized as one of the crucial assets to help organizations achieve their strategic focus, many organizations have started their KM initiatives to manage their knowledge assets in a more structured environment.

Exhibit 2 e   Research Conceptual Framework

Organizational Goals & Objectives

Organization Strategic Focus

Knowledge Management Objectives

Creating Knowledge Repositories

Supporting Knowledge Accessibility & Transfer

Managing Knowledge Assets

Knowledge Management Initiatives

Knowledge Management Activities

a) Treat knowledge as entity
b) Transform/codify knowledge into knowledge systems for easy retrieval. E.g. memo, reports, market research, sales presentation, product information

a) Develop Knowledge /expert network or knowledge mapping
b) Utilizing KM tools for k-sharing & transfer. E.g. yellow pages, pocket guides to expertise

a) Building awareness and cultural receptivity
b) Evaluate and value knowledge asset-k-audit. Focusing on the knowledge contribution aspects (appraisal system etc.)

Strategic Technical Competencies

KM-related competencies

Learning events & programs

Knowledge Management training

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The connections between KM and an organisational strategic focus were discussed in the theoretical framework that highlighted knowledge as a strategic resource in most organisations. KM therefore is strategically being adopted as a planned and structured approach to capitalize the organisation's knowledge assets by having a planned and structured KM initiative including a KM policy in place, KM objectives that support organisations aims and objectives, a series of KM activities as strategies to achieve KM objectives and KM champions to promote, facilitate and manage KM activities. KM objectives will determine the types of KM activities involved in the initiatives or projects. Davenport and Prusak (2000) define the KM objectives and activities (noted in section 2.2.3) as creating knowledge repositories, supporting knowledge accessibility and transfer, and supporting the knowledge environment/culture. These are also used as terms of reference in this research.

Since an organization's performance mainly depends on the performance of KM (McElroy, 2003), knowledge needs to be managed effectively. Therefore it is crucial for organizations to create and assign KM champions/drivers to facilitate their KM initiative (Al-Hawamdeh, 2003; Davenport and Prusak, 2000; Jones, Herschel and Moesel, 2003; Ow, 2001; Pemberton, Stonehouse and Francis, 2002). Appropriate KM related competencies are needed for KM managers to facilitate knowledge activities such as knowledge sharing, transfer, identification and retention as suggested by Davenport and Prusak (2000) and Al-Hawamdeh (2003). Training initiatives could equip KM personnel with appropriate knowledge and skills specifically related to KM (job-related skills). This is because training which is traditionally considered as a 'trouble-shooting' function is more appropriate to serve as a 'trouble-preventing' role (Bushardt, Fretwell and Cumbest, 1994). With appropriate training, employees become more competent in

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performing their tasks. As part of an organisation's learning initiatives, training has been identified as a process that enhances employees' competencies. According to Garavan and McGuire (2001) organisations are increasingly developing competencies through the implementation of sophisticated human resource development and workplace learning strategies (education and training). The objective of training in competency development is to enable employees to respond to an organisation's business needs (Garavan and McGuire, 2001).

The constructed framework offers a representation of the connections between elements of the research based on the theory and the practical approach of the researcher. It is used to derive the interview questions and also in analysing the data collected from the interview.

2.5.2 Foci of this study

This research examines the essential KM knowledge and skills required in managing KM activities and the implications of KM practitioners' attitudes towards KM-related training. Therefore, the insights of how KM activities or processes are conducted are not the focus rather, 'how' the essential knowledge and skills are important to KM practitioners in performing their KM tasks are emphasized. There are three main areas of inquiry that this research addresses:

a) The 'what' – uncovering KM managers' (respondents') interpretations of the essential KM-related knowledge and skills needed to perform KM tasks.

b) The 'why' – addressing the justifications of why the essential KM-related knowledge and skills are significant to KM managers' tasks

c) The 'how' – exploring how the required knowledge and skills influence the respondents' attitudes towards KM related training.

2.6   Conclusion

Basically, KM is being interpreted from two different perspectives: the systems approach which is said to be the first generation of KM generation and later the human behavioural approach. For that reason, it is common to see that those involved in KM activities are mainly from the information management field since knowledge (explicit) has been managed in a very sophisticated manner long before KM emerged. However, since KM goes beyond managing explicit knowledge, the softer side of KM was addressed and those from the human behavioural track (human resource, business and management, accounting and auditing) start to become involved in KM activities. Since being established in late 1998, many KM related professions have come into being such as knowledge architects, knowledge specialists, content developers, and knowledge managers to perform KM roles and tasks.

Similar to other professions, competency frameworks or models are developed from time to time to assist organisations' capability development. In general competency frameworks are used by organisations for:

- Recruitment and selection process
- Development of job description and specification
- Strategizing education and training programmes.

However, the competency framework or model should not be treated as a 'one-size-fits-all' as it has to be applied in the appropriate context of certain professions or organization. The research conceptual framework is constructed based on the researcher's understanding and interpretations of the literature on the related concepts and how they communicate and link with one another. Since the words knowledge, KM, competency and competencies are being defined differently depending upon the context of explanation, the researcher has adopted certain

concepts suggested in the literature so as to make the research more understandable and focused.

This chapter has highlighted the background theory, and relevant literature for this research and the following chapter (Chapter 3) describes the research methodology and methods adopted in the study. It describes the rationale for adopting the chosen methodology, its philosophical stance, methods and techniques emphasizing a case study approach. The chapter also covers the data collection and analysis strategy employed in the study.

CHAPTER 3: RESEARCH METHODOLOGY AND METHODS

3.1   Introduction

The purpose of this chapter is to discuss the research philosophy and the research strategy adopted in this study. The discussion begin by presenting the researcher philosophical stance, followed by the rationale for choice of research approach, the data collection methods and analysis that were employed and also the pilot study conducted using the online focus group. The methodology and methods adopted in this study is demonstrated in exhibit 3a.

Exhibit 3 a   Research Methodology

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                    ┌─────────────────────────────┐
                    │   RESEARCH METHODOLOGY      │
                    └─────────────────────────────┘

                          Social constructionism
                                    ↓
                              Interpretivism
                                    ↓
                           Qualitative approach
 ┌──────────────┐                  ↓                    ┌──────────────┐
 │  RESEARCH    │  ⇨                                  ⇨ │  RESEARCH    │
 │  OBJECTIVES  │              Single case study         │  FINDINGS    │
 └──────────────┘                  ↓                    └──────────────┘
                           Purposive sampling
                                    ↓
                        E-focus groups (pilot study)
                                    ↓
                       Semi-structured interviews
                                    ↓
                           Narrative analysis
```

3.2 Philosophical stance

Amaratunga *et al.* (2002) argue that a discipline or profession is established through research, which uniquely contributes to the development of a body of knowledge. In business and management research besides the desires to know or learn, it also makes contribution to the development of relevant approaches to the management of organizations. Not only does it provide findings that advance knowledge and understanding, it also addresses business issues and helps to solve managerial problems (Easterby-Smith, Thorpe and Lowe, 2002). Gill and Johnson (2002) state, as well as upgrading knowledge, research serves up as a disciplined and systematic process of help in resolving problems. The scope of research in business and management is wide and allows researchers to explore all kinds of research from different perspectives and contexts depending on its purpose. According to Denscombe (2002), good research is when the direction and topic is a direct outcome at the cutting edge of knowledge, theoretically driven or based on practical problems that could contribute to the advancement of the discipline. In general, one could suggest that through research one could provide suitable answers or solutions to all kinds of questions and problems.

Since social science research is about the study of human beings, unlike 'objects' as in the natural science research, each type of research is associated with different types of paradigms. However, the terms and categories used by different authors to describe research traditions are not mutually exclusive and there is no definitive way to categorise the various research traditions and in fact some are overlapping (List, 2005; Miles and Huberman, 1994; Patton, 2002). The various groupings are not clear which according to Miles and Hubermann (1994, p:5) the overlapping perspectives of research orientations are reflected in their views on

epistemologies; '... the lines between epistemologies have become blurred...'.

For example, Crotty (1998) suggests '5 perspectives', Cresswell (2003) a different '5 traditions', Schwant (1994) uses '3 epistemological stance', Denzin and Lincoln (2000) with '7 paradigms/theories', Patton (2002) suggests '16 theoretical traditions' and Pepper (1957) with '4 world hypothesis' as cited in https://people.sunyit.edu/ ~harrell/Pepper/Index.htm. Based on the abovementioned, one therefore can conclude that it is difficult to position a methodology approach of research under an exact and label or paradigm. Exhibit 3b outlines the categorizations of research traditions extracted from List (2005); Patton (2002) and Place (1997).

Knowledge can be generated from practical experiences, observation and systematic experimentation (Benton and Craib, 2001). They further express there are prejudices, superstitions and unquestioned assumptions that are obstructions to scientific progress, and they believe a philosophy could help researcher to clear the different views. In understanding the subject of philosophy one will be able to reason out the investigating phenomena with a clear perspective. Therefore, before adopting certain methodologies of research, it is important for the researcher to understand the framework of research methodology. Remenyi *et al.* (1998) define research methodology as a procedural framework within which the research is conducted. They emphasise that in any research work, researchers should consider many factors before choosing appropriate methodology with the topic or subject to be research and making the specific research questions as the main drivers.

Exhibit 3 b   Categorization of research traditions

Authors	Categories of research traditions
Patton (2002)	"Twenty theoretical traditions and orientations": Ethnography, Autoethnography and evocative forms of inquiry, Truth and reality-oriented correspondence theory (Positivist, Realist and Analytic Induction Approaches), Social construction and constructionism, Phenomenology, Heuristic inquiry, Qualitative heuristics, Ethnomethodology, Symbolic interaction, Hermeneutics, Narratology/Narrative analysis, Ecology psychology, Systems perspective and theory, Chaos and complexity theory: Non linear dynamics and Grounded Theory.
Lincoln and Guba (2000)	"Alternative inquiry paradigms": Positivism, Post-positivism, Critical theory, Constructivism and Participatory.
Schwandt (2000)	"Three philosophical stances": Interpretivism, Hermeneutics, and Social constructionism.
Crotty (1998)	"Three primary epistemological": Objectivism, Constructionism, and Subjectivism. "Theoretical perspectives": Positivism (and postpositivism), Interpretivism, Critical inquiry, Feminism, and Post-modernism.
Creswell (1998)	"Five qualitative traditions of inquiry": biography, Phenomenology, Grounded theory, Ethnography, and Case study.
Pepper (1957)	"Four World Hypothesis": Formism, Mechanism, Organicism and Contextulaism

Several areas to be considered in deciding research method have been suggested in the literature, which include the context of the study or phenomenon, the research goals, the level and nature of research questions, practical reflection and resources availability. The traditional perspective of research methodology states that there are two general approaches - the quantitative and qualitative research. This traditional view also implies that quantitative research deals in data that can be quantified, while qualitative research examines data that are narrative

(Easterby-Smith, Thorpe and Lowe, 2002). However, many recognize that the researcher's personal philosophy and beliefs have some influence on the research method adopted (Crossan, 2002; Denzin and Lincoln, 1994; Proctor, 1998; Shih, 1998). Crossan (2002) states, it is useful for researcher to plan their research by clarifying his or her assumptions related to their personal values. How a researcher conducts research activity may be influenced by the researcher's philosophical stance. According to Benton and Craib (2001), philosophy provides 'foundations' for the research done in particular scientific specialisms. Easterby-Smith, Thorpe and Lowe (2002) suggests that understanding philosophy helps to refine and specify which research methods to be used to clarify the type of evidence gathered and its source as to answer the research questions; to evaluate different methodologies and methods that could avoid inappropriate use of methods and to be creative and innovative in either selection or adaptation of methods. Therefore, it seems pertinent for the researcher to understand the subject of philosophy that enables him/her to reason out the investigating phenomena in a clear perspective.

The philosophical assumptions underlying this research come from the social constructionist stance, which engages the interpretivist research paradigm. The sociological theory of knowledge was put forward by Berger and Luckmann (1966) in their seminal work and called "The Social Construction of Reality". They proposed that all knowledge is socially constructed and the idea of their social constructionism aims to unveil the ways in which people (individuals and groups), look at the world they create. Berger and Luckmann argue that individual and society are mutually constituted within their social interaction where every individual has its own perspective reality yet at the same time as human beings, they have commonsense knowledge (shared knowledge) applied in the normal

everyday life (Martin, 2006). Meanings that individuals and groups create in the world are the result of social interaction. The 'social' aspect reflects the construction of reality developed when people interact within their social interplay. Human beings constructed the development of social phenomena. According to Martin (2006) the Berger/Luckmann sociological perspective seems to integrate the earlier works of Weber, Durkheim and Marx that highlighted the relationship between society and individual. According to Burr (1995) knowledge is produced as interactions take place between people. This suggests that social constructionism is mainly focused on processes rather than observing a distinguishing feature of one personal nature. From a constructionist stance, the process of understanding meanings even in the same phenomenon, suggested that people may construct different meanings in different ways as 'meaning is not discovered, but constructed' (Crotty, 1998, p.9). Constructionists argue that knowledge and truth are drawn from perspectives; therefore, all truths are relative to some meaning of context or perspective.

According to Robson (2002) people give accounts of an event or series of events. People are capable of expressing ideas of their world and attach meaning to, interpret, and experience things around them (Riessman, 1993) and meanings are constructed based on 'social interactions' (Patton, 2002). According to Hackley (1998) the social constructionist model of research seeks to raise understanding of the structure and functions of a discourse by revealing an insight into a social process. The author also states that the social constructionist approach takes subjective reports as events, emotions and cognitions to multifaceted constructions, which can be interpreted on many levels' (Hackley, 1998, p.125). This research study on KM managers' interpretations of KM competencies seeks to reveal 'meanings' that are derived from KM managers' 'constructs' as

individuals or KM team members based on their social interactions within KM initiatives that are qualitative in nature.

According to the traditional view, quantitative researchers subscribe to the 'positivist' paradigm of science; on the other hand, qualitative researchers subscribe to the 'interpretivist' paradigm. As mentioned earlier with regards to the terms and categories of research traditions, the interpretive paradigm is a term that is said to be associated with the terms (social) constructionism, (social) constructivism, social phenomenology, hermeneutics and relativist approaches (Jennings, 2004). Within the interpretive paradigm, Gummesson (2000) explains that the social world is best understood if we look from the viewpoint of the participant in action. Prasad (2002) suggests that contemporary interpretivist decline to be 'confined, policed and disciplined' by outdated notions of interpretivism's limitations and are committed to the wide philosophy of social constructionism. Erickson (1986) and Ferrier (1998) use 'interpretive' as the collective term to include constructionism and interpretivist approach. Thus in this study, the researcher believes that understanding a phenomenon will not be interpreted on a 'take for granted' basis rather it is always being reconstructed according to context and perspectives.

As the social constructionism approach claims that meanings are constructed based on experiences through social processes, one of the main critiques of this approach is that it remains very abstract and subjective (Martin, 2006). This is because it encourages the divergence in presenting views. According to Cromby and Nightingale (1999), while actively seeks to explore meanings of a phenomenon; we employ certain ways and purposes, which then would 'create knowledge we then take as the truth'. Truth is a product of activity and purpose

because another activity carried out with a different purpose might create alternative 'truths', therefore there 'can be no facts which is really true in every culture and for all time' (Cromby and Nightingale, 1999, p.6).

3.3 Rationale for choice of research approach

3.3.1 Interpretivist paradigm

Although the ultimate goal of all scientific activities is 'truth' and explanation, it is impossible to get a 'true' objective view; even with any kind of scientific research there are bound to be certain levels of possible error and bias in their experiments and testing. Positivism focuses and promotes operationalism (involved in proving and applying) through measurement and experimental methods. Crossan (2002) argues that a positivist approach does not allow the means to examine in in-depth way human beings and their behaviours. He asserts that humans are not objects and are subject to many influences on behaviour, feelings, perceptions and attitude, which is what social science research, is all about. Social science research is about the study of human beings, and unlike 'objects' as in the natural science, the study is different although it involves some kind of scientific examinations and observations. Benton and Craib (2001) state that in social science, since human beings are not the same as 'object' of chemistry and physics; the study involves a more complex setting. This is because human beings could recognize or understand when they are being studied, understand what is said about them or could act differently since they know they are being studied. The interpretivist approach emerges in contradiction to positivism in an attempt to understand and explain human and social reality; as described by Crotty (1998, p.64) the interpretivist approach 'looks for culturally derived and historically situated interpretations of the social life-world'. Taylor (2006) states that since the fundamental sociological methods are about investigating,

understanding and interpreting the meanings that people reflect to their actions in their social world, interpretivist argue that the natural sciences logic and methods are not appropriate to the study of societies.

In describing the main idea of interpretivist, Taylor (2006) states that the primary difference between the natural and social world is that the social world is meaningful. He further explains that understanding subjective experiences, which include thinking, feelings, and actions of those being studied in their natural context, are the aims of the interpretivist. The main assumption of interpretivist paradigm states that knowledge and meaning are represents of interpretation (Gephart, 1999). Knowledge does not exist as independent without involving human thinking and reasoning. Gephart (1999) also highlights the emphasis or key focus of interpretivist is to look for patterns of meanings, which its aims are to describe meanings, recognize researchers' definitions of the situation and examine how objective realities are generated. In contrast to positivists who attempt to explain reality by separating values from facts, interpretivist believe that in explaining social context value and facts are inseparable (Woods and Trexler, 2000). Interpretivists believe that reality in social science is difficult to encounter through observation therefore it needs to be interpreted. The role of the researcher within the interpretivist philosophy is to understand and interpret the world that she/he inquires, however Walker and Dewar (2000) suggest that the objectivity and reliability of the researcher's interpretations reside in the distance maintained between the researcher (investigator) and participants (those being investigated). This is to avoid researchers' bias in the interpretations that may be influenced by her/his belief systems and also from those embedded in the situation being investigated (Scriven, 1983).

One of the main purposes of positivism is to yield 'law-like' generalizations. The interpretivist researcher argues that this could not be done because of the complexity of the social world that involves interactions among people, organizations or societies. Since business situations are complex and dynamic, interpretivist claim that generalisability is not crucial instead they try to capture the rich complexity of social situations of the changing and evolving world of business organization (Saunders, Lewis and Thornhill, 2003). The strongest argument of interpretivist is to discover what is stated in Remenyi et al. (1998, p.35) as 'the details of the situation to understand the reality or perhaps a reality working behind them'. Further to this argument, Carroll and Swatman (2000) state that researchers use their own conceptual lens when they interpret the social world based on their previous experiences, beliefs, existing knowledge, and assumptions. They elaborate that the researcher's conceptual lens acts as a filter in interpreting the world and the theories of knowledge and how the knowledge is accumulated or accrued. The interpretivist approach has shaped the field of research that aims to enlighten everyday life experiences of people as described by Taylor (2006). Although interpretive studies are not limited solely to the use of qualitative methods, they are acknowledged as the most typically used method (Lincoln and Guba, 1985; Patton, 2002). According to Woods and Trexler (2000), 'qualitative research' can be referred as an attempt to capture in-depth understandings of the world being investigated and the term qualitative research is used synonymously for research associated with the interpretivist paradigm.

Working from interpretivist perspective, the researcher interpretive view of the world of reality is socially constructed and therefore the qualitative approach seems to be appropriate. It is the intention of the researcher to deeply explore and gradually acquire the views and perspectives of KM managers. In addition, it is

also to understand why individuals make the choices that they make and associate one thing to the next. It is not the intention of the researcher to predict and he or she has no interest in making broad claims. What matters for the researcher is to determine the features surrounding the social phenomenon in order to understand it not control or manipulate it.

3.3.2 Qualitative paradigm

The type of research or subject under investigation that researchers wish to undertake will determine the methods that they should use. According to Poggenpoel, Myburgh and Linde (2001) quantitative and qualitative methods are different in that they have different underlying principles, character and process. In the past, both were separated from each other and only in recent years, effort was made to fuse both quantitative and qualitative methods so as to provide more comprehensive understandings of the phenomena under study (Patton, 2002). However, despite becoming increasedly popular, the mixed methods approach remains controversial on issues such as its paradigmatic foundations, research designs and the actual logistic of the approach (Tashakkori and Teddlie, 2003). Jones (1997) states that the research approach (qualitative or quantitative research), has its own advantages and disadvantages.

Quantitative research that employs experimental methods and quantitative measures to test hypothetical generalizations (Hoepfl, 1997) and focus on theory testing has received great interest among researchers. Chappell (2004) concludes that adopting a quantitative research approach is a useful way of research in measuring attitudes, behaviour, preferences or beliefs using statistical analysis and generalization of description.

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According to McCullough (1997) the advantages to using quantitative research is that the results are statically reliable and able to be projected to the population. However, the primary disadvantage is that issues are only measured if they are known prior to the beginning of the survey, which has been incorporated into the survey questionnaire (McCullough, 1997). According to Emden (1998), very often the quantitative research approach fails to take accounts of the unique characteristics of individual cases.

Qualitative research is used when an event or process is difficult to study using a quantitative approach. It represents the opportunity for in-depth probing and diagnostic exploration. This helps to uncover and understand a phenomenon about which little is known and will enable us to understand the meaning of what is going on (Gillham, 2000). Holloway (1997, p.2) defined qualitative research as 'a form of social inquiry that focuses on the way people interpret and make sense of their experiences and the world in which they live.' Murphy (1995), who also promotes the use of qualitative approach, states that unlike quantitative research, which establishes the substance of relationships in terms of influences and action, qualitative analysis is interested about the profoundness of information required to make sense of an individual's actions and experiences.

Some of the strengths when adopting a qualitative approach are that data gathering is more natural than artificial. Amaratunga *et al.* (2002) express that it has the ability to look at change in the surroundings over time, understand individuals' meanings and adapt to new issues and ideas as they emerge. In addition to this, the approach could lead to theory generation. At the same time, qualitative approaches do have some weaknesses. Although the respondents involved in a qualitative study are normally very small however different skills,

roles and resources may involve in the data collection process. For example, according to Mahoney (1997), for observation techniques, the observer or researcher should be able to explore and evaluate firsthand data on programmes, processes or behaviours being studied. On the other hand, interviews technique provides different type of data therefore it requires the researcher/interviewer to have good interpersonal skills (Mahoney, 1997). Since the approach is more subjective compared to quantitative research, the data analysis and interpretation are complex. This is because from the first piece of data collected, the researcher tends to start the 'sense-making' process. Amaratunga *et al.* (2002) conclude that the qualitative approach is harder to control the pace, progress and end-points which leads to low credibility in results from the perspectives of policy makers.

Qualitative research does have some limitations. Conducting interviews is time consuming and costly and attaining validity and reliability is often difficult in the analysis and interpretation of data. Also, ethical issues may arise from the researcher's intrusion into the 'privacy' of those under study (Easterby-Smith, Thorpe and Lowe, 2002; Saunders, Lewis and Thornhill, 2003). However, qualitative research particularly and the case study method especially offers powerful tools for research in business and management; i.e. general management, marketing, leadership corporate strategy and more (Gummesson, 2000).

Debate on the differences between quantitative and qualitative research continues in much research literatures and common differences in characteristics of these two are shown in Exhibit 3c, as abstracted from Amaratunga *et al.* (2002), Hyde (2000) and Sanghera (2004). It is shown in the table that distinguishes set of characteristics of each research approach, which lead to a different nature of data

collection, analysis and findings. For the purpose of this study, the use of the qualitative approach seems to be suitable since the researcher begins with the intention to explore and seek a deeper truth. It presents the opportunity for in-depth probing and diagnostic exploration. This helps to uncover and understand a phenomenon about which little is known and the key concern is to understand the phenomenon of interest from the participants' perspectives, not the researchers' (Merriam, 1998).

Exhibit 3 c   Characteristics of Quantitative and Qualitative Methodology

Quantitative	Qualitative
■ Based on positivist paradigm, where basic belief is that the world is external and objective while the observer is independent (separate). ■ Researchers focus on facts and search for causality and fundamental laws. ■ Seek to describe the general characteristics of a population, and to disregard detail. ■ One reality – focus is concise and narrow. ■ Formulate hypotheses and test them. ■ Uses instruments; such as questionnaires with structured questions. ■ Measurable - report statistical analysis and its basic element of analysis is numbers. ■ Might draw a large and representative sample from the population of interest, measure the behaviour of and characteristics of that sample and attempt to construct generalizations.	■ Based on the interpretivist paradigm, where beliefs are socially constructed and subjective while the observer is considered as part of what is observed. ■ Researchers focus on meanings and try to interpret what is happening. ■ Seek to provide conclusions with explanations to particulars of every case ● Multiple realities – focus is complex and broad. ● Develop ideas through induction from data ■ Interpretive – report rich narrative, individual; interpretation and its basic element of analysis is words/ideas. ■ Sample size is not concern; seek informal, rich sample.

3.3.3 Case study approach

The use of case studies has received a widespread popularity in conducting research (Abramson, 1992; Bromley, 1986; Merriam, 1998; Stake, 1981; Yin, 2003). A single case study approach was adopted for its uniqueness and contemporary aspects (Yin, 1989). According to Yin (2003), case studies are a suitable strategy to answer the 'how' or 'why' questions, and when the researcher has little control over events, and when emphasis is on the contemporary phenomenon in real-life context. Merriam (1998) states that the decision to use a case study or other research designs will depend on what the researchers want to know. According to Bromley (1986, p.23), a case study is described as an attempt to '...get as close to the subject of interest as they possibly can, partly by means of direct observation in natural settings, partly by their access to subjective factors (thoughts, feelings, and desires)...'.

As suggested by Yin (1994), case studies could be designed as a single-case or multiple-case where a replication instead of sampling logic follows the multiple designs. In case studies design either single or multiple, generalization should be made to theories rather than populations (Yin, 1994). Although it is difficult to select cases for the case study approach (Yin, 1989), the selection could offer an opportunity to maximize what could be learned (Stake, 1995) which at the same time must always have boundaries. To adopt a case study approach Tellis (1997) suggests several issues that one should consider and plan for:

- gaining access to the subject organization
- sufficient resources while in the field
- clearly scheduling data collection activities;
- providing for unanticipated events

Most case study researchers express that case studies produce much more detail information, to gain insight through discovering meanings. According to Yin (2003, p.2), 'the case study allows an investigator to retain the holistic and meaningful characteristics of real-life events'. By adopting the case study approach, it allows the researcher to investigate phenomena in a natural manner (Denscombe, 1989). Case studies have also received criticism and among others, one of the weaknesses in a case study research is the problem of generalization and this has been perceived as a main draw back (Bryman, 1989).

A single case study approach is adopted in this study. The use of a case study for the purpose of this thesis is consistent with the view of Yin (2003), which highlights that case study research deals with an empirical inquiry that investigates a contemporary phenomenon, which is explored by the researcher within its real-life context. The rich context and lack of control over the events in this research, which is a characteristic of case studies, render it the best method to choose.

In addition, this study is also in line with Benbasat, Goldstein and Mead (1987) suggestion that case study approach is considered to be viable for three reasons:

- it is necessary to study the phenomenon in its natural setting
- the researcher can ask "how" and "why" questions, so as to understand the nature and complexity of the processes taking place
- research is being conducted in an area where few, if any, previous studies have been undertaken.

The purpose of this research is to create a better understanding of how essential are technical competencies (KM related) for KM managers in supporting KM activities within KM projects/initiatives. Among other objectives is to identify the

essential technical KM competencies required for KM managers who are involved in the KM initiatives. The researcher needed to use a research methodology that would allow him to pay close attention to the ways that KM evolve and KM managers experience making KM project a success. It is not the aim to control or influence the experiences and thus the application of case study research seemed to be feasible.

In this research project, the researcher intends to look at the actual unfolding of knowledge-based phenomena in the work setting. A single case study is chosen involving a Malaysian public organization that is committed to promote monetary and financial system stability. In addition, the organization is responsible for fostering a sound and progressive financial sector that sustains economic growth for the nation. The organization has initiated KM and appointed key KM managers who are responsible to ensure consistent availability of systems, communication and infrastructure. This is to support and enable the organization's employees to capture, share and manage its knowledge to improve business performance, delivery of service and meet its legal and social responsibilities.

3.4   Data collection methods

There are several possible methods that could be employed in eliciting data for qualitative research.   The researcher needs to answer first of all, 'how the research questions could be answered?' Which is the best possible method to provide rich data? Several methods were considered. Questionnaires were not considered in this research as they are too structured and though it allows open-ended questions, follow-up issues related the answers of the question could not be highlighted spontaneously or promptly. Observation is another method that could be used to provide data for qualitative research; however in this study the researcher thought that it was not appropriate to collect factual data. Alternatively,

the most common methods employed in qualitative research include observations, interviews and focus groups (Mahoney, 1997).

Mason (1996) identifies how the philosophy of qualitative research is focused on how the social world is understood, interpreted, experienced and produced. Flexibility and sensitivity are required in the data collection method. The main data collection method adopted in this study is the semi-structured interview. The interviews involved questions on the essential KM competencies and the implications on KM managers towards KM training. Focus groups were conducted during the pilot study to explore KM practitioners' interpretation on issues related to KM competencies. According to Burn (1998) qualitative interviews allow the researcher to have numerous choices on how to conduct it. With a lack of rules, the researcher will have to be personally competent to face with greater responsibility in the process of capturing the respondents' perceptions (Goldstein, 2004).

3.4.1 Focus groups

A focus group is a set up of social interactions. Bryman (2001, p.338) suggests that a focus group offers the opportunity to study '... the ways in which individuals collectively make sense of phenomenon and construct meanings around it.' As compared to the one-to-one interviews, focus groups allow a more realistic account of how people think of a phenomenon as they allow ideas and views to be challenged interactively (Bryman, 2001). This method is explored in this study using Internet as an alternative to face-to-face focus group. An 'e-focus group' was set up using the web blog during the pilot study. The main objective of adopting the 'e-focus group' is to clarify certain terms and generate relevant issue for the main data collection method, which is the face-to-face interview. The

participants of the pilot study are those from the online members of the KM Association of Malaysia. The researcher decided not to conduct focus group at XYZ so as to avoid the unwillingness to participate in the subsequent interviewing as the KM managers XYZ are busy with their work schedule. A more detail explanation of how this method was conducted is given in sections 3.8 and 4.2.1.

3.4.2 Semi-structured interviews

To address the research questions, the qualitative data were collected from series of semi-structured interviews. According to Gorman and Clayton (1997) semi-structured interviews:

- Facilitate an immediate response to a question
- Allow both parties to explore the meaning of the questions and answers and resolve ambiguity
- Provide a friendly emphasis to data collection

This interview method was chosen as it is appropriate to discover what people feel and explain how their world is working (Rubin and Rubin, 1995). This allows the researcher to gain understanding of how individuals make sense out of their own experiences. The semi-structured interviews fall into a middle approach between the structured and unstructured interviews. Semi-structured interview with the KM managers were conducted after the pilot study that employed the 'e-focus group' technique. It is a combination of a set and spontaneous questions that provide the structure of the interview and at the same time allow some flexibility to explore new issues or emerging responses (Hussey and Hussey, 1997). This research follows the interview format suggested by Bryman (2001), which includes:

- The establishment of rapport
- Preparation of an interview guide
- Tape recording
- Appropriate closure

As a semi-structured interview is considered as non-standardised interview (Saunders, Lewis and Thornhill, 2003) the researcher had prepared a list of related themes and questions. For this research an interview guide has been prepared as in Appendix E. The questions to be covered and the order of questions in this type of interview may vary depending on the flow of the interview (Saunders, Lewis and Thornhill, 2003). A formal letter of invitation (Appendix F) to each potential participant was sent through email. The data generated from the face-to-face conversations were tape-recorded using the digital dictation machine. The interview sessions, which were open-ended, emphasized the purpose and anonymity aspect was mainly conducted in English. A consent-form (Appendix G) was prepared and given to the respondents before the interview session. The respondents were encouraged to speak freely and the interview lasted around one hour. However, Gorman and Clayton (1997) note that interviews should not be seen as problem free as the disadvantages include: time consuming, costly, overly personal and open to bias. Despite the potential problems highlighted earlier, the face-to-face semi-structured interviews were seen as most appropriate for this research. The reasons for this include:

- could produce the depth of data during the interview
- face-to-face semi-structured interviews mainly conducted at the XYZ KM centre gave the researcher the sensible ambience of KM activities within a practical approach
- the semi-structured interviews allow a 'close' rapport between both parties which could facilitate a greater degree of providing data

3.5 Methods of data analysis

Analysing qualitative data can be done in several ways such as ethnographic analysis, narrative analysis, phenomenological analysis, constant comparative method, content analysis and analytic induction (Merriam, 1998). However, there

is limited literature discussing how these methods are conducted in a systematic approach. According to Woods and Trexler (2000), qualitative data will involve unique and specific procedures of analysis. Data analysis involved in qualitative research should begin as early as when the data collection started. Woods and Trexler (2000) suggest, the analysis during the beginning of data collection will allow the 'field worker' or researcher to cycle 'back and forth' between thinking about the existing data and generating better strategies onwards.

The method used in analysing the interview transcript was *narrative analysis*. In the literature of narrative research, it is apparent that the word 'narrative' is often used interchangeably with the word 'story' (Emden, 1998). There is no specific definition of narratives. However according to Fisher (1987) narratives are stories and human are storytellers. A story metaphor emphasizes that individuals create order or construct texts in particular context (Riessman, 1993). According to Reissman (1993, p.2) narratives are representations;

> *'Nature and the world do not tell stories, individuals do. Interpretation is inevitable because narratives are representations... Human agency and imagination determine what gets included and excluded in narrativization, how events are plotted, and what they are supposed to mean.... construct past events and actions in personal narratives to claim identities and construct lives.'*

There are various sources that discuss narrative analysis such as Mishler (1986), Fisher (1987), Reissman (1993), Labov (1997), Emden (1998) and McCormark (2004). However, the procedures involved in narrative analysis could not be standardized as the data are being analysed based on their context. In this study the researcher adopts mainly a narrative analysis procedure proposed by Emden (1998) as shown in Appendix H, with some modifications suggested in Chapter 4.

Through narrative analysis the researcher gathers descriptions of actions and events, which generate data that enable the generation of stories (McCormark, 2004). This research seeks to get an insight into KM managers' experiences and stories in KM activities. It intends to explore and understand within the context of KM competencies and training based on the managers' involvement in KM activities. The analysis and management of data collected from the interviews was assisted by the QSR N6 Software Kent (2001) suggests, the use of computer-assisted data analysis software is not just a case of replacing the coloured pencil and scissors, cut and paste activities by 'hand', it allows the researcher to operate on an entirely new level. The author outlines that this method allows researcher to go beyond looking at connections between codes and text to looking at relationships between codes themselves.

Riessman (1993, p.69) concludes that narrative analysis methods are 'slow and painstaking' as they need detail attention to: 'nuances of speech, organisation of a response, local context of production, social discourses that shape what is said, and what cannot be spoken.' Furthermore, according to Runswick-Cole (2005), one of the disadvantages of narrative analysis is that the data being analysed depends on 'voice' that represents 'stories' but 'whose story is it?' is an issue. This is because respondents could construct stories from their own experience or from other people's experience or just 'made-up' stories from respondents.

3.6   Sampling

Sampling is a procedure used to 'identify, choose and gain accesses' to relevant units which is used to generate data by any method. However it is often linked exclusively with the general law of statistics and probability (Mason, 1996). According to Patton (2002 p.46), ' ... nowhere is the difference between

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quantitative and qualitative methods better captured than in the different strategies, logics, and purpose that distinguish statistical probability sampling from qualitative purposeful sampling.'

In this research, the non-probability sampling method or purposive sampling is employed in the selection of thirteen KM managers believed to be the informants who could provide and generate pertinent data based on their involvement in KM initiative at XYZ. Purposive sampling allows researchers to choose a case which demonstrates several features or processes in which researchers are interested, however is not a simple approval to be applied to any case the researcher intend to study (Silverman, 2004). According to Patton (2002), purposive sampling will assist the procedure of gaining access to information-rich cases, which allow the researcher to acquire a thorough understanding of the phenomena under study. Using this approach, KM managers in organization XYZ are purposively sampled as informants. These informants are chosen because of their key involvement as KM managers (social group) and their ability and willingness to tell the researcher what they experience, feel, view and think about managing KM initiatives.

The sampling strategy for quantitative research is usually not done in the same way as for qualitative research, which is often small. The unit of analysis or sample being studied in this research is the KM managers of organization XYZ. Thirteen KM managers participated during the interviews are from the list of seventeen names suggested by the XYZ's KM Centre. The sample is adequate as it aims to gather 'thick description' and 'thick interpretation' (Patton, 2002).

3.7   Provision for trustworthiness

Unlike the positivist research approach, interpretivist has emerged recently as a paradigm only over the past few decades, which caused the misjudging critiques on the worthiness of the approach (Travis, 1999). Taylor (2006) states that the interpretivist approach is criticised by some sociologists on the issue of validity since it does not provide testable hypotheses that can be proven or tested. However, Zambo (2004) highlights that the issues of validity and reliability that are raised in experimental research are inappropriate when the context of study is 'local' in scope. According to Robson (2002, p.93), validity is about establishing trustworthiness, which concerns 'whether the findings are really about what they appear to be about'.

Unlike positivist research where the quality of study involves demonstrating validity and reliability, in qualitative research rigour is equally important with different procedures to assess it. 'Trustworthiness' is considered a more desirable term in recent years for qualitative research (Patton, 2002). However this is often argued by positivists despite the concepts of validity and reliability are often applied in naturalistic work, their essential concerns are addressed differently (Shenton, 2004). As suggested by Lincoln and Guba (1985), there are four key criteria of trustworthiness that can be used to evaluate the integrity of qualitative study. These are credibility, transferability, dependability and confirmability. According to Isaac and Michael (1995), the criteria use the terms that are parallel to those criteria assigned to traditional quantitative research designs so as to ensure the soundness of the research: internal validity, external validity, reliability and objectivity. However, there are authors who do not acknowledge the general inclusive concept of validity as pertinent criteria in assessing the quality of their

qualitative work (Altheide and Johnson, 1998; Leininger, 1994). In fact, Wolcott (1990) describes it as a 'burden'. Denzin and Lincoln (2000, p.69) state that 'qualitative researchers do not claim that there is no one way of interpreting an event' for 'qualitative research has to do with description and explanation and whether or not the explanation fits the description'. It was with these questions in mind that the researcher seeks to highlight how Lincoln and Guba (1985) criteria will be satisfied in this research project.

In addressing credibility, the researcher employed three approaches. First, in designing the research modus operandi, the researcher prepared an interview guide and asked open-ended questions during the semi-structured interview. This is to enable a free flow of information and opinion, and therefore researcher could put the same questions in a similar or related manner. Second, 'Peer Debriefer' which according to Isaac and Michael (1995), is a strategy of engaging a 'neutral' outside party to raise questions and in general to explore and identify one's approach which include its 'breadth and depth', 'strengths and weaknesses', choice of options and implications. According to Byron (2001) a peer debriefer; whose role is to offer critiques from a fresh point of view is normally someone outside the context of the study but has some knowledge of the method, theory and content regarding the study. The person also has to be someone who has no power over the researcher (Byron, 2001). Peer debriefing has been achieved in PGR conference organised through Newcastle Business School of Northumbria University from time to time, a one week research methodology workshop (Turkey Summer School), in dialogues and discussions with other doctoral students and academics and in many exchange of thoughts, opinions with researcher's supervision team. Discussions from peer debriefing are pertinent as they have contributed in deepening the researcher's understanding of the issues involved in

this research project. Finally, the researcher has completed 'member checking' (Lincoln and Guba, 1985). However, it is only to three participants as others were not being able to do so due to the tight work schedules, they were made aware that the copy of the final thesis would be sent to their organisation. The final thesis will also be forwarded not only to the organization but also to the authority (Economic Planning Unit of Malaysia) that approves this research.

To address transferability: two measures were taken. First, in terms of the question of similarities between the context of this research and other contexts that may generate a similar conclusion, the researcher has constructed a research conceptual framework as shown in Exhibit 2e. This developed from the researcher's experience combined with the reviews of literature that the researcher has undertaken into accounts the elements of competencies, training and KM objectives. The framework offers a structure, which other researchers could use when trying to replicate this research. Second, the researcher has constructed the procedures of data analysis as stipulated in Section 4.2.1, and proposed a method for conducting an E-focus group. These approaches give other researchers the ability to repeat as closely as possible the procedure of this research project as well to make modifications for further research.

To address dependability, that can be determined through 'properly managed' audits, the researcher has to rely on an independent audit of the research project by a competent peer (Lincoln and Guba, 1985). Comments from discussions with independent sources were noted and suggested reconsideration was negotiated to suit the applicability of the research processes. In this context, the researcher relied on independent audits of the research methods by competent auditors during the 'Turkey Summer School on Research Methodology, September 2006.

The researcher was given the opportunities to have four one-to-one sessions with the tutors: three from the Oxford Brookes University; Prof. Mark Saunders, Dr. David Bowen and Diane Seymour and one from Northumbria University; Dr. Janice McMillan. All of them are very familiar with qualitative research approach.

As for confirmability, Shenton (2004) suggests that researchers should be concerned that research's findings are drawn from the experiences and ideas of participants or informants rather than from the researcher's backgrounds or attributes. To demonstrate confirmability, all interview tapes and discussions, and hard copies of transcription have been maintained. These records are available upon requests from the researcher. Furthermore, throughout the research process, both researcher and informants are aware and well informed that the findings will be forwarded to the organization where the study took place as well as to the body who grant the approval to conduct research, which is the Economic Planning Unit of Malaysia.

3.8   Pilot study

3.8.1   Pilot study using e-focus group

An initial pilot study was conducted mainly to get some preliminary data on KM practitioners' perspectives about KM in general and also to make sure that the terms and themes used in describing KM technical competencies were understood. An online focus group using web-blog concept was set up to gather KM practitioners' view. Ten KM practitioners were invited and six participated.

Reported in Clarke (2005), it has been estimated there are 200 million of Internet users and the Internet has formed communities that provide access to interdisciplinary and diverse groups. ICT has great influence on society, either as

individuals, organizations, professions or communities. Therefore as Clarke states, researchers are confronted by the ICT developments that require them to revisit research concepts such as interview, subject, field sites and informed consent (Clarke, 2005). As a network of networks that allows computers link with each other, the Internet serves as a global platform for communication. With appropriate software and hardware, the Internet allows us to send and retrieve documents, view images and animations, listen to any audio files and also communicate with one another verbally or through online chatting. Researchers in many disciplines such as marketing, health and education have started to use the Internet for their research activities as an alternative.

There is a potential for the Internet to become a valuable methodological research tool and is growingly being recognised by not just market researchers but also by academics (O'Connor and Madge, 2003). This is because the capabilities of this technology have been increasingly integrated into business operations, individuals and communities. According to Waskul and Douglas (1996), with developing Internet technology, researchers are faced with conceptual, theoretical and methodological challenges, which are the core of academic advancement.

Clarke (2005) states that the multimedia services of the web and other technology-mediated communication by the web have helped the Internet to 'imitate' the traditional data collection methods. It has been extensively used as a research tool in the area of marketing, and recently adopted in other research areas such as nursing and academia. For example, Kenny (2005) used software called WebCT to conduct an online and interactive focus group with chat facility. O'Connor and Madge (2003) conducted an online interview using Hotline Connect; a software conferencing technique, and conclude that the Internet-based

interview forum is logical, cheap, convenient and innovative and the data collected can be as rich and valuable as those generated via traditional face-to-face method. However, before deciding to employ this technique, researchers need to consider some of disadvantages such as the issue of 'dependency' to technology, the researcher and respondents skills of ICT and difficulty in gauging the respondents' mood. Discussions on the advantages and disadvantages are discussed further in this chapter.

3.8.2 Synchronous vs. asynchronous e-focus group

E-focus groups can be conducted synchronously or asynchronously. A Synchronous E-focus group session is a real-time session that normally takes place using an electronic 'chat room' or online conferencing facilities as conducted by Hughes and Lang (2004). Similar to a traditional face-to-face focus group, all participants need to be connected at the same time while the discussion takes place. One benefit of this type of focus group is it allows more spontaneous real-time interaction, which may provide more reliable results (Oringderff, 2004). An asynchronous e-focus group, however, is a session that allows participants to contribute their comments in their own time even when others are not participating at that time. For this type of e-focus group, email, bulletin board, listserves and mailing lists are commonly used. The benefits from the asynchronous session include the ability to overcome different time zones, giving allowances for participants with various typing levels, and giving more time to focus and reflect on responses (Oringderff, 2004).

Previously, the synchronous e-focus group sessions were conducted through 'typing' in the chat rooms, however the advancement of ICT has changed the dynamic of the communication as it now allows video and audio interactions. Although almost all Internet browsers offer basic communication services and

tools, there is specific conferencing software, which offers free downloading such as the 'HOTLINE CONNECT' available for Apple Macintosh and Microsoft Windows. O'Connor and Madge (2003) used HOTLINE CONNECT software package for their research on 'Cyberparents' projects – a project that highlights how and why new parents made use of the available health websites. They conducted a synchronous focus group session for cyber parents from the www.babyworld.co.uk who are geographically widely dispersed. The research concludes that data gathered through virtual communications can be as rich and valuable as the traditional face-to-face method; however, its potential must not be exaggerated (O'Connor and Madge, 2003). Hughes and Lang (2004) also conducted a synchronous online focus group for a qualitative study of user peer-to-peer file sharing systems by setting an Internet site using Blackboard.

The asynchronous electronic approach has been used by researchers in various research fields (Kenny, 2005; Oringderff, 2004; Rezabek, 2000). Rezabek (2000) used asynchronous online approach to determine suitable questions and issues before going for an in-depth interview on distance learning. Oringderff (2004) also adopts the same approach by creating an online focus group using Yahoo's free discussion service called 'Expats online', which serves as a 'brainstorming' platform for the international expatriates. Kenny's (2005) research aim of the online study was twofold; firstly, was methodological; that is to assess the capabilities of Internet technology and secondly the aim is to investigate why the Australian rural nurses have chosen to convert to the first level of the nursing registrar.

3.8.3 Rationale for using e-focus group for pilot study

The rationale of conducting an Internet focus group is to bring together participants that are geographically dispersed (Rezabek, 2000). Therefore, via this mode, reactions, discussions, supporting and contrary points will provide in-sight into the matters being discussed.   According to Edmund (1999), this type of technique is low cost, able to reach a broad geographic scope, able to access too hard to reach participants, and offers a convenient and comfortable way to participate in any discussions.

The main objective of adopting a focus group approach is to generate relevant issues based on participants experience as knowledge managers. Valuable data may surface from the discussion, which will help researcher to generate more appropriate and relevant questions and issues for the semi-structured interview. For this study, the researcher has chosen the asynchronous e-focus group method mainly because the traditional face-to-face method is impractical and costly. Apart from the geographical reason, the researcher also considered the nature of workload the participants (knowledge managers) might have in having to adjust their time for a face-to-face focus group or even the synchronous online session.   The asynchronous online focus group provides a convenient way of participating as it allows those who have little time during normal hours to participate (Rezabek, 2000). One of the advantages of the electronic data collection method is that it reduces the data transcription time because this approach provides an automatic transcription. In addition, the researcher employed the asynchronous session to avoid some technical problems; such as power failure, which may occur on the day the online discussion, was to be conducted. This may cause a very critical issue such as 'data lost' as it is a real-

time session even though the online session may provide an automatic transcription. Another possible technical problem that may arise in the synchronous online focus group is that of the server going down and such failure may disappoint every participant when time has been allocated for the session.

3.8.4   Advantages and disadvantages of e-focus group

Although most research literature on experiencing online data collection discusses the disadvantages of their approach as in O'Connor and Madge (2003), Rezabek (2000), Oringderff (2004), Hughes and Lang (2005) and Kenny (2005), the advantages were more highlighted by the researchers. Silverman (2005) asserts that it is incomplete and misleading when online focus groups are usually compared to traditional face-to-face setting. It is more appropriate if comparison is being made between the online focus group and telephone focus group (Silverman, 2005). He has made comparison between the three types of focus groups; online, telephone and face-to-face. He concludes that each has its own advantages and limitations but the one that has the most advantages is the telephone focus groups. One interesting characteristic that both telephone and online focus groups share is that both are ideal platform to discuss sensitive topics and in fact online focus group gets the highest rating of providing psychological safety of participants because people could not hear each other's tone of voice.

Overall, most online focus group literature discusses the benefits of online focus group as an economical way of collecting data. It could gather participants or moderators who are geographically dispersed and avoid travel times and cost (Kenny, 2005; O'Connor and Madge, 2003; Rezabek, 2000; Selwyn and K, 1998).

However, one major advantage of an e-focus group is the issue of anonymity. An online approach could easily protect the identity of participants. Even if the topic discussed is not to be sensitive, one might still feel uncomfortable participating if his/her identity is known. Kenny (2005) concludes that participants valued the option of anonymity and chose to participate rather than making statements without 'protection' of their identity. Edmunds (1999) notes that online research helps to promote greater openness among participants since it provides for anonymity. In fact, according to Wagner (1999), the 'anonymity' of being a participant of the online focus group could create greater candidness. According to O'Connor and Madge (2003), the anonymity provided by electronic medium enabled them to be open rather than feeling embarrassed or intimidated. Since an e-focus group allows anonymity, participants who are hiding could get pretty brave (Grandy, 2000). Selwyn and Robson (1998) highlight the unobtrusiveness and friendliness of e-focus groups to respondents as an advantage because it may reduce problems caused by 'dominant and shy participants'. Participants will feel more comfortable contributing their thoughts and opinions without others knowing who they really are.

Another significant advantage of an e-focus group is that it provides 'naturalness' of transcription. The e-focus group allows data to be transcribed automatically during the discussion, which then can be reviewed using word processing or data analysis software. Hughes and Lang (2004), highlight the naturalness of transcription by quoting guidelines suggested by Mergenthaler and Stinson (1992, p.105), that transcription should 'keep word forms, the form of commentaries, and the use of punctuation as close as possible to speech presentation and consistent with what is typically acceptable in written text'. He notes that online focus-group could address this issue and affirms that automatic transcription of an online focus

group will give one hundred percent accuracy compared to traditional face-to-face (Hughes and Lang, 2005). According to Oringderff (2004, p.3), e-focus group can provide 'in-depth, rich responses, especially in asynchronous environment'. She states that this could save the manually transcription time and could enhance accuracy in transcription (Oringderff, 2004).

Similar to other types of data collection method, there are also some disadvantages that need to be considered when adopting the e-focus group as a data collection method. One of the main disadvantages of the e-focus group approach is that the online session is totally dependent to the ICT in used (Hughes and Lang, 2005). Although the Internet allows a wide selection of software packages and systems to conduct online focus group, it has to be reliable. It is not just about software and hardware but also the Internet connection and electricity supply. In this aspect, the issue of reliability and stability of technology-mediated communication is important.

It is important too for researchers to think about the ICT skills of the online participants. Although in general we seem to think that the Internet is getting common to everyone, we must also be aware there are still people who have some fear of 'technology'. Greenbaum (1995) argues that conducting a focus group using the Internet will drops off several key factors that work very well in the traditional face-to-face method, especially the eye-to-eye contact that may be very important to understanding reactions to the issues being discussed. Arguing that body language is so significant, he notes that the Internet is not a suitable medium for research (Greenbaum, 1998). Another interesting factor that Greenbaum (1998) highlights in his report is the participation issue. In a traditional face-to-face setting, participants are sitting for certain hours in a controlled environment.

Unfortunately, for an Internet focus group one could never know what the participants are doing while communicating in the forum as they could be listening to music, watching television or doing other things that could distract their interest (Greenbaum, 1995). Grady (2000) states that during the discussion session, the moderator will have difficulty in gauging the discussion 'mood' like the traditional method. Selwyn and Robson (1998) state that problem between interviewer and respondent may arise when there is lack of non-verbal communication. Referring to the works of King (1996) who highlights the importance of non-verbal and active listening in effective interview, Selwyn and Robson (1998) note that, in an electronic interviewing, researcher might lost the valuable non-verbal data.

Another limitation of online communication is the representation of expression. Although 'netiquette' suggests some guidelines on how emotion and intent could be expressed in online communication, Selwyn and Robson (1998) argue that 'netiquette' could not substitute verbal and non-verbal interaction with emoticons (☺, ☹, ...) or multiple vowels for intonation such as 'soooo'. In addition, conducting an asynchronous focus group session can be very time-consuming because participants are allowed to participate at their own time. This has been said by Rezabek (2000). The drawback of this approach is lack of timeliness, which tends to slow the discussion. A period of time must be given to participants. It may last for months. Another concern when conducting research over the Internet is that it will involve technological issues. As the Internet is a public domain, any computer systems always have the potential of being 'hacked'.

3.9 Changes made after the pilot study

The main purpose of conducting the pilot study was to draw possible themes for the main data collection method; however considerations and amendments had

been made accordance with the findings of the pilot study. It was based on the discussions, comments and feedbacks the researcher had from various avenues, which include the Mid-Point Progression and PGR conference. From the pilot study experience and result, changes made towards the research main study include:

a. Research questions
b. Research conceptual framework
c. Interview guide

The pilot study helped the researcher to strengthen the research focus and questions as in Section 1.5. From the discussions, the initial research questions that focus on 'competency deficiencies' had raised concern about the willingness of participants responding to issues relating to their limitations of weaknesses (skill deficiencies).

The initial research questions that focus on KM competency deficiencies and training are as following:

a. How KM managers perceived their KM skills deficiencies while performing their KM roles and how critical are those skills to help them perform their KM tasks?
b. How these deficiencies influence KM managers training needs to improve their KM understanding and performance?

The experience and result from the pilot study had also changed the research conceptual framework whereby 'training initiatives' was included as part of the main research focus. From the discussions and with further readings and understanding, the new conceptual framework as in section 2.5.1 (Exhibit 2f) addressed 'training initiatives' as the important element that will equip KM managers to be competent in KM. The research conceptual framework constructed before the pilot study is shown below (Exhibit 3d).

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Exhibit 3 d   Initial research conceptual framework

ORGANIZATION GOALS & OBJECTIVES

KNOWLEDGE MANAGEMENT

TECHNICAL / FUNCTIONAL COMPETENCY

Organization Strategic Focus

Knowledge Management Objectives

| Creating Knowledge Repositories | Supporting Knowledge Accessibility & Transfer | Supporting Knowledge Environment / Culture |

Knowledge Management Activities

| • Treat knowledge as 'entity' • Transforming/ codification knowledge into knowledge systems for easy retrieval • E.g. memo, reports, market research, sales presentation, product information | • Knowledge/expert network or knowledge mapping • Utilizing KM tools for k-sharing & transfer • E.g. yellow pages, pocket guides to expertise. | • Building awareness and cultural receptivity • Evaluate and value knowledge asset/k-audit • Focusing on the knowledge contribution aspects (appraisal system etc.) |

Strategic Skills
(Sets Of Related Skills, Knowledge And Attributes)

Themes that were highlighted during the pilot study had also informed the researcher in preparing the interview guide for the semi-structured interviews. It had provided the researcher with same general areas of themes but focuses and at the same time allows some adaptability. The main changes regarding the words or terms used during the pilot study were 'technical' or 'functional' skills, which were initially perceived as the ICT skills. As focus group approach allows the researcher to moderate the discussion, the terms were changed to 'KM-related skills'. The researcher also realised that 'KM objectives' are being perceived as 'organization objectives'. Since clarity of questions needs to be addressed appropriately, the pilot study had supported the researcher in preparing the interview guide. Preparing an interview guide helps to focus attention on areas or

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themes of particular importance or relevance during the interview process. Part of the findings from the pilot study is in Appendix I

3.10 Conclusion

The study, which aims to provide an insight into the KM practitioners' interpretations on the required KM related competencies based on their experience in KM activities, is being approached from the social constructionist research tradition. To achieve the research aims, the researcher follows the interpretive perspectives by adopting the qualitative research approach. The interpretivist standpoint is suitable as it believes that the social world is best understood if we look from the viewpoint of participant in-action (Gummesson, 2000). According to Saunders, Lewis and Thornhill (2003), the role of interpretivist is to search and interpret the subjective reality in order to be able to make a sense of the motives, actions and intentions that give meanings to the research participants.

As 'KM' and 'competency' could be interpreted from various perspectives, a case study approach was adopted. According to Yin (2003), case studies are suitable strategy to answer the 'how' or 'why' questions, and when the researcher has little control over events, and when the emphasis is on a contemporary phenomenon in real-life context. The single case that is being studied is one of the Government Agencies of Malaysia that started their KM journey since end of 1999. A pilot study using the e-focus group method was engaged before the actual data collection technique using the face-to-face semi-structured series of interviews was conducted. Narrative analysis was used in analysing the interview data, which at the same time was assisted by N6 software to mainly handle the data management activities. Although the researcher is comfortable with using

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computers throughout the research process, from developing diagrams for frameworks, e-focus groups using blog (web log), and using N6 for data analysis, the use of N6 in data analysis was minimal as the researcher believed that 'analysis' had to be done manually. Therefore N6 was mainly assisting the management of the collected data.

The narrative analysis procedures developed by the researcher are based on the suggestions by Emden (1998) with modifications made according to the context of the data and methods adopted in general. Narrative analysis proposed by Emden (998) was chosen because of its clearer step-by-step approach could lead researcher to analysed the unstructured data such as those generated from interviews.

The next chapter (Chapter 4) presents the process involved during the execution of data collection; both e-focus group (pilot study) and semi-structured interviews. The chapter also discusses the execution of the main data analysis of the interview data adopting the narrative analysis technique.

CHAPTER 4: THE EXECUTION OF DATA COLLECTION AND ANALYSIS

4.1 Introduction

This chapter demonstrates the procedures of data gathering during the pilot study, which employed the e-focus group and the main study that adopted the semi-structured interviews. Six informants participated in the e-focus group are those invited from the KM Malaysia Association. The data generated from main data collection method using the semi-structured interviews involved thirteen informants (KM managers) of XYZ. As the main data collection method was the semi-structured interviews, the chapter also presents the data analysis procedures of the qualitative data generated from the interviews. The recorded interviews were transcribed and both manual and computer assisted approaches were combined in doing the analysis and interpretation.

4.2 Procedures of data collection

4.2.1 Setting up an e-focus group for the pilot study

For the purpose of this study, participants for the e-focus group were identified from the list of knowledge managers' emails from the KM Association Malaysia. The participants were invited on the basis of their experience and position as knowledge managers. They were contacted by email and given the account names and passwords created earlier by the researcher/system administrator. The account and password allowed sufficient access to a web blog site created specifically for the purpose of the virtual focus group. Participants are anonymous to each other as they were given account names (kmmgr11, kmmgr12, kmmgr13....). The web blog or blog were set up with several prepared questions (evolving throughout the discussion), with an introduction to the topic of

discussion, netiquette, e-focus group FAQ and an online participant satisfaction survey. Samples of the screens using blog are illustrated in Exhibit 4a-4c.

Exhibit 4 a   Sample screen: creating and posting questions
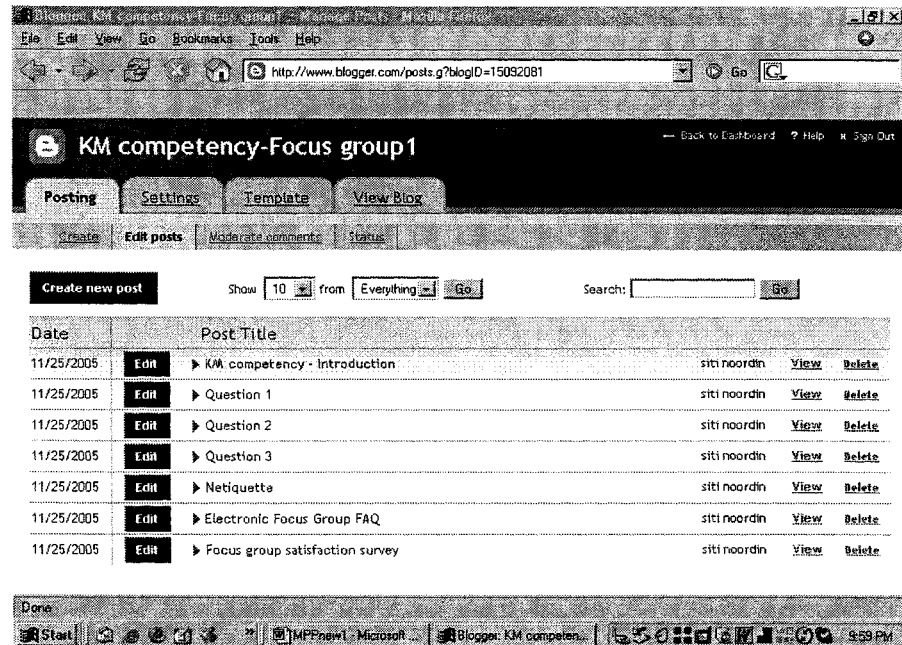
Exhibit 4 b   Sample screen: invitation to participate
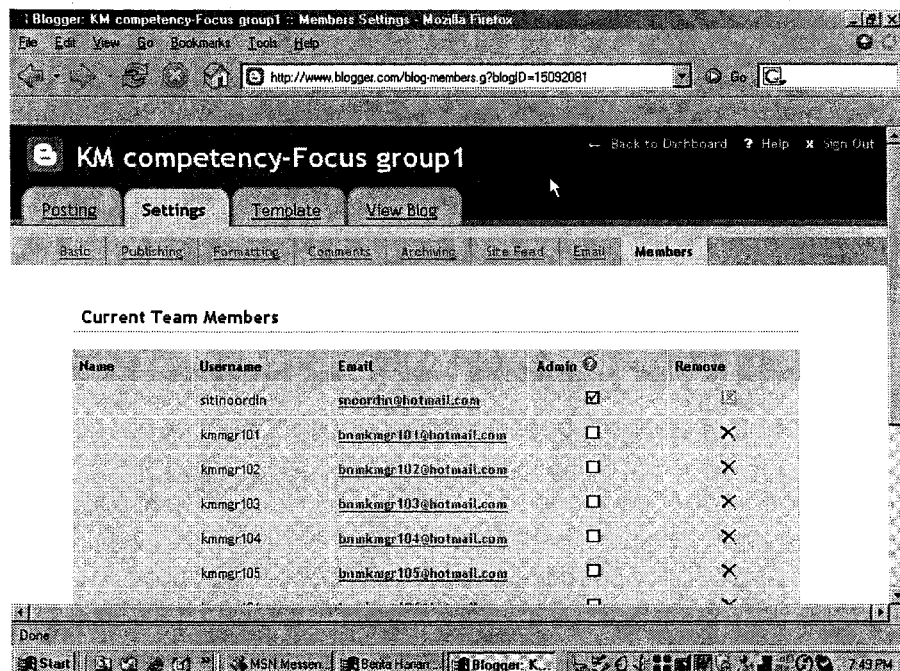
Exhibit 4 c   Sample screen: participants' responses.
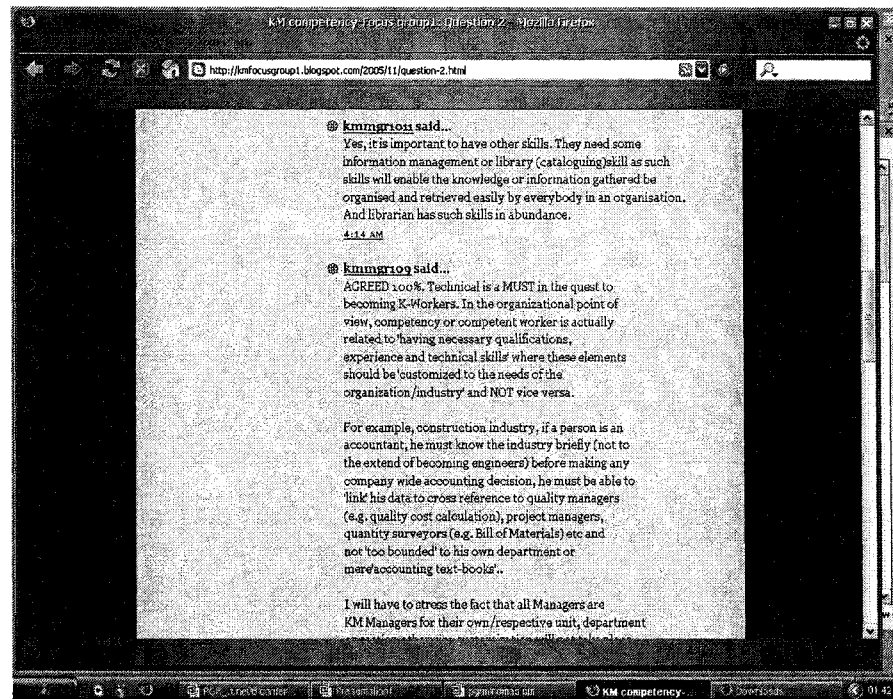
Research participants do not need any specific software as the link to the created blog was attached in the invitation emails. Therefore, participants could easily access the link by having an Internet connection and web browser on their PC. An introduction to the topic gives a brief description about the issue and research purpose. Following the 'best practices' guideline by Oringderff (2004), the 'netiquette' issues have been posted in case of some members of the focus group are not familiar or aware of 'netiquette'. On the FAQs, it is adopted based on lessons learned from Rezabek (2000) and Oringderff (2004) that provide some explanation about the procedures, instructions, and issue of anonymity. The blog also provides a participants' satisfaction survey with an aim to get feedback on their experience discussing the online platform.

4.2.2 Conduct of the e-focus group - Netiquette

While undertaking the e-focus group, the researcher had considered the behavioural element of potential online participants. Therefore explanation about 'netiquette' was posted for participants to consider. The word netiquette is derived from the word 'network' and 'etiquette', which very simply combine to mean proper etiquette for Internet usage (Henry, 2000). The website that supports the virtual community of Henry County, Kentucky, suggests proper internet manners and good etiquette that one should practise while one is online. The website also allows some related links to be visited for further familiarization of netiquette. It also provides other netiquette links; i.e. The Net: user guidelines and netiquette and the 10 commandments of computer ethics. Although the Internet has been around for quite awhile, many are still not familiar with the growing issue of netiquette (Frederick, 2005). For example, the ALL CAPS rules; says that typing all in capital letters is considered shouting and in bad form, however you may want to use some words in capital letters for a legitimate reason (Henry, 2000). There are also interesting issues being highlighted such as in APSU Online (2005), which states that one common rule of netiquette is to respect copyright and licensing agreements by citing all quotes, references and sources used. Among other interesting issues is the common concern of sarcasm and humour which could easily be interpreted, and the issue of getting acquainted with emoticons. Emoticons are said to be a sign of how emotion and intent are being expressed (APSU Online, 2005). According to Frederick (2005), one must be aware of the meanings of 'smileys' and acronyms that are used in textual messages as they might easily cause misinterpretations.

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The Internet has opened another avenue in conducting research. According to O'Connor and Madge (2003), the data gathered could be as rich as that from the traditional method. The problem of being able to see the participants in order to appreciate non-verbal communication perhaps could be solved by the latest development in ICT. The visual setting of an interview could be conducted using visual teleconferencing. However, the researcher will than need to focus on the aspects of software and hardware that allow both parties to communicate effectively. Clarke (2005) suggests that to have an effective technology mediated communication specifically on the Internet, the important elements are making sure that the technology is reliable and the Internet link and hardware must be stable. The author indicates that it is better to take advantage of the technology by exploiting the functionality of the medium and at the same time minimising its limitations.

Wagner (1999) argues that though the 'emotional content' may be lost while adopting this technique, it could be compensated by the 'logical content' of data. She explains that participants of online focus groups who key in to computers simultaneous responses can be quicker 'to reveal true consensuses'. The value of online technology should be carefully measured rather than slavishly adopting the face-to-face models (Clarke, 2005). O'Connor and Madge (2003) suggest that, although it could have a resemblance of the real world as noted by Kitchin (1998), many issues and problems of traditional research approach are still applicable. Therefore, the researcher must really consider the benefits and limitations of the online approach and how it suits the nature of their research. Taking the focus group online can contribute significant benefits, but for now, they can supplement, rather than replace the face-to face method (Wagner, 1999).

4.2.3 Conducting interviews

4.2.3.1 Piloting interviews

Although the research adopts the interview guide approach, which intended to ensure that same general themes were addressed to the interviewees, the semi-structured interviews were piloted before the actual interview took place. It was done to two KM managers from the researcher's organisation (UiTM). This is to ensure that the pre-categorizing themes or questions in the interview guides were relevant. It also try to clarify the terms used in the interviews were understandable. It gave the researcher the opportunity to rehearse the interviewing process before going to the actual interview with KM managers at XYZ. Piloting the interview also allowed the researcher to practice some possible 'probing questions' as to get more detailed information or clarification from the interviewees.

4.2.3.2 Contacts with organization XYZ

When the pilot study was conducted, approval from the Malaysian government was still awaiting. It was not until November 2005 that an approval letter was given, which then required the researcher to submit two photographs so that an official research pass is produced. Since then, the researcher had made contact with organization XYZ several times and prepared a letter to the KM managers inviting them to participate in the interview sessions. The initial letter of research intent was sent to the Director of Corporate Communications Department followed by a letter and email to the Head of KM Centre. Through email, letters of invitation to participate in the interview sessions were sent to every KM manager on the contact list provided by the KM Centre. Interview sessions were scheduled in advance and took place over a period of three weeks (August 8th – 28th). The

sessions took place mostly at XYZ except for two respondents who requested a different venue.

4.2.3.2 Ethical considerations

Gaining access into the organization where the research was conducted involved certain strategies and procedures. Shenton and Hayter (2004) highlight the issue of 'gaining accesses to potential organizations or respondents is one of the most fundamental tasks in qualitative research. It involves both securing entry into an organization and ensuring the participation of the informants or respondents in the research. To ensure the individuals do participate in the research, Shenton and Hayter (2004) recommend two important strategies: offering incentives to the participants where appropriate and acknowledging openly the value of their contributions. For this research, application to conduct research in Malaysia had been forwarded to the Economic Planning Unit of Malaysia; with their permission given it allowed entry into organization XYZ. It is a regulation of the Malaysian government that all foreign researchers and Malaysian nationals from overseas institutions/organizations get permission from the government. The permission to conduct research was endorsed by the Economic Planning Unit under the Prime Minister's Department. A copy of the approval letter and research proposal was also forwarded to organization XYZ. The letter of the approval is in Appendix J.

Since this study adopted the face-to-face semi-structured interview method, Merriam (1998), states that interviewing may make the respondents feel that their privacy has been invaded, or they may be embarrassed by certain questions or may reveal certain issues that they never intended to do so. At the same time, most interviewees enjoy sharing their opinions, experiences and knowledge; therefore some gain self-knowledge and some maybe therapeutic (Merriam,

1998). According to Patton (1990), the main task of an interviewer is to gather data, not to change people. However, one main issue that has been emphasized was the issue of anonymity, especially during the pilot study using the E-focus group sessions as the Internet is a public domain platform. For the face to face semi-structured interview, however, since the number of participants is only thirteen the researcher did not describe each informant in detail as it could easily allow the identity of the informants to be discovered. This is because copies of the thesis need to be sent to organisation XYZ and also to the Economic Planning Unit of Malaysia as one of the requirements.

4.3 Procedures of analysing interview data

Since there is no standard step-by-step procedure that can be considered as the best way in analysing narratives, the researcher devised the analysis procedure after considering the suggestions made by Emden (1998). There are thirteen respondents (KM officers) involved in the interviews and all were identified and suggested by the Knowledge Management Centre (KMC), therefore profiles of respondents were not being discussed in detail and pseudonyms (organization XYZ, Respondent #01, Respondent #02, Respondent #03...) were used to represent the organization and the respondents in order to maintain anonymity. Based on Emden's (1998) narrative analysis procedure, the researcher adopted and modified the suggested steps according to the context of the data collected and taking into an account the benefit of N6 for managing data. The procedures are represented in the form of flowchart below as in Exhibit 4d.

Exhibit 4 d   Data analysis procedure

```
              ┌──────────┐
             (   Start    )
              └────┬─────┘
                   ▼
         ┌───────────────────┐        • Full transcription of audio recording files
         │       Data        │        • Standardize identifier
         │   Transcription   │        • Assign pseudonyms
         └─────────┬─────────┘
                   ▼
         ┌───────────────────┐        • Check (proof-read) to reduce
         │       Data        │          transcription error
         │   Verification    │
         └─────────┬─────────┘
                   ▼
         ┌───────────────────┐        • Read interview texts several times
         │       Read        │        • Make sense to identify emerging plots
         │       Text        │          or themes
         └─────────┬─────────┘
                   ▼
         ┌───────────────────┐        • Map context into categories using
         │       Map         │          spider diagrams
         │  Initial Context  │        • Develop possible categories
         └─────────┬─────────┘
                   ▼
         ┌───────────────────┐        • Prepare data for N6 format (plain text)
         │  Prepare data for │        • Standardize formatting
         │        N6         │        • Merge all files into one
         └─────────┬─────────┘
                   ▼
         ┌───────────────────┐        • Use N6 for data management (storage and
         │   Data Storage &  │          retrieval) for the 'merged document'
         │    Management     │
         └─────────┬─────────┘
                   ▼
         ┌───────────────────┐        • Produce 'merged document' report
         │    Hard copy      │          with 'line numbers' which will act as
         │     Report        │          pointers
         └─────────┬─────────┘        • Print into hard copy
                   ▼
                 (  End  )
```

Indexing
- Identify keywords / phrases using 'free-text' indexing technique from the actual text
- Add in other terms e.g.common related terms, synonyms
- Use coloured highlighters to mark keywords

Creating 'identifier' field
- Creating a line as an 'identifier' field before each interview question in 'merged document'

Formulate & establish search
- Formulate & establish search strategies using 'text-search' function of N6
- Search strategies constructed based on conceptual framework

Produce search reports
- Produce reports for the related search strategies
- Print hard copies of search reports with line numbers

Map plots or themes
- Map plot of themes using clouds/cluster diagrams from search reports
- Using line numbers from the search reports as pointers to locate the actual context from whole documents

Sense making plots & themes
- Make sense of the categories / plots / themes
- Analyse and interpret – reflecting, contrasting and comparing

Produce results
- Findings – highlighted issues that answer the research questions

End

Categorization based on gender was not significant because the individuals could easily be identified if detailed about each being exposed. The analysis procedures were established using N6 software as well as manual procedures using pens and papers. Pen, coloured highlighters and paper were used in mapping themes. N6 was used mainly for data management purposes especially in data organization and searching.

'Digital Voice Editor' software was used to transcribe the digital audio recording files and the researcher attempted to standardize the format of each transcription text using the same 'tagging' or identifier for each transcription document. Pseudonyms were assigned throughout the process. The transcription texts were validated through proofreading processes to reduce transcription error. The texts were then read several times so as to make sense and identify the emerging categories or themes.

From the initial overview of the context the data represented, the researcher had constructed spider diagrams to map the categories emerging from the text. The diagrams were developed and evolved as the transcriptions were read one by one (respondent after respondent). This process was considered as the initial overview of the whole story or narrative based on what being said or told by each respondent. At this stage the researcher tried to construct as many themes or categories as possible from each respondent's text. This are assembled in the diagram shown in Exhibit 4e - 4h (data analysis maps). Each text was then formatted using a standardized layout for the purpose of putting it into N6 acceptable format. All the 13 files were then being merged as one 'merged document' and saved as a plain text file. N6 was then used to manage the whole data file (merged document). A report of the whole document was produced and

printed out in a hard-copy format. The hard-copy report produced had running numbers assigned to each line.

Exhibit 4 e   Data Analysis Map 1

KM Agents

KM Initiatives

Organization XYZ

• Background info

• Knowledge-based organization/ KBO journey
• Full time/part time km agents
• KM centre CKO, KM officer
• Align with XYZ business preposition
• Mainly focus on 3
  - Supporting k-accessibility and transfer
  - Supporting k-culture /environment
  - creating k-repositories
• Try to focus on measurement (problem – identify proxies that represent k-activities

• KM journey
• KM structure
• KM objectives

• Background/past experience → • Academic, position, dept
  • Previous work experience
  • Years in organization/KM
  • Perception on KM

• Challenges as KM agent → • Lack KM exposure
  • Lack KM understanding
  • Lack KM related skills

• Involvements in KM objectives/activities → • Run concurrently, some focusing on specific
  • Details experience of k-activities

• Enhancing KM knowledge & skills → • Read KM books/articles
  • Internet
  • K-Sharing sessions among KM agents
  • Training sessions (seminars, workshop, HE)
  • Hands-on day to day experience as KM agents

• KM essential knowledge & skills → • 'basic', 'core', 'important' KM related knowledge and skills

• KM training needs → • What/which km related training
  • Why important
  • Selective in choice of km training, why?
  • Expectations from km training
  • Perception on certification km training

• Reflection on others' perception on KM → • KM/agents role
  • Receptivity on km initiatives
  • Many still do not know what KM is all about

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Exhibit 4 f   Data Analysis Map 2

KM Agents

• Background/past experience →
- • Academic, position, department, previous experience
  - • finance, accountancy, information mgt, marketing, knowledge mgt
- • Years in organization/KM
  - • -since KBO journey (6 yrs ago), less than 2yrs, from other organization, part/full time status performance based on main job/restricted involvement
- • Perception on KM
  - • capabilities development', structure approach in managing knowledge, 'not difficult', 'not new', 'terminology' only. Not suitable for fresh graduates appointed as km agent

• Challenges as KM agent →
- • Lack KM -----difficult to determine effective strategies
- • Lack KM understanding-----difficult to understand km; bombastic words, gurus, concepts, taxonomy, prefer plain English
- • Lack KM related skills -----quantifying k-activities, Identifying proxies for k-activities, Identify and capture the 'strategic' k-assets (what is right and useful to organization), Benchmarking (difficult in terms of Malaysian context)

Organization XYZ

• Involvements in KM objectives/activities →
- • Run concurrently, some focusing on specific-----most part-time km agents focus on specific objectives eg. k-sharing and k-repositories
- • Details experience and problems involving in some k-activities-----km-training, mentoring, k-sharing, repositories, measurement,/audit, identification, capturing, corporate taxonomy, yellow pages, k-hub, portal, content development, story telling, virtual discussion room/VDR.

• Enhancing KM knowledge & skills →
- • Read KM books/articles
- • Internet
- • K-Sharing sessions among KM agents
- • Training sessions (seminars, workshop, HE)
- • Hands-on day to day experience as KM agents

• KM essential knowledge & skills →
- • 'basic', 'core', 'important' KM related knowledge and skills

• KM training needs →
- • What/which km related training
- • Why important
- • Selective in choice of km training, why?
- • Expectation from km training
- • Perception on certification km training

• Reflection on others' perception on KM →
- • KM/agents role
- • Receptivity on km initiatives
- • Many still do not know what KM is all about

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Exhibit 4 g   Data Analysis Map 3

```
                    ┌──────────────┐
                    │  KM Agents   │
                    └──────────────┘
                                            • Academic, position, dept
                      • Background/past ──→ • Previous work experience
                        experience          • Years in organization/KM
                                            • Perception on KM


                                            • Lack KM exposure
                      • Challenges as KM ──→ • Lack KM understanding
                        agent                • Lack KM related skills


                      • Involvements in KM ─→ • Run concurrently, some focusing on specific
                        objectives/activities  • Details experience of k-activities
  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

• Read KM books/articles-----individual, read & share one KM book a month among km agent

• Internet-----KM websites (Gurteen, Ark Group, KM Asia), Online KM forum (local and external), KM practitioners Blogs (to get useful ideas from others)

• Enhancing KM knowledge & skills

• K-Sharing sessions among KM agents-----sharing sessions + VDR, to problems and best practices

• Training sessions (seminars, workshop, HE)-----big seminars like KM Asia (learn more from participants than speakers), several pursuing masters in KM

• Hands-on day to day experience as KM agents-----learn throughout the journey

┌──┐
│ • 'basic', 'core', 'important' KM related knowledge and skills-----km tools, k-audit, k-mapping, │
│   k-identification, k-sharing, k-retention, CoPs, k-portal, information security policy, information │
│   management, k-flow & transfer, KM systems, content development, corporate taxonomy. │
└──┘

KM essential knowledge & skills

• What/which km related training-----in-house/external, levels/complexity, certification training, HE

• Why important-----create network, share ideas/best practices, improve understanding, solve problems

• KM training needs

• Selective in choice of km training, why?-----'yes'; upsetting experience attending big seminars. 'no', an opportunity not to be missed because there must be something that could be learn

• Expectation from KM training

• Perception on km certification training-----'not important but it helps', 'not necessary depending on km agent involvements in k activities', important; gives more confident, recognition, opportunities, suggested in-house certified training to encourage interested km agent, not required and not believe in km standards formulation.

┌──┐
│ • KM/agents' role-----'dumping ground', 'controversial', 'misused', 'under-utilized effort', │
│   'slaves'   │
│   │
│ • Receptivity on km initiatives-----do not like km words; put people off/scared, avoid using km │
│   terms but it is actually km agenda,   │
│   │
│ • Many still do not know what KM is all about-----doing nothing, like to see something tangible │
│   therefore km agent need to be visible.   │
└──┘

• Reflection on others' perception on KM

Organization XYZ

Exhibit 4 h   Data Analysis Map 4

KM Agents		• Academic, position, department, previous experience ------finance, accountancy, information mgt, marketing, knowledge mgt
	• Background/past experience	• Years in organization/KM------since KBO journey (6 yrs ago), less than 2yrs, from other organization, part/full time status performance based on main job/restricted involvement
		• Perception on KM------'capabilities development', structure approach in managing knowledge, 'not difficult', 'not new', 'terminology' only.

• Challenges as KM agent
- • Lack KM ------difficult to determine effective strategies
- • Lack KM understanding------difficult to understand km; bombastic words, gurus, concepts, taxonomy, prefer plain English
- • Lack KM related skills ------quantifying k-activities, Identifying proxies for k-activities, Identify and capture the 'strategic' k-assets (what is right and useful to organization), Benchmarking (difficult in terms of Malaysian context)

• Involvements in KM objectives/activities
- • Run concurrently, some focusing on specific------most part-time km agents focus on specific objectives eg. k-sharing and k-repositories
- • Details experience and problems involving in some k-activities------km-training, mentoring, k-sharing, repositories, measurement,/audit, identification, capturing, corporate taxonomy, yellow pages, k-hub, portal, content development, story telling, virtual discussion room/VDR.

Organization XYZ

• Enhancing KM knowledge & skills
- • Read KM books/articles------individual, read & share one KM book a month among km agent
- • Internet------KM websites (Gurteen, Ark Group, KM Asia), Online KM forum (local and external), KM practitioners Blogs (to get useful ideas from others)
- • K-Sharing sessions among KM agents------sharing sessions + VDR, to problems and best practices
- • Training sessions (seminars, workshop, HE)------big seminars like KM Asia (learn more from participants than speakers), several pursuing masters in KM
- • Hands-on day to day experience as KM agents------learn throughout the journey

• KM essential knowledge & skills
- • 'basic', 'core', 'important' KM related knowledge and skills------km tools, k-audit, k-mapping, k-identification, k-sharing, k-retention, CoPs, k-portal, information security policy, information management, k-flow & transfer, KM systems, content development, corporate taxonomy.

• KM training needs
- • What/which km related training------in-house/external, levels/complexity, certified training, HE
- • Why important------create network, share ideas/best practices, improve understanding, solve problems
- • Selective in choice of km training, why?------'yes'; upsetting experience attending big seminars. 'no', an opportunity not to be missed because there must be something that could be learn
- • Expectation from KM training
- • Perception on certification km training------'not important but helps', 'not necessary depending on km agent involvements in k activities', important; gives more confident, recognition, opportunities, suggested in-house certified training to encourage interested km agent, not required and not believe in km standards formulation.

• Reflection on others' perception on KM
- • KM/agents' role------'dumping ground', 'controversial', 'misused', 'under-utilized effort', 'slaves'
- • Receptivity on km initiatives------do not like km words; put people off/scared, avoid using km terms but it is actually km agenda,
- • Many still do not know what KM is all about------doing nothing, like to see something tangible therefore km agent need to be visible.

The merged document was then read and the indexing technique was applied at this stage where the keywords or phrases were identified using the 'free-text' indexing technique based on the printed report. Not just keywords or phrases found directly from the specific text were identified, but other related possible terms were also being added on as keywords such as the common related terms that being used by others. This was being done also to cater for any keywords, themes or phrases that might be related to other topics that were being discussed earlier. Highlighter pens were used to indicate the keywords on the printed report. Going back to the merged plain text document, a new 'identifier' field was created to allocate these keywords, which served for 'sign-posting' purposes.

This new 'merged document' was imported in N6 and was used to formulate and establish search strategies using the 'Text Search' function. The search strategies constructed were based on the conceptual framework of the research. The 'Text Search' function helped to locate not just those lines that had the exact or similar keywords from the questions and respondent's section but also helped to direct researcher to analyse the lines that discussed the same context but using different terms or keywords. These were the terms or keywords assigned in the 'identifier'. Since the searches were made in the 'merged document', they had assisted the cross-analysis among respondents. Each search strategy produced a report and the researcher chose a report format that had line numbers tagged to each line for easy 'cross-referencing' between the main document (merged document) search reports. Therefore, search reports were all being printed in hard copies. A sample of the merged documents with identifiers is shown in Exhibit 4i.

Exhibit 4 i   N6 'Merged document' with 'identifier' field

```
Yes, there isn't much literature on knowledge measurement and audit at      3055
the moment as compared to other type of activities.                          3056
Respondent#7                                                                  3057
We are doing knowledge audit (measurement) in this organization to look      3058
at the level of km at departmental level and also organization wide          3059
because we have a road maps or milestones.                                   3060

*Identifier knowledge management audit instruments measurement MAKE
indicators sharing investment benefits productivity performance              3061

Interviewer                                                                   3062
So who actually develop the instrument of knowledge audit, is it the kmos?   3063
Respondent#7                                                                  3064
oo... the audit instrument..., we are using the MAKE award instrument        3065
and customized a bit within our context. Like trying to link it as close     3066
as possible to our departments. We know what are the KPIs or key             3067
performance indicators but how to measure that indicators... how to          3068
measure that people has already share. We could identify some proxies.       3069
.but many disagree... Say... like one department has so many thousands       3070
documents, and from there maybe 60 percent can be shared... but is that a    3071
good way to measure knowledge sharing. But we have already agreed km as      3072
part of the process within organization culture but when we start            3073
measuring, we have to look at productivity, performance. Trying to           3074
relate them to culture is very difficult. But people would like to know      3075
how km benefits the organization. For example, it is the same when we        3076
invested a lot of money on ICT, people wants to see the return. So it is     3077
difficult to find the right proxies that can represent indicators for km     3078
measurement.                                                                  3079
```

From the search reports that indicated pointers to the actual text, themes were then developed using the clouds or cluster diagram as shown in Exhibit 4j. Line numbers that functioned as pointers to locate the actual context were useful in identifying relevant narratives. Yet again the coloured highlighters were used to mark appropriate narratives that represent certain themes or categories on the main report. Sense making processes took place based on the emerged categories or themes that involved analysis, interpretation, reflection, construction and compare and contrast activities. These processes could be repeated again and again from the searching stage or even from the identifying keywords or phrases until researcher felt satisfied with the analysis.

Exhibit 4 j   Data Analysis Cluster Diagrams
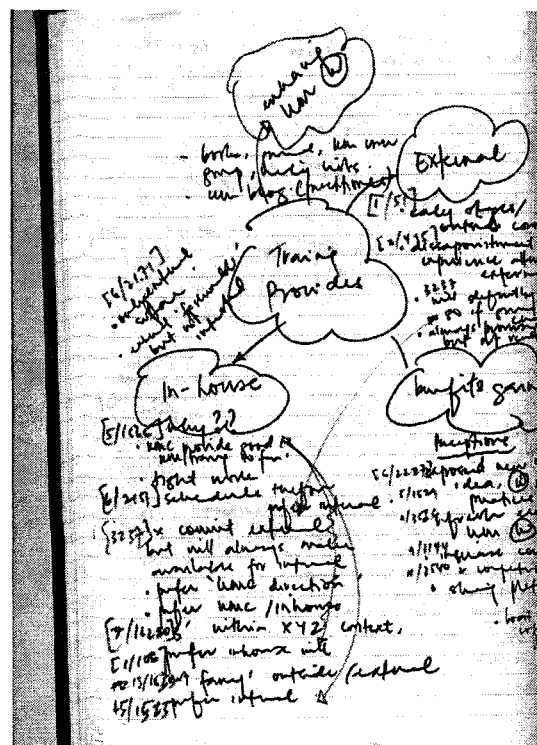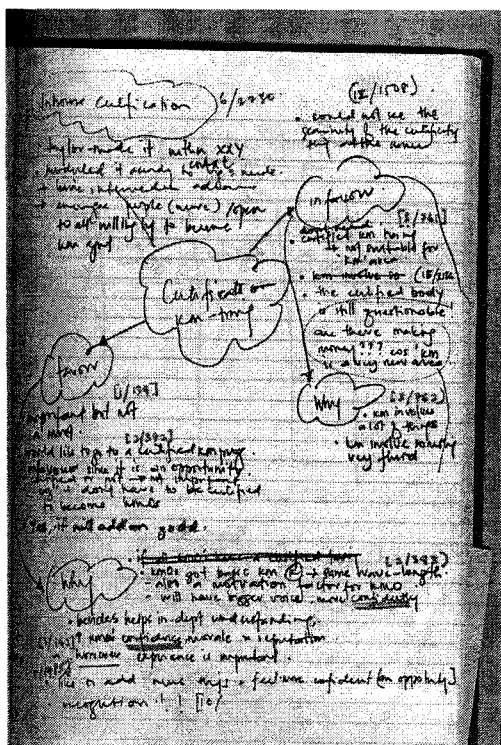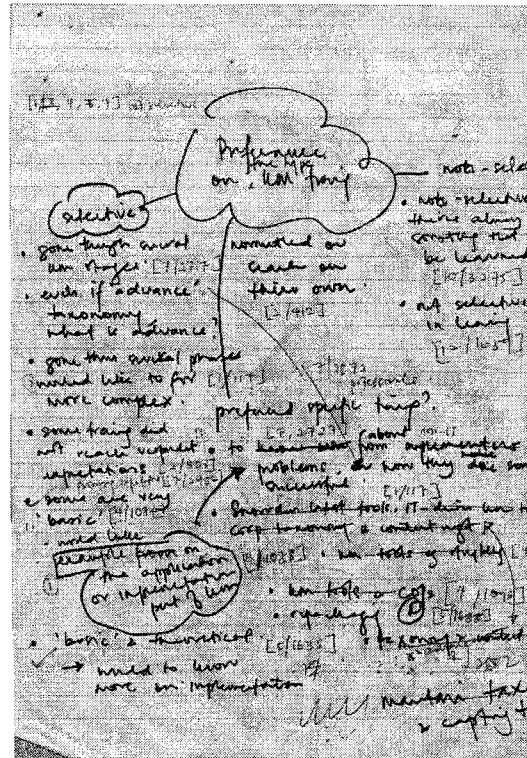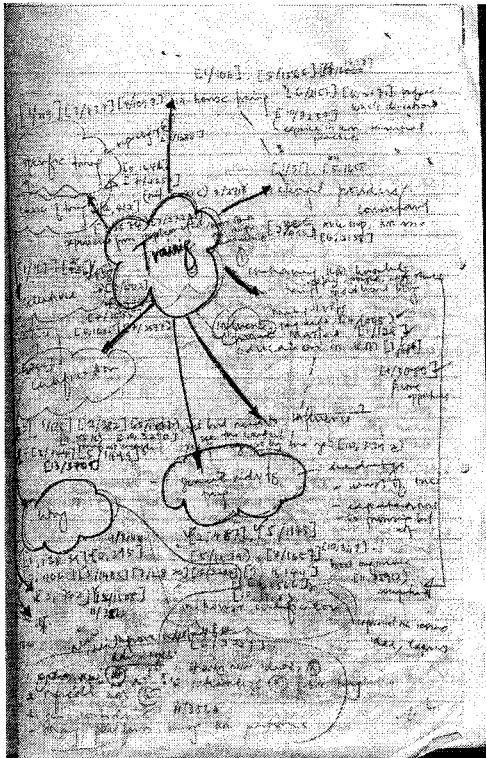
4.4 Conclusion

Since the interviews conducted generated data, which are referred to as 'narratives', literature on narrative analysis was consulted to get a clear understanding of how the analysis could be conducted. However, as the nature of qualitative research is subjective, the process of making sense of the collected interview data is not clearly stated in the literature. Therefore, the researcher had adopted the procedure recommended in Emden (1998) as a guide to analyse the data in this study. Without leaving behind the contribution of computer assisted qualitative data analysis software (N6), the researcher had incorporated some functions from N6 in handling the data with modifications to Emden (1998) suggestions, and a procedure of data analysis for this research in particular was then developed.

CHAPTER 5: ANALYSIS AND FINDINGS

5.1 Introduction

This chapter provides the results of the analysis and findings drawn from the data collected from the case study that involved KM managers in organization XYZ Malaysia. The results starts with presenting the type of KM activities that run at XYZ, followed by the interpretations and discussions of KM managers' perspectives on the KM-related knowledge and skills based on their involvement. The interpretations and discussions on the implications on KM managers' attitudes towards KM training are then presented and discussed.

5.2 XYZ's KM overview

The research was conducted at one of the Malaysian government agencies, which is Agency XYZ. As one of the most important government agencies, XYZ was established on 26 January 1959 with the objectives are to:

a) issue currency and keep reserves safeguarding the value of the currency
b) act as a banker and financial adviser to the government
c) promote monetary stability and a sound financial structure
d) influence the credit situation to the advantage of the country

XYZ main office is located in Kuala Lumpur; the capital city of Malaysia. It has two overseas representative offices in London and New York, with six regional branch offices in Malaysia; to date the organization has more than 2000 employees. XYZ was selected because of its commitment in promoting knowledge management initiatives not just within the organization but also its contributions in helping other organizations. Their experiences in managing knowledge and having a structured KM approach have always become the example not just to other government departments, agencies or public services, but also to some Malaysian private companies.

In the year 2000, the government of Malaysia announced its commitment in developing the nation K-economy master plan; which will guide the transformation from the production-based economy to knowledge based economy agenda. During that same year, XYZ launched and embarked on a structured initiative to transform the organization into a knowledge-based organization (KBO). The initiative was launched to respond to the demands of the rapidly changing and knowledge-driven economy that requires organization to strengthen its resources and capacity effectively. XYZ's KBO initiative was launched with the aim to leverage on the utilization of the organization knowledge asset as the critical resources to improve productivity and performance (XYZ, 2003). To realized its KBO objective, major commitments and initiatives has been introduced which include efforts such as refining approaches in human resource management, training and learning, knowledge management, corporate culture and values as well as enhancing the use of technology. Reported in XYZ annual report 2002; the launching of knowledge-based organization (KBO) agenda has marked a paradigm shift in reflecting the bank's intention to move forward in embracing a knowledge-driven organization and work culture. Taking a responsive approach towards K-economy, the head of agency XYZ as the Knowledge Champion and Chief Knowledge Officer; and the deputy, directors and management were inspired to play an active role in embracing KM. The directors and management were expected to fully engage themselves in building and exploiting the organization intellectual capital (Zamani, 2000). This effort intends to react efficiently to the demands of the knowledge-driven economy. XYZ efforts in embarking knowledge management initiatives reflect their commitment in managing organization knowledge assets as one of the strategic importance in the organization. More about XYZ KM roadmaps and journey are in Appendix K.

5.3 Background context of KM managers' experience in KM activities

In general, XYZ's KM objective is to support the organisation's strategic focus, which ultimately attempts to improve the organisation productivity and performance. Similar to other KM driven organisation, the type of KM activities being carried out by XYZ depends on the focus of their KM objectives. Initially XYZ's KM activities focused towards the objective of *creating knowledge repositories*, however over recent years focus and efforts have been also made towards *supporting knowledge accessibility and transfer* as well as *supporting knowledge environment* as outlined in the research framework of this study (2.5.1). Although XYZ has strategically established KM activities that address all the three objectives concurrently, however the adoption and implementation of these activities are not the same. As Respondent #01 responded;

> *".... of course it is not like 'one-size-fits all'. So over here it all depends on the value preposition from one department to another, so each department will have its own KM objective align to its department's business needs."*

According to Respondent #01 since XYZ KM objective as a whole is about capabilities building, they tried to capitalize on what they have by managing their knowledge assets in a more structured environment. To achieve the KM objectives a variety of activities are carried out either at departmental level or organization wide implementation.

5.3.1 Creating knowledge repositories

Creating knowledge repositories is an extension and reorientation of the organization's information systems and infrastructure. KM within XYZ utilises IT systems to develop their knowledge repositories with the intentions of making the best use of their organisation knowledge assets. All respondents interviewed

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described their involvement in either developing some of the repositories or promoting the usage of these repositories among staff. Respondents #02 and #05 for example, were involved in developing and establishing knowledge portals, although Respondent #02 was doing it at departmental level. Most of the respondents implied that they had tried to make the knowledge assets of XYZ visible by putting their department's knowledge asset into the Electronic Documents Management Systems (EDMS). Respondent #06 revealed that any incoming on outgoing information in the department is put in the EDMS so that it is properly stored and can easily be retrieved whenever required. This includes information such as administrative documents, reports, queries, letters, memos and circulars issued. Respondent #06 described an example of how one department capitalized on their EDMS, not only in managing explicit knowledge, but also trying to codify the tacit process.

"...say... they are coming out with a new policy...where did they go? Who did they talk to? What were the management decisions? What if it was rejected? What happen if it got accepted? What research they had conducted...all that are documented in the EDMS."

For other respondents, like Respondent #08, besides the EDMS, s/he is involved in setting up the department's homepage and also electronic yellow pages for XYZ; a repository that represent who's who in XYZ. According to Respondent #08 these activities were being influenced by the direction of KM, which initially was more IT-focused until they realized that IT is more an enabler for KM implementation. For Respondent #02, besides developing knowledge repositories like the EDMS and portals, and at the same time promoting the usage among staff, s/he had been recently involved in a new kind of repository project called e-collaboration that develops a knowledge hub for interested parties and could be accessed through XYZ's websites. Respondent #02 admitted,

"Although most of the repositories developments were championed by the knowledge management centre, it is a normally a huge project. My responsibility is to look after a smaller version of it; the subset version."

5.3.2 Supporting knowledge accessibility and transfer

After realizing that IT is an enabler to expedite KM, activities that support knowledge accessibility and transfer were then emphasized. This is not to say that developing any relevant repositories would be abandoned or put on hold, in fact continuous efforts were made to make their knowledge assets more visible. However establishing all kinds of KM tools, wherever suitable, was getting more attention by the KM managers especially in supporting knowledge sharing and transfer. KM tools such as Visual Discussion Room (VDR), CoPs, Mentor-Mentee relationships, knowledge fairs and story telling were being introduced and promoted. All respondents illustrated their involvement in promoting knowledge sharing and in fact described their participation as part of the on going activities. For example among KM managers, CoPs, VDR and story telling sessions were set-up and used among KM managers as a platform for sharing ideas, problems and experiences. Respondent #07 described how KM managers had utilised the story telling tools whereby each month KM managers will take turn to read a different KM text which then being discussed as part of their overall KM activities. At the end of the year they had covered 12 KM texts. The idea was to enhance their understanding of various KM aspects so that KM could be promoted easily to other employees. In fact according to Respondent #07 it is only right for them to suggest any KM book to others when they knew what the book is all about. Another respondent; Respondent #02 shared her experience on utilizing the VDR also as a sharing platform to share knowledge gathered from attending seminars

and conferences. A more informal format and language were used in expressing her/his ideas, experience and opinion in addressing the issues;

> "...coming back from seminar I will write and write...like simply use
> informal language...and sometimes I will say 'please excuse the
> language'...or I put question marks here and there... I also address
> issue that I myself could not answer...and from the feedback they
> prefer that type of reporting and say they understand better."

Knowledge fairs are organized from time to time and used as a tool to highlight the state of the XYZ KM journey. According to Respondent #07 the fair usually highlights their current KM activities, coming events, current KM books and articles, story telling sessions and also the top ten list of those being recognized as demonstrating outstanding effort in knowledge sharing. KM managers are responsible for introducing all possible KM sharing and transfer tools that could be used in the departments however; it is up to the department to adopt the most suitable ones.

5.3.3 Supporting knowledge environment and culture

Various measures have been developed and established during the six years to support XYZ's KM on-going journey. Developing KM-related policy, concepts, frameworks and classification system were among those activities that most of the KM managers have been involved in. In supporting the KM infrastructure, among the instruments and actions that some KM managers have engaged in are:

- o Developing XYZ's KM roadmap
- o Developing Information security policy
- o Developing strategic knowledge asset framework
- o Developing knowledge taxonomy
- o Identifying and organize KM related training

The KM roadmap was developed to demonstrate their commitment to adopting KM by indicating certain milestones that they would like to achieve in the future. The roadmap acts as a basic guide for their KM direction and according to Respondent #03, every year they measure their performance based on the KM roadmap. The Information Security Policy intends to deal with the issues of security and sensitivity of knowledge, especially when sharing and transfer are being encouraged. They determined the type of knowledge that is considered to have 'confidential or sensitive' value. Respondent #03 said that they publicized the policy because without it;

> "...the tendency for people to classify certain knowledge or piece of information at the highest level of security could block people from sharing what they know."

Respondent #07 admitted that the policy had made everyone in the organization aware of which documents could be shared to which groups internally or outside organization XYZ. However the respondent highlighted that the Information Security Policy was mainly developed to handle explicit knowledge;

> "...KM is about managing knowledge in all possible forms but the information security policy helps a lot on the explicit ones specifically documents... even to cater for the digital kind of information is difficult..."

KM managers were also involved in identifying and developing the Strategic Knowledge Asset (SKA) framework that outlined the 'high-value content' of knowledge, which guide the content of knowledge repositories. According to Respondent #09;

> "Although we developed several knowledge systems but the intention is not to put everything into the system...that is why we need to identify which knowledge has the 'strategic' value."

Commenting on the SKA framework, Respondent #06 stated that s/he still prefer a comprehensive knowledge systems for the department EDMS. Therefore in this respondent's department all documents, both incoming and out-going ones, are stored in the EDMS in case they might need to refer to them in the future. In fact s/he noted that sometimes it is difficult to identify and categorize knowledge that has the 'high-value content'.

Since developing knowledge taxonomy was another important area that KM managers were engaged into as it was said to govern the whole KM structure, a consultant was appointed to help KM managers. It was quite along process according to Respondent #07 as it had to look at the overall scope of XYZ's business processes. They needed to come up to a standard terms that everyone in the organization agreed with. For example, KM managers use it in developing knowledge repositories, while others might use it in the day-to-day knowledge flow such as sharing activities. This helps to ensure that everyone in the organization is referring to the same context of information when certain knowledge is referred to.

Some KM managers are directly involved in identifying and developing KM-related training for KM managers and also the employees in general. Respondent #01 and #04 implied that they still need to design and conduct relevant in-house KM training for employees and KM managers at the same time still working on developing KM competency framework for XYZ.

5.4 Driving forces behind KM managers involvements

One of the driving forces that determine the volume of knowledge activities that KM managers are involved in, is the status of the KM manager themselves. There are two types of KM manager; full time and part-time and whether the person is a full-time or part-time KM driver depends on the structure of each department. For example according to Respondent #06 there were two positions advertised by the department; one was the full-time KM manager and another was the administrative position. Since s/he believes that s/he could contribute more in the administrative matters of the department, therefore s/he applied for the position that suited her best. Nevertheless after accepting the post s/he was appointed as the part-time KM manager. Working as part-time KM managers, their focus towards KM activities was restricted, as they need to place their main job as top priority.

Some KM managers had gone through several phases in the KM journey therefore there tend to explore other KM activities. For example Respondent #08 reflected that previously s/he was involved in the IT-driven KM activities as it was the initial direction of KM in XYZ. However s/he revealed;

> *"Moving further in KM journey we were then exposed to knowledge audit and content management...involved the process of identifying knowledge gap, business opportunities, need and requirements".*

Some respondents also expressed that support from the Director in each department plays an important role in driving the KM managers' involvements in promoting and practicing KM. The respondents that participated in this research

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came from those departments that were led by the Directors that recognized and encouraged KM. Respondent #05 described the director's role in KM;

> "...it all depends on the director. In my case she is not pushy but she would like to see some KM activities takes place."

The role of Knowledge Management Centre (KMC) was also referred as one of the driving forces that encourage KM managers' activity. As the backbone of the organization KM initiatives, the KMC initiated many KM projects and activities have been passed down to departments where KM managers will continue. Respondent #02 revealed;

> "Now I am starting with my new project, knowledge collaboration and knowledge taxonomy. These are projects championed by KMC. I am also involved in establishing the story telling tool in the bank."

KMC also had managed to influence KM managers to participate in other types of activities like knowledge fairs or capitalizing the VDR. In fact many are satisfied with the opportunities to participate in KM trainings that KMC conducted as revealed by Respondents #02, #05 and #06.

5.5 Findings and interpretations: Part 1 - KM managers' perspectives on KM-related competencies

Based on the research conceptual framework in addressing its research questions, there are six essential KM-related as appear in Chapter 2 (2.5.1) competencies have been identified from the analysis of the semi-structured interviews. The essential KM-related knowledge and skills described by KM managers based on their experience involved in KM activities are highlighted in no particular order of importance. This is because of the differences on the status of KM managers (part-time/full-time), backgrounds and involvement in the knowledge activities. From the interviews, Knowledge Management overview, Corporate Knowledge Taxonomy, KM tools, KM Measurement, Communities of Practice and Information Management, are among the essential knowledge and skills being highlighted as in Exhibit 5a, which is an extension from the earlier competency framework (Exhibit 2e).

Exhibit 5 a   KM technical competencies
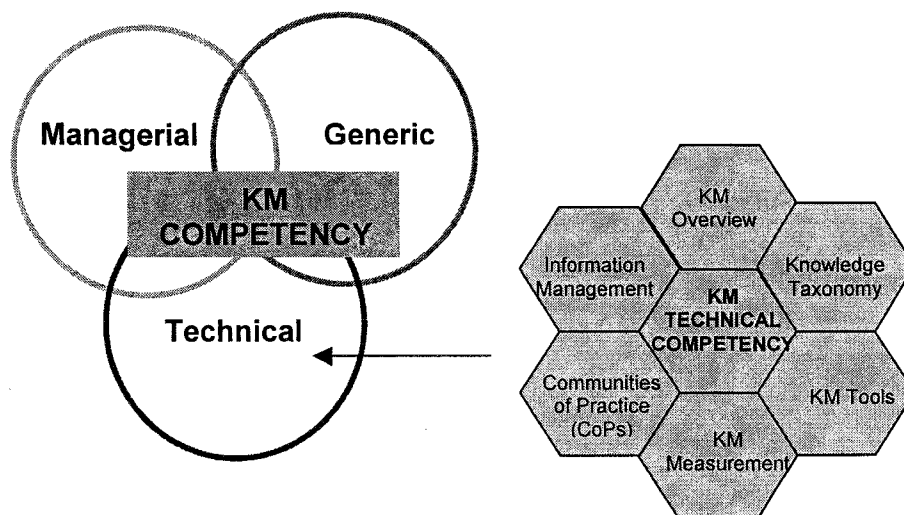
5.5.1 KM overview

From the interviews, respondents expressed the need for KM managers to have an overview of KM in general that includes:

- KM benefits
- KM history, gurus, principles, cycles, framework and tools
- KM implementation or application
- KM success stories

As an organization that has established a structured KM initiative, a team of KM managers was appointed to perform their role as KM drivers based on the knowledge activities they are involved in. The respondents as a whole suggested that KM managers should have some basic understandings of KM. Majority of the respondents recommended that it should not be too theoretical or in-depth, but rather general overview of KM and most important the benefits it brings to organization. KM benefits or value is one of the main issues that need to be explained to the management and employees in order for them to accept KM. According to most respondents, being able to highlight the benefits of KM helps them to sell and promote KM ideas in the organization. According to Respondent #04, making the management and employees understand how they could benefit from KM has become one of the difficult tasks in performing their role as KM drivers while Respondent #10 viewed it as challenges that KM managers had to encounter. Some respondents believe that KM will only run smoothly with the strong support from the management. The importance of understanding how KM benefits the organization was highlighted by several respondents. Respondent #02 admitted,

> "...in order for you to sell the idea to management you must really able to convince them about the benefits."

This could probably because of the KM initiative in XYZ is adopted organization wide, therefore making everyone in the organization including the management understand the benefit that KM could bring to the organization is a concern. For example Respondent #07 revealed,

"...it is not an easy thing for KM managers because you need to educate everyone in the department to understand KM and how it does benefit the department."

In fact, Respondent #07 confessed that being able to understand how KM brings value to the organization is considered a must for KM managers. Similar to Respondent #07, another respondent; Respondent #10 expressed the same attitude;

"In my opinion, for KM manager who is going to facilitate KM, he or she must at least have some minimal understanding of what knowledge management is all about, one...he must understand how it is beneficial to the workers and the organization..."

From the interview, the benefits of KM are not the only issues that respondents suggested to be essential to KM managers. Majority of the respondents highlighted a more extended overview of KM as a foundation to perform KM tasks. According to Respondent #11,

"To deliver ... related activities, we must understand the breath and depth to form an opinion or concept for effective delivery. If one only touches the surface of 'information' or 'knowledge', then when they are being questioned or further challenged, they will not be able to respond...it gives negative perception on the lacking of km understanding." (Respondent #11)

The extended overview of KM includes the KM history, gurus, principles, cycles, frameworks, concepts, tools and practices, which are considered the 'basic'

knowledge that KM managers need to have, as exemplified in the following quotes.

> "...they have to know what KM is all about, what the available tools are, how to implement KM, and what the KM frameworks are." (Respondent #07)

> "...basic KM knowledge like... is able to understand what are KM tools and methods that come together with it..." (Respondent #01)

> "...like KM definition, there isn't one definition, there's a lot out there, you know. At least they must have some exposure to the KM gurus, the history or some KM concept." (Respondent #10)

According to Respondent #10 one must have some knowledge and exposure of KM even before being appointed as KM manager.

> "... they need to know [basic KM] before they can actually proceed as KM manager. Without these, they will feel like...everything is so complicated and difficult."

The reason for Respondent #10 said this because s/he relates her experience and background before being appointed as KM manager in XYZ. S/he has a Master's degree in Knowledge Management before becoming the KM manager. With that experience, s/he has been exposed to an in depth overview of KM concepts, theories and a number of case studies. S/he admitted that it helps her a lot in understanding and adopting whatever knowledge activities being established in XYZ.

Although it is an organization-wide KM initiative with a KM Road map as the guide to reach certain milestone, all departments are being encouraged and supported

rather than pressurized. Therefore, not only do the knowledge activities in departments vary, but the status of KM managers in these departments also differs with some being full-time and others part-time. One interesting scenario expressed by some part-time KM managers is that the commitment towards KM is not that same as the full-time KM managers. One part-time KM manager, Respondent #05, said the full-time KM manager needed in-depth understandings of KM as compared to the part-time KM managers. Respondent #05 confessed,

"... that is for full-time KM managers; honestly my role differs to others. The nature of my department is different because it is small. ... small department like mine, you don't have to know KM in-depth, you don't need that. Yes you need to know what is KM, you need to know some theories and what are the organization's KM direction; where we are moving next...but the full-time KM managers are the person who really drives the KM initiative in the organization."

Since Respondent #05 is a part-time KM manager, perhaps s/he feels that s/he has to emphasize more on her actual position and role. Certainly, s/he has to put more commitments to her main duties and at the same time try to contribute whatever s/he could in supporting KM initiatives. Another part-time KM manager; Respondent #06 revealed this;

"...I only allocate about 5 to 10 per cent in my yearly performance...so...there's no way they can actually tell me to do this, this and this...when I have 90% .so many other things......, rather than who are the KM gurus...KM this, ...KM that, Richard Allen..., who are all these people...who are these KM gurus' real name?"

Respondent #06 stated that as KM manager s/he would like to have an overview of KM because s/he admitted that sometimes s/he could not understand what other KM practitioners meant because they use many 'bombastic' words. KM should be introduced and communicated to the employee in a more general

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context rather than using the 'KM' jargon such as knowledge 'taxonomy', 'mapping' and 'codification'.

Besides 'basic' knowledge, some KM managers tried to reflect on some success stories from other organizations in trying to promote KM. In recognizing and emphasizing examples from KM success stories in other organizations, it may help KM managers in performing their KM tasks such as to convey the benefits and adopting KM concepts applicable to their department and organization. Respondent #13, for example, highlighted that knowing what other organizations do in running their KM and what are some of the best practices that could be learnt would be useful. These would help them understand KM and also gave more ideas of what to do in their department. Agreeing to this response, Respondent #07 revealed,

> "For me, KMO [KM officer] must be able to identify and highlight success stories…so that others could understand how they can benefit from knowledge management practices."

Respondent #10 also expressed similar view in highlighting success stories;

> "Probably some of the most important thing that KM manager need to aware of is to understand best practices in other organizations. There are a lot of best practices available out there…for example best practices of the World Bank…trying to bring examples from successful organizations."

Indeed Respondent #07 suggested that KM managers be exposed to the MAKE (Most Admired Knowledge Enterprise) organizations and stories,

> "They also have to know why organization recognize MAKE [Most Admired Knowledge Enterprise] award."

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This is because stories from MAKE organizations that are listed or chosen in the MAKE yearly list are those that have the ability to create values from their knowledge activities. It is possible for KM manager to relate some examples that could be applied to the context of XYZ.

5.5.2 Corporate knowledge taxonomy

One of the purposes of establishing KM in organizations is to capitalize on knowledge assets through a structured system of knowledge processes i.e. identifying, capturing, sharing, storage and retrieval for future decision-making purposes. It is easy to capitalize on an organization's knowledge assets if everyone in the organization has the same terms of reference of what knowledge they possess or refers to it with corporate knowledge taxonomy. In describing the importance of having knowledge in developing taxonomy, KM managers highlighted:

- The justification of having the knowledge in developing corporate knowledge taxonomy
- The experience in the process of developing the taxonomy
- The nature of the corporate taxonomy

Developing corporate knowledge taxonomy has been described as one of the essential knowledge and skills that KM managers required to assist them in supporting KM activities. Respondent #07 stated that corporate knowledge taxonomy is essential,

> "... the reason for developing corporate taxonomy is for everyone to have the same understanding of the actual subjects, if not..., it is difficult for people to store, or search...and it is very much related to our knowledge cycle. It is a framework that governs the KM cycle...for example when we want to help people to find info, we have to have the 'meta-data'."

Respondent #07 explained that, the people in the organization need to know the framework since it drives the KM cycle, i.e. storing, organizing, searching, or...knowledge seeking because it is easier and faster for everyone in the organization to access or retrieve the knowledge for future use. However, KM managers need to know the process of developing it. The reason for Respondent #07's argument is that KM managers are those who are in charge of maintaining the taxonomy because they need to change the framework from time to time according to the organization's business context. Respondent #07 also said;

> "...developing taxonomy is an evolving process based on our business ...like when our organization come out with new contexts of business, we have to change our taxonomy."

Another KM manager had similar view on the nature of developing the taxonomy. According to Respondent #08;

> " ...we need to have a committee because developing corporate taxonomy is not a one-off activity, it is a continuous process...I am aware that there is possibility of changing it in the future....."

According to Respondent #07, in developing the in developing the corporate taxonomy, KM managers may need to have some technical skills. Respondent #07 clarified;

> "... a process of developing a classification...we have to get help from the consultant ....what we did is...we bench-marking it with similar organizations. We came out with a baseline of corporate taxonomy...and then we have to meet with all the subject experts...because they are the one that actually understand about the organization and work processes.... until we agree on one standard terms... and main subjects in the organization."

Respondents agreed that developing corporate knowledge taxonomy is a difficult task, as it needs inputs from all departments in order to construct a standard classification that is agreeable by all on every term used in the classification. While recognising the importance of this skill, some KM managers' comments were noted regarding the complexity of the system or framework. Several respondents, Respondent #02, #05, and #11 suggested that less complicated jargon should be used instead of using the complex word while developing the taxonomy. Respondent #05 confessed,

> "... it does not have to be complex. What most important is to make sure that it is easy to use. I try not to make things complex. After all, I have never exposed to any kind of classifications like library classifications or what... So I am just thinking of trying to reflect how the people in the organization do their work..."

Reflecting from a part-time KM manager's perspective, Respondent #11 highlighted one scenario while developing the corporate knowledge taxonomy with a consultant when describing the complexity of developing taxonomy. Respondent #11 described her/his experience with two different consultants who were brought in to help KM managers develop the corporate knowledge taxonomy. Respondent #11 favour one consultant's approach in explaining and helping to develop the taxonomy. Respondent #11 clarifies,

> "...she will come and talk with simple plain English... with the ['lah'] ...all thrown in .... She will bring chocolates, sweets, things, and say 'taxonomy...is...like this, you see different-different kinds of chocolates here? and how would you want to class them? So... Mars...or, ...Smarties...and all the round-round ones go together, the sweets....bla..bla..bla...' you see...she taught us like that because she knew that we don't really understand what this taxonomy is all about."

Narrating one unfavourable approach while developing corporate taxonomy, Respondent #11 suggested that a more straightforward concept should be introduced to make people more understand about taxonomy. In this context, Respondent #11 expressed her concern:

> "he [the consultant] talked like...'taxonomy is from the Greek word...this and that'.....and everybody was like...you know...even my boss looked like sooo...... and ..... I would suggest you put a section [thesis] on this because people think it is great to talk all the 'hi-fi' words. Even if you go to KM conferences and they have been throwing all these words but not everybody there can understand it.... People will easily get shut-off."

However, one KM manager said they have to be very clear on the concept of corporate knowledge taxonomy before trying to make others contribute to the construction of the taxonomy. Respondent #02 revealed her experience in describing 'corporate taxonomy' by saying that s/he has to make her audience or staff clear of what s/he meant. According to this respondent s/he will every time explain clearly the context of 'corporate taxonomy' than 'corporate tax anomy' which is also another term familiar to the organization that deal with financial activities.

5.5.3   Knowledge management tools

KM managers agreed that another essential KM-related knowledge that KM managers need to have is the KM tools. Issues that the respondents highlighted in describing the significance of having the knowledge and skills in KM tools include:

- The justification of having the knowledge in KM tools
- The varieties of the types of KM tools
- The benefits and values of the tools

- The implementations or applications; the suitability and customisation of the tools
- Storytelling tool

The majority of the respondents in general agreed that it is essential to have knowledge and skills in KM tools. For example Respondent #07 clarified;

> "...we need to know this skill because we are responsible on the setting up the tools, the usage and the sustainability of those tools. ...within KM tools, things like...what it is for..'

Supported by another respondent, Respondent #03;

> "If you know and understand the core thing about the tools, it's going to be easy because you will be the one who is going to introduce the tools to the rest..."

There are varieties of knowledge management tools available to support knowledge activities; either ICT or non-ICT driven. The respondents make clear that their organization is having both types of KM tools. Respondents #02, #03 and #07 observed the importance of having knowledge and skills in KM tools is because there are so many choices of KM tools available and one needs to choose the right tools that suit the department. Respondent #07 uncovered that they need to know the available KM tools especially the technology driven tools because as times goes, technology changes and the tools could easily become obsolete. Respondent #07 explained,

> "...when we say knowledge retention, knowledge lost, and knowledge transfer; looking at that do we have enough tools to support? These are some of the things that we have to look whether we have the appropriate tools to address all the issues.... For example to promote knowledge sharing, ... we also need to know that it is not just VDR or Visual

Discussion Room which is using technology, but also there are other
tools and means to share!"

Besides acknowledging the IT-driven tools, some KM managers also discussed the importance of knowing the non-IT driven tools such as after action reviews and face to face story telling. Quoting from Respondent #03,

"...we need to know about IT... because we deal a lot with these
tools...there is quite a lot actually...,... we need to understand the
technology tools but technology is not the only thing, and people need to
understand this...you need to introduce other tools...so when we throw
these kinds of tools [non-IT tools] ... they can share better ...and have
better mechanism to share...when they start a new project, they have a
better platform to collaborate..."

However, the respondents highlighted that having introduced many type of available KM tools available and leave it to the people in the organization to choose without knowing its purpose and objectives will not help them in capitalizing the potential of the tools. As Respondent #07 explained, since KM managers are the ones who provide and assist departments on the use of KM tools, it is important to highlight the purpose and benefits of each available tool. The respondent further added that with this knowledge the adoption of any tools in department would then be much easier. S/he recalled her earlier experience as a KM manager;

"When we [KM managers] first started, we provided them with all the
tools but at that time we ourselves could not really justify to them how to
use it and how they could benefit from it...but now we must be able to
show the value of these KM tools..."

According to Respondent #11, the benefits, processes and applications of KM tools need to be convincingly communicated so the tasks of promoting KM could be done more effectively.

A majority of the respondents also emphasized the issue of applications or implementations of KM tools. The aspects of suitability and customisation of the tools were highlighted by some KM managers. For example, Respondent #10 stated that it is not an easy task to do because the respondent herself/himself adopts several KM tools like storytelling and KM fair in the department where the respondent attached. Respondent #07 highlighted the lack of literature in the aspect of KM implementation and application. Respondent #07 responded;

> "...things like... what is it [KM tool] for...? and you also have to know about the adaptability of KM tools...say... how to customize it...? And actually you have to look at this tool and analyse it whether it is suitable to provide a platform for KM activities. Yes, you can have and read literature on KM and KM tools but sometimes it's so theoretical...but how you implement it was not being discussed...

Some km managers responded that being able to identify the suitability of certain KM tools to appropriate context is important. For example in describing the knowledge capturing activities Respondent #04 expressed,

> "...there are so many ways or I shall say tools that we use to capture tacit knowledge depending on situation. In this organization, we have several methods in capturing employees' tacit knowledge. We use storytelling to one and maybe written experience to others".

Similar explanations are shared by Respondent #07 when describing on the issue of 'suitability' in adopting KM tools. Respondent #07 explained;

"I would like to know more about the latest KM tools...which tools are more suitable to certain kind of k-activities...for example, storytelling...though it is not IT-driven, yet it is so powerful especially when a person is a 'story-teller'; they can easily relate their experience in an in-depth context...however as a powerful tool, it might not be workable to others who are not comfortable to that kind of environment."

In relation to that, another KM manager (Respondent #10) noted that KM managers might need to understand how these tools could be adapted to specific situation. Respondent #10 commented;

"...there are many tools that you can pick and try to utilize it for organization's benefit, but what is needed is to be able to customize it according to the department's requirements."

Respondent #07 summed up the view on the implementation issue by saying that KM managers need to know how to customize the KM tools by analysing the tools and try to figure out the suitable platform for KM activities based on the adaptability of the tools.

The respondents have revealed storytelling as one of the most powerful KM tools. To establish a storytelling concept that suits the organization, XYZ secured assistance from a consultant to teach them how to capitalize storytelling tools. According to Respondent #02, they need to study the suitability of the storytelling tool within their organization context. Respondent #02 recalled her experience while developing and establishing a storytelling mechanism to identify which approach suits which character;

"Actually while identifying all the characters around us, we never expected that this [showing the XYZ's storytelling poster] would come out. We were asked by the consultant to illustrate the traits of our own office mates...when we join things together, we could see those

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*characters really exists around us and we came out with the analogy for
each character [again referring to the poster]."*

According to some respondents; (Respondent #03, #10, #13), they used
storytelling as a tool to promote and encourage knowledge sharing activities.
Respondent #03 introduced storytelling tool for the knowledge sharing session,
which was conducted to share best practices related to their work and referring to
an example where they used it for sharing knowledge after they came back from
training. However Respondent #10 used storytelling not just to share best
practices but also on leisure topics like hobbies. The argument is to let the
storytelling tool be an informal platform for sharing knowledge.

Respondent #13 used storytelling in the department 'knowledge fair' which they
conducted to update department's knowledge activities as well as a platform that
gathers employees together to share valuable experience. Another respondent;
Respondent #05 described the use of storytelling as a platform for problem solving
sessions not just in the department where the respondent act as a KM manager
but also when the respondent was in the CoP of KM managers. Whilst
Respondent #04 said the storytelling analogy that represents the employees' traits
was used for the knowledge capturing activities. The respondent recalled one
incident capturing tacit knowledge from one of the staff that was going to retire;

> *"...he had serve very long in the organization but we knew that he prefer
> to tell about his experience verbally rather than put it in reports so we
> used the storytelling techniques to capture his tacit experience and
> knowledge."*

5.5.4 Community of Practice (CoP)

Every employee in an organization may have been involved in certain groups or networks either in big or small communities; or in active or inactive participation. It has become a platform where each member in CoPs share and enhance their knowledge and experiences. KM managers reflected their views on having the knowledge in CoP by highlighting issues such as:

- The justification of having the knowledge on CoP
- Establishing CoP
- Understanding the nature and structure of CoP or social network
- Types of CoP; IT-driven or non-IT-driven

One of the reasons for most KM managers at XYZ revealed CoP as one of the needed KM skills is because of their role as to support and promote KM initiatives. From the interview, KM managers highlighted that supporting and promoting CoPs as one of the most powerful KM tools that could help organization to capitalize their knowledge assets. One KM manager; Respondent #01 revealed that for KM managers to understand Community of Practice is important because promoting and supporting CoP is part of the KM manager's job. As one of the KM drivers, while participating within their own KM CoP, they also have to support the application of CoP to others; as revealed by another KM manager, Respondent #03. Sharing that same view, Respondent #04 disclosed that COP is another important element of KM that KM and said;

> "...when I say CoP... it is about how we nurture community of practice in organization? Yes, it has been around for years... but how do we capitalize it?"

Realizing their role as to promote and support CoP, some KM managers suggest an extended understanding of CoP such as its concepts, structure, benefits and

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5.5.4   Community of Practice (CoP)

Every employee in an organization may have been involved in certain groups or networks either in big or small communities; or in active or inactive participation. It has become a platform where each member in CoPs share and enhance their knowledge and experiences. KM managers reflected their views on having the knowledge in CoP by highlighting issues such as:

- The justification of having the knowledge on CoP
- Establishing CoP
- Understanding the nature and structure of CoP or social network
- Types of CoP; IT-driven or non-IT-driven

One of the reasons for most KM managers at XYZ revealed CoP as one of the needed KM skills is because of their role as to support and promote KM initiatives. From the interview, KM managers highlighted that supporting and promoting CoPs as one of the most powerful KM tools that could help organization to capitalize their knowledge assets. One KM manager; Respondent #01 revealed that for KM managers to understand Community of Practice is important because promoting and supporting CoP is part of the KM manager's job. As one of the KM drivers, while participating within their own KM CoP, they also have to support the application of CoP to others; as revealed by another KM manager, Respondent #03. Sharing that same view, Respondent #04 disclosed that COP is another important element of KM that KM and said;

> "...when I say CoP... it is about how we nurture community of practice in organization? Yes, it has been around for years... but how do we capitalize it?"

Realizing their role as to promote and support CoP, some KM managers suggest an extended understanding of CoP such as its concepts, structure, benefits and

application as some of the areas that will benefit them in performing their km role. It is important for KM managers to understand CoP because with better understanding of its concept, structure and benefits, one may come out with an effective CoP in supporting knowledge flow. Respondent #02 uncovered that without enough understanding of CoP, as KM manager s/he has to start from 'zero' and therefore revealed that KM managers need to understand CoP;

> "... what is the benefit of CoP...? ...why is that a need for CoP...?...how can you adopt CoP in your organization"

Respondent #11 believed that only when KM managers understands the concept of CoP, then one might relate it easily in performing their KM role. Respondent #11 explained;

> "...In our daily work, we do get into groups; be it temporarily until the task finish or remain intact. But CoPs are unique as they stay as long as they wanted as they believed with the knowledge, experience in enhancing group knowledge, and further value add to their work since all share the same passionate toward one thing or more. Under the context of KM it is known as CoP but...until we understand what is CoP all about, then we can relate it to KM context easily."

For Respondent #04, understanding the community of practice has to be in detail because this respondent believed that CoP is capable in producing effective way of supporting KM. According to Respondent #04;

> "...others [essential skills] will be things like...CoPs [community of practice]... but I think in has to be in depth, because CoP is very powerful. It is just a term that was being given to what we used to call as networking; no matter you are in marketing or other network groups, ...CoP is a very useful tool... KM manager could use the CoPs concepts and try to make them more effective within KM context..."

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Responding to the importance of CoP, Respondent #03 implied CoPs as a social network said that KM managers might need to understand the structure of the social network to manage tacit knowledge, as it involve people. Since CoP exists all over the place, understanding 'social network' and how the structure works could improve knowledge activities and flows. Respondent #03 reflected a situation;

> "...I think it [CoP] is everywhere. But we need to understand further of how this network works in this organization. For instance; who normally ask what, for what or for whom, all that we need to understand. Once we understand the structure of the network in the bank than we can improve our knowledge flow, knowledge transfer or retention, share or whatever."

Respondent #03 also said that it would be good for KM managers to be able to understand the structure of social network in the organization;

> " ... the best fit for me is somebody who can come in and who can look at the organization networks, and can function by introducing a lot of initiations to help with the decision making in the organization...we are focusing on the tacit; dealing with people. So how do we deal or structure networks?"

Responding on the application aspects of CoPs, Respondent #07 suggested that on the application and implementation part of CoPs, KM managers should understand that CoP could be supported either using IT or non-IT based on the nature of the groups. For example although the respondent highlighted the IT-based platform like the Visual Discussion Room that was set up to allow project team members collaborate with each other, other non-IT based were also described. According to Respondent #07, the non-IT based could also be introduced to help the CoP formation continue functioning. The same respondent

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added that people would like to be in a community or group but not all are comfortable with IT. The respondent recalled one scenario when some CoP members were asked to utilize the organization's Visual Discussion Room, not all responded in a favourable way. There are people who are still comfortable in having a traditional kind of 'get together' within their own interest group. That is why it is important to know the nature of groups and the appropriate approaches for CoP.

5.5.5   Knowledge measurement

As KM is about managing organization knowledge assets including intellectual capital as well as other intangible resources, measuring knowledge or knowledge activities have always become a contentious issue. KM managers in XYZ are also facing the same problems in justifying their KM initiatives, which include benchmarking and identifying what need to be measured, and how it should be measured. This section will reflect KM managers' opinion on K-measurement that includes:

- The justification for KM managers having the knowledge and skill in K-measurement
- Problems in k-measurement
  - Difficulty in measuring knowledge
  - Identifying proxies that represent knowledge or knowledge activities
  - Benchmarking best practices

When commenting about the importance of having knowledge measurement knowledge, one KM manager (Respondent #03) said;

> "...KM measurement is important. This is about audit and assessment, which is very difficult to do. ...the reason for us to do this 'audit' thing is to find gaps and I would like to know how to do it."

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KM managers that commented on the importance of having the knowledge and skills in knowledge measurement agreed that there is a need to develop knowledge measurement framework in order to measure their knowledge activities. One full time KM manager; Respondent #01 said that besides KM tools, K-identification and K-sharing s/he would like to know more about KM measurement. Justifying the importance of having knowledge and skills in KM measurement was highlighted by Respondent #08,

> "We need to develop meaningful KM measurement framework to give a reasonable assurance to the management and staff of XYZ on our KM initiatives."

Admitting having insufficient knowledge in this area, several KM managers such as Respondent #08 and #04 admitted the difficulty in developing KM measurement framework in practice. This is illustrated by Respondent #04 who expressed her/his frustration from attending training sessions on KM measurement;

> "...after listening to the half day KM measure workshop, I got so upset with what I am getting. I like to know something about how they do it..."

According to the respondents, having the knowledge of KM measurement is crucial especially for intangible knowledge. Measuring intangible knowledge is difficult due to several reasons. As Respondent #07 revealed;

> "I am more interested to know more on how to measure knowledge or KM activities ...because KM is also looking at culture which is so difficult to measure."

Respondent #07 highlighted;

> "...there isn't much literature on knowledge measurement and audit at the
> moment as compared to other type of activities. We are doing knowledge
> measurement in this organization looking at the level of KM at
> departmental level and also organization wide, based on our KM road
> map or milestones. ...we are using the MAKE award instrument and
> customized a bit within our context...like trying to link it as close as
> possible to our departments."

For KM managers in XYZ measuring knowledge has always been an issue that
needs to be addressed in terms of relating it to some business impact. Measuring
knowledge is still a problem to KM managers not just during the earlier stage of
implementing KM, even until now when they are in their sixth years of their KM
journey. Respondent #08 revealed;

> "Yes we have invested a lot but because of the qualitative and in-direct
> nature of KM contribution to the achievement of XYZ strategic results, we
> faced difficulty in developing comprehensive and convincing business
> measurements."

The nature of knowledge that appears in various forms; explicit and tacit, and the
amount or value of knowledge that differs among individuals and departments; it
makes it difficult for KM managers to determine what are the indicators that could
represent knowledge or knowledge activities such as k-sharing, k-creation or k-
transfer. Respondent #07 reflected one situation while trying to come out with KM
indicators;

> "We try to identify some proxies...but many disagreed and said things
> like... one   department has so many thousands documents, and from
> there maybe 60   percent can be shared...and so on... but is that a
> good way to measure knowledge sharing for example?... KM benefits the
> organization... but it is difficult to find the right proxies that can represent
> indicators for KM measurement."

The respondent added that they have to keep on thinking of the appropriate 'proxies' that could closely represent knowledge activities and most important is that the proxies are those agreeable by many.

Similar views to Respondent #07, another KM manager; Respondent #08; exposed;

> "After 2, 3 years in our KBO journey, questions were raised on the value or contribution of KM to the organization but it's difficult to find suitable indicators that could be used to measure KM activities or contributions."

Misrepresentation of KM indicators could affect people performance as said by Respondent #05;

> "...the way that we measure performance will then drive people performing their work."

With the complications in identifying proxies for indicators that could represent knowledge or knowledge activities, they have difficulties in measuring and comparing their KM activities for internal and external benchmarking. In view of the fact that benchmarking is part of KM measurement, KM managers also mentioned that it is crucial for them to know how to benchmark KM activities. While organization XYZ is considered as one of the KM pioneers among Malaysian government agencies, it is difficult to find organizations that they could refer to for benchmarking their KM activities. According to Respondent #10,

> "...the person must have knowledge in benchmarking KM practitioners and organizations. Meaning, the person must have some knowledge or exposure to some other institutions that have practice km successfully. It can be foreign organizations like... or maybe some local organizations such as organization ..."

Respondent #01, the knowledge and skills in benchmarking is considered crucial even though s/he has involved in XYZ's KM initiatives from start. Respondent #01 admitted;

> "What I find it difficult until now is benchmarking. It is very difficult to benchmark this organization with others in Malaysia. Most companies that practice KM are all in the private sector. Instead of benchmarking ourselves to other organizations from public sectors or government agencies, they will come to us to see and learn from us. They want to know what we are doing and how we do it..."

While according to Respondent #04, knowledge measurement is also about 'gap analysis', which involves audit and assessment tasks, and organization XYZ does conduct its KM audits. At the moment according to Respondent #07, organization XYZ does recognize some knowledge-sharing activities such as sharing, cooperation and teamwork following the MAKE award criteria. They believed that acknowledging these behaviours is important to encourage their contribution and sharing.

5.5.6 Information management

The information management discipline covers a wide scope of areas; from information storage and retrieval, record management, indexing, abstracting, classification, databases, information resources, etc... With that large scope of area, KM managers highlighted that having knowledge of information management is essential as a basis for better understanding of KM concepts. This section highlights KM managers' views on KM that include:

- The justification of having knowledge and skills in Information Management
- Information management application in KM
  - Developing knowledge repositories
  - Classifying knowledge/information; knowledge taxonomy

- Identifying, acquiring, searching analysing strategic knowledge

Information management is seen as one of the fundamental elements in KM as highlighted by some respondents like Respondent #02, #03 and #09.

> *"The basic concept of knowledge management is still information management." (Respondent #02).*

> *"Information management is still the core...KM will not work if information management doesn't work...that is why sometimes there is tendency in organizations to put knowledge management under information management." (Respondent #03)*

> *"Apart from understanding the business operations; in terms of KM-related skills I would suggest that information management as the core." (Respondent #09)*

One respondent, Respondent #04 who has a master's degree in Information Management said that having a background in information management helps the respondent understand KM better. The same respondent said that being involved in XYZ KM initiatives gave the respondent the opportunity to translate the theoretical experience into 'applied perspectives'.

Some respondents also described that their knowledge and experience in information management field gave some impact on their KM understanding. Respondent #09 admitted that KM is not just about managing information but it goes beyond which include managing tacit knowledge. However, this respondent clarified that because of his/her involvement in information systems, his/her understanding of KM become much easier. Another respondent; Respondent #08 noted;

"Actually my knowledge in information management was handy in the initial stage of implementing KM projects...and moving further in our KM journey like knowledge audit and content management...my business skill was crucial."

Objectively Respondent #08 reflected such view because XYZ KM journey was initially more towards IT-driven like developing knowledge repositories and infrastructures.

Most respondents observed the relevance of information management in their KM initiatives. For instance Respondent #03 mentioned why KM managers need to know information management;

> *"...also remember, in order for knowledge management to work, we need information to work first because we have to manage a lot of these explicit knowledge ...and for example when we develop repository, from pieces of information later on may turn into knowledge as a whole."*

Most respondents agreed that the knowledge in information management has helped them to facilitate KM activities especially in developing and establishing knowledge repositories, corporate taxonomy and content management. Respondent #06 commented that even before KM they have information systems that manage the organization's information asset, such as the EDMS. The same respondent added therefore, when KM came in it is then about refining its objective and function into a wider scope. Elements like strategic knowledge assets, information security policy and knowledge taxonomy have to be considered. Another respondents; Respondent #05 describe how probably IT background help;

> *"for me...maybe my IT my IT background help me in terms of managing knowledge because now with knowledge management we have knowledge portals, knowledge hub etc... so if you are not IT savvy*

*person you might find it scary or panicky when you feel like there are a
lot to learn."*

For respondent #09, a part–time KM manager and at the moment is studying KM at master's level agreed that KM managers should be technically sound in information management. This respondent added that this is due to the fact that a lot of KM work will involve the retention of information, which in IM (Information Management) it is commonly referred as information storage and retrieval. As revealed by another respondent; Respondent #05 KM manager could exploit the knowledge on information management to work and support on the systems side of KM activities. The respondent said that KM managers could be in charge of the KM systems as well as involved in designing the systems.

According to some respondents, having the knowledge in information management could assist KM managers in developing corporate knowledge taxonomy. Although Respondent #03 believed that the knowledge that KM managers needed to have a mix of organization theory and behaviour, sociology and communication, however information management is still fundamental.

Respondent #03 elaborated that knowledge taxonomy, which is a 'classification' structure; has to be developed first before they developed and established knowledge repositories. This is to standardize the operational aspects of the repositories. Also mentioned earlier by Respondent #07, knowledge taxonomy is the foundation for any kind of KM activities. With an information management background, Respondent #07 tried to relate the process of developing corporate taxonomy with the library classification system. According to Respondent #07 the concept of corporate taxonomy is similar to the classification systems that the

respondent learnt while studying in information management field. Although Respondent #07 admitted that developing the taxonomy is not easy as they need to get help from some consultants, Respondent #07 confessed that having the knowledge and skill in classification and indexing makes it easier to absorb.

Since KM includes activities such as knowledge identification and acquisition according to Respondent #04 those activities would also need information searching and analysis skills to support those KM activities. This respondent highlighted that besides information management skills KM managers will also require some competitive intelligence skills, which most importantly involve information analysis. Describing an example Respondent #04 who has information management background revealed;

> "...information analysis tries to understand links between information...like looking at scenarios in information... for example when browsing the internet; you read an article from the Chinese newspaper or foreign newspaper, and sometimes it click to you like there are links between the two stories..."

The difference between the knowledge that an organization already has with the knowledge that it should have will then highlight the existence of knowledge gap. According to Respondent #03 also with information management background;

> "To fill up the gap firstly you need to know where the resources are. Resources could be a resource person, experts...communities...group of practitioners that you could be part of...joint a lot of mailing list...talk to some of the gurus, books, research..."

In the field of library and information management, information resources are considered fundamental subject matter or topic that is being taught. Therefore information and retrieval techniques are common for those that have information

management background. According to one respondent, being able to locate and obtain the knowledge (tacit and explicit) will support the *knowledge identification* and *knowledge acquis*ition activities or processes, however KM managers must also be able to know the organization strategic knowledge assets. They have to study their user profiles and their information needs to provide relevance information or knowledge. Respondent #07 clarified that identifying which knowledge or information is important to the organization is crucial because;

> *"Our intention is actually not to store everything into one repository but to highlight the 'high value' content that we called 'strategic knowledge assets'."*

Respondent #05 explained that they have to be clear about their strategic knowledge assets so that it could be properly organized for future used.

Identifying information needs helps information brokers [KM managers] to provide valuable information or knowledge to everyone in the organization. However identifying information needs is not an easy task as there are certain methods and techniques that had been suggested and discussed within the information management field.

5.6 Findings and interpretation: Part 2 - Implications on KM managers' attitudes towards KM-related training

KM managers had revealed their perceptions on the KM-related knowledge and skills required by KM managers based on their involvement in KM activities. Based on the conceptual framework, data gathered from the respondents also revealed their attitudes towards KM-related training. Since several specific skills were highlighted as essential skills for KM managers, a majority revealed that they still felt their KM-related skills are insufficient. The respondents exposed that they learn as they progress and it should be a continuous process.

Respondent #03 said that the knowledge in KM will never be enough although after having involved in KM for almost ten years because the respondent still felt that KM is still very much an open subject which could allow new concepts and thinking to come in. Respondents revealed that they enhanced their KM knowledge via many ways such as reading from KM books, journal articles and case studies. They also subscribed to KM mailing list or KM online groups and associations. A KM practitioner's blog has been said as another way of getting ideas and knowledge about KM; as revealed by one respondent. However the majority of the respondents highlighted that they enhanced their KM knowledge so that they could perform their KM activities by attending KM-related training. For example Respondent #04, #09 and #13 said that they attended KM training because of their insufficient knowledge in KM and from that training they could get new knowledge and ideas. One respondent, Respondent #06 revealed that her/his KM understanding and knowledge are always not enough and that is why the respondent will try to make herself/himself available for any kinds of KM training. Respondent #11 however said although KM knowledge and skills could be enhanced through reading KM articles or books and participating in the CoPs,

training was suggested as a good platform to enhance KM manager's knowledge and skills.

For Respondent #09, although being in the CoPs of KM managers, the respondent felt;

> "I always feel ...like... it is still not enough because I know there are still more that I could get from those individuals. That is why I am attending this programme [Master's in Knowledge Management]."

Another respondent; Respondent #10 also admitted insufficient knowledge of KM and revealed that from KM training issues on KM will be exposed. The respondent explained;

> "That is why if you attend KM Europe for example, you will be exposed to new happenings...ideas, practices and experiences.."

5.6.1 Attitudes towards attending KM training

From the analysis, the respondents reflected their views towards the KM-related training that they have attended so far. KM managers' views on KM training are presented according to the:

- decisions on attending the KM-related training
- preferences on KM training providers
- perceptions on benefits gained from attending KM training

Majority of the respondents acknowledged that their involvement in KM activities had some influence on their decision in attending KM-related training. The training includes short courses, conferences, certified programmes or even university level master's programmes. Many had attended training either the one conducted in-house or external. All of the respondents had attended various KM

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training like short courses and seminars however two respondents had attended the certified KM training while four continued their education by studying KM at masters level. Respondent #01 confessed;

> *"At the time when I was already involved in our KBO[Knowledge-based organization) journey, I would like to know about KM. ...at the time the concept was still very new to us in Malaysia not just in public sectors but also in private organizations. So I thought from the training might help me in my KM work."*

Another respondent, Respondent #04 explained that while being involved in KM, the decision to continue education in KM is because the respondent viewed KM as a niche area. However, during that time there wasn't any university offering KM as a programme by itself therefore the respondent decided to study information management since several KM subjects are included in the syllabus. XYZ started its KBO journey late 1999 and during that time KM was still at a very early stage of its establishment therefore none of the university in Malaysia offered KM. While Respondent #09 revealed a long term perspective and stated that the decision to study KM at master's level was more or less influenced by the respondent's involvement in KM activities, in fact this respondent intended to further up to PhD level. The respondent admitted;

> *"...because at that time people are talking about k-economy...knowledge management...knowledge sharing...and in fact I got the opportunity to be the KM manager so I think it is useful for me to equip myself with a proper or formal KM education not just to be more knowledgeable as KM manager but I could also see opportunities in the future.."*

Respondent #09 expressed that through the KM programme the respondent was exposed to a broader context of KM since it required the respondents to read from all sources like books, journals, online materials and case studies. The respondent

also learnt from experiences that other classmates bring to class. On the other hand Respondent #05, tried as much as possible to attend to all KM training such as workshops or seminars during her/his first year involvement in KM as s/he saw it as an opportunity to improve her/his KM understanding. According to this respondent so far the trainings s/he had attended have been sufficient to perform her/his part-time KM manager tasks. Respondent #05 expressed;

> "For me, I think it is not necessary to go to a structured learning kind of KM training like ...the master's programme...etc...because to me KM is not very different or that difficult like engineering kind of thing.."

This respondent revealed pursuing a much more structured education is not essential yet trying to internalise what had been learnt from the trainings is more crucial.

Most of the KM managers had attended KM training organized or conducted by both in-house as well as external providers, however many prefer attending training that are organized in-house. Several respondents such as Respondent #06 and #10 only attended the in-house KM training and had not been to any KM training conducted by external providers. Those respondents that prefer in-house training revealed that one of the reasons was because the in-house training provided something more relevant within XYZ context. Respondent #06 preferred in-house training because it was designed according to XYZ's KM direction.

> "I think that I would learn more by knowing what the organization really wants to be in KM... I realized that it is fashionable to go to outside training with World Bank example, Samsung example...this example...but can you bring it back here? ...I prefer to move towards KMC's [Knowledge Management Centre] direction."

With similar argument; Respondent #09 said;

> *"I prefer the internal ones because I think our KMC understand the organization problems better than others."*

In fact, according to the respondent when the KM managers are together in the training session conducted in-house, they could share many problems and issues within the organisation or their own KM context. Respondent #01 said outside perspectives could also being brought into the organization since from time to time consultants were appointed to facilitate in-house training and the scope was customized according to XYZ KM objectives. Therefore this respondent will try to make herself/himself available every time when there is in-house KM training being conducted even if the respondent need to reschedule other appointments.

As for external training, it will depend on the content of the training and the availability of time. Quoting from Respondent #05 who also preferred the in-house training said that s/he did not 'fancy' the external training and so far was happy with the in-house training. However, one respondent who had attended both type of trainings revealed, although s/he experienced some disappointments when attending to external training as it did not reach the respondent expectations, the respondent still believe that it is a good platform to create another side of CoP. The respondent recalled the experience attending KM Asia conference;

> *"That is the place where you get to know a lot of people which I still keep in contact. I always share ideas...this is another part of my CoPs...I met some new people from Singapore Navy, Ministry of Defence also from Singapore and Petronas Malaysia"*

In general, most respondents agreed that attending KM training would enhance their KM understanding and help them to perform their KM activities. From training, respondents could gain new knowledge from ideas, practices and experiences that came out from the training as revealed by Respondents #02, #05, #10 and #11. Respondents could also share new knowledge as training is also a platform where they could share knowledge with KM practitioners. For example since training is one of the places where KM practitioners gather, Respondent #10 explained;

> "...issues like the latest happening that KM people are talking about, the latest things they are embarking to, KM tool...that is why if you attend conference like KM Europe, probably you will be exposed to these kinds of issues...and it is easier to talk to practitioners who have KM background."

Another experience attending from attending the KM conference particularly KM Asia was described by Respondent #02;

> "...it all depends on whether you want to talk to people or not. If you don't talk...like creating network, you gain nothing. During the time I attended KM Asia, I managed to mingle around with people from......and sharing ideas especially the good ones for my KM event in XYZ."

One respondent revealed that not just s/he gained new KM ideas and shared KM knowledge from training but also it revive the respondent understanding and knowledge in KM. Respondent #08 said s/he would not mind attending even a 'basic' KM course because at times s/he felt that s/he need to refresh her/his KM knowledge.

Most respondents perceived that they could improve their KM abilities from attending KM training. According to Respondent #11;

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"Through training I feel that I am more prepared and confident. Besides those training make me competent in KM matters which able me to sell and convince knowledge management to stakeholders."

5.6.2 Respondents' preferences on KM-related courses

Respondents in Organization XYZ said that they were always being encouraged to go for KM training either by nominating certain KM managers to go to particular training or allowing KM managers to search on their own appropriate KM training. However the finding revealed that respondents had certain preferences in attending KM related training and those preferences are highlighted based on:

- Selective in the choice of KM-related courses/topics
- Specific KM- related training KM managers preferred to attend

Some respondents such as Respondents #01, #02, #04, #05 and #07 admitted that they are quite selective in attending to KM-related courses because of several reasons. Respondents #04, #05 and #07 highlighted that they are selective in their choice of KM courses as most of the content was too 'basic' and theoretical. Respondent #04 referred to the papers and discussion presented during the KM Asia conference she attended recently. Respondent #05 showed her/his concerned s/he had to be selective every time when s/he decided going for any kind of KM training.

> *"What I am getting is like so basic...what I want to know is how do I solve my problem? For me working is about solving problems. Listening to those talks and lectures is too theoretical...I need more practical approach."*

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Respondent #07 rationalized her/his attitude of being selective in attending KM-related training as s/he had been involved in KM for several years and had gone through certain stages through out the KM initiatives.

> "...I want to know from KM professionals...I want to know from the implementers...I will be a bit selective even if there are courses on 'advanced' taxonomy...I really need to find out what do they mean by 'advanced' course."

Respondent #07 recalled her experience attending one KM training that brought into KM implementers from Singapore Police Force to talk about their experience. Simple and practical, as Respondent #07 described, the examples of how they established the non-IT KM tools were interesting and useful. Another respondent; Respondent #01 also claimed to be selective because of her long establishment in XYZ KM initiatives Respondent #01 said;

> "My involvements in KM activities have started since KBO journey. Since then I have gone through several phases so I would like something more complex...so to me complexity in the training that I am going is important."

If complexity was an issue to Respondent #01, other respondents such as Respondent #02 and Respondent #07 however highlighted the issue of expectations. Similar to Respondent #02 and #07 also expressed the disappointment experience as the content of the course did not reach their expectations and therefore suggested the training providers need to do more research on their target groups.

> "What happen now is that they put all the papers together...and even at times it was so promising but when you go it was not really what you expected."

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There are also respondents who admitted that they are not selective in terms of attending KM-related training. According to Respondent #10 s/he would try not to miss any training opportunities, as this respondent believed there would be some advantages. Respondent #10 highlighted;

> *"For me in any new environment or scenario that you are in, there is always something that you can actually learn...there are a lot out there... one thousand and one things that we can learn. So any training opportunities that approach us we should go even it might be CoP I, CoP II or CoP III."*

Another respondent; Respondent #12 revealed on why s/he would not be selective in attending KM-related training;

> *"I am not selective in what I want to learn because I still want to now more about knowledge management."*

Concerning the specific KM-related courses that KM managers in XYZ would prefer to attend; the interview revealed that most of them would like to attend courses on KM that exposed on the application or implementation part of KM. Most of the respondents described their interest in attending further training in KM tools. Respondent #01 that prefers courses related to KM tools such as Snowden's latest tools and also IT-driven tools. Respondent #01 came from the human-track of KM formal training said that the technology developed very fast therefore the respondent need to update the availability of KM tools. Respondent #03 and #07 however preferred the training on non-IT KM tools. Respondent #03 would further training on adopting storytelling as a KM tool. The respondent realized that even though they get help from consultants to establish their storytelling mechanism, there are more to learn especially from other practitioners.

On the other hand, Respondent #07 clarified that s/he would like to know more about KM tool and its suitability in KM activities. The respondent revealed that s/he would want to see how other successful cases on implementing certain tools.

Respondent #01 and #07 that previously described to be selective and expect a much more advanced and complex training would also like to further their knowledge by attending to courses on corporate taxonomy since both started as early as XYZ embarked on its KBO journey. They would prefer some advanced courses that exposed them on the implementation part like how they maintain the taxonomy. Both respondents also mentioned about their interest in specific KM training like content management. Respondent #07 said her reason for attending this training was because they are still struggling in establishing their content management;

> *"We are having our own difficulty in understanding our content management. Now we a getting one consultant to help us work on our content management, but his definition is more towards system and we are not interested in content management systems. Though it is part of it but we are looking at the whole system of content management...its policy and how to contextualized it based on our policy...how do we avoid duplication...how do we manage the content..."*

However, another respondent would prefer the training that discuss on how to repackage knowledge. Respondent #05 revealed;

> *"... repackaging the knowledge...like putting in a different way for different people as there are so many functional units in the organisation"*

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Respondent #04 highlighted that although many KM managers would prefer courses that revealed cases from practitioners' application and implementation experience, they admitted having problem in searching for that type of KM courses.

> "I would like to go for courses like 'best practices' in KM, but I know it is difficult to find one."

Respondent #07 expressed her experience when trying to find out about knowledge measurement;

> "Even when I attended the KM Asia annual conference, when I asked questions on how to measure knowledge to others...not many are willing to share their experience, maybe they do not know the answer. The speakers tried to highlight some cases, and suggest some framework, but it is not a good example to us."

As mentioned earlier in the analysis, the issue in knowledge measurement is complicated and subjective, therefore it is difficult to get good examples but the respondent was expecting to learn something from other practitioners.

5.6.3   Respondents' preferences to certification of KM training

The issue on 'certified' KM training was initially highlighted by the first respondent being interviewed and followed by some others.   The researcher decided to include the certification issue as part of the interviews by also asking opinions from others who did not address it spontaneously.   Therefore this section is covering the following:

- Respondents attitudes on certified KM training and its justification
- In-house certification

From the analysis, the respondents could be grouped into two different opinions; one is in favour of KM certification and the other is against certification. Giving their own justifications, majority of the respondents had reflected why they show positive attitudes towards certified training. Many agreed that being a certified KM manager is good as it could give more impact while they perform their KM activities. Getting a certified KM training is a motivation factor for some of the respondents. For example, Respondent #01, #02, #05, #06 and #10 said that besides being able to get an in-depth understanding, the certified KM training would increase their drive towards KM. According to Respondent #01,

> *"I believe that it helps a lot in KM managers work ...would understand KM much deeper. The certification status in KM would in a way increase our confidence, morale and reputation."*

Respondent #02 and #06 both agreed that being a certified KM manager would carry more weight and both expressed their interest towards attending a certified KM training. Respondent #02 highlighted;

> *"With that certification, we would have bigger voice. It will help us to do the job more confidently."*

According to Respondent #02 it would be much easier for all KM managers to talk to each other about KM if everyone had the same wavelength when they discussed about KM. KM concepts could be materialized more easily and quickly if the general understanding of knowledge management among KM managers is at similar level. According to Respondent #02 this could be achieved when all KM managers are 'certified' KM managers. In fact s/he gave a scenario that a group of 'certified' KM managers from one organization came to see XYZ's KM efforts towards becoming a KBO. S/he described that a comprehensible communication were reflected among those KM managers.

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As XYZ is always being a referred as a pioneer in KM for government agency, many organizations (private and public) had came to see and learn from XYZ. According to Respondent #02 unlike most KM managers in XYZ that had to learn from the very beginning;

> "...a group of KM manager from ZZZ came and visited us; all of them had attended the certified KM training. They came to see what we have done and we had a long discussion with them. What I have found out is that although they are new KM managers, their understanding of KM is good and they only need to ask themselves on what they should do now or how to materialise the KM tools."

On the other hand for Respondent #05 and #10 the reason why they would be interested to go for a certified KM training is that they could see the significant of having that kind of training to their KM job. Respondent #10 said that the certification would not just increase their confidence but also it would impart some kind of 'status' and 'authority' especially when it is being recognized by XYZ. Respondent #10 added;

> "In this matter if the certification is being acknowledged by XYZ and clearly specified that with it, there will be some recognitions by all means I'll go ahead."

Similarly for Respondent #05, besides being able to know KM profoundly, attending to any certified KM training would be an opportunity because s/he believed that with in-depth understanding, others would respect and listen to them more especially when they introduce some new KM ideas. However for this respondent, s/he does not think that at this stage of her/his involvement as a part-time KM manager, the KM certification is required. Although those respondents who showed their favour towards having a certified KM training agreed that having it is a good and to some is important but all of them seem to

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agree that it is not a must. This is because what they picked up through out experiencing the XYZ's KM journey will help them to improve from time to time. There were several respondents that showed some unfavourable attitudes toward KM certified training. Respondent #03 and #12 expressed concern on how genuine is the training and the body who runs the certified KM training. According to these two respondents, KM can be considered as a new progressing movement as compared to other established area. Elaborating on that issue, Respondent #03 said that unlike other field, the time was not appropriate yet for any organization or body to offer 'certification' training as everyone is still in their initial learning process. This respondent believed that KM involves a lot of 'fluid' things that is intangible. Another respondent, Respondent #13 showed concern on the 'money making' intention of some organizations that offer the certified training because very often participants were charged very high for attending such courses. In fact while studying her/his masters in KM, the issue was being addressed and careful consideration before committing into any certified KM training was suggested.

One respondent; Respondent #06 highlighted an interesting suggestion on KM certification. Respondent #06 who had not attended any certified KM training said that s/he would like to see a kind of certified KM training being developed and organized in-house by XYZ.

> "The organization [XYZ] could start by offering a basic course, then intermediate and advanced and all with exams...why not? ... the KM training centre we could always tailor-made it according to organization context, ... built it within the organization needs, and then break it up into basic, intermediate and advanced."

Respondent #06 believed that by doing such more people in the organization would willingly be interested in becoming KM managers as it will be open to everyone in XYZ. This would naturally create better KM managers that have the passion and motivation in practising KM.

5.7   Conclusion

In this chapter, findings from the interview data were analysed into two sections: *the six KM specific competencies essential for KM managers to perform their tasks and KM managers' attitudes towards KM-related training.* The six competencies identified include KM overview, KM tools, Knowledge taxonomy, KM measurement, Communities of Practices (CoPs) and Information Management. KM managers attitudes towards KM training were demonstrated based on the benefits, types of KM training providers and courses offered.

The issues highlighted in this analysis and interpretations are further discussed in the following chapter (Chapter 6 – Discussion) by drawing together the experience of KM managers and discussions from previous research and literature.

CHAPTER 6: DISCUSSION

6.1 Introduction

To respond to the research questions highlighted in Chapter 1, this chapter evaluates the results presented in the previous chapter by comparing them with the previous research and theoretical perspectives from the literature. The research conceptual framework in Chapter 2 is used as a base to present the discussion. With the findings, the researcher will discuss 'how KM practitioners interpret the essential KM-related skills needed by KM officers based on their involvement in KM activities and how it influenced their attitudes towards KM-related training.'

6.2 Essential KM competencies

The findings reveal six KM competencies (Exhibit 6a) that KM managers interpret as essential while performing their KM tasks. These were addressed the first research question:

- *How do KM managers interpret the essential KM competencies needed in supporting their KM tasks?*

Two main issues are addressed; KM managers' views on the essential KM knowledge and skills needed *(what)* and the justification for the importance of the knowledge and skills in performing their KM tasks *(why)*. The results highlighted six essential KM competencies as depicted in Exhibit 6a and are followed by several general justifications of their essentialness in Exhibit 6b. Further justifications for each competency are then discussed based on Exhibit 6b – 6i.

Exhibit 6 a   Components of KM-related competencies
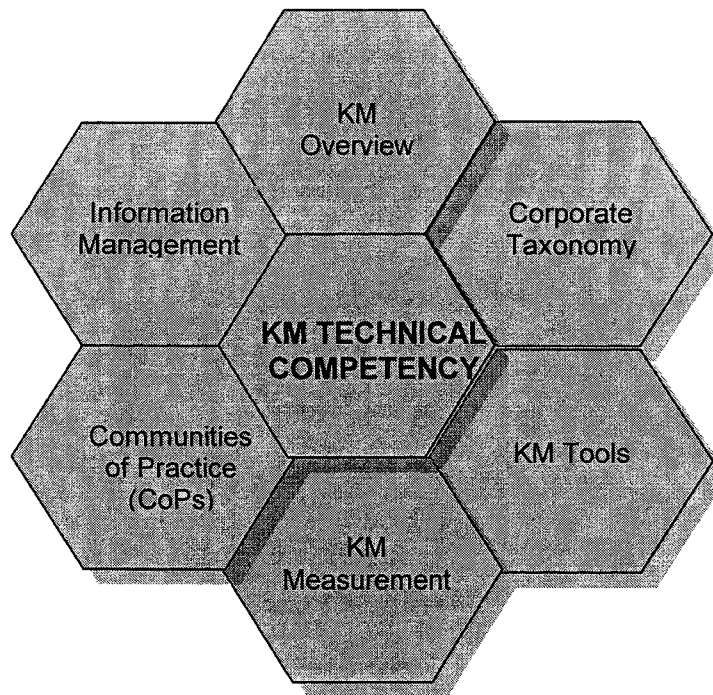
Essentially all of the respondents believe that having relevant competencies within KM subject matters is crucial because of several fundamental reasons such as:

- Responsible for promoting and supporting KM in the organisation
- Easier to sell KM ideas
- Help to adjust KM when equipped with adequate KM knowledge

Since KM managers are responsible for introducing, promoting and facilitating the concepts, principles, tools and activities. Promoting KM ideas will be easier when they have the ability to relate KM concepts to their business operations. KM initiatives require a certain amount of investment therefore the outcomes need to be justified. Since KM managers are responsible for managing organisational knowledge assets they have to rationalize and defend to management and employees how KM contributes to better organisational performance. This is

because, for example as the person who is responsible for coordinating and facilitating the work of CoPs, KM officers will carry out both the management and leadership activities of CoPs (Garavan *et al.*, 2007).

6.2.1 Knowledge management overview

Exhibit 6 b   KM overview

KM competencies *(what)*	Justifications *(why)*
1. **KM overview** ■ KM history, gurus, concepts, principles, frameworks, cycles, tools, benefits, best practices	• An essential foundation of KM spectrum • Able to improve confidence as KM drivers • KM is an 'open system' • KM is ambiguous and there needs to be a shared understanding of KM • Able to learn from others' best practices and mistakes

Establishing KM initiatives or activities in organizations could be complicated. KM is an initiative that is multifaceted and complex, covering various organizational aspects including organization policy, structure, human resources, business operations and culture. The result of this research indicates that understanding the KM overview is considered essential for KM managers in performing any kind of knowledge activities. KM managers need to have 'basic' KM knowledge in order to have a full picture of the concepts that could be adopted within the organisation. It has been noted by Al-Hawamdeh (2003) that for those who are involved and interested in KM, one of the general characteristics is having a good knowledge of KM subject matter.   However the scope of 'basic' KM knowledge is quite subjective as the majority of KM managers indicated 'basic' KM includes its

concepts, principles and framework. On the other hand the scope of 'basic' KM was extended into more details by some KM managers (Respondent #01, #07 and #11), which include knowing its history, gurus, cycles, tools, benefits, best practices and also its applications.

The background, experiences and involvement of KM team members who are appointed to perform KM roles and activities vary. Several KM officers had formal KM education or training which could determine the level of KM understanding in general. On the other hand, there are mostly full-time KM officers with only some part-time KM officers involved in XYZ, which lead to the level of commitment and involvement in knowledge activities varying. Since the respondents involved in KM initiatives at XYZ come from different backgrounds (academic, designation, discipline, professional, gender and fulltime/part-time status), they tend to have different perceptions and understandings of KM concepts or frameworks. The nature of KM itself had gathered or attracted people from all backgrounds. Such comments are supported by McAdam and McCreedy (1999) who state that besides combining theory and practice, KM is also a multidisciplinary field with an ambiguous definition and which attract people from all kinds of segments who then endeavours KM according to their own interest and concern.

From the findings, respondents at XYZ believe that highlighting the benefits of KM would make people in the organization more receptive towards KM. Emphasizing KM benefits was recommended by consulting firms like KPMG Consulting. According to KPMG Consulting (2000) KM users (employees and employer) would absolutely like to see how KM could benefit them if they were to practise or follow the initiatives or activities. In fact some respondents (#02, #04, and #10) reflected that KM officers should be able to convince the management and employees of

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how KM benefits not just the organization in general but also the direct contributions at departmental level. According to McAdam and McCreedy (1999) employees need to know how KM could bring the potential success to the organization as well as how it improve their knowledge and work environment in the department. Being able to convey KM benefits to employees and management is crucial because several consulting firms (Ernst & Young, 1999; KPMG Consulting, 2000; PriceWaterhouseCoopers, 1999) argue that if people who are in charge of KM (KM officers) could not send out this message clearly within the organization, KM initiatives will not be successful. Respondent #07, #10 and #11 revealed that promoting KM by emphasizing its benefits is difficult, complicated and in fact one of the major challenges KM officers need to counter. A similar situation experienced by Nordon (2005) while establishing a KM project reveals that KM is not simple as it takes time to highlight KM benefits or victories to the organization though the ultimate aim of KM is to improve the organization performance. The potential benefits of KM to organizations were highlighted in most KM literature. Highlighting KM benefits when promoting KM to the organization was also suggested in Skyrme (2001) who says that in most organizations the ultimate value of KM is about the benefits of what it could contribute. However according to the respondents highlighting KM benefits seems difficult because to prove the good effect of KM is quite subjective especially when people tend to interpret KM differently. This would be more complicated especially when the benefits or potential value of KM could be just anything related to the organization performance (April, 2002). Skyrme (2001) notes that those benefits could vary from increasing knowledge worker productivity to reducing time-to-market new products or even to improving customer service.

Knowing some KM success stories and failures from other organization was said to be one of the significant factor that could help KM managers in performing their knowledge activities. Respondent #07, #10 and #13 admitted that learning from others is one of the ways to adopt KM. That is the reason why in KM, to avoid costly mistakes, it encourages the recording of experiences and making available to others what works so as to avoid experiencing the same mistakes (Goethe and Carlyle, 2007). In fact, Respondent #01 highlighted that it is difficult to make reference to other organisations that practise KM as benchmark without knowing what others are doing. According to Henczel (2002), benchmarking is about investigating how things are done by another organisation, 'where they are done differently or better' and to see whether their processed could be adopted to improve their existing processes.

In terms of justifying why KM managers need to understand the overview of KM to perform their KM tasks, all agreed that it is an essential foundation within the KM spectrum due to the nature of KM itself. Respondent #02, #04, #07 and #10 revealed that knowing the fundamental principle of KM is significant, and should become a foundation for KM managers in practising and promoting KM initiatives in XYZ. Respondent #11 revealed that understanding the overview of KM could make them more confident, especially when they are being challenged about the KM concept while promoting KM to the employees. However, very often that new ideas or concepts introduced in an organization were being challenged by the employees or management, as they are already complacent in terms of what they have been doing before. To reduce such situation of resistance to change, Dueck (2001) states that more focus should be given to those involved in KM journey by including them in the process of designing the initiatives.

Despite its imprecise nature, KM could fit into any type of organizations as well as organisation processes or functions. Respondent #03 highlighted that KM is an 'open system' which in this aspect could fit into other fields. Therefore it is typical for any KM team members in an organization to have a selection of KM officers like in XYZ with different backgrounds and experiences. Nonaka and Takeuchi (1995) highlight that with the wide scope of definitions; those involved in the KM field represent all kind of disciplines such as management science, production engineering, strategy, sociology, psychology, etc. For this reason having an 'open system' could open to all kinds of KM concepts and approaches. The respondents were aware that KM is an indefinite, complex and multifaceted discipline; however its ambiguous definition and concept could lead to misinterpretation. Call (2005) reveals that since there is no one definition that could be considered as definitely correct or incorrect, however, the organization should at least agree on one broad definition of knowledge in order for the whole organization understand KM.

Despite KM being ambiguous in its definition and in terms of concepts within it, there should be some common basic understanding that almost everyone in KM professions should have regardless of the position that they hold i.e. knowledge managers, knowledge scientists or knowledge engineers (Newman, 2002). It has been agreed by most respondents that there must be a 'shared understanding' of what a basic KM overview should be for the organisation to follow. Moreover since KM activities at XYZ were established at a different level and pace, KM managers might have to face complex KM concepts and approaches. Therefore, what is most important is to ensure that they are all moving towards the same direction with the same shared understanding about KM. This is crucial in helping them to craft appropriate strategy in managing organizational knowledge assets.

Within the context of KM overview, each organization is unique in its particular way; however other organizations' best practices and mistakes could become a good KM orientation with some adjustments to those who would like to practise KM. Respondent #07 and #10 for example believe that highlighting examples of success stories from other organizations could make the justification of how KM could benefit the organization much easier. While Respondent #13 expressed that besides improving the understanding of KM, it gave some practical ideas on how it could be implemented in XYZ. Best practices and lessons learned from other organizations that practise KM were said to be a significant point of reference for any organization that adopt the same initiative. According to Secchi (1999), 'lessons learned' are working knowledge that has been validated and drawn from both success and failure stories, and which, when reused, can significantly impact on an organization's processes. For example the stories and experiences of companies that are listed as the top 20s Most Admired Knowledge Enterprise (MAKE) Award, are often being highlighted in reports, conferences, books and articles. In fact commenting on the MAKE Award, Respondent #07 highlighted that, by learning from other organizations' experiences, KM officers could avoid some potential mistakes that others had made. Additional information about MAKE award is attached in Appendix L.

6.2.2 Knowledge and skills in building corporate taxonomy

Exhibit 6 c   Knowledge and skills in developing corporate taxonomy

KM competencies (what)	Justifications (why)

2. **Corporate taxonomy**
   • characteristics
   • development process
	• It acts as a standardized framework of a classification system for the whole organisation
	• It governs the whole KM cycles and activities; it functions in KM activities
	• Allow a smooth knowledge flow in managing knowledge assets
	• A complicated/complex process which is difficult to develop
	• An evolving process aligned with organisational changes
	• Required technical skills
	• Required inputs from experts /consultants

Chaudhry and Tan (2005) describe how organization developed taxonomies with the aim of connecting users to resources. It happens through the 'navigational processes of browsing structured hierarchies by making sure that organization knowledge resources are defined and located within appropriate contexts or categories (Chaudhry and Tan, 2005). Therefore it is important for KM managers to understand the characteristic of corporate taxonomy. Respondent #02, #05 and #11 showed their concern not just with the word taxonomy, which seems to be a huge word. In fact, it was suggested that the jargon used in the classification system should represent their business and operations. Gilchrist (2001) in his study on taxonomies states that the word 'taxonomy' should not be defined before the process of developing it starts. This is to avoid confusion over the term or

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even to avoid it being labelled as another fad of referring to the word classification or thesauri.

Three respondents (#02, #05 and #11) expressed that the developed classification system or taxonomy should not be too complex. This is to make sure that the taxonomy could be easily understood and used by everyone in the organization as well as it being applicable to any types of knowledge activities. Respondent #05 specified that most importantly the taxonomy should reflect how people (the users of the taxonomy) work in the organization since they are the ones who are going to use and reused the taxonomy. This is in parallel with Gilchrist (2001) who suggests the key consideration in developing this standardized classification is to focus on reflecting the language of the organization and its people. The argument is similar in Warner (2004) that defines 'taxonomy' as a system of labels that shape a hierarchical navigation construction, which develops by emphasizing users' common labels or terminology. However, the fact that taxonomy is a set of controlled vocabularies, lacking user orientation was one of the significant issues (Bearman and Trant, 1998; Chaudhry and Tan, 2005; Geser, 2004; Nicholson, Dunsire and Neil, 2002). Especially in this digital era where digital systems are used to assist organization in most activities or business operations, the personal human assistance is getting limited (Nicholson, Dunsire and Neil, 2002). Although one software developer (GammaSite, 2004) reveals that human errors and time committed in taxonomy building could be reduced when using the software, those involved in taxonomy building are recommended not to delegate totally to the software because it is the developer's job to customize the taxonomy framework according to the organizational and users contexts (Ainsbury, 2002). Therefore the authors suggest that the controlled vocabularies used in taxonomies or knowledge organization systems (KOSs) should particularly consider the

terminology used by those who are going to employ it. In the case of XYZ, employees and experts throughout the organization were approached to give inputs and consent until one agreeable set of vocabularies could be endorsed.

According to the respondents it is important for KM organizations like XYZ to develop a corporate taxonomy that serves as a standardized knowledge framework in the form of a classification system. Having the knowledge in developing an organizational taxonomy is important for KM managers because the classification system is a shared understanding of standardized terms of reference which represents XYZ's business operations as revealed by Respondents #02, #05, #07, #08 and #11. According to the respondents, using the same terms of reference at every organisational level is important no matter what type of knowledge activities or at which level the departments are into KM. In XYZ, although KM is being introduced organization wide, the scale or level of adoption and practice in every department is not the same depending on the priority that each puts into KM. However, Respondent #07 highlighted the substance of developing the taxonomy because the classification system is one that governs the whole KM cycles and activities in XYZ. The respondent also revealed that having the taxonomy will allow a smooth knowledge flow within the organization as everyone refers to the same term when describing or working on their organizational knowledge assets. The rationale can be found in Harvey (2003), who says knowledge taxonomy is a course of classifying organization knowledge assets which describes and classifies the structure for knowledge storage and retrieval that will help future searching and browsing of organisation information and knowledge.

The respondents who were involved in the development of corporate taxonomy for XYZ recalled that the framework of the corporate taxonomy is always evolving because the organization as a whole, the management, the culture and the business processes are forever changing so as to adapt with the business environment. For example Respondent #07 and #08 admitted that developing taxonomy is not a one-off activity, as it has to be updated from time of time. Currents efforts to address this issue include a study by Chaudry and Tan (2005) that confirm there is no one taxonomy or classification scheme, which could be referred to as a best fit scheme or system, therefore it is going to be a continuous learning process.

In general the respondents admitted that the process of developing a corporate taxonomy was difficult and complicated. Respondent #07 and #08 suggested that there should be some specific personnel working on taxonomy development. This suggestion was highlighted earlier in a survey conducted by Gilchrist (2001) drawing on twenty-two case studies that researched the current practice in building taxonomies. The study that reports the use of taxonomies as a new approach to solve information overload, also reveals that companies are prepared to invest extensively on professionals specifically in developing and maintaining their taxonomies. Although there are many automatic classification tools or packages available in the market that could assist in developing the taxonomy (Ainsbury, 2002), this study reveals that developing taxonomy is not a straightforward activities. In fact Respondent #07 expressed that some technical skills are needed in developing the taxonomy and in the case of XYZ initially they had to bring in some consultants to get expert input in helping to develop the taxonomy.

With the issue of difficulty, technicality and complexity were associated with the 'controlled' taxonomies development; some considerations highlighted by the respondents are summarized below:

a) Avoid complexity

  – easily understood and applicable to any kind of knowledge activities.

b) Use understandable vocabularies/jargons

  – easily understood and applicable to any kind of knowledge activities

  – consider 'user context' terminology

c) Reflects organization's activities

  – should represent the work of the organisation

d) Continuous process

  – changing the taxonomy framework from time to time to adapt with business/organisation changing environment

6.2.3 Knowledge and skills in KM tools

Exhibit 6 d   Knowledge and skills in adopting KM tools

KM competencies (what)	Justifications (why)
3. **KM tools** • Types of KM tools • Benefits • KM tools adoption • Story telling	▪ Variety of KM tools to choose (ICT vs. non-ICT); which will support organisation's KM activities ▪ Lack of literature on implementing KM tools, therefore adopting KM tools is difficult ▪ Different nature/ characteristics of the department or organization ▪ Understand the benefits of the chosen tool is crucial in promoting the usage ▪ Involve in the decision on suitability of KM tools to the nature/characteristics of departments ▪ Involve in customization and adjustment of KM tools to the type of KM activities

Respondents acknowledged the importance of having the knowledge and skills in KM tools during the interviews. The result reveals that there are respondents (#03, #04, #07, #08, #10, #11 and #13) believe that it is essential to have knowledge and skills in KM tools since they are responsible for introducing and promoting those tools to people in the organization. KM tools are being introduced to support all kinds of knowledge activities such as knowledge acquisition, creation, sharing, retention and measurement. Most respondents are aware that there are so many available KM tools that could be adopted and generally they could be divided into two types: ICT-driven and non-ICT-driven KM tools. Like most organizations that practise KM, XYZ chooses both platforms as a strategy to carry out and facilitate knowledge activities. They have been using all kinds of tools to support KM initiatives, including those suggests by (Robertson, 2005) including intranets, e-mails, internal magazines, meetings, notice boards, manuals, etc. Besides these, XYZ established a range of KM tools including a visual enterprise portal, a visual discussion room, storytelling, knowledge fairs and knowledge repositories to support their knowledge activities. One could not deny that ICT provides all kinds of systems within context. In this provision Davenport and Prusak (2000), view technology as both contributors as well as an enabler of KM initiatives. Respondent #03 highlighted that since most of the tasks today involve a lot of ICT tools, it is important to know about the ICT tools. However, the respondent also acknowledged that they should be used with the non-ICT tools to provide a better knowledge-sharing platform especially when they are involved in a new project. On the other hand, Respondent #07 revealed that KM managers should give more emphasize to ICT-driven tools since these tools tend to be out-dated faster than the non-ICT-driven tools as ICT technology continuously develops and evolves from time to time. In fact very often KM tools are being associated with ICT tools and the respondents highlighted several main ICT-driven tools (mentioned earlier)

to facilitate KM activities at XYZ. For instance, the visual discussion rooms (VDR) that allow flexibility in the traditional face-to-face communication; as said by Respondent #03 and #07, could solve a number of organizational collaboration issues. However they showed their concerns that proper consideration is needed in developing it. This is because technology could not be the direct answer to any problems. According to Arnison and Miller (2002), having a virtual communication platform between team members improves access to information and team participation, which could increase work performance. On the other hand, even though it could reduce the time taken to finish certain jobs and help to solve problems related to their tasks more easily, the authors reveal that this comes with some disadvantages, especially interactions between team members and 'technical' communication problems (Arnison and Miller, 2002). Taking enterprise portals that exist in most organisations as an example, Cloete and Snyman (2003) imply that organization could not put enterprise portals to replace poor KM. However successful KM will lead to a successful enterprise portal. Within this context, Wells, Sheina and Harris-Jones (2000) note that KM officers may have to realize that the relationship between KM and KM tools is not solely based on a technical shift but actually is a strategic move that is based on 'intellectual purpose'.

As they are responsible for introducing and promoting KM tools to the organisation, KM managers should be able to relate the benefits each tool introduced to support KM activities. What is most important in selecting appropriate tools according to Respondent #07 and #11 is to know how the implementation or application of certain KM tools could benefit everyone in the organization. For example Respondent #11 said that as KM officers they should

be able to convince people in the organization when promoting certain KM tools by emphasizing its benefit which according to another respondent (Respondent #10) is not an easy job to do especially when there isn't enough literature on the implementation or application part of KM tools. The decision to choose certain tools will depend on how they could support knowledge activities like knowledge sharing, transfer, capturing, acquisition or even knowledge retention. For example Respondent #03, #04, #07, #10 and #13 suggested tools like action review and storytelling are among the powerful KM tools in knowledge activities. Furthermore the use of certain KM tools in one organization could be different to another organization depending on their organizational culture (Robertson, 2005). As for Respondent #07 it is easier to justify the benefit or value of certain KM tools now as compared to the time when XYZ started their KM journey since their knowledge of KM tools has improved.

In terms of the adoption of KM tools Respondent #03, #08 and #11 highlighted that it would be easier to introduce and promote KM tools if KM managers know the suitability and customisation aspects of KM tools. This is because only by adopting suitable tools could KM activities be established smoothly. In fact Robertson (2005) highlights that selecting appropriate KM tools as a delivery channel for knowledge dissemination is one of the crucial determinants for successful KM. The application of KM tools might need some customisation and adjustment within the context of the department or organization. Respondent #04, #07 and #10 revealed that the application would depend on the suitability and customisation elements in terms the types of KM tools, which would then determine the choice of KM tools adopted. This could capitalize on the potential of relevant tools in supporting knowledge activities. Based on the respondents

view, Exhibit 6e shows the flow of adopting KM tools that KM managers could consider.

Exhibit 6 e   KM tools adoption

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                    ┌─────────────┐
                    │ Availability│
                    │ of KM tools │
                    └─────────────┘
                           │
                           ▼
              ┌────────────────────────┐
              │                        │
        ┌──────────┐            ┌──────────┐
        │ ICT KM   │            │ Non-ICT  │
        │ Tools    │            │ KM Tools │
        └──────────┘            └──────────┘
              │                        │
              ▼                        ▼
   ╭──────────╮   ┌─────────────┐   ╭──────────────╮
   │Suitability│──▶│ Evaluations │◀──│ Departments  │
   │ elements  │   │ of KM tools │   │characteristics│
   ╰──────────╯   └─────────────┘   ╰──────────────╯
                           │
                           ▼
                    ┌─────────────┐
                    │ Best fit KM │
                    │    tools    │
                    └─────────────┘
                           │
                           ▼
                    ┌─────────────┐
                    │ Adjustment/ │
                    │customization│
                    └─────────────┘
                           │
          ┌────────────────┼────────────────┐
          ▼                ▼                ▼
     ┌──────────┐    ┌──────────┐    ┌──────────┐
     │    KM    │    │    KM    │    │    KM    │
     │activities│    │activities│    │activities│
     └──────────┘    └──────────┘    └──────────┘
```
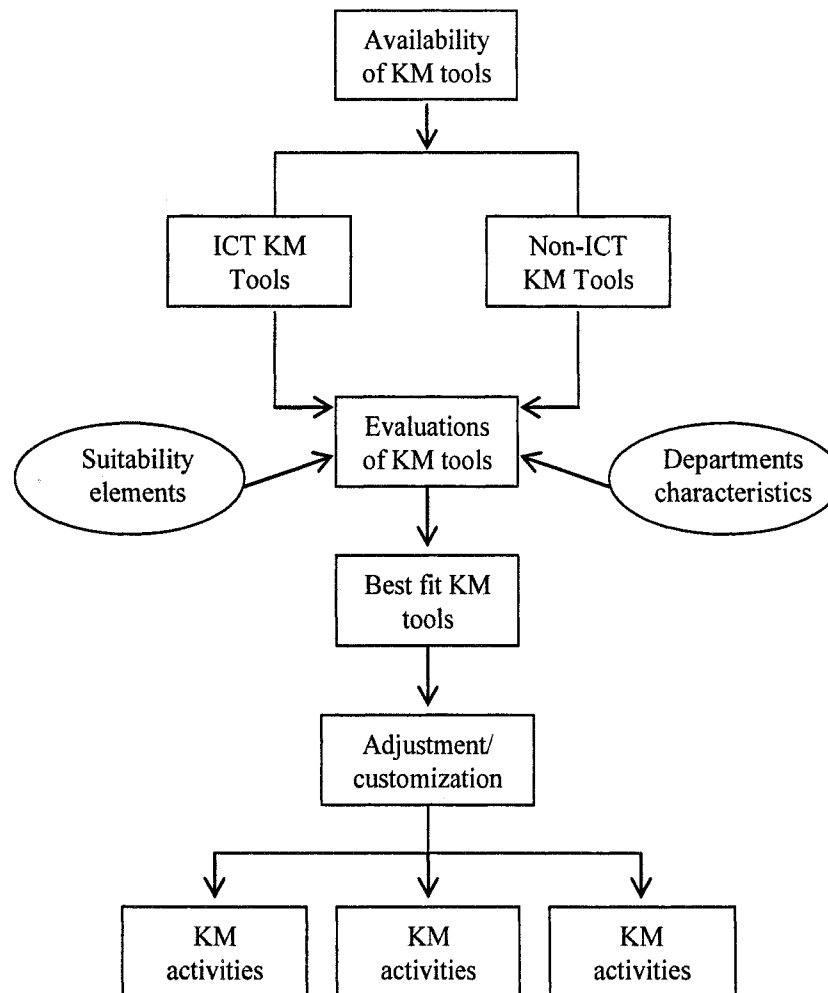
Robertson (2005) suggests that the use of certain KM tools will be different depending on certain organizational cultures or in the case of XYZ. Since most KM tools deal more in the explicit approach, Sanchez (2004) suggests that an approach that combines both tacit knowledge and the explicit knowledge should be considered.

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In XYZ they introduced storytelling for sharing best practices and experience, either through face to face or online, for example after coming back from training. Most respondents agreed that storytelling is one of the powerful tools in supporting their knowledge sharing and capturing activities between both KM managers as well as between other employees at a departmental level. They acknowledge storytelling as an influential KM tool that was being promoted throughout the organization. Some respondents (#03, #10 and #13) believed that storytelling is most suitable for knowledge activities like knowledge sharing and transfer. Respondent #10 highlighted that storytelling allows an informal platform of knowledge sharing which promotes flexibility. This is because storytelling is 'the process of elicitation, iteration and negotiation which creates the story' (Ward and Sbarcea, 2001, p.2), it could express trauma, hostility, unlock experiences and most importantly could connect both storyteller and listeners with any organizational issues. However, according to the respondents, though storytelling looks like any other 'natural' behaviour that everybody has been doing in an organization, as change agents they need to be able to relate the importance of story telling and its benefits, and show how it could take place more successfully as not everyone is comfortable or good at telling their stories.

Although telling stories is not 'new' in any organization, to make it become effective in supporting knowledge flow, as with developing corporate taxonomy, a professional consultant was brought in to help them construct a framework relating to their organizational context (Respondent #02 and #07). Respondent #02 revealed that XYZ adopts a storytelling framework (Exhibit 6f) from Stephen Denning (former Programme Director of KM at the World Bank in Washington D.C) as part of their knowledge sharing activities.

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Besides promoting the storytelling tool to employees, it was also being practised within the CoP of KM officers (Respondent #05). Storytelling was also used at XYZ to capture employees' tacit knowledge. However, Respondent #04 believed that the verbal type of storytelling could not be applied to everyone in the organization since there might be those who are better at putting their experiences in writing rather than putting them into verbal stories. Therefore KM officers need to study what type of person they are dealing with especially for capturing tacit knowledge. This is because storytelling has its own purposes that act as anecdotes to educate or help people to understand; therefore knowing the character of 'storyteller' is important especially when the person is presenting some organization-related tasks (Snowden, 1999). That explains why at XYZ storytelling was used both face-to-face and also as written stories on the organizational intranet allowing flexibility to the storyteller as said by Respondent #04. Conceivably, this is because the objectives of KM may be different between organisations or even between departments (Gamble and Blackwell, 2001) and therefore the relevant part of the organisation's nature and strategic intents will need to be considered.

Exhibit 6 f   Knowledge sharing tools

Source: XYZ Knowledge Management Centre

6.2.4 Communities of Practice (CoPs)

Exhibit 6 g   Knowledge and skills in managing CoPs

KM competencies *(what)*	Justifications *(why)*
4. Community of Practice (CoP) • Concepts & framework • Benefits • Characteristics • Functions • Social network/structure • Applications	▪ believe CoP is an effective approach to support KM activities ▪ unique community allowing experience and interest to be share ▪ add values to existing knowledge ▪ so much knowledge transpires among members ▪ help to identify and construct suitable strategy for KM activities

Most respondents who are in general responsible in the formation of CoPs at XYZ revealed that to perform a better role as facilitators, it is crucial for them to understand the concept of CoPs in terms of benefit, characteristics, functions, social networks formation and CoPs applications in the organisation. Respondents #02, #03, #04 and #11 believed that an in-depth understanding of CoPs is crucial, as they believed that CoP is capable of generating a more effective way of supporting KM activities. Respondent #11 said, as a unique group, it may be either temporary or remain intact even when certain tasks completed, and it is a unique community that allows experiences to be shared in the group, which could then add value as each member shares their passionate interest.

The basic concept of CoPs involve 'a group of people who share a concern, a set of problems, or passion about a topic, and who deepen their knowledge and expertise in this area by interacting as an 'on going basis' (Wenger, McDermott and Snyder, 2002, p.4). A simpler explanation of CoPs is by APQC (2001), which

describes CoP as groups of individuals who join together to 'share and learn from one another'. According to Respondent #02, #03 and #04 in order for KM officers to promote and facilitate CoPs they should understand the concept and framework of CoPs, including their characteristics and functions to stimulate knowledge activities like sharing and transfer. Pastoors (2007) highlights that because of the importance of CoPs that allow a platform for learning between individuals; it would be useful to understand the concept of CoP. Respondents believed that, by understanding the concepts of CoPs, formation would help KM officers in the implementation aspect, which then helps to construct an effective strategy especially in supporting and promoting knowledge sharing and transfer (Respondent #01, #02 and #03). For instance, it could help KM managers to choose appropriate KM tools that could support and promote collaborations and networking among employees.

In terms of KM managers at XYZ who were responsible for not just supporting intentionally created CoPs but were also involved in their own CoPs, they should have a clear understanding of how CoPs work. Since CoPs could be set-up anywhere within the organisation as well as outside the organisation, Respondent #04 revealed that to understand and promote CoP at XYZ, KM officers need to understand the social networks in the organisation and how the structure of these networks work. According to Garavan *et al.* (2007) it requires the understanding of context, process and content of CoPs. The authors conclude, '... as sense maker CoPs managers must have a detailed understanding of cultural and political context of CoPs, the expectations of key stakeholders and the tasks requirements (Garavan *et al.*, 2007, p.47).

Compared to other KM managers who gave their view on CoP, Respondent #04 seems to be the one who gave more emphasis to the formation and structure of social networks. Respondent #04 admitted that for KM managers one of the important issues in CoPs is being able to nurture and capitalize them in the organization. It is important for KM managers to understand the nature and structure of these social networks or CoPs because there is so much knowledge that transpires among members in the community whether it is in a formal or informal formation. Based on some closer observations on what organisations do in CoPs, Dube, et al. (2005) argue that besides sharing some common characteristics, there is a major difference between normal CoPs and intentionally created Virtual-CoPs (VCoPs) in terms of their structure characteristics. The authors added that the intentionally created VCoPs are said to be more challenging. However, according to Dube, et al. (2005), the literature indicates that most CoPs are similar and normally perceived as one-dimensional in terms of its construction.

6.2.5 KM measurement

A number of KM success stories or cases of how KM contributes some positive impacts has been reported which include improved decision making and productivity, enhanced innovation, minimised reinvention and duplication and accelerated staff development (Wing and Chua, 2005). However, the findings revealed that measuring knowledge and benchmarking knowledge activities are two main challenges that KM managers had to face in managing knowledge (Exhibit 6h). The respondents revealed that these were caused by various issues including lack of literature and the challenge of identifying suitable knowledge indicators as well as that of identifying other organisations for benchmark purposes.

Exhibit 6 h Knowledge and skills in KM measurement

KM competencies *(what)*	Justifications *(why)*
5. Knowledge measurement • What to measure - identify metrics/proxies • How to measure – establish framework	• Difficult to measure intangible characteristics of knowledge • Need to justify KM in terms of the economic impact on organisational performance • Difficult to develop KM measurement framework • Difficult in identifying proxies/indicators • Amount of strategic knowledge assets not equal between departments • KM adoption among department is diverse (approach, priorities) • Lack of benchmarking knowledge and experience ▪ Lack of literature on both theoretical and practical aspect of KM measurement

Respondents #01, #03, #04, #05, #07, #08 and #10 revealed their major concern in measurement activities is to be able to justify how KM brings an economic impact to the organisation performance. Managing and measuring knowledge is difficult because of its intangible characteristic. Several respondents (#01, #04, and #08) revealed that they would like have better understanding of measuring knowledge assets so that their activities could be easily justified and accepted. Respondent #08 admitted that it was a difficult experience when KM officers were required to develop a KM measurement framework to the management while trying to justify KM initiatives. Although many organisations claimed that KM had contributed to some positive impacts, it was estimated that around 84 percent of KM projects or initiatives showed no significant impact on the organisation (Lucier and Torsiliera, 1997). The authors, further claim that there are organisations that

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experience failure in their KM initiatives concealed their stories (Lucier and Torsiliera, 1997).

Understanding how to assess intangible knowledge assets or knowledge-based assets (KBA) could provide KM managers with a strategic weapon useful when interacting with stakeholders (Edvinson, 2000; Steward, 1997; Sveiby, 1997). Respondent #08 revealed that although they have reached their sixth year of KM implementation at XYZ, KM officers are still facing difficulties in trying to measure knowledge activities. The respondent added that the efforts of trying to tie KM in with some economic gain are still an issue, especially when huge amounts of money and time were invested. Obviously, the aim for knowledge measurement activities is to help monitoring the value of KM initiatives and to connect them to the key performance indicators (Ahmed, Lim and Zairi, 1999). To measure and quantify knowledge, standardized metrics are needed so as to convince the stakeholders of the benefit of KM (Bose, 2004). Perhaps since KM is still an emerging discipline, literature on knowledge measurement is lacking as compared to literature on other discipline or even within other areas of the KM discipline itself. Respondent #08 revealed that there is not enough literature both on the theoretical and practical aspect of knowledge measurement. Even if there is literature related to knowledge measurement, most of it discusses problems in measuring knowledge. In addressing this issue Bose (2004) states that the body of literature and research in KM area is considered very small and is in fact still defining but growing. Although there is literature reporting results from research on how some companies used certain measurement methods, it is still not sufficient.

Respondent #07 and #08 addressed the problem of identifying proxies for knowledge activities and tying KM with business measurements. In the findings

respondents admitted their difficulties in identifying what needed to be measured and how it should be measured. At XYZ different department in the organisation that practise KM adopted different approaches, for example some established it organisation wide while others might establish it in certain departments only. Even if KM were implemented in more than one department in the organisation, the adoption in every department depends on the department's commitment towards KM. Furthermore, some department might gain better support from the top management or maybe some focus on certain knowledge activities like knowledge sharing or developing repositories. Therefore, their emphasis on knowledge activities is not the same, and it is difficult to measure for example, the number of knowledge contributions, knowledge sharing activities, repositories usage etc. For that reason to find appropriate proxies that represent knowledge activities is also difficult. KM managers at XYZ reported that they could not find suitable and agreeable proxies or indicators that could represent some measurement metrics for knowledge activities and performance since knowledge assets or knowledge activities are very subjective in nature. The argument for this is that at XYZ some departments might have more strategic knowledge assets than others (Respondent #07). The same KM problem related to measurement was reported in Robinson *et al.* (2005) in a research on performance measurement practices in construction organisations. It reveals that determining and monitoring indicators was the most significant barrier in adopting performance measurement models. Besides, according to Euske (1984) what is measured is seldom performance itself; but often it is the specific attributes relating to the performance. However, a study on knowledge measurement conducted by APQC noted that 'measurement is possible'. The report suggests that the best practice in measuring knowledge is to use the organisational business measures of outcomes rather than having a separate KM measure of outcomes (Emerald Group, 2004). From the

organisational business measure of outcomes, one could work backwards to measure knowledge activities.

Bose (2004) suggests that when an organisation has the ability to recognize where KM would be most valued as a contributor to organisation's market strength, it could become a good indicator of KM impact on an organisation's performance. The author suggests that the most logical action is to tie-in KM measurement with the organisation's performance systems. The difficulties that respondents experienced in trying to measure knowledge were supported in Spender (2006) who reports that the characteristics of knowledge have made it difficult to be measured as knowledge is essentially intangible, sometimes incomplete or mis-located, unidentified or inconsistent and often contested.

Meanwhile Respondent #10 revealed that having some knowledge and exposure on how other institutions were doing it is considered crucial. However, within a broader context, when XYZ could not identify suitable proxies for measuring their knowledge assets or activities, benchmarking what they are doing with other organisation that practise KM was found by Respondent #01 to be difficult. XYZ is one of the KM pioneers for government agencies in Malaysia even before the government introduced the K-based Economy Master Plan (KEMP) in 2002. Since the majority of the organisations that practise KM are from the private sectors, finding organisations for benchmarking purposes is more difficult. In fact it was reported by Syed-Ikhsan and Rowland (2004a) on the study of KM strategy in Malaysia's public organisations that relatively little is known about KM in the public sectors especially in developing countries. Henczel (2002) suggests that major commitments are required for benchmarking which include time, people and money with no guarantee that it is a cost benefit approach. Although a Malaysian

Benchmarking Service was set up under the National Productivity Corporation (NPC) in 1997 to provide services and information on best practices through partnership and networking (Yean, Zailani and Keng, 2006) benchmarking was not widely adopted by Malaysian organisations. Several respondents revealed that one of the problems or difficulties at XYZ is to find other public organisations that they could take to benchmarking their KM performance with. Instead other public organisations keep coming to learn from them (Respondent #01 and #07). Another difficulty that drives the need to have knowledge in KM measurement is that their knowledge in developing KM framework is insufficient. However, this has been addressed in Rodov and Leliaert (2002) who state that most reported methods for assessing knowledge or intellectual capital provide only a framework rather than describe a complete, manageable set of relevant intellectual capital.

The main purpose of KM measurement activities is about giving economic values to KM, which was also agreed by the respondents. Therefore, organisations should consider another way of justifying the value of their knowledge by using other than financial tools. This is suggested by Austin and Larkey (2002). The authors propose that organisations should move away from these traditional methods as means of quantification when trying to measure the knowledge performance of their employees and organisations. A survey of FTSE 100 companies conducted by Chourides, Longbottom and Murphy (2003) revealed that presently most companies are focusing on moving away from merely numerical measurements towards some qualitative and intangible assessments. According to Ahmed, Lim and Zairi (1999) it is necessary for an organisation to go beyond traditional financial measures by enhancing it with non-financial measures to give a much fuller picture and more relevant management progress tracking system. However, a major problem arises when it comes to implementation as

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argued by Butler, Letza and Neale (1997). The challenge is that how to integrate and devise both sets of financial and non-financial measures to make it reflects on organisations strategic focus are still not clear.

6.2.6 Information Management (IM)

Exhibit 6 i   Knowledge and skills in Information Management (IM)

KM competencies *(what)*	Justifications *(why)*
6. **Information Management** • Classification systems • Indexing • EDMS & database development	▪ IM is the core/basic foundation of KM ▪ KM will not be successful without IM support throughout KM cycle ▪ Information valuable if it is acted upon (knowledge) ▪ IM/KM is related/ overlapped/ complement each other ▪ IM skills support knowledge activities

According to Davenport and Prusak (2000) despite most literature on KM initiatives appearing in the business field, what is actually involved within KM stays unclear and ambiguous, since there are many interpretations of what KM is all about. Recent work by Chong *et al.* (2006) reveals that understanding KM and its purpose is one of the biggest challenges as there is no general consensus on the concept of KM. At XYZ, although KM officers came from different backgrounds the respondents suggested that having the knowledge in information management (IM) would be a plus and even some considered information management as the basic skill that KM officers should have. Respondent #02, #03 and #09 said that having the knowledge of information management is core to KM.

However, there is no clear-cut distinction between IM and KM. In fact according to Gourlay (2000) regardless of the ambiguity of KM and its frail theoretical stand, KM that is practised in many organisations, tends to overlaps with information management. The author further explains that since KM emphasizes knowledge representations rather than knowledge per se the distinction between KM and IM is unclear. Furthermore, the scope of IM that spreads out from cataloguing, indexing, classification, information systems, content development, information policy, classification, database designs, record management, information storage and retrieval has pulled together the opinions not just from those who come from the information management and systems background, but also other fields which make the distinction even ambiguous. Conversely, according to Bouthilier and Shearer (2002) there is certainly a clear difference between IM and KM; eventually, the main purpose of IM is to make sure that information is stored and retrieved whereas for KM its ultimate aim is to tie closely to organisation performance or outcomes.

Another justification why KM officers need to have IM skills is because according to Respondent #03, in any organisation KM could not work if IM does not work. The argument is based on the perceptions that many IM activities are embedded within the KM cycle or activities. This includes developing repositories, corporate taxonomies, EDMS as well as indexing and classification systems, which are part of information management (Respondent #06). In fact, activities like knowledge or information acquisition and information retrieval (searching) are common day-to-day activities that take place in performing organisational tasks. The finding supports the argument by Choo (1998) which points out that information management is the key for sustaining an organisation's knowledge creation and application. Another similar view is that of Kakabadse, Kouzmin and Kakabadse

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(2001) who claim information and data management are key pillars of KM. However, the authors note that KM covers the broader scope of managing the explicit i.e. employees' files or sales performance. In fact KM involves the creation of different processes and behaviours, such as sharing of rules, procedures and learning experiences while managing the explicit knowledge (Kakabadse, Kouzmin and Kakabadse, 2001).

Much literature tends to suggest that a human element is an essential component of KM (Bouthilier and Shearer, 2002; Davenport and Prusak, 1998; Gourlay, 2000), nevertheless the preservation and retrieval of information should be in place to maintain the success of IM as a whole and these ultimately support the success of KM project (Martensson, 2000). Most respondents agreed that KM will not be successful unless the KM activities are complemented by IM activities at any stage of the KM cycle. For example, capturing tacit knowledge will need proper repository systems. Knowledge taxonomy will involve the skill of knowledge classification. Identifying strategic knowledge will need a solid information searching strategy and knowledge sharing might be supported by information dissemination activities as said by Respondent #03. For instance the process of developing a corporate taxonomy is not new but it is the process of 'classification revisited' (Milne, 2007). Therefore, skills that are held by information professionals such as knowledge identification and acquisition could benefit KM practices they facilitate a comprehensive KM initiative (Bouthilier and Shearer, 2002). This is because, information at any stage will be transformed into knowledge and that knowledge could later be 'repackaged' with interpretations will transform it to information again (Respondent #03). Hence, Koenig (1997) states that terminologies and techniques used in KM are not new among library and information works such as knowledge mapping or knowledge audit seem to have

been borrowed from both IM and librarianship. Therefore the author recommends that librarians and information officers should take up a more crucial role as possible in the intellectual capital/KM process.

On the other hand, even if IM is said to be one of the crucial skills that KM officers should have, whatever information is being managed (IM) it would only be valuable if it is being used as implied by Respondent #03. It is important for KM managers to realize that the KM cycle will not be completed or successful if whatever knowledge stored is not being used and shared (Bouthilier and Shearer, 2002). This is where according to Respondent #03, IM and KM overlap and complement each other, reflecting the transformation of knowledge into information and back into knowledge, which will continue over time. This is happening in organisation especially when both knowledge and information could be the source of further transformation of new knowledge or information. Exhibit 6j describes how knowledge and information are transformed and accumulated throughout one's involvement in an organisation. Each employee who starts to work with an organisation will come with a set of skills and knowledge, which increases incrementally as the process of knowledge accumulation continues. However, it is difficult to describe the process of how exactly information transforms into knowledge and even more difficult to explain how knowledge could be codified into information (Al-Hawamdeh, 2003). That is possibly the reason why relationships between IM and KM were said to be very loosely related and overlapped each other.

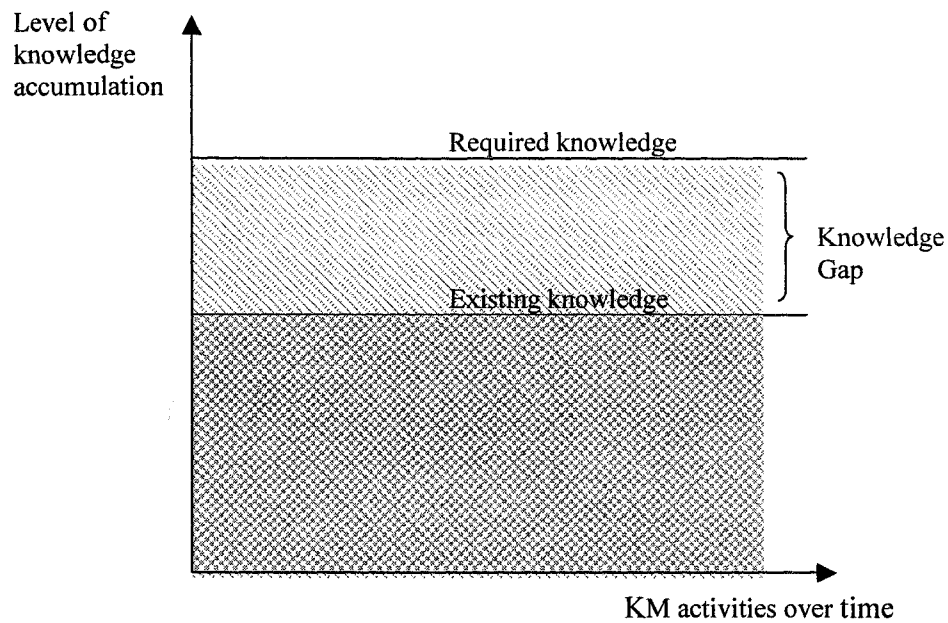**Exhibit 6 j   Information/ Knowledge Accumulation**
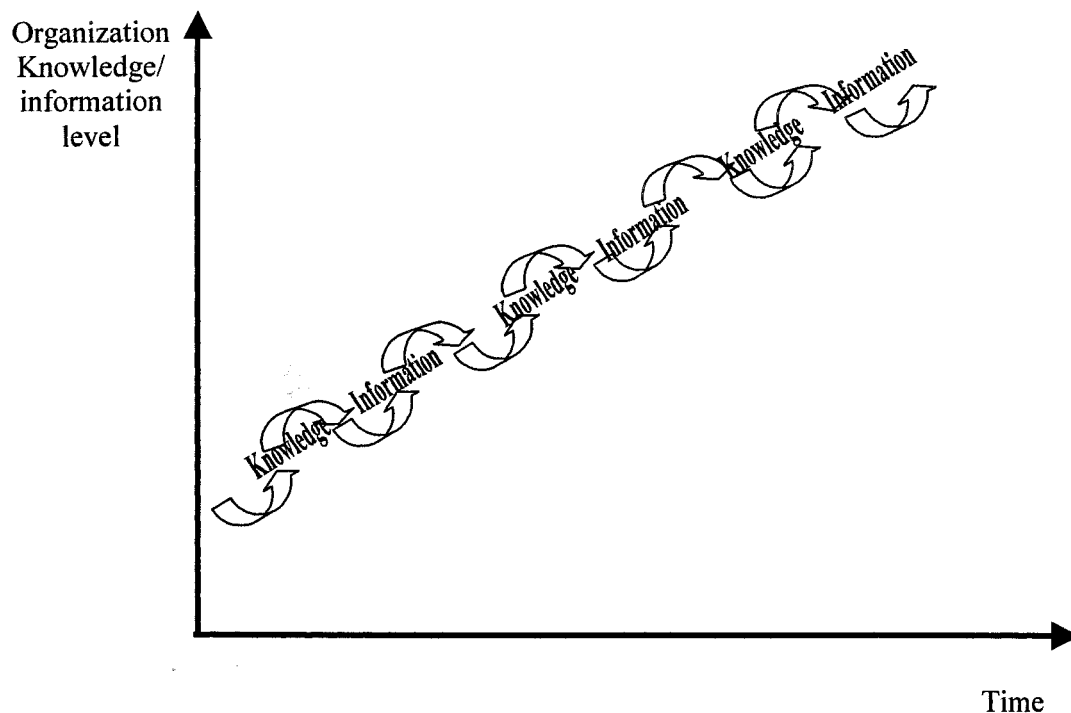
6.3   Influences on KM officers' attitudes towards KM-related training

The second part of this discussion addresses the second research question:

- *How do these required KM competencies, influence KM managers'*
  attitudes towards KM related training to improve their KM understanding
  and perform their KM tasks?

The findings revealed that as they progress over their years as KM officers, besides learning through day-to-day experience, informants also admitted that the required KM competencies that they identified earlier as essential for KM managers are still insufficient. They acknowledged that knowledge gaps (Exhibit 6k) had influenced their attitudes towards KM related training.

Exhibit 6 k   Knowledge Gap

Level of
knowledge
accumulation

Required knowledge

Knowledge
Gap

Existing knowledge

KM activities over time

Education and training programmes attended by KM managers include both those conducted in-house and those by external providers such as workshops, seminars, certification KM training as well as those offered in terms of a master's degree in Malaysian universities and abroad. From the training, they believed that they became more confident and more knowledgeable as KM managers. The discussions and evaluations in this section will report on training implications from KM practitioners' perspectives.

6.3.1 Attitudes towards KM training

Most respondents revealed that they enhanced their KM knowledge and skills as they progress along their KM journey from various sources such as KM literature, books and articles and practitioners' blogs as well as training. The respondents believed that, from the training that they attended, they could gain knowledge on new KM ideas, practices or experiences from the speakers as well as other
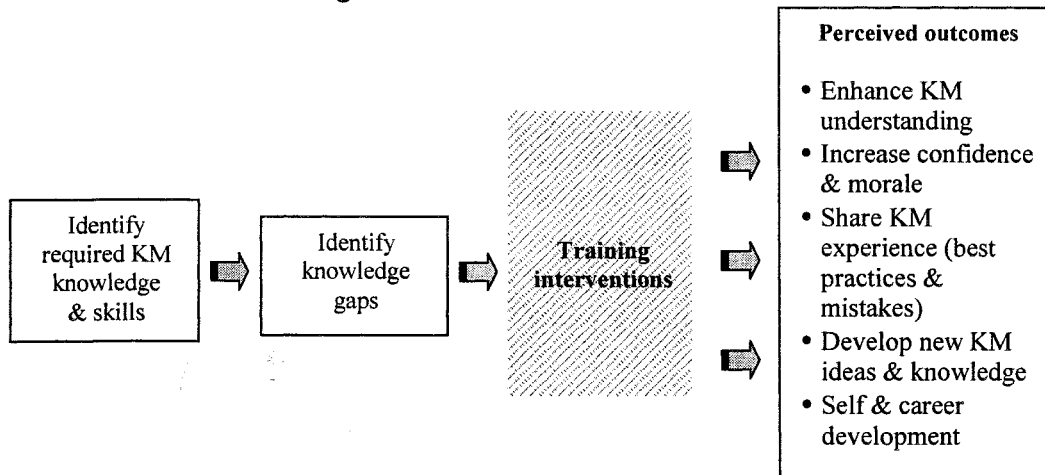
participants. This is because through training courses employees' value will increase, and as they become more valuable, the value of the organisation also increases (Martin, Wech, Sandefur *et al.*, 2007). Most respondents admitted that their insufficient knowledge in KM (knowledge gaps) was a problem while performing their KM activities (Respondent #01, #03, #04, #05, #06, #09, #10 and #13). Problems had become one of the driving forces that make people interested in training, which is part of learning processes (Hwang, 2003). In this case Respondent #03 revealed that the problem of insufficient KM knowledge will always be there since KM is still very much an open subject. To address the problems the respondents sought KM-related training (short term KM training or further education KM programmes) to enhance their KM knowledge acquisition. Exhibit 6I elaborates respondents' attitudes towards KM training outcomes in general. By attending the KM training, respondents would be exposed to new KM ideas, practices and experiences (Respondent #10), which will improve their KM understanding (Respondent #05 and #09).

Akhavan, Jafari and Fathian (2006) reveal that to extend KM policies and to reach knowledge totality in an organisation that adopts KM, employees should be entirely and intensely familiar with KM concepts and this could be achieved through continuous training programmes. Since KM had been established in 1999, the respondents expressed that they prefer to attend a much more advanced KM training. A recent study by (Plessis, 2007) suggests that in-depth KM training could provide understanding of how KM initiatives work and allow successful participation in the KM activities. For example, advanced KM topics required by KM managers such as the IT-driven KM tools (Respondent #10) or taxonomy

development (Respondent #07) will further improve their understanding although their had experienced such activities.

KM could be considered as a new working culture in many organisations. Therefore in forthcoming years we could witness the emergence of a variety of KM-related training from all types of training provider. KM managers at XYZ were given opportunities to attend to KM training programmes offered by both the internal and external training providers. According to Respondent #05 and #09, KM managers at XYZ were encouraged to attend training opportunities such as seminars, workshops and short courses offered by both internal (in-house) and external training providers not just organized in Malaysia but also abroad. Respondents #05 and #09 revealed that the main advantage of attending training programmes organized by external training providers is that they could develop or create a new CoP every time they attend big seminars like KM Europe or KM Asia. CoPs could be another platform for learning for KM officers as it allows sharing of experiences and knowledge among other participants (Respondents #02, #08, #10 and #11). It is a mutual, unlimited way of sharing experiences and knowledge that could cultivate new approaches to problems, as well as create new knowledge (Wenger and Snyder, 2000). However, most respondents prefer in-house KM training since its content is normally designed or constructed within the context of their organisation. This is because XYZ's Knowledge Management Centre adequately provides KM training courses customized according to their KM activities and objectives (Respondent #01, #03, #06 and #10).

Exhibit 6 I   KM training outcomes

| Identify required KM knowledge & skills | ⇒ | Identify knowledge gaps | ⇒ | Training interventions | ⇒ ⇒ ⇒ | Perceived outcomes

• Enhance KM understanding
• Increase confidence & morale
• Share KM experience (best practices & mistakes)
• Develop new KM ideas & knowledge
• Self & career development |

Since KM is now considered as an 'evolving' organisational culture, it is important for employees to equip themselves with a KM scope whose context is relevant to their organisation's KM direction. One respondent (Respondent #09) believed that in-house training is relevant since it understands the organisational problems better than others. Most respondents believed that they gain benefits from attending KM training even if it sometimes repetitive and serves only as a refresher. As one of the self-development plans, training had made KM officers more confident in their knowledge and competency which helped them perform their knowledge activities (Respondent #01, #09, #11 and #13) as they could see the prospect of KM as a niche area that has the potential to develop. The outcomes from attending training are potentially benefiting the employees. Bushardt, Fretwell and Cumbest (1994) highlight that training could improve employee satisfaction, enhance employees' skills, build up employees' sense of belonging and benefit as well as develop employees' commitments to the organisation. Read and Kleiner (1996) state that after attending training programme, employees should be able to carry out what they were trained for.

Employees experience in a quality job-related training programme may lead to improve morale and enhance sense of achievement and accomplishment which will eventually increase organisation competitiveness (Elizur, 1996).

6.3.2 Preferred KM courses

The findings showed that XYZ had been committed to encouraging and supporting their KM officers in KM-related training programmes so as to make them more competent in delivering their KM tasks. Perhaps most employers acknowledge that the investment they put in training is crucial to improving organisational performance.

The findings from the research show that XYZ has been committed to encouraging and supporting their KM officers in KM-related training programmes so as to make them more competent in delivering their KM tasks. Most employers acknowledge that the investment they put in training is crucial to improve organisational performance. Organisations that are not willing to spend on training for managers/staff, will affect the organisation's performance (Longenecker and Fink, 2005). According to most respondents, at XYZ the employees are given the opportunity to identify which KM training that they felt relevant to them. This is common in most organisations today - Corbridge and Pilbeam (1998) highlight that besides relying on the employer to identify employees training programmes, individuals or staff in an organisation should also take responsibility for their own learning and development. In fact this is part of the approach used in competency-based training. Newman (2002) suggests that not just education or training providers need to work together with KM practitioners, but KM practitioners should also be actively participating in the development or delivery of their own education and training needs. Attempts could be made by continuously doing self-

assessment on their 'gaps'. This may help individuals to decide appropriate learning opportunities that would close the gaps (Longenecker and Fink, 2005).

Though training could contribute in enhancing respondents' KM competencies, the findings revealed that there are respondents (#01, #02, #03, #04, #05 and #07) who were quite selective in their choice of KM training based on several reasons. They revealed that one of the reasons for that is because certain KM training is too general and theoretical. The courses that the respondents attended generally provide on-the-surface discussion on KM especially in big conferences rather than on training that is relevant to the practical side of KM implementation as some respondents prefer (Respondent #01, #04, #05 and #07). According to the respondents, training that emphasizes on how implementers perform certain knowledge activities are difficult to find. According to Pratt (1980), very often the process of design and development of most training programmes is carried out by training providers or trainers and therefore the needs of the trainees are almost ignored.

Some respondents on the other hand preferred KM-related training that is more advanced and complex in its content. For example, analysing and customizing KM tools (Respondent #07), how to measure knowledge (Respondent #01, #04, #07, #08) or advanced topics on CoPs (Respondent #03 and #04) were all cited. While XYZ had embarked on their KBO journey in 1999, yet the respondents agreed their KM-related knowledge was insufficient. However, they preferred the more advanced KM topics (i.e. new KM development, implementations and applications) rather than the basic KM knowledge since the respondents got adequate basic KM training from outside XYZ as well as that conducted in-house. It is difficult to find something, which specifically suits the respondents' training,

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needs especially when there are differences in perspective about KM which according to Chaudhry and Higgins (2003) seems to influence the development of KM curriculum or programme design. While on the other hand, since 'knowing' comes from 'doing', Pfeffer and Sutton (1999) note that KM officers developed their KM-related skills as they move on over the years performing their tasks, they had reached a level where they would like to have KM training that provides some advanced or complex KM approaches and implementation. For that purpose XYZ had called in consultants to provide some in-depth training on specific KM topics such as developing taxonomy, exploiting KM tools or constructing a knowledge measurement exercise.
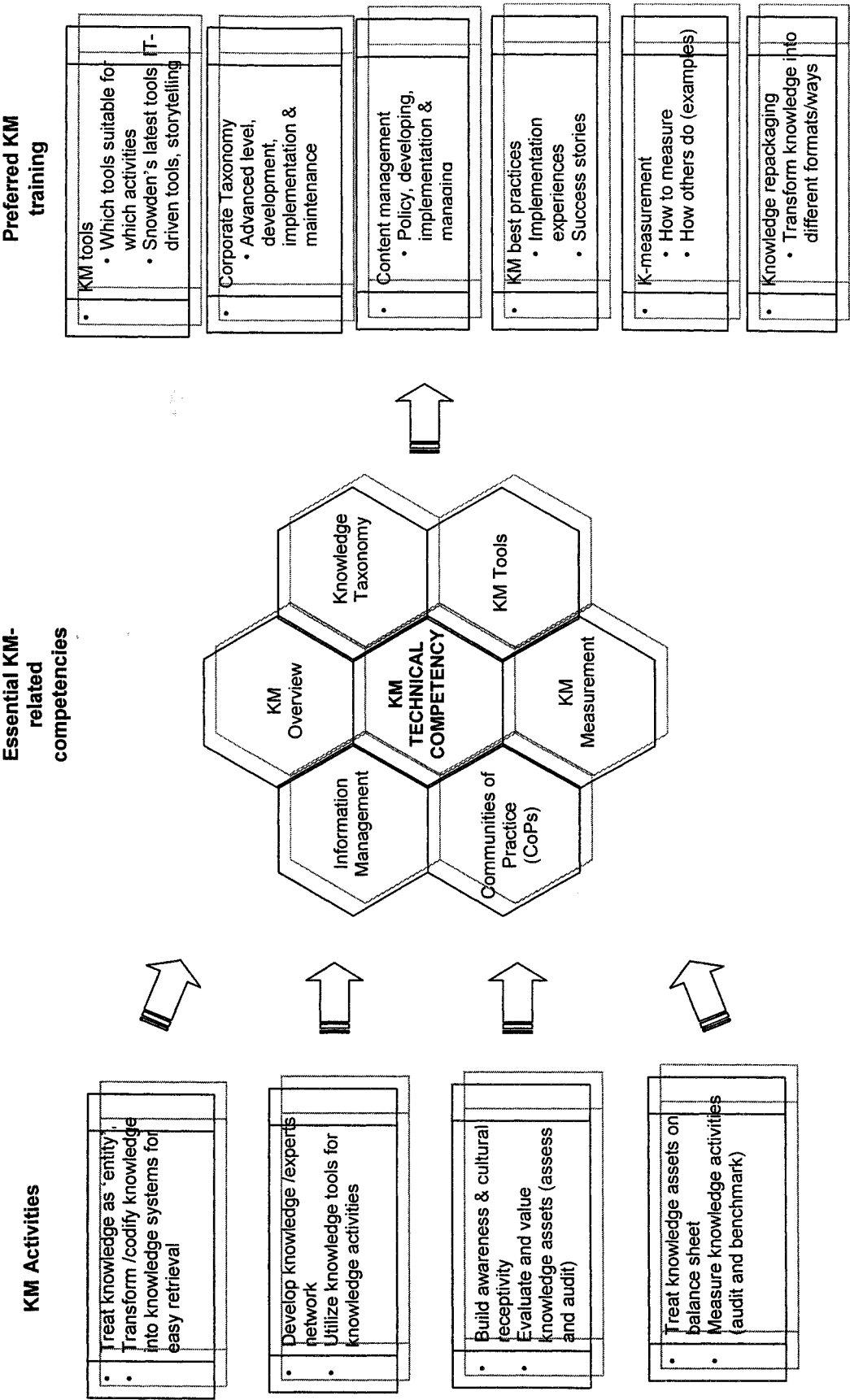
In terms of training providers the findings also revealed that some KM training offered by external providers failed to reach their expectations (Respondent #02, #04 and #07). What they expect from the training or the content highlighted by the organizing body before the actual training was not up to the respondents' satisfaction in practice. Therefore, it is important for both training providers (external or in-house) to understand when a training programme should fit, who are responsible in giving approval to attend as well any relating issues such as development, implementation, maintenance, evaluation and supervision of any training programme (Pratt, 1980). It is crucial for the organisation to identify clear objectives of training intervention while designing the programme (Corbridge and Pilbeam, 1998). The authors suggest that this could close the gap between the present and the desired state of the learners. To make sure that organisation is providing the desired training course, they should conduct training needs analysis (TNA) before designing any training programmes. It is a systematic approach that usually defines employees' needs for training (Cole, 1997) by comparing the

demand of the jobs and organisational change with the level of knowledge and understanding. From the results, among those topics of KM-related training that most respondents would prefer to attend in the future are some advanced courses which include training on KM implementation and application, KM tools; especially storytelling, corporate taxonomies, content management, knowledge repackaging, KM best practices and knowledge measurement. However, although there are many training providers with all kinds of KM training, to have one that is related to the practical approach is difficult. This is because according to Newman (2002) although training providers offer a variety of KM training to individuals, companies and organisations, they do not seem to be relevant to the 'real-world' situations.

On the other hand, some respondents showed that they are not selective at all in the type of KM related training they would like to attend. Those with this type of attitude are mainly the part-time KM agents. Justifying their arguments, they said that by attending any type of KM-related training regardless of the level of the topic there must be something that could be learnt throughout the sessions or at least it would help them make new networks or community of practice (Respondent #10 and #11). Respondent #10 admitted that any KM training provided the respondent with opportunities that they could not resist because the respondent knew that something new will be explored. On this aspect one could not deny that the advantage of creating a new network of KM practitioners is valuable. However it should also be weighted against the amount of cost invested on the training since some are really very expensive. In fact with the availability of Internet, virtual KM CoPs are available everywhere through practitioners' blogs or KM user groups.

Exhibit 6m summarizes KM managers preferred training, which they believe could enhance their skills in performing KM activities. It illustrates the KM activities and preferred KM courses such as: *KM tools, Corporate Taxonomy, Content Management, KM best practices, K-measurement* and *Knowledge Repackaging*. Some specific courses highlighted by the respondents may directly help to develop and enhance the required KM competencies such as *K-measurement, corporate taxonomy* and *KM tools*. In fact since the characteristics of KM is multidisciplinary and interdisciplinary (Singh, 2007), the content of some specific areas could overlaps with one another. For example, courses related to KM tools may enhance KM managers' knowledge on various types of tools to be adopted, including CoPs, which can be considered as powerful KM tools that support knowledge sharing and transfer. On the other hand courses related to building *taxonomy, content management* and *knowledge repackaging* could enhanced participants' competencies related to information management as stated in Milne (2007) that these are fundamental activities of information management.

Exhibit 6 m   KM Competencies and Preferred Training

KM Activities

- Treat knowledge as 'entity', Transform /codify knowledge into knowledge systems for easy retrieval

- Develop knowledge /experts network
- Utilize knowledge tools for knowledge activities

- Build awareness & cultural receptivity
- Evaluate and value knowledge assets (assess and audit)

- Treat knowledge assets on balance sheet
- Measure knowledge activities (audit and benchmark)

Essential KM-related competencies

KM TECHNICAL COMPETENCY

- Knowledge Taxonomy
- KM Tools
- KM Overview
- Information Management
- Communities of Practice (CoPs)
- KM Measurement

Preferred KM training

KM tools
- Which tools suitable for which activities
- Snowden's latest tools IT-driven tools, storytelling

Corporate Taxonomy
- Advanced level, development, implementation & maintenance

Content management
- Policy, developing, implementation & managing

KM best practices
- Implementation experiences
- Success stories

K-measurement
- How to measure
- How others do (examples)

Knowledge repackaging
- Transform knowledge into different formats/ways

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6.3.3 Attitudes towards certification KM training

Most respondents expressed positive attitudes toward certification KM training programme that would lead to 'certified' KM personnel. This scenario is being influenced by the emergence of all kinds of KM certification training providers, especially those from the commercial sector, which claim to offer a 'licence' for a competence KM professional. Although they revealed that it is not a must, holding a certification from a KM programme would be an advantage not just by having an in-depth KM knowledge, but also it would increase their motivation as KM officers (Respondent #01, #02, #05, #06 and #10). With the certification, they believe that it would enhance their self-confidence and reputation as KM agents. For those respondents, having a certification in KM programme might increase their motivation by addressing their self-esteem needs such as gaining recognition and respects from other employees which they feel would be very helpful when introducing and promoting KM ideas or concepts in the organisation. For example, Respondent #02 felt that the respondent would have a bigger voice, which would increase confidence while Respondent #10 revealed that the certification would impart some kind of 'status' and 'authority' as KM officers in XYZ. Rollinson and Broadfield (2002) imply that if others indicate a favourable view on a person as the same as the person embraces himself/herself, it is an indication of a highly rewarding experience. This is because 'esteem by others' is needed since it is part of one self-concept to obtain signals from others about oneself (Argyle, 1968; Cooley, 1964). At the same time, Respondent #02 believed that if all KM officers at XYZ attended the certification KM training programme, KM tasks would be much easier to perform since every KM officer would have the same shared understanding of KM. For some other KM officers being given the chance to

attend this kind of training would be an opportunity for future self-development plans.

However, in recent years, KM practitioners have continuously debated the KM certification issues. Some of the arguments are based on the nature of KM field itself, which is very diverse and would involve a number of roles and competencies (Lambe, 2006). The author further argues that in terms of a profession, it is a team-based approach or practice instead of an 'expert' practitioner discipline. Therefore, it is unlikely to have personnel that could represent all the required competencies. Conceivably, apart from the commercial intentions, the urge to offer KM certification could be caused by the prospective outcomes that might emerge from the KM standards development which is under development by some standards organisations, such as the British Standards (BSi), Standards Australia International (SAI) and Global Knowledge Economy Council (GKEC) - an accredited Standards Developer for American National Standard Institute (ANSI). Potentially, KM standards might become like to the 'quality management standards' and 'environmental management' standards like the ISO 9000 and ISO 14000 series. Hence, KM standards are looking at similar prospects as those 'quality' and 'environmental' standards or products standards.

However, for KM, it is very subjective in nature since knowledge is difficult to managed, and it involves cultural issues which also very difficult to deal with. Joseph Firestone, a consultant in the field of Knowledge Management and Information Technologies who argues on behalf of the Knowledge Management Consortium International (KMCI); an international professional association of KM practitioners implies that unlike product standards which are already hard to

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conform, to a complex field like KM would make it more difficult and complicated, and therefore it would definitely take a longer time for KM standards to be developed (McElroy, 2003). Even if they are successfully developed, it will then lead us to the issue of the certified KM professionals, which is where the certified training plays its role. However, Skyrme (2002) argues that it is not just inappropriate to initiate the work of developing KM standards, there should not be a certified KM programme especially when that KM certified training providers need to be 'accredited'. On the other hand, several respondents at XYZ (Respondent #03, #12 and #13) who disagree with the certification KM programme imply that most of those KM training providers are exploiting KM and mainly aim for a commercial gain rather than contributing to the KM body of knowledge itself. In the literature since most KM case studies are involved or associated with large consulting firms of which some are the pioneers in KM field, people tend to believe that KM is just another marketing strategy for consultants. In fact in some countries commercial training providers were purposely contracted by some societies especially in the US to run the certified KM programmes (Lambe, 2006). In this case the main target of these commercial providers is to make money and profit, which was also highlighted by Respondent #13.

However, there is a suggestion from Respondent #06 that suggested developing in-house KM certification. Since every organisation has its own set of KM objectives and initiatives, XYZ could therefore customize the training programmes according to their own context and direction. The in-house KM certification would provide modules designed specifically according to XYZ context with three stages; Introduction, Intermediate and Advanced level. This type of training could then become one of the motivation forces that could naturally attract the employees or

so called 'knowledge worker' to participate in the organisation's KM initiatives. This concept is not new. In fact their IT related training which normally conducted in-house was designed with several levels of approach.

6.4 Conclusion

The discussions had brought together the theoretical context that was discussed in the literature with the practical context of KM managers' experience. In summary the findings revealed six specific competencies, which are essential for KM, managers to perform KM tasks. The six competencies include KM overview, KM tools, CoPs, Knowledge Taxonomy, Information Management and KM measurement. Although the respondents could not really specify to what level that KM managers need to grasp each competency, they however highlighted the issues of its importance, complexity, benefits, application and implementation elements related to the competencies. The research also highlighted the relevance of training initiatives, which equipped KM managers with appropriate KM specific skills.

Chapter 7 discusses the main contributions of the research and the implications for professional practice and future research. Although the chapter highlighted the main contributions of the research, however discussions on the implications for professional practices were discussed within the context of XYZ, KM practitioners in general and also the researchers own research/practical context as required based on the guidelines of DBA thesis.

CHAPTER 7: CONTRIBUTIONS OF THE STUDY AND IMPLICATIONS FOR PROFESSIONAL PRACTICES AND FUTURE RESEARCH

7.1   Introduction

This chapter discusses the contribution that the work has made in terms of professional practices and makes suggestions for future research. The chapter concludes with discussion on the relevance of this research to a wider context in three sections: contribution and implications for KM managers and personnel at XYZ, KM practitioners and researchers, and for the researcher as both KM practitioner and researcher.

This research addresses the KM officers/managers' interpretations of the essential KM competencies based on their involvement in KM activities and the impact on their KM training attitudes. With the methodology adopted to achieve the research objectives, the expected contribution and implications of this study for professional practices and future research are mainly drawn from the findings and the research methods adopted in this study. The key contributions and implications emerging from the research are the perceived essential KM competencies required for KM mangers, KM practitioner's training attitudes and the research method adopted in conducting the research. As this is a single case study research, the generalization of the findings was not at all the intention. The aim of the qualitative single case study approach adopted in this research was to rather to contribute in other ways, as according Lukka and Kasanen (1995), 'the purpose of generalization is substituted by the claim of aiming at useful results'.

Besides contributing to the body of knowledge the researcher believes that the findings and the methodology adopted could become a baseline and guide for

future research and practices as they offer some theoretical and practical benefits to KM researchers and practitioners. Exhibit 7a represents the area of expected contribution and implications of the research on professional practices and future research that this chapter intends to elaborate.
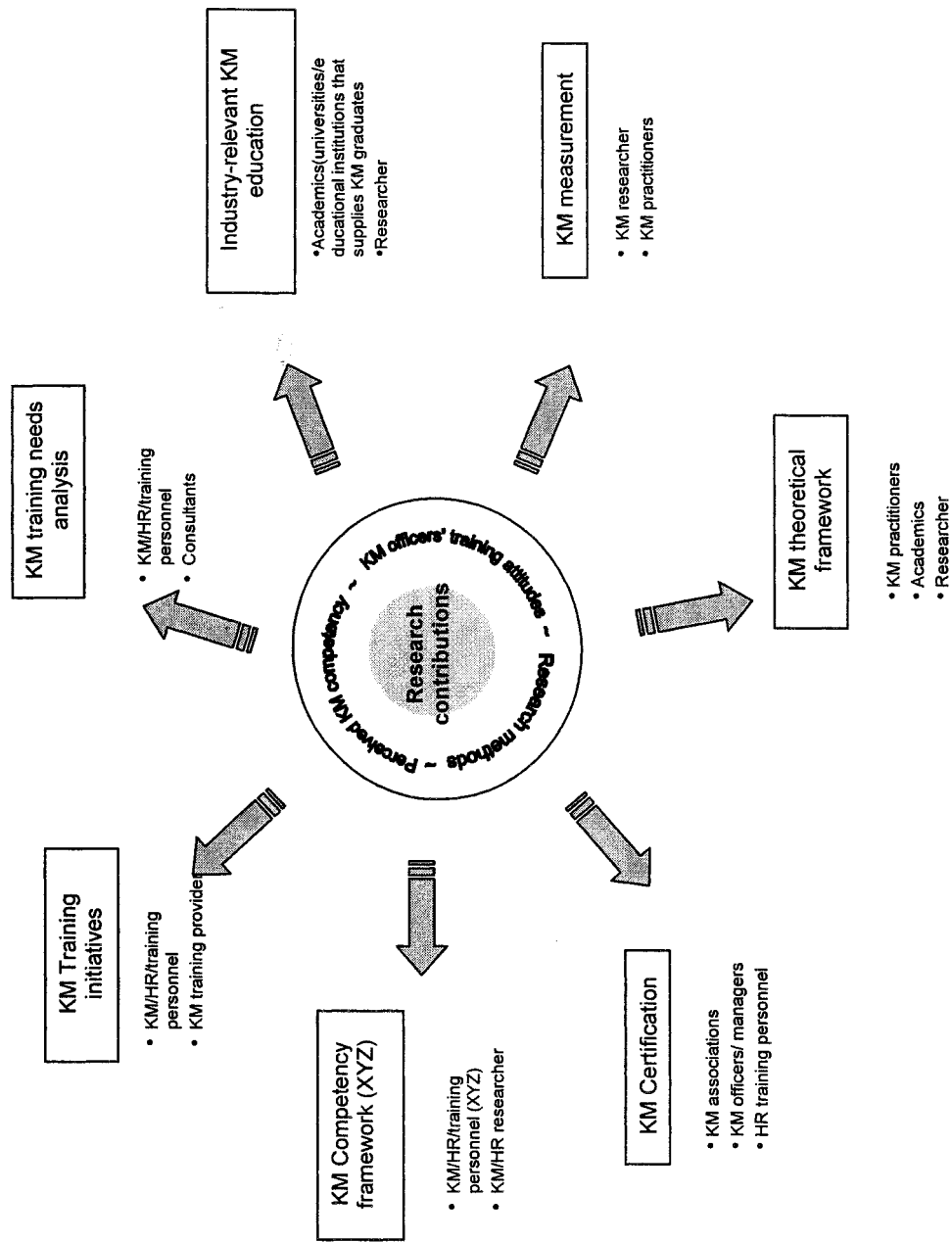
Exhibit 7 a   Research Contribution & Implications

Industry-relevant KM education
- Academics(universities/educational institutions that supplies KM graduates
- Researcher

KM measurement
- KM researcher
- KM practitioners

KM training needs analysis
- KM/HR/training personnel
- Consultants

KM theoretical framework
- KM practitioners
- Academics
- Researcher

KM Training initiatives
- KM/HR/training personnel
- KM training provide

Research contributions

KM officers' training attitudes ~ Research methods ~ Perceived KM competency

KM Competency framework (XYZ)
- KM/HR/training personnel (XYZ)
- KM/HR researcher

KM Certification
- KM associations
- KM officers/ managers
- HR training personnel

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7.2 Contributions of the research

This research study has filled some knowledge gaps on technical competencies for KM professions. It provides a broader understanding of KM technical competencies and the implications for training based on the experiences of KM managers. Although the elements of the KM competency framework identified and highlighted in the findings could be found in the literature, this research, which identified the related competencies based on KM practitioners' interpretations, brings them together. Furthermore, studies relating to the KM professions in Malaysia have not, to date, been undertaken. Besides contributing to the theoretical and conceptual discussions on KM competencies and training, the qualitative study adopted in the study also offers methodological discussion on the online focus groups. The outcome of the study generated three main contributions, which benefit several communities including those KM practitioners within XYZ and UiTM as well as KM researchers/practitioners in general. The study, which identifies KM-related competencies and training needs, contribute to the development of the following:

- KM competencies framework for KM professions which contributes to
  - greater employees and organisation effectiveness as it could support KM skill gap analysis/reflection on existing knowledge and skills
  - provide basis for better KM job description & specification to support recruitment and selection of potential KM personnel
  - underpins performance reviews/appraisal

- KM training requirements/preferences of KM managers
  - support effective training needs analysis
  - support effective KM training strategies

- An alternative way of data collection method in conducting e-focus group (design and execution)
  - using blog as asynchronous online data gathering technique

The main contribution of this study is in the assembling together the insights from KM managers' perspectives to construct a KM competencies framework. The research has identified six core elements i.e. KM overview, knowledge taxonomy, KM tools, Communities of Practice, KM Measurement and Information Management. Furthermore, the framework could contribute to a greater employee and organization effectiveness in supporting both (employees and the organization) in their skills gap analysis by reflecting on their existing skills that they possess. It could also provide a basis for better and more targeted KM job descriptions and specifications, which can support the organization in their selection and recruitment of potential KM personnel. In addition the KM competency framework could also underpin performance reviews or appraisal related to KM activities.

The study has demonstrated the implications of the required KM-related competencies on training needs. Arguably, this could be used to initiate KM training needs analysis that will identify the gaps between current competencies held and those needed. Further to this it also contributes to effective training strategies as it can be used for the 'competency-based training'. Appropriate KM training, relevant to KM managers' needs could be provided or allocated for their professional development as it could increase employees' morale, motivation and efficiencies. Therefore in this context the training needs required by employees (KM managers) may support a cost-effective KM training strategy by focusing on the relevant tasks.

An additional contribution of this research lies in the design and development of a new way of collecting data; e-focus group using blog offers an alternative

approach in data gathering, which is applicable in other contexts. Although e-focus groups are often used in conducting market research, increasingly it has been adopted in academic research in areas such as nursing and education. It has become an important tool for conducting netnography – an ethnographic studies of online communities. Several free software, which most e-focus group use as a platform for the sessions can be downloaded from the Internet. However, the use of a blog in setting up an asynchronous e-focus group has not been explored by academic researchers because blogs are often use for reflecting ideas, feelings and opinions online similar to writing manually in a personal diary or journal.

As a public domain platform, blog could reduce some technical barriers associated with other types of avenues (software) as it is more a straightforward approach for participants. Unlike other e-focus groups that require participants to download appropriate software, which sometimes might inhibit their willingness to participate, blog is accessible with Internet. The researcher has demonstrated some useful guidance in developing the platform. This could be adopted in other research by analysing the context of the research understudy in detail so that modification and customisation of the techniques involve in the design and development could be adjusted; (i.e. synchronous or asynchronous and the sub processes of designing the blog). The design and development of the online focus group adopted in this research could be adopted with some considerations on the theoretical and technical elements related to the approach. The use of e-focus groups as a data collection method would be very practical for participants who could virtually connected via the Internet or intranet. The use of ICT is part of the organisation's day-to-day tools that support organizations' operations;

therefore the available systems could be exploit to conduct research such as the online data collection methods.

7.3 Implications for professional practices

7.3.1 Implications for XYZ's HR and KM personnel

One of the main objectives of this research is to interpret KM officers' at XYZ perceptions on the essential KM-related competencies required for KM officers to perform their given KM activities or tasks. KM practitioners'/respondents' experiences are potentially useful with some practical and research implications. Though both HR and KM personnel at XYZ would indirectly be facing the same implications as other KM practitioners and researchers in general, there are some direct implications on their existing KM activities within XYZ KM setting. Arising from the research findings, the following aspects/implications appear relevant:

o   Identification and analysis of KM competency gaps among KM managers of XYZ

o   Development of KM competency framework for XYZ which may be extended to the:
  - Design and development of a more relevant KM managers' job descriptions and specifications
  - Determination of characteristics/attributes of KM managers in the selection and recruitment process of potential KM managers
  - Identification of the level of application (Advanced, Proficient and Knowledgeable) that each competency required

o   Adoption of the competency-based training concept

o   Improvisation of the KM training strategies – capitalizing XYZ's resources through
  - better understanding of KM managers attitudes towards KM training
  - developing and conducting in-house KM training and certification
  - conducting training needs analysis

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As all the six competencies are said to be the core KM-related competencies, HR and KM personnel could address their competency gaps at XYZ. The six essential KM competencies drawn from this study could be used as a baseline for HR personnel and KM team members to develop their own KM competency framework for their KM professions. As suggested by UNIDO (2002), a competency framework should include generic, technical and managerial elements (Chapter 2 and Exhibit 2e) these perceived competencies could support the technical component. This could become a 'standard' for KM managers to perform their KM tasks at XYZ as it is a 'shared understanding' drawn from the KM managers who are directly involved in KM activities. Indeed, the framework will be the foundation element or 'driver' for implementing change; in this context is the KM initiative, so that their KM direction will have a clear focus.

HR and KM personnel who are involved in developing the KM competency framework for XYZ could also use the perceived KM competencies to further support a more detailed process the job analysis process. The purpose of the job analysis, which is a systematic process, is basically to gather information about responsibilities, tasks and context of a particular job (Corbridge and Pilbeam, 1998). Therefore, the findings could provide relevant information in crafting a better job description and specification for KM professions. The KM competency framework along with appropriate job description and specifications could help their recruiting and selection process for potential KM personnel.

The findings of this research also have practical implications for the learning and development strategies at XYZ. The competency framework and KM managers' training preferences highlighted in the findings could be used by HR and KM

personnel to improve their KM training initiatives at the same time trying to capitalise their organization resources. In this case the concept of competency-based training could be adopted to make sure appropriate KM training relevant to KM activities is designed or offered to the employees (KM managers). HR personnel at XYZ should address the findings that revealed the respondents' preferences towards KM training providers, KM courses and KM certification programmes. Since majority of the respondents prefer in-house training to that by external providers, XYZ should consider the decision to provide resources and experts who could deliver the relevant courses as preferred by the respondents. Since they preferred more in-depth content in KM courses, bringing in more 'experts' or consultants from outside needs to be considered. Probably, this might be expensive however it could be substantiated with the advantage that it could accommodate more KM managers at one time while exploiting XYZ's existing resources like infrastructure and activities available in the organisation. An important issue highlighted by one respondent is that until now the content of KM training which was conducted in-house seems to be very relevant to XYZ KM context therefore the HR personnel might emphasize more their in-house KM training. They might customise the training content specifically for XYZ KM practice and examples used could be very focused on what they have been doing in XYZ at this stage.

Since the findings also revealed the positive attitudes of most respondents towards the certified KM programmes offered by external training providers and at the same time highlighted the disagreements among some respondents, it would influence the decision to send KM practitioners to such training. Several KM practitioners at XYZ had previously attended the KM certified training. To balance

out these differences HR and KM personnel need to analyse this issue more in-depth since it involves costly training expenses. XYZ might want to consider a suggestion by one respondent who proposed the idea of designing and developing an in-house KM certification that offers introduction, intermediate and advanced level. As KM works well in an environment where their employees accept KM as their work culture in a more 'natural' manner, this training would promote employees' willingness in KM participation. This could motivate more employees to involve themselves in KM activities as they might see it as an incentive to improve their existing skills enhancements or career developments. XYZ might also consider having a partnership effort with external KM training providers. However, they might need to rationalise the proposed idea of having the in-house KM certification by considering issues such as the incentives and value to employees and organisation, their resources and expertise in delivering the training as well as where it could lead the employees and XYZ. They must also consider the relevant content or syllabus that suits XYZ KM direction and activities.

With issues, concepts, recommendations and frameworks highlighted from the findings, further research may need to be conducted. As there are six KM-related competencies that are essential for KM managers, HR and KM personnel need to identify the applications level of each competency. The application levels of each competency could be categorized as Advanced, Proficient or Knowledgeable as suggested in UNIDO (2002) and discussed in Chapter 2. This is because some KM professions might require more in-depth knowledge in certain KM areas like knowledge measurement, knowledge sharing or knowledge taxonomy. For instance, those who are responsible for developing and maintaining knowledge

taxonomy would require a more in-depth knowledge of taxonomy development while those who are involved in knowledge measurement would require some advanced knowledge on KM measurement.

Another area for further research is based on the findings that in relation to the issue of measuring knowledge or knowledge activities. Until now, they still have difficulty in identifying and establishing their knowledge measurement activities. Therefore, KM practitioners may need to research this area, getting appropriate training and perhaps trying to look at other organisations KM benchmarking and audit strategies.

As a baseline, the findings on essential competencies and training preferences should be extended to evaluate existing KM training outcomes. This is to find out to what extent the KM training offered until the present time benefited KM managers and the organisation as a whole. In addition, findings from this research could also support HR and KM personnel in addressing the issues relating to competencies and training for their Training Needs Analysis (TNA) exercise specifically for KM managers. TNA involves a comprehensive collection of data pertaining to KM professions through various methods including observation, interviews, group discussions and questionnaires. Issues highlighted in this research finding could be used as themes for XYZ Training Needs Analysis.

7.3.2 Implications for KM practitioners and researcher

In order for an organisation to initiate and practise successful KM, they will need some well-trained personnel who have adequate competencies to manage the project. For other KM communities (practitioners and researchers), the findings appears relevant in several ways, either in performing their day to day KM tasks or in researching into KM which include:

o   Enhancement of KM understanding

o   Exploration, investigation or research on developing the KM competency framework for KM professions in general

o   Considerations from lesson learn (benefits, implementation and experience of XYZ's KM managers) as guidelines or directions

  ▪   allow flexible alternatives to be considered in running KM activities such as adopting KM tools, developing taxonomy, benchmarking knowledge and CoPs

o   Reflection on KM skill gaps and address KM training needs analysis

In general other HR and KM professionals who are involved in KM activities in other organisations could use the findings of this research to enhance their understanding of KM. Knowledge and lessons learned from the experience gained from those who have been directly involved in KM initiatives, might become useful guidelines for other KM practitioners. For example, in defining an organisation's KM competency standard or framework, other KM practitioners/researchers could use the conceptual framework demonstrated in this research. From the perceived KM competencies highlighted by practitioners at XYZ, though it might not be exactly the same as of those from other organisations, certain suggestions and frameworks could at least be taken into

consideration when working in a similar setting. For example, the findings that highlighted the significance, benefits, frameworks and considerations in developing and establishing knowledge taxonomy, KM tools adoption, KM measurement experience, CoPs formation and Information Management concepts could be relevant to other KM practitioners. From the frameworks and propositions drawn from this research, other KM practitioners could develop more flexible alternatives in their KM strategies through adaptation or customisation while delivering their KM tasks. Furthermore, among all the essential KM competencies highlighted, the problems in KM measurement are still unsolved. Unlike other organisational resources, the intangible characteristics of knowledge make it difficult to be measured and assessed since identifying suitable indicators for knowledge activities is not a straightforward process. KM practitioners/researchers will have to continue researching in this area so that measurement activities such as auditing and benchmarking mechanisms can be improvised and established.

Conceivably from the findings, in general KM practitioners could also make some comparison by reflecting on their own KM competency gaps. Through their reflection and assessment on their existing KM-related competencies they could consider some specific KM training to enhance their knowledge and understanding of KM. KM practitioners will need to identify appropriate KM training programmes that are relevant to their KM involvement in their organisation. The outcomes drawn from this research could also be used by HR and KM personnel as the means to support their organisations in identifying KM skill gaps among KM team members. They could also use it to support their training needs analysis in ensuring that the delivery of any kind KM training that

they are conducting will fulfil the required KM skills. Perhaps it will improve the organisations' KM training strategies, which include the design, development and implementation of the future KM training.

Therefore, this research, which concludes with a set of six essential KM competencies from KM practitioners' perspectives, could also act as an initial baseline in developing or improvising KM education programme. As the main 'suppliers' of KM graduates, it is important for the higher education institutions to make sure that they are offering an industry-relevant KM curriculum or programme. In this case, those who are responsible for designing and developing a KM programme could consider this set of practitioners' perceived KM-related competencies for researching KM graduates competencies. Lang *et al.* (1999) acknowledge that the widening separation of a faculty and curriculum from industry needs and expectations has resulted in a real threat to competitiveness in the global marketplace. Therefore, similar research may be conducted in other government /public organisations as well as private organisations to get a larger picture of the trends based on the perspectives of those who are directly involved in KM.

7.3.3 Implications for the researcher as KM practitioner and researcher

As the decision to research in this area was motivated by the researcher's involvement in KM research and activities that took place at the university (UiTM) where the researcher is working, this research could have both practical and research implications for the researcher. At UiTM, there is a KM unit responsible for managing UiTM's KM initiatives. Many of the issues discussed in this study have potential for further development and research.

Whilst the scope of the current study is not specifically generalisable, many of the issues are likely to be relevant and these are areas concerning KM that could be developed and researched:

o Engagement of similar research in UiTM on KM competency gaps or deficiencies since there is a KM Unit

o Development of the KM competency framework by HR/KM personnel of UiTM which may be extended to the:

  ▪ development of the KM job specifications and descriptions within UiTM context

o Improvisation of UiTM's KM training strategies by conducting the:

  ▪ skill gaps analysis
  ▪ training needs analysis

o Imparting the proposed framework as guidelines in designing/reviewing curriculum for KM education program currently offered by UiTM

o Investigating, identifying the essential skills of KM professional within a broader perspective by researching on industry expectations on KM graduates competencies.

Since the university has started their KM journey, the researcher would like to conduct similar research to explore the insights and interpretations of KM practitioners on their KM competency gaps and the essential KM competencies that are required by KM practitioners. It would firstly be conducted at the researcher's faculty level and later will extend it to other faculties or the organisational level. Similar to XYZ, the research intention is to help the HR or KM personnel at UiTM in supporting and developing the organisation's KM

competency framework and training strategies. Again this will help the process of designing a better job description and specification that will help both HR and KM personnel in their selection of KM team members as well as KM practitioners' directions in delivering their KM tasks.

At the same time, the contributions and implications for the university KM training strategies will depend on the KM competency gaps and the essential skills required by the KM practitioners in the organisation. Therefore, the researcher would also intend to initiate or participate in research on KM practitioners' training attitudes and training needs analysis. In this context it will provide useful information in supporting UiTM training strategies. While the researcher is attached to a faculty that offers a KM programme at a Master's degree level, this research could become the baseline for the researcher and the faculty in reflecting and analysing the faculty's current KM curriculum. The researcher would like to conduct further research on the industry expectations for a KM curriculum. This will also research the current state of KM education.

Another research area that researcher would like to explore is research on industry expectations for KM graduates so that KM competency framework would be more collective. This will involve organizations that hire KM professions to run their KM initiatives. A number of research projects on meeting the industry demands and expectations for future graduates have been conducted in several areas such as engineering, textile, aquaculture, information systems etc. However in the area of KM very little research is being done as a result of the fact that the Knowledge Management field is still evolving. Therefore, the findings highlighted

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in this research could help to develop relevant issues on knowledge and skills of KM professions for future research.

7.4 Conclusion

The discussions on the contributions and implications of this research had brought together the theoretical context that was discussed in the literature with the practical context of KM practitioners. Although this research was conducted within XYZ context, it provides better understanding of KM specific skills and training which, indirectly becomes the basis by other KM practitioners to improve KM related skills, activities and training. The e-focus group was highlighted as another possible alternative in data collection method which other researcher could consider by taking advantage of the technologies that already in some ways create and integrate the social world.

The following chapter (Chapter 8) is the conclusion chapter summarizes the findings of research work performed. The conclusion chapter also provides a discussion on strengths and limitations of the research.

CHAPTER 8: RESEARCH CONCLUSION

8.1 Introduction

This final chapter consists of 4 sections concluding the whole research work carried out through the study. It gives a brief description about the research approach adopted in completing the study. It also highlighted the findings drawn from the research. Limitations of the research were also discussed and followed by the conclusion chapter.

8.2 Conclusion from the research

Based on the researcher philosophical stance, the qualitative approach was adopted as addressed the study that aim to explore and understand why KM managers interpreted certain competencies as essential and associated them with training. A single case study approach was adopted, which KM managers of XYZ were the participants based on their involvements in KM. The qualitative approach that allows data to be generated within participants' natural setting had employed the semi-structured interviews as the main data collection method. The constructions of KM managers' experiences into narrative forms, which consist of collections of statements and views about their perspectives, were analysed using narrative analysis technique.

The purpose of the study was to explore how KM managers interpret the essential KM competencies based on their personal and 'hands-on' experience. Having appropriate KM skills that are relevant to the organisational KM context is crucial especially when KM managers are the ones responsible for introducing and promoting the KM idea and concept as a new management initiative like KM. Since the term KM is ambiguous, having a clear picture of shared understanding

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of the organisation's KM concept is important so that KM initiatives could run smoothly. While promoting any KM concepts, ideas, approaches or tools KM managers should first promote the benefits of KM not just by relating it to organisational performance, but be able to relate it within the context of the individual at departmental level. This is because, first of all, people in the organisation would like to see how KM benefits them in performing their tasks whereas to the management KM managers need to convince them of how KM can improve organisational performance. Only when these could be projected to the stakeholders will KM managers be able to sell their ideas more easily to everyone in the organisation and KM can be established smoothly.

In would be impossible to limit the overview of KM as it depends on how each person interprets his or her needs to understand KM while performing their KM task. For example, at XYZ although they share the main KM objectives, the adoption of knowledge activities is different in each department. For a small department with a part-time KM manager, it is sufficient to know the general concept of KM and benefits. However, for a big department that usually has a full-time KM manager, many types of knowledge activities will be involved. This could drive the need to know more about KM and so gain more confidence in selling KM ideas. The knowledge of success and failure stories from other organisations that adopt KM as examples could provide knowledge of best practices or even mistakes that could be avoided. The MAKE award was suggested as important in that it draws attention to KM benefits and success stories.

KM managers should also have the skills in developing a taxonomy, which will become the framework that governs the knowledge activities at XYZ. This is to

support a smooth knowledge flow as everyone in the organisation uses the same terms of references when they perform their tasks. Without the use of corporate knowledge taxonomy, there may be a situation of 'knowledge/information lost'. Developing corporate knowledge taxonomy is a complicated, complex and difficult process, which should produce a dynamic framework, that is evolving and needs updating from time to time as and when the business environment changes. The process of developing corporate knowledge taxonomy is not a 'one-off' activity. Instead it is a continuing process that needs to be updated from time to time. The framework of the corporate knowledge taxonomy therefore is always evolving because the organisation as a whole, the management, the culture, the business processes are changing from time to time to adapt to the business environment. KM managers should also realize that in developing this standard corporate classification system for everyone to use, it does not have to be complex and therefore the use of complicated jargon, concepts and approaches should be avoided, as the main purpose is to reflect the organisational activities, as well as be easy to use.

The issue of variety in the choice of KM tools, benefits/values, applications, suitability and customisation of these tools was highlighted in this research. With the advancement of ICT capabilities and realizing that ICT could enable a better platform for KM, either type of KM tool has its own advantages and disadvantages. These include tools for knowledge sharing, capturing or retaining knowledge like Visual Discussion Room (VDR), knowledge repositories, CoPs, yellow pages, after-action review and storytelling. It was revealed that being able to justify convincingly the benefits, the processes and applications of each tool are important in promoting KM activities effectively. Therefore sufficient knowledge

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about the tools is required. Based on its advantages and disadvantages, the issues of 'suitability' and 'customisation' with the context of the department or the organisation where certain knowledge activities are applied need to be addressed. Storytelling, which was said to be a powerful KM tool, was used to promote and encourage knowledge sharing activities.

KM managers suggested that one must realize that dealing with organisational knowledge, especially tacit knowledge, involves people and therefore understanding the nature and structure of CoP or social network formation in organisations is crucial. It was revealed that only when they understand the formation and nature of the CoPs or social groups, could they identify appropriate strategies to capitalize each group member's capabilities. These will include finding suitable tools to support the group's formation and dynamics, which can be set up using an IT-based approach or a non-IT-based approach. Some KM managers concluded that it would be easier for KM managers to have an in-depth knowledge of CoP from the start as one could straight away work on the implementation or application part of CoP rather than having to start from the basics. Alternatively, through a better understanding of CoP, its concepts, benefits and applications, KM managers will be able to perform better roles as facilitators for KM initiatives or activities in the organisation so that CoP could successfully serve as a vehicle to promote knowledge flow among practitioners in various interests.

Like other organisations, XYZ would like money invested in certain business processes or operations being related to the economic gains. Measuring KM activities has become one of KM managers' challenges. It was revealed that being

able to know how to measure and benchmark knowledge activities is an important element that needs to be acknowledged so as to justify KM initiatives. With limited knowledge on what and how knowledge or knowledge activities could be measured, KM managers admitted that it is caused by lack of literature, failure in identifying suitable proxies and lack of knowledge in benchmarking best practices. In comparison with other knowledge activities, knowledge measurement is one of the most difficult tasks as it involves measuring something that is intangible.

KM managers are facing difficulties in identifying appropriate 'proxies' that could present indicators or metrics for measuring their KM performance. Problems in identifying what needs to be measured and how it should be measured are caused by the nature of knowledge itself. Tangible and intangible characteristics as well as knowledge activities that are being described as subjective in nature by some respondents makes it difficult to come out with a set of 'agreeable' proxies. Benchmarking is also considered another essential area of knowledge and skills for KM managers, as it is another way of justifying the value of KM initiatives. However, since KM is being adopted mostly by organisations in the private sectors, to benchmark KM activities in public organisations is difficult, since they are not set up for making profits.

The scope of information management spreads out from cataloguing, indexing, classification, information systems, content development, information policy, classification, database design, record management, information storage and retrieval and the discipline pulls together the opinions from those in all these areas. Although in general KM is about managing organisational knowledge assets, especially tacit knowledge. However, the ultimate intention is explicating

the 'tacit' knowledge in a form that could easily be shared and exploited. Therefore, most respondents highlighted that having some knowledge of information management is crucial to support KM activities.

Information management was considered the basic skill that KM managers should have to 'manage' knowledge as some KM managers concluded that KM would not be successful until information management in the organisation works. Information management could be applied within the KM cycle or activity. It could benefit KM managers in developing knowledge repositories, developing corporate knowledge taxonomy, identifying and searching for strategic knowledge. Although developing knowledge repositories is not new because systems like EDMS (Electronic Document Management Systems) have been around for quite some time, when KM emerged, they needed to adjust their objectives and functions. The concept of sharing and transferring knowledge (especially tacit) within the organisation is being emphasized in KM.

The findings also revealed that most respondents agreed that their involvement in KM activities, which demand certain competencies, played some role in their decision to attend KM-related training to enhance their KM knowledge. Although the respondents attended KM training organized by both internal and external providers, most of them preferred the in-house KM training, as it is more understandable and applicable to their organisational context. This is because it was conducted towards the direction of the organisational KM objectives. However, they acknowledge that attending external KM training could enhance the respondent's KM networks through CoP establishment as a new set of CoP could be created or developed. From both types of KM-related training, KM managers

gained several benefits: they gained and shared new ideas, practices and experiences. KM managers also believe that they gain more confidence and competence in performing their KM activities from the training.

While XYZ has reached six years on its KM journey, it has gone through several stages in implementing KM starting from the knowledge-based organisation (KBO) journey, establishing KM with road maps, focusing on an IT approach which was then replaced by the human approach. Experiencing the XYZ transition, most KM managers prefer a more advanced level of KM courses in the future specifically those related to the KM competency framework. Although KM training courses which focus on the application and implementation aspects of KM are preferred, this type of course was either difficult to find or always caused disappointments for not being able to meet KM managers' expectations.

KM certification training was seen as a favourable choice to the majority of KM managers. The KM certification training not just helps individuals to understand KM more in-depth, but consequently it would make the KM managers feel motivated to embrace and practise KM. This is because, with the certification, it could enhance their confidence, morale and reputation. It would also reflect some recognition and respect as it carries more weight, especially when they are proposing new ideas relating to KM. It was also noted that if all KM managers in XYZ attended the certification training, KM activities could be done much easier and faster as everyone within the KM team members would be on the same wavelength in terms of their understanding of KM. Despite the fact that many respondents preferred going to the certification training and claimed that it is an

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important and good motivational factor, several respondents displayed their disagreeable opinion on the certification training. Their arguments on this issue are essentially due to the fact that:

- KM is still considered as an emerging and evolving concept especially in Malaysia
- The credibility of the body that conducts the certified KM training especially when high fees was charged may be questionable
- KM involves something very fluid and subjective.

A suggestion to have an in-house KM certification training run by the KM centre might obviously encourage more XYZ personnel to adopt KM. This could boost employees' willingness toward adopting KM and at the same time it could be a platform for career development. In-house certification suggested by KM manager could be designed and offered in three stages: Introduction, Intermediate and Advanced certification level. Most importantly it should have to be relevant to XYZ strategic focus. Briefly the findings contribute theoretically as well as practically as discuss in Chapter 7 which include:

- KM competencies framework for KM professions which contributes to
  - greater employees and organisation effectiveness as it could support KM skill gap analysis/reflection on existing knowledge and skills
  - provide basis for better KM job description & specification to support recruitment and selection of potential KM personnel
  - underpins performance reviews/appraisal
- Demonstrates KM managers training requirements/preferences
  - support effective KM training needs analysis
  - support effective KM training strategies
- Presents the design and development of an alternative way of data collection method in conducting e-focus group
  - designing blog as asynchronous online data gathering technique

8.3 Limitations

KM is a new and evolving discipline, which is multifaceted and could be adopted in several approaches such as IT-based, human/organisational behavioural approach or a combination of both. Different KM approaches will focus on different KM objectives will then lead to different types of KM activities. Therefore, the knowledge and skills needed for KM managers could be different. Furthermore, similar to other competencies studies, the proposed competencies framework could easily be obsolete as discussed in Chapter 2, especially when organisational change occurs. As KM is still evolving and there is no 'one-size-fits all' in KM, the proposed framework drawn from this research could easily become 'old' and may quickly be challenged and replaced by a new mindset.

Based on the literature, in general building a competency framework is complex difficult. In fact discussion on developing KM competencies is limited. This is because most references from the literature and research focus on the managerial and generic competencies rather than technical competencies. The researcher realizes that more literature on technical competencies needs to be highlighted to clarify the theoretical framework.

The fact that this study has adopted a single case study that relies on personal interpretations of KM managers in XYZ, it is not appropriate to generalize the findings. Since participants are from the same organisation it is difficult to highlight in detail each participant's profile to make sure the participants are kept anonymous because by just profiling the gender, status of KM managers (part-time/full-time) or their position in the organisation would easily identify who the participants are.

8.4   Conclusion

In general, the concept of KM is about unifying an organisation's knowledge assets by developing its value so that knowledge can continuously be created, applied and shared to improve an organisation's operations and performance. Therefore, it is vital for organisations to systematically manage tacit knowledge and make it explicit so that it can be used strategically within the organisation. To plan, develop and implement KM will need a substantial financial investment, time and commitment. It needs top management support to ensure success. Furthermore, KM requires a group of people (i.e. a KM team) to manage the initiatives so that KM activities within the organisation will focus towards the same direction and consistent with the organisational objectives. It has been reported in the literature and previous research discussed in Chapter 2 that one of the main reasons of why KM may fail is that there are no specific personnel being assigned as knowledge champions and managers to run the initiative. Therefore, organisation will need effective KM managers to facilitate and promote KM principles and activities so that organisations can capitalize or their valuable knowledge assets.

The findings reflected the perspectives of KM managers from Malaysia government agency. Although the findings might not be generalised in all types of organisations (private and public), it has impart useful lessons as to make the implementation of KM strategy better in the future. The nature between private and government agencies is different in so many ways including their structure, strategic focus, policies and culture.   In general, both private and public organizations/government agencies share the same KM objectives in terms of trying to improve performance and productivity.   However, according to Khosrowpour (2001), at the micro level, the organizational and KM strategic focus

differ, as the private organizations KM is always about economic gains which relates to profits and costs. Therefore any kind of training investments should demonstrate potential return. On the other hand, KM in government or public organisations could be influenced by political directives or government policies, which are typically hierarchical and bureaucratic (Liebowitz and Chen, 2003; Shields *et al.*, 2000 and Syed-Ikhsan and Rowland, 2004b). In the public or government organizations, though marketshare and competition are normally irrelevant, they still have to compete for funding to ensure survival so that they could provide better services (Khosrowpour, 2001). Although economic return on investment for training is irrelevant for public or government organisations, training initiatives are crucial for developing competent human resources as to increase the organisation performance. Therefore in both types of organisations, competency framework and training initiatives are very much related to make sure that they could capitalize their resources for better performance and productivity.

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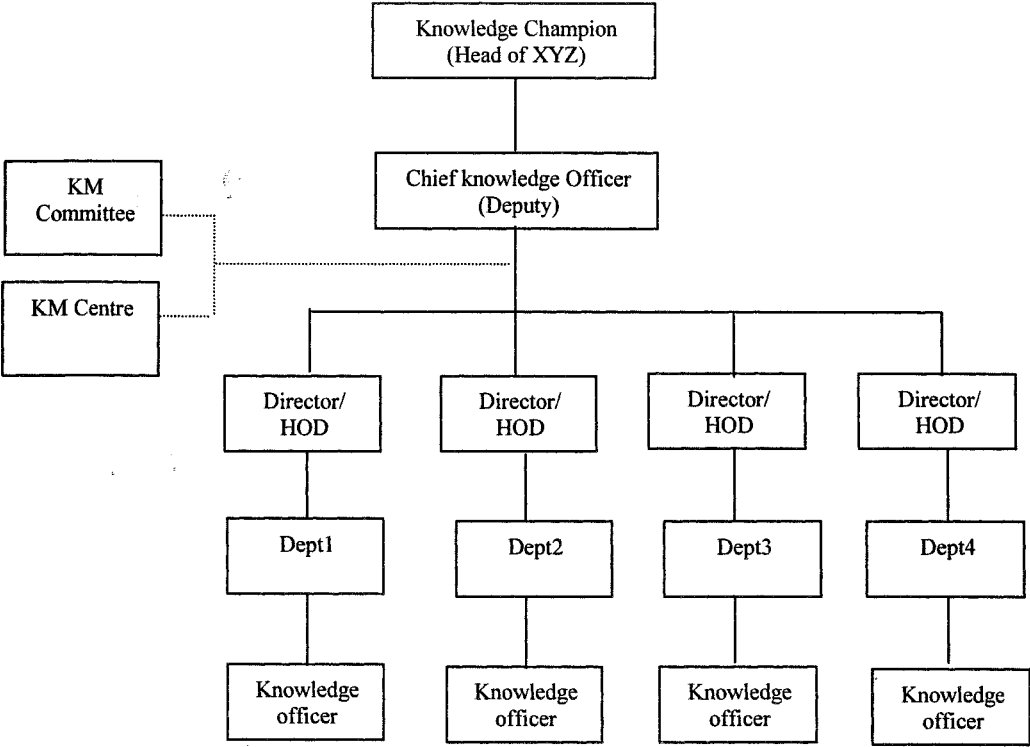
APPENDICES

Appendix A Malaysia Knowledge-based Economy Master Plan
- Strategic Trust and Critical Areas

Thrusts	Critical areas
Thrust One	Cultivate and secure the necessary human resources
Thrust Two	Establish the institutions necessary to champion, mobilize and drive the transition to a knowledge-based economy.
Thrust Three	Establish the incentives and infrastructure and info-structure necessary to prosper the optimal and ever-increasing application of knowledge in all sectors of the economy and to the flourishing of knowledge-enabling, knowledge-empowering and knowledge-intensive industries.
Thrust Four	Dramatically increase the capacity for the acquisition and application of science and technology in all areas.
Thrust Five	Ensure that the private sector is the vanguard of the development of knowledge-based economy.
Thrust Six	Develop the public sector into a knowledge-based civil service.
Thrust Seven	Bridge the knowledge and digital divides.

Source: Malaysian economy in transition – an introduction (Sau, 2004).

Appendix B **XYZ's KM structure**

```
                          ┌────────────────────┐
                          │ Knowledge Champion  │
                          │   (Head of XYZ)     │
                          └──────────┬─────────┘
                                     │
 ┌──────────┐             ┌──────────┴─────────┐
 │    KM    │┄┄┄┄┄┄┄┄┐   │ Chief knowledge Officer │
 │ Committee│        ┊   │      (Deputy)       │
 └──────────┘        ┊   └──────────┬─────────┘
                     ┊              │
 ┌──────────┐        ┊   ┌────┬─────┼─────┬─────┐
 │ KM Centre│┄┄┄┄┄┄┄┘
 └──────────┘
```

Director/ HOD	Director/ HOD	Director/ HOD	Director/ HOD
Dept1	Dept2	Dept3	Dept4
Knowledge officer	Knowledge officer	Knowledge officer	Knowledge officer

Appendix C Ow's KM focus

8 Key-Focus of KM	Activities
1. K-identification (knowledge needs analysis)	• Identifying required knowledge and comparing it to existing knowledge to highlight the knowledge gap.
2. K-acquisition (gathering knowledge)	▪ Acquiring knowledge to reduce a knowledge gap from various sources colleagues, friends, experts, and consultants or even from organizations.
3. K-application (internalization and use of knowledge)	▪ Knowledge must be applied. Organizations must act upon the knowledge that they gather or own. Working is about learning and learning is about working.
4. K-sharing (distributing and participating)	▪ Sharing knowledge among employees to facilitate continuous innovation and creativity in the organization. Sharing knowledge smoothly with the support of KM tools
5. K-development (complementing knowledge acquisition)	▪ Knowledge development, which complements knowledge acquisition, must have certain foci (aligned with its strategic focus).
6. K-creation (generating new knowledge)	▪ Knowledge creation concept (SECI model) by Nonaka and Takeuchi (1995) that describe the interaction process between tacit and explicit knowledge as the main elements of knowledge creation is adopted.
7. K-preservation (organise and retain knowledge)	▪ Activities that support 'getting the right and relevant knowledge to the right people at the right time'. Knowledge (tacit and explicit) must be retained or preserved in a systematic manner for easier retrieval, usage and sharing.
8. K-measurement (measuring the performance of knowledge activities)	▪ To measure the value and performance of KM, knowledge and knowledge activities need to be codified or quantified. K-activities must be aligned with the organizational strategic focus by identifying knowledge indicators. Having a benchmark as a reference in assessing performance.

Appendix D **TFPL - KM competencies research phases**

The research methodology involved three phases (TFPL, 1999):

- Phase 1 – Project initiation

  Finalise and agreed upon the methodology, identify and set up a steering committee and prepare publicity materials

- Phase 2 – Desk research

  Get the initial overview of KM implementation (review literature and research, job advertisements/description and interview experts)

- Phase 3 - Data collection and analysis

  - *In-depth case study* (to identify and explore KM roles and responsibilities as well as skills and competencies associated with KM)

  - *Questionnaire survey* (international database of organisations that adopt KM)

  - *Workshops and consultations* (KM groups)

  - *Review* (professional development for Library & Information Science (LIS) professionals and educations and KM related training)

Appendix E **Interview Guide**

QUESTIONS	JUSTIFICATIONS
• How do you describe your organization Knowledge Management objectives?	Ambiguous KM definitions and approaches. People track *vs.* System track, Knowledge Management vs. Information Management.
• What type of KM activities are you involved in?	Different KM objectives will have different activities (Davenport and Prusak, 2000), which then may requires different KM skills
• What are the problems while performing KM roles?	KM initiatives, similar to other change initiatives such as BPR, TQM and Learning organisation, will have to face with challenges from every aspect; such as organization culture, behaviour and environment.
	Rothwell (1992) states that managers are increasingly expected to overcome organization challenges and bring teams together to manage change.
• As KM manager, do you think you have sufficient understanding and knowledge of KM to help you perform your KM tasks?	Cicmil (1999) states that it is clear that we need to have different approaches to the management process for different types of projects. He also suggests that different knowledge and skills are needed to deal with associated, specific levels of ambiguity and uncertainty throughout the project phases.

• Could you describe any situations in which you have concerns related to your skill level in performing KM tasks?	Al-Hawamdeh (2003) suggests that while Knowledge Management professions are still emerging, the professionals should have the necessary skills and competencies that will enable them to deal with organizational knowledge and promote KM practices within the organization.
• Throughout your involvement in KM activities what are the essential KM-related skills that KM managers should have? Why? • How would those required skills influence your KM training needs? o Training courses/ providers, • Have you been attending to any specific KM training programmes? • How would KM-related training support your involvement in KM activities?	What Knowledge Management researchers and practitioners are hoping to achieve is to identify a set of features and rich of skills and competencies common to organizations (Al-Hawamdeh, 2003). With the same perspective, Jones, Herschel and Moesel (2003) states that most often, the type of training that Chief Knowledge Officer (CKO) gets are from books and conferences. These types of ad hoc training may be relevant and necessary for current CKOs, but future KM professionals would need more formal training.

50 Tahun UiTM
1956 - 2006
Kecemerlangan Berterusan
Faculty of Information Management

Date: 24th July 2006

Dear Sir/Madam,

RE: CONSENT LETTER FOR INTERVIEW STUDY

This letter is an invitation to consider participating in an interview study on knowledge management research I am conducting. I would like to provide you with more information about this project and what your involvement would entail if you decide to take part.

Knowledge Management (KM) is now being recognized as a management tool that could help organization to compete and survive in the knowledge-economy era. Acknowledging the 'power' of knowledge is not enough unless organization is committed in managing the 'knowledge processes/activities'. Malaysian government has started to set foundation for the knowledge-based economy in 1990s with the launching of the National IT Agenda (NITA) and Multimedia Super Corridor (MSC) and in September 2002, Knowledge-based Economy Master Plan was launched. Therefore there is a need to have the right people with appropriate skills and training to manage KM initiatives. The purpose of this study, therefore, is to interpret KM managers' views on the essential KM-related skills required in managing KM initiatives and its implications on their KM-training needs.

This study will focus on KM practitioners' experience who involves in the organization KM initiatives. Although most KM projects in Malaysia have been adopted in many private organizations, gradually more of government agencies and public organizations have started the initiatives. Since XYZ has taken a responsive approach towards K-economy by adopted KM initiatives since 1999, I was given an approval to conduct research in your organization by the Economic Planning Unit (EPU), Prime Minister Department (Research Pass No. 1274). This project has been reviewed by, and received clearance through, the Faculty of Information Management, MARA University of Technology (UiTM) and also Newcastle Business School, Northumbria University. I believe your valuable

experience as K-managers could be transform into useful opinions and views in my research.
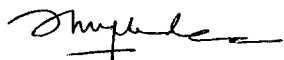
Participation in this study is voluntary and will involve an interview of between 45 to 60 minutes in length to take place in a mutually agreed upon location. You may decline to answer any of the interview questions if you wish and may decide to withdraw from this study at any time. The interview will be tape-recorded with your permission to facilitate collection of information, and later transcribed for analysis. I will send you a copy of the transcript to allow you to confirm the accuracy of our conversation and to add or clarify any points that you wish. All information you provide is completely confidential. Your name will not appear in any report resulting from this study, however, with your permission anonymous quotations may be used. Data collected during this study will be retained by researcher and only researchers associated with this project will have access.

If you have any questions regarding this study, or would like additional information to assist you in reaching a decision about participation, please contact me at *03-51266121* or by email at *siti.noordin@unn.ac.uk or snoordin@hotmail.com* or Dean, Faculty of Information Management (UiTM)- tel. no. 03-79622020.

I hope that the results of my study will be of benefit to those organizations directly involved in KM initiatives specifically to the governments and public organizations, as well as to the broader research community.

I very much look forward to speaking with you and thank you in advance for your assistance in this project.

Yours sincerely,

Siti Arpah Noordin
Lecturer
Faculy of Information Management
UiTM

Appendix G Consent Form

CONSENT FORM

I have read the information presented in the information letter about a study being conducted by Siti Arpah Noordin of the Faculty of Information Management (UiTM). I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I wanted.

I am aware that I have the option of allowing my interview to be tape recorded to ensure an accurate recording of my responses.

I am also aware that excerpts from the interview may be included in report or publications to come from this research, with the understanding that the quotations will be anonymous.

I was informed that I may withdraw my consent at any time without penalty by advising the researcher.

I was informed that if I have any comments or concerns resulting from my participation in this study, I may contact the Dean, Faculty of Information Management (UiTM), Tel. no. 03-79622020.

With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

☐ YES ☐ NO

Participant's Name: _____ (Please print)

Participant's Signature: _____

Date: _____

Appendix H Narrative Analysis Procedure

Narrative analysis procedures developed by Emden,C (1998)

1. Reading the full interview text several times within an extended time-frame (several weeks) to grasp its content.

2. Deleting all interviewer questions and comments from the full interview text.

3. Deleting all words that detract from the key idea of each sentence or group of sentences uttered by the respondent.

4. Reading the remaining text for sense.

5. Repeating steps three and four several times, until satisfied that all key ideas are retained and extraneous content eliminated, returning to the full text as often as necessary for rechecking.

6. Identifying fragments of constituent themes (subplots) from the ideas within the text.

7. Moving fragments of themes together to create one coherent core story, or series of core stories.

8. Returning the core story to the respondent and asking, 'Does it ring true?' and, 'Do you wish to correct/develop/delete any part?'

Appendix I   **Findings from the pilot study**

KM objectives and activities

Regarding the objectives of, *creating knowledge repositories* seems to the significant comments, contributed in the online focus groups. The activity that was mentioned is managing the Electronic Document Management Systems (EDMS). Some did not elaborate much on the Knowledge Management objectives; however they highlighted some Knowledge Management activities such as knowledge sharing and knowledge mapping. There are also comments that described on the strategic focus of the organization rather than the KM objectives.

> "... *to make the company a high performance organization, and believe that knowledge management will play a major part in this. We believe the company success in building a high performance organization will be based primarily on its ability to share and utilize its professional knowledge better and faster." (kmmgr103, Blogger, Aug 10, 2005).*

KM Technical competency

Several members of the focus group felt that the technical competencies are as important as other competencies (managerial and generic).

> "*we need to design, initiate and manage KM activities such as KM awareness, knowledge audit, knowledge mapping, knowledge measurement, knowledge culture, knowledge capture and knowledge-reuse, therefore specific KM skills will be required" (kmmgr105, Blogger, August 09, 2005).*

To make sure that all the KM related activities operates smoothly, specific skills will be required as responded by the same KM manager;

> "... *because companies are running/operating their business like a project which need good project manager that able to orchestrate and drive the project towards achieving its goal. Project does have technical elements; therefore KM managers will need to have the necessary technical competency" (kmmgr105, Blogger, August 09, 2005).*

One participant felt that the Knowledge Management centre must be responsible

to enhance and develop necessary Knowledge Management techniques and skills

that will help in the flow of organization Knowledge Management initiatives.

Technical competency deficiencies

The issue of technical competency deficiencies draws an interesting scenario.

Many agree that while performing the Knowledge Management roles,

> *"There are times when I could not figure out, what I am supposed to do*
> *in supporting KM activities like KM sharing or knowledge mapping for*
> *example. Is it about setting-up a sophisticated system or transforming*
> *'knowledge' into documents?..." (kmmgr104, Blogger, Aug. 09, 2005).*

Several members of the participants responded that they do not have enough

knowledge in KM related activities such as knowledge mapping, knowledge

auditing, knowledge capture or knowledge measurement. They even mentioned

about their limited skills in setting up the knowledge management tools to facilitate

KM activities.

According to the respondents, the deficiency is caused by the movements of KM

initiatives in Malaysia as a new management tools. According to one respondent,

> *"... KM is still very new in Malaysia and not many organizations*
> *practice it. It is difficult to benchmark KM activities within Malaysian*
> *context". (kmmgr1011, Blogger, Aug. 12, 2005).*

Several important factors are also describes as contributors to the deficiencies; for

example the KM contextual issues (its meanings and approaches). Some could

not really understand the concept clearly. From the literature, it has been

generally believe that there are several definitions of knowledge management as

espoused by Housell & Bell (2001) that substantial numbers of views agreed that

KM is not clearly defined and understood. Indeed, he added that there appear to

be general confusion about the difference between information management and

knowledge management. According to Angus and Patel (1998), KM is a concept of operating business that resolves within four processes; knowledge gathering, organizing, refining and disseminating, which involve the process of bringing information and data into the system, establishing context for easy retrieval, adding value and disseminating for others to use. Other issues include the respondents' experiences and backgrounds. Knowledge management was not taught in through their experience while performing the day to day KM roles.

Appendix J Approval Letter from Malaysian Government

UNIT PERANCANG EKONOMI
Economic Planning Unit
JABATAN PERDANA MENTERI
Prime Minister's Department
BLOK B5 & B6,
PUSAT PENTADBIRAN KERAJAAN PERSEKUTUAN
62502 PUTRAJAYA
MALAYSIA

Telefon: 88883333
*Fax:*603-888837

Ruj. Tuan:
Your Ref.:

Ruj. Kami: UPE: 40/200/19/1393
Our Ref.:

Tarikh:
Date: 11 November 2005

Siti Arpah Noordin
80 Housesteads Gardens
Somervyl Mews
Longbenton, Newcastle
NE12 8WQ UK

APPLICATION TO CONDUCT RESEARCH IN MALAYSIA

With reference to your application dated 20 May 2005, I am pleased to inform you that your application to conduct research in Malaysia has been approved by the **Research Promotion and Co-Ordination Committee, Economic Planning Unit, Prime Minister's Department.** The details of the approval are as follows:

Researcher's name	:	**SITI ARPAH NOORDIN**
Passport No. / I. C No	:	**630819-71-5036**
Nationality	:	**MALAYSIA**
Title of Research	:	**A STUDY OF THE TECHNICAL SKILLS DEFIECIENCIES IN MANAGING KNOWLEDGE MANAGEMENT (KM) INITIATIVES**
Period of Research Approved:		**THREE YEARS**

2.   Please collect your Research Pass in person from the Economic Planning Unit, Prime Minister's Department, Parcel B, Level 4 Block B5, Federal Government Administrative Centre, 62502 Putrajaya and bring along two (2) passport size photographs. You also required to comply with the rules and regulations stipulated from time to time by the agencies with which you have dealings in the conduct of your research.

3.   I would like to draw your attention to the undertaking signed by you that you will submit without cost to the Economic Planning Unit the following documents:

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a)   A brief summary of your research findings on completion of your
     research and before you leave Malaysia; and

b)   Three (3) copies of your final dissertation/publication.

4.   Lastly, please submit a copy of your preliminary and final report directly to the
State Government where you carried out your research.

Thank you.

Yours sincerely,

(MUNIRAH ABD. MANAN)
b.p. Ketua Pengarah,
Unit Perancang Ekonomi,
(Seksyen Ekonomi Makro)
Email: munirah@epu.jpm.my
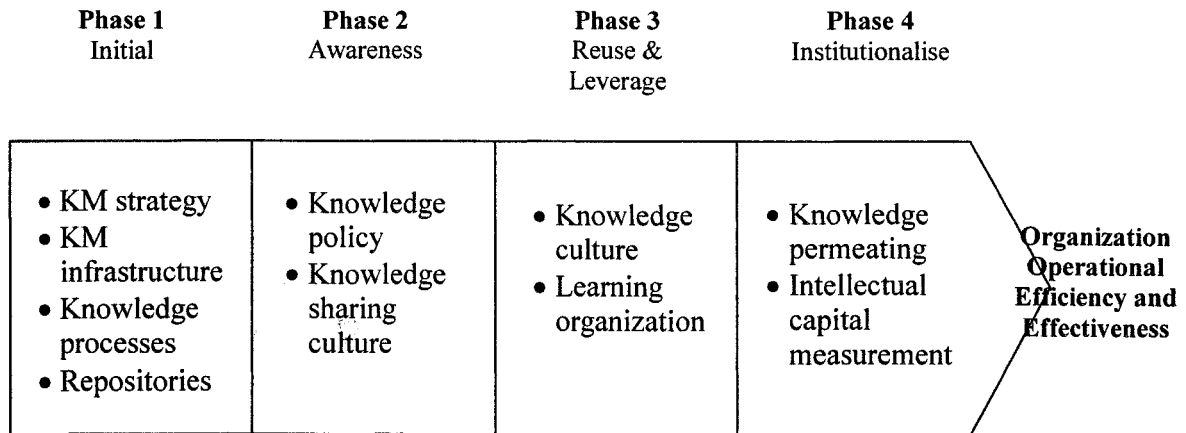Tel: 88882809/2818/2827

C.c:

En. Bistamam Siru Abdul Rahman
Pengurus Besar
Bahagian Pembangunan Industri
Suruhanjaya Komunikasi dan Multimedia
63000 Cyberjaya
Selangor   (Ruj. Tuan: MCMC/EPU/IDD-GM/AUT.GOV002(004)

Pengarah,
Pusat Pengurusan Penyelidikan,
Universiti Kebangsaan Malaysia,
43600 UKM, Bangi, Selangor.
(u.p: Prof. Dr. Mohd Yusof Hj. Othman)

Appendix K XYZ knowledge management roadmap 2001-2005

Phase 1 Initial	Phase 2 Awareness	Phase 3 Reuse & Leverage	Phase 4 Institutionalise	
• KM strategy • KM infrastructure • Knowledge processes • Repositories	• Knowledge policy • Knowledge sharing culture	• Knowledge culture • Learning organization	• Knowledge permeating • Intellectual capital measurement	Organization Operational Efficiency and Effectiveness

XYZ experiences, continuous efforts and commitments in structured knowledge management initiatives since early 2000 still go on during data being collected through interviewing with knowledge management agents for the purpose of this research. The dynamic of the initiatives are still going on which is useful because it allows knowledge management agents to tell experiences and stories clearly within context based on their involvements in knowledge management initiatives. By embarking on knowledge management initiatives, in 2002 XYZ has put its central focus or priority on knowledge as an important resource.

In 2002, several knowledge management tools were introduced and enhanced to support the KBO journey and initiatives by enhancing the organization ICT infrastructure. One of it is the Visual Discussion Room (VDR) that is being set-up to facilitate better discussions or communication among staff specifically among project team members. Departmental Home Pages (DHP) was also developed to enhanced communication among departments. To further improve better communication and knowledge flow, other tools like the Electronic Data

Management Systems (EDMS) and Corporate Yellow Pages (CYP) were also developed which then expanded in the year 2003. Other new initiatives were carried out in 2003 which include focusing on the content management aspect, improving the facilities and systems that support learning and training. XYZ's Information Security Policy was revised to capitalize the use of the organization knowledge assets and to facilitate easy access and sharing of knowledge that add values to the bank but at the same time making clear of the use of sensitive data (XYZ, 2003). A special unit was established in 2003 called the Information Security Management Unit who is responsible for the policy, enforcement, monitoring, and recovery process. It is also in the year 2003, XYZ reached another important knowledge management milestone by establishing its Knowledge Management Measurement Framework that is use to guide the bank in designing its knowledge management practices.

To fulfil that objective a series of knowledge audits were conducted within the organization to measure the knowledge gaps. Indicators from the audit are use to support the knowledge management measurement framework based on the knowledge activities; promoting the identification, acquisition, application and retention of knowledge. To enable an effective and efficient communication, storage and retrieval of information within the bank, corporate taxonomy project were initiated as a major milestone towards the realization of the knowledge management initiative with the intention to allow easy access and productive use of the organization knowledge repositories. In 2004, the corporate taxonomy was use to manage the organization knowledge assets. This is to make sure that a standardize classification or categorization of organization knowledge is used throughout XYZ. Since the corporate taxonomy project was successfully established, knowledge management initiative was then continued in 2005 by

developing the organization knowledge hub that allows easy and fast access to organization knowledge repositories under one centralize system. It was reported in that during the year 2005 the knowledge management facilities and services show increase in utilization (XYZ, 2005).

XYZ knowledge management structure

Moving towards knowledge-based organization which leads to the establishing on structured knowledge management initiatives have change not just the organization policies and strategies but also its organization structure. It was during the second year of the organization's KBO-journey that various structured knowledge management initiatives being introduced and implemented. To establish all the strategies, XYZ has set up a matrix knowledge management structure. The knowledge management initiatives are being championed by the organization top person as the Chief Knowledge Officer with 20 individuals from the top management sit in XYZ's knowledge management committee who guide and direct the strategic implementation of knowledge management related policies, programmes and activities. Knowledge management agents who come from various departments and background are also appointed to run and facilitate XYZ knowledge management initiatives.

Initially the library was appointed as a centre point among staff in practising knowledge management (XYZ, 2002). This is because the library has always being referred to hold important knowledge management function that includes being the primary knowledge repository for XYZ and act as the custodian of the organization corporate knowledge. The library also initiated the knowledge audits, content management and corporate taxonomy projects. During the third phase of its knowledge-based organization (KBO) journey, the Knowledge Management

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Centre (KMC) with specialised resources was established to focus not just on information management but also knowledge management activities such as knowledge creation, knowledge identification, knowledge acquisition, reuse and repackaging of knowledge.

Knowledge management managers at XYZ

To manage the knowledge management initiatives in XYZ, they have recruited a team of knowledge management agents. The group of fourteen knowledge management practitioners or KM managers that researcher conducted the interviews are based on the name list given by the knowledge management centre. There are two type of KM managers; full time and part-time knowledge management agents, however they are either senior executive or manager of certain departments. Data gathered from the interview revealed that these KM managers came from different backgrounds; such as finance, accountancy, information management, marketing and knowledge management background. Most of them has involved in the organization KBO since its launching however there are four participants serve less than three years as KM managers. Only one KM manager had involved in knowledge management before joining the organization knowledge management initiatives. One of the KM manager interviewed has a master's degree in KM before being appointed as KM manager. Since the organization embarking on its KBO journey, 3 KM managers interviewed, pursued their master's degree in Knowledge Management after being appointed as KM managers.

Appendix L Most Admired Knowledge Enterprise (MAKE)

2006 Global Most Admired Knowledge Enterprise (MAKE) Winners Named

Teleos has announced the Winners of the 9th annual Global Most Admired Knowledge Enterprises (MAKE) study. Toyota Motor Corporation is the overall Global MAKE Winner for the second year in a row. North America took top honours with 8 Winners, followed by Asia (6 winners) and Europe (2 Winners). 4 organizations (global consulting and professional services firms) are considered International due to their business structures. The Winners of the 2006 Global MAKE study, conducted by Teleos in association with The KNOW Network, are (in alphabetical order):

- Accenture (International)
- Apple Computer (United States)
- BHP Billiton (Australia/United Kingdom)
- Buckman Laboratories (United States)
- Dell (United States)
- Ernst & Young (International)
- Google (United States)
- Hewlett-Packard (United States)
- Honda Motor (Japan)
- McKinsey & Company (International)
- Microsoft (United States)
- Novo Nordisk (Denmark)
- PricewaterhouseCoopers (International)
- Samsung Group (S.Korea)
- Sony (Japan)
- Tata Group (India)
- 3M (United States)
- Toyota (Japan)
- Unilever (Netherlands/United Kingdom)

A panel of Global Fortune 500 senior executives and internationally recognized knowledge management/intellectual capital experts selected the 2006 Global MAKE Winners. Then panel rated organizations against the MAKE framework of eight key knowledge performance dimensions which are the visible drivers of competitive advantage and intellectual capital growth.

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Website: http://www.knowledgebussiness.com