KNOWLEDGE MANAGEMENT AT THE NATIONAL LIBRARY OF MALAYSIA

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ABSTRACT

The emergence of the new economy that is based on knowledge in the present era has definitely affected everyone and every organization including libraries. Knowledge is seen by most organizations as an overriding and important commodity and if managed properly can assist the organizations to improve their services and remain sustainable and significant in the near future. This study is carried out to assess the organizational working culture of the National Library of Malaysia as to whether it would support the efforts of managing knowledge in the organization. The explorative study using triangulation method consisting of interviews, observations and questionnaire were conducted to investigate the situation. Two hundred questionnaires on knowledge management issues were distributed to the staff of the organization and a total of 72% of it was duly filled and returned. Analysis of the data revealed that most of the respondents that participated in the survey are familiar with the concept of knowledge management and that the National Library has all the required tools and systems to manage knowledge in the organization. However, it was anticipated to come up with a Knowledge Management System whereby persons with specific knowledge and expertise can be located easily and the organization should document the best practices and expertise it requires to successfully conduct the services offered to the library users. Therefore, a conceptual framework called the PNM Knowledge Bank is proposed in the final chapter hopping that it could act as the medium for knowledge capturing and dissemination in the organization.

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INTRODUCTION

Knowledge Management in the National Library of Malaysia: An Explorative Study

1.1 Preamble

The emergence of a new economy that is based on knowledge in the present era has definitely affected everyone and every organization. Knowledge has suddenly become a key resource in every organization and seen as the thermonuclear competitive weapons (Steward, 1997). This significant transformation that occurred in the economy has urged both profit and non-profit organizations to make major structural adjustments in the organization for survival and to prosper in this new competitive millennium.

Knowledge as seen by most organizations is an overriding and important commodity in the competitive millennium, if managed properly can help the organizations improve their services and remain sustainable and significant. This can be achieved through creating an organizational culture of sharing knowledge and expertise within the organization. However, there are obstacles and innumerable challenges in nurturing and managing the knowledge. The challenge occurs because only a part of knowledge is internalized by the organization and the other part is internalized by individuals (Bhatt, 2002) and is floating around in the organization in the form of in-house 'expert', shared stories, working solution, web of relation, communities of practice and experiences. This is the real intellectual asset of the organization and

this asset needs an effective and efficient process of capturing, organizing and distributing it within the organization (Allee, 1997). This phenomenon not only occurs in the profit making organizations but also the non-profit organizations and service providers like the libraries.

Faced with the challenges mentioned above and to remain relevant to the changing environment, libraries should rethink and explore ways to capture and share the tacit and explicit knowledge within the library. Libraries with the conventional functions to collect, process, disseminate, store and utilize information to provide services to its users now need to improve the services provided to the clients or users by becoming a learning organization that enhance the process of managing knowledge and innovation. The roles of librarians should shift from information providers to knowledge managers and more emphasis should be placed on the need to constantly update or acquire new skills and knowledge.

Like any other organization in the world there is a need for libraries to realize that knowledge and experiences of the staffs are the assets of the organization and should be valued and shared (Lee, 2000). Libraries now have to depend on their ability to utilize information and knowledge of the staffs to better serve the needs of the organization and users in order to be successful in the near future. Knowledge management is therefore seen as the tool that can help the libraries to draw out the tacit knowledge that the staffs have, which they carry around with them, through their observation and what they learn from experience rather than what is usually explicitly stated. By managing knowledge the role of the librarians can therefore be extended and as such the libraries can then expand their role and responsibilities to

effectively contribute and meet the needs of a large and diverse of community and users.

1.1.1 Fundamentals of Knowledge Management

Knowledge management is an organization's capability to combine the culture, context and infrastructures of the organization to deliver high-value information ready to be applied to decision-making and service delivery with the aim to improve performance. "*Concepts and practices evolved through the 1990s as management in the postindustrial era not only realized that knowledge was perhaps the critical resources, rather than land, machines, or capital* (Drucker, 1993), *but also their organizations generally poorly managed it. If more attention were paid to creating, providing, sharing, using and perhaps protecting knowledge, the promise was that the organizational performance would improve"* (Earl, 2001).

Knowledge and management of knowledge appear to be regarded as increasingly important features for organizational survival (Martenson, 2000). In addition, knowledge is fundamental factor, whose successful application helps organizations deliver creative products and services. Today organizations are fundamentally different as compared to organizations that existed in one or two decades ago in terms of their functions, structures and management styles. Yu (2002) pointed out that organizations put more emphasis on understanding, adapting and managing changes and competing on the basis of capturing and utilizing knowledge to better serve their markets. The central argument around which knowledge management

revolves is that people hold a wealth of knowledge and experience that represented in a significant resource for an organization. Most of this knowledge is represented in a wide variety of organizational processes, best practices and know-how (Gupta et. al, 2000). However, knowledge is diffused and mostly unrecognized.

It is important for organizations to determine who knows what in the organization and that knowledge can be shared through out the organization. For the purpose of this research knowledge management is thus:

> *The explicit and systematic management of vital knowledge and its association process of creating, gathering, organizing, diffusion, use and exploitation. It requires turning personal knowledge into corporate knowledge that can be widely shared through an organization and applied* (Skyrme, 1997).

There is obviously much more to knowledge management than sharing these basic definitions. It is important to begin to frame the detailed aspect of knowledge management. "*Knowledge management has become a new way of capturing an institution's full expert addressing factors such as: databases; Web site interfaces and documents; knowledge infrastructure for just-in-time knowledge and global access; enhancing the visibility of knowledge in the institution; sharing knowledge not only within the institution but also with external clients; an institution's knowledge capture; capturing tacit knowledge and experience of staff; and information collected in libraries, record centers, administrative units, operational units, and with individuals*

staff" (Srikantaiah et al, 2002). This definition speaks to the heart of knowledge management. It is a holistic approach for managing tacit and explicit knowledge in order to gain a competitive advantage (Drucker, 1993).

1.1.2 The Evolution of Knowledge Management in Malaysia

Since the announcement of vision 2020, the concept of the knowledge economy has been prominent across Malaysia. Knowledge management, however really only began to make an impact at the turn of the century. InfoSoc Malaysia 2000, a major conference held in Sarawak, and the Second Global Knowledge Conference, held in Kuala Lumpur from 7 – 10th March the same year was said to be the events that were largely responsible for this. At the opening of the Second Global Knowledge Conference, the Former Prime Minister of Malaysia, Dato' Seri Dr. Mahathir bin Mohamad stated that, "*…in the Information Age which we enter, our society must be information rich…this country must most seriously enhance the production and supply of information, knowledge and wisdom and ensure their accessibility to all our people in every area of work."* (Mahathir, 2000)

Recently, the number of firms experimenting with the disciplines that relate to knowledge management has grown, especially over the past two years. The big multinationals still lead the way, but a number of large corporations' utilities in the country are beginning to take their steps down the knowledge management road. Knowledge management is also creeping up the government agenda, affecting both the government's vision for the country as

a whole and the way ministerial departments operate on a day-to-day basis. The K-based Economy Master Plan (KEMP) introduced at the end of 2002, proved that the government is very serious in transforming Malaysia from P-based economy to a K-based economy (K- economy). The various cutting edge initiatives such as the Multimedia Super Corridor and the increasing emphasis on research and development (R&D) are other few examples that testify the Government's seriousness and efforts.

In an interview with the *Knowledge Management* journal, Ming Yu Cheng, Head of Economic Unit of Multimedia University Malaysia, noted that in Malaysia, government agencies represent one of the sectors in which knowledge management has thus far made the biggest impact. In the same article on "C*ountry focus"*, he mentioned that knowledge management strategies in public–sector bodies are well defined and relatively far advanced. In the private sector, many large firms now have dedicated Knowledge Managers, although most of these still cut fairly lonely figures. Knowledge management has had an impact on the country's telecommunications industry, such as the Syarikat Telekom Malaysia and also the Multimedia Development Corporation (MDC).

The lack of understanding of what knowledge management entails and its potential benefits was probably the limited application of knowledge management in other sector in the country. Another factor that contributes to it could no doubt be the cost consideration in implementing Knowledge

Management in the organization. Funding is always seen as a hindrance to implement programmes and nurture innovations.

As seen from social perspective, the knowledge management movement in Malaysia has a number of things in its favor. First, Malaysians are becoming far more comfortable with information technology. Partially as a consequence of this, e-commerce is also taking off, and people are beginning to feel at home with many of the ways of working associated with knowledge management. The government is also paying a crucial role in raising awareness about the importance of knowledge–based working in Malaysia. A Knowledge-base Economy Master Plan was then published as a guide to the public sector to develop a world-class knowledge-based public services.

Media coverage is also very active and considerable. *The New Straits Times*, *Computimes*, *Malaysian Business* and *Bernama* are among the publications that regularly devote column inches to the subject of knowledge management, and the English press has occasional articles on the topic. There is, though, a tendency to treat knowledge management as primarily an IT-based discipline, an approach that does not help in spelling the confusion that still surround knowledge management in Malaysia. Prominent advertisements for out-of-the-box knowledge management solutions no doubt carry some of the blame for the perpetuation of this myth.

Companies in Malaysia have been aware of the principle of knowledge management for many years, although the majority either do not consciously

recognize them or call them by another name. If the country is to achieve its goal of becoming a truly knowledge-based economy as part of its journey towards fulfilling Vision 2020, or deliberate and defined approach towards knowledge management is perhaps in order. The country as a whole may have a relatively late start in knowledge management terms, but it now faces an excellent opportunity to secure its future and its place on the world's economic stage.

1.1.3 Knowledge Management and Libraries

Though not many libraries have been known to undertake knowledge management initiatives, the keen interest of the International Federation of Library Association (IFLA) community in knowledge management (KM) over the past few years has led to the transformation of the knowledge management Discussion Group into a full-fledged IFLA Section. Established in December 2003, the new KM section is situated within Division IV (Bibliographic Control). Since its inception in 2001, the activities of the Knowledge Management Discussion Group received considerable attention among conference delegates. Information professionals from all parts of the world participated in the KM meetings, expressing their interest in learning more about this important development in organizational management. Library and Information (LIS) professionals have shown great interest in the implementation of knowledge management in the libraries and information environment and expressed a need for a deeper understanding of its many dimensions and relevance to their work.

The aim of the IFLA KM Section was to support the development and implementation of knowledge management culture in libraries and information centers. The Section had provided an international platform for professional communication - a mechanism to increase the awareness of KM, understanding and appreciating its significance for librarians and the institutions that employ them. The Section had track developments in knowledge management and promoted its practical implementation within the IFLA community.

Since KM encompasses many dimensions of organizational management, the activities of the Section were intended to be integrated and linked to other relevant sections of IFLA and other professional organizations. The KM Section can be seen as a wide platform with integrated activities, working in a co-operative mode with other sections and divisions (Wormell, 2000).

Knowledge management in Libraries in the 21st Century is one of the conference paper presented at IFLANET that is much cited by libraries undertaking the knowledge management process. The presenter, Shanghong (2002) noted that the role of knowledge management in libraries would become more and more important along with the development of knowledge economy. It is a new management mode, boasts the following superiority and characteristics incomparable with conventional management.

Human resource management she cited is the core of knowledge management in libraries because in the knowledge economy era, the libraries will attach

importance to vocational training and lifelong education of library staffs to raise their scientific knowledge level and ability of acquiring and innovating knowledge. They also will and fully respect the human value, guide and bring into play wisdom potentialities of library staffs, take developing knowledge resources in the brains of library staffs as an important way for increasing work efficiency. An all-round improvement of library staff's quality and positioning of the human value will become important objectives of knowledge management in libraries (Shanghong, 2002).

The objective of implementing knowledge management in libraries is to promote knowledge innovation (Cao, 1999). As bases for collection, processing, storage and distribution of knowledge and information, libraries represent an indispensable link in the scientific system chain, an important link in the knowledge innovation. Most libraries take part in scientific research process directly and therefore the library work is a component of knowledge innovation.

Libraries must pay attention to diffusion and conversion of knowledge. They should act as bridges for turning the results of knowledge innovation into realistic productive forces. Knowledge management in libraries should promote relationship in and between libraries, between library and user, to strengthen knowledge internetworking and to quicken knowledge flow. In the knowledge economy era, libraries will carry out researches on development

and application of information resources, construction of virtual libraries, protection of intellectual property rights in the electronic era etc., thus founding the base for knowledge innovation (Cao, 1999).

Information technology is a tool for knowledge management in libraries because knowledge acquisition is the starting point of knowledge management in libraries. The application of information technologies enlarges the scope of knowledge acquisition, raises knowledge acquisition speed and reduces knowledge acquisition cost. It is impossible to accomplish such important tasks by using man's brains only in the modern society in which the knowledge changes with each passing day. It will be possible to link closely knowledge sources and knowledge workers by computer networks, thus constructing knowledge networks in libraries based on the realization of a single-point informatization (Wang, 1999).

In order to endeavor in the 21st century, libraries should combine the best of the past with new thinking. This can be done by engaging or converting into a learning organization. As a learning organization Choo (2000) noted that libraries should then provide a strong leadership in knowledge management and expand the access of knowledge for their diversified users.

1.1.4 The National Library of Malaysia

The history of The National Library of Malaysia goes back as far as 1966 when it was first established as a unit within the National Archives with the modest primary functions of implementing the Preservation of Books Act 1966 and the publication of the Malaysian National Bibliography.

It then functions as a department after the establishment of the National Library Act 1972. A series of catalystic events in the following years accelerated the growth of the National Library. The Preservation Books Act 1966 was repealed and replaced by a much more effective Deposit of Library Material Act 1986. This act requires all publishers in Malaysia to deposit 5 copies of printed material with the National Library. This ensures published materials to be recorded and to be available for references now and the future.

Today the National Library of Malaysia is a Department under the Ministry of Education. It is responsible for the building and maintenance of the national collection from various library resources, providing facilities for their use as well as providing leadership in library matters. The National library also plays an important role in planning and development of the library infrastructure throughout the country. This role is in line with the aspirations of the government to inculcate a culture of knowledge in the development of the country and to foster a reading culture among Malaysians.

Objectives:

The purpose and objectives of the National Library of Malaysia as stipulated in Part II Section 3 of the National Library Act (Amended) 1987 is as follows:

1. To make available for use of present and future generations a national collection of library resources;
2. To facilitate nationwide access to library resources available within the country and abroad; and
3. To provide leadership on matters pertaining to libraries.

Philosophy:

To develop culturally advanced individuals with a love for knowledge acquired through lifetime reading in order to nurture the minds of Malaysians towards excellence; thereby bringing about innovations that can enhance the tradition of knowledge in the country.

Vision:

The National library of Malaysia aspires to be a world-class library in the provision of excellent information services towards the realization of Malaysia's vision of becoming an industrialized and developed nation by the year 2020.

Mission:

To ensure that all Malaysians have equal access to library services and facilities as well as the ability to utilize Malaysian and universal intellectual

heritage knowledge through a national infrastructure of integrated electronic libraries.

A proposal to restructure the National Library's organization was forwarded to the Public Service Department (PSD) on 28 September 2000 and was approved to further strengthen the National Library's services and to provide opportunity for promotion to its staff. Under this new restructuring (Appendix 1A – Organization Chart) the increase in the number of staff, the need for office space also increased. Therefore, the National Library has rented an office space at TH Selborn Building, Jalan Tun Razak to accommodate several Divisions besides the existing building in Jalan Tun Razak.

As at January 2005 the National Library of Malaysia has a total workforce of 466, holding different position and posts. The distribution of posts is listed below:

- Top management 2 posts
- Managerial and professional 124 posts
- Support staff 340 posts

The main services of the National Library are the Common User Library Service Scheme headed by the Director General of the National Library. The Department is supported by staffs from the Common User Services of the Public Service Department, Common User Services of Accountant-General's Department and the Common User Service of the Ministry of Information.

Under the National library Common User Services Scheme, there are four (4) schemes of services as follows:

- Librarians
- Library Offices (Personal to holder)
- Assistant Library Officers
- Library Assistant

Regarded as the main organization that is responsible for the development of the librarianship (library) services the National Library continuously strives to upgrade the level of knowledge and understanding of its officers in the field of librarianship, especially on current issues such as the development of the local digital content, the National Library's strategic plan, public sectors evaluation programmes and others. In this regard, embarking the process of knowledge management seems vital to leverage the organizational knowledge, where experiences and expertise can be shared and learned by others in the organization.

1.2 Statement of problem

Since its establishment in the year 1966 the National Library of Malaysia has seen a succession of individuals holding the post of Director General and other top executives in the National Library of Malaysia. In search for excellence for the department, ideas and management varies from one to another and this come in the form of changes in the management style, ideas, directives, policies, practices etc. Some of the management changes are available in print and document forms but most of the times are not.

According to Al-Ali (2003, p.81) most organizations, depend on knowledge of a few people in the organization. Knowledge is stored in the memory of these individual staff and is gone once they change job or retire. "*The memory loss problem is compound by another deficiency in the organizational brain- the brain drain wherein valuable knowledge resources are lost with employees leaving the organization. It happens when management fails to capture the tacit knowledge of its employees by transferring it to explicit knowledge".* This statement is somewhat similar to the situation faced in the National Library of Malaysia. In the library environment especially the National Library, the dominant asset is of course intellectual asset that is the knowledge held within the staff especially the professionals and these intellectual assets need to be captured. It will forever belong to these individuals or knowledgeable people unless initiatives are taken to capture, organize and facilitate access of the knowledge to be shared across the organization and thus become the intellectual asset of the organization. Knowledge mapping initiatives should be undertaken to simplify the job of managing knowledge. There will be less problems identifying explicit knowledge of the organization but the greater challenge comes where tacit knowledge is concerned.

Another problem that this study addresses is how to exploit knowledge as a competitive advantage and become a knowledge-base organization. A knowledge-based organization is one that harnesses human capital to enable the institution to achieve a competitive advantage to attain strategic objectives. The National Library like any other organizations in Malaysia presently has Internet connection, Intranet and even has its own Web Portal but are these amenities being fully utilized to

facilitate the process of managing knowledge of the organization? Assessing the working environment of the organization will help us identify these problems.

1.3 Aims and objective of the study

This study is carried out for the following aims and purposes:

- To survey the current status of knowledge management in The National Library of Malaysia.
- Investigate how the organization creates, disseminates and applying knowledge within The National Library
- Determine whether the working environment of The National Library supports the implementation of knowledge management in the organization.
- Propose a knowledge management model or conceptual framework for the implementation plan for The National Library.

1.4 Research questions

In order to examine the purpose of this study, relevant data will be sought to answer the following questions:

i. What is the level of understanding of knowledge management among the staff of National Library of Malaysia?

ii. Will the working environment support the implementation of knowledge management?

iii. Do knowledge sharing practices occur in the organization?

vii. What are the systems used in the National Library of Malaysia to capture the knowledge created?

1.5 Significance of the study

This study should be able to provide the National Library of Malaysia with some useful information as to whether the working environment will support the implementation of knowledge management in the organization. The findings of the study can be used as ingredient in formulating successful knowledge management strategies for the National Library of Malaysia in its pursuit to become a knowledge-based organization. It is also hope that the report of the study will produce useful data for other libraries in Malaysia to perceive and be aware of the constraints and benefits that they would acquire if they were to manage knowledge in their organization.

1.6 Expected Research Outcomes

This research is expected to gain some information as to whether the National Library of Malaysia is ready to embark on the process of managing knowledge in the organization. The main issues investigated are of course the willingness of the workers, the working environment and also the present infrastructure.

At the conclusion of this research, it is intended to propose a conceptual framework of managing knowledge in the National Library of Malaysia which should be able to act as a medium for knowledge capturing and dissemination in the organization. It is hoped that if implemented the framework would be able to serve as a knowledge source that facilitates the delivery of captured knowledge in the organization to the right person at the right time. Effective management of the organization's knowledge will certainly allow it to improve the quality of its services while operating more efficiently. The potential value to the organization is certainly huge and immerse.

The National Library was chosen as the place for research because it is seen as an organization that is very wealthy of knowledge and knowledgeable employees where lots and lots of information were being deposited and again retrieve for the use of research and learning by the people of the country. Besides that the researcher is also a librarian employed under the Common User Library Service Scheme, working under the supervision of the Director General of the National Library and was very much aware of the fact that that there are a lot of implicit knowledge that is circulating around in the organization that needs to be captured and organized so that it could be used by other employees in the organization to enhance their working capability.

1.7 Operational definitions

It is important to provide a few brief operational definitions of the key terms used throughout this research. The definitions provided in this section will be further explained in the literature review.

- **Data:** Data is a set of discrete facts about events and is considered raw facts and figures that must be further processed to become information.
- **Information:** Information is processed data
- **Knowledge:** 'Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information.' (Davenport and Prusak, 2000).

- **Explicit knowledge:** It is the knowledge found in books, documents, records, databases, and e-mails. It is 'public' knowledge rather than 'private' (Davenport and Prusak, 2000).
- **Tacit (implicit) knowledge:** Implicit knowledge is difficult to capture and communicate. It is private knowledge. It is personal knowledge stored in the mind of the individuals. Tacit knowledge is job or task specific and related to context (Crowley, 2001).
- **Knowledge management:** 'It is the explicit and systematic management of vital knowledge and its associated processes of creating, gathering, organizing, diffusion, use and exploitation. It requires turning personal knowledge into corporate knowledge that can be widely shared throughout an organization and appropriately applied' (Skryme, 1997). Knowledge management deals with people, culture and technology to enable organizations to achieve strategic objectives.

1.8 Limitations of the study

The study will be conducted on a limited number of samples and only focus on the National Library of Malaysia: its staff, and their working procedures. As such, it cannot be said to represent the total view of knowledge management implementation in libraries per se and therefore the findings cannot be use to generalize the same situation that would happen if the study is to be carried out at other libraries in Malaysia. Furthermore, the focus of the study is only related to one aspect of knowledge management in the organization, that is its working environment, therefore it cannot be said to provide a complete overview of the effectiveness of knowledge management implementation in the organization. Other factors like the

organizational structure; finance, and incentive must be taken into account to determine as to whether other libraries are ready to embark on knowledge management implementation.

1.8 Assumptions

It is assumed that when this study is carried out, the National Library of Malaysia has not started the practice of knowledge management in its organization. There might be some isolated cases whereby the staffs might be practicing knowledge management in certain divisions or units but not as a holistic approach.

1.9 Organization of the Thesis

This introductory chapter has covered an introduction to the subject and the aims of the study. Operational definitions are provided in this chapter together with the assumption, limitations and the significant of carrying out the study.

Chapter 2 commences by looking at knowledge, followed by some discussion of what knowledge is, and various aspects of knowledge. The facts surrounding knowledge management studies done by other researchers will be covered in the same chapter. This chapter then leads to the formulation of research instrument for data gathering.

Chapter 3 takes the research questions, and proposes a methodology by which to test them. This includes the justification of why the questionnaire is chosen as the main research instrument.

Chapter 4 displays and analyses the results from the questionnaire, and draws key findings of the study. It also provides a detailed evaluation of the processes involved in the study, and the final outcome of the study.

Chapter 5 is the summarizing chapter that discusses the conclusions drawn from the study, and whether it answers the research question. Finally this chapter outlines possible paths for future work.

Appendices are included at the end of the report for further information and to justify the findings. A list of referred text and articles will be noted as the last accompanying material that is labeled as the Bibliography.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

There is a plethora of literature on the topic of knowledge management published yearly. The fundamentals knowledge management theories can be traced back to very early philosophical studies during famous philosophers like Aristotle and Plato. Within business organizational contexts, managing knowledge has always been part of general management activities, even though some of the practices are not labeled as knowledge management and are usually not systematically organized and implemented. Some literature tracts the origin of widespread interest in knowledge management as early as 1939, as Lynd (1964) wrote, "*People need to rebuild their organizations so that knowledge flows freely to create opportunities and solve problems"*. Later, Drucker (1993) was said to be the first to refer to knowledge society and knowledge worker and also the first to identify the new language of the knowledge economy when he pointed out, "*the U.S. has shifted from an economy of manufactured goods to a 'knowledge economy'...In the new economy, the basic economic resource is no longer capital, but knowledge*".

Although the topics of knowledge and knowledge management are not new, contemporary knowledge management studies and practices in business organizations are said to have a brief history beginning in mid 1990s. Ponzi and Koenig (2002) in their article, "*Knowledge management: another management fad?"* stated that, "*starting in*

1995 there has been an explosion in literature surrounding the development concept of knowledge management. Today, hardly anyone can attend a conference or read a journal without seeing literature referring to the concept."

Though there are exhaustive studies available that outline the evolution of knowledge management, much of the emphasis appears orientated towards the details of the subject rather than addressing the key strategic area and holistic requirements that this dissertation is keen to address. Further more, the practices of knowledge management are case by case based, and there are no universal standards or agreement on how to evaluate and measure the performance and outcome of knowledge management.

This research will explore contemporary issues associated with implementing a knowledge management framework in an organization or the readers' haven, the library. Knowledge management in libraries has not been extensively studied but significant body of literature, deals with knowledge management in business environment has been helpful to frame the study. A solid review of important knowledge management research assisted in developing knowledge management perspective for the National Library of Malaysia.

The operational definitions in the field of knowledge management in Chapter 1 provide the context for the research. A detailed review of the literature was most useful in developing this context. Several studies also directly contributed to the objectives of this research. This section of the study surveys the pertinent literature in the following areas:

- defining knowledge;

- explicit knowledge;
- implicit (tacit) knowledge;
- characteristic of learning organization;
- knowledge management and organizational culture;
- knowledge management models and previous studies to frame the research.

2.2 Defining Knowledge

A detailed definition of knowledge is fundamental to this study. There are many that synonymously use the terms data, information, and knowledge. The literature does provide operational definitions for each of these terms. Davenport and Prusak discuss these terms in their book, *Working Knowledge: How Organizations Manage What They Know.* "*Data is a set of discrete, objective facts about events. In an organizational context, data is most useful described as structured records of transactions"* (Davenport & Prusak, 2000). Structured data include distinct numbers, places and costs displayed in databases. Data must be manipulated or summarized to become information. Davenport and Prusak further defined information as, "*a message, usually in the form of a document or an audible or visible communication. As with any message, it has a sender and receiver. Information is meant to change the way the receiver perceives something, to have an impact on his judgment and behavior"*.

Putting knowledge into contexts, at the organizational level, Davenport and Prusak (2000) further stated, "*Knowledge is a fluid of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experience and information. It originates is applied in the minds of*

knower. In organizations, is often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms."

This definition facilitates examination of two critical categories of knowledge. There are two fundamental type of knowledge, explicit and tacit, that is essential to understand prior to further discussion of Knowledge Management.

2.3 Explicit Knowledge

Explicit knowledge is fairly easy to define and capture. Nonaka and Takeuchi (1995), in *The knowledge-creating company: How Japanese companies create the dynamics of innovation*, define explicit knowledge as, "*the stuff in books…It is easy to articulate, capture, and communicat*e" (Pederson 2000). "*Some examples of explicit knowledge are found in the following: commercial publications; organizational business records; e-mails; web Group Ware; Intranet; databases; self-study materials"* (Srikantaiah, 2002) he further stated that explicit knowledge is that which has been formalized in our heads, or documented in books and papers. There, it can be easily disseminated. The literature is consistent in the fact that explicit knowledge is "public" rather that "private" knowledge (Davenport and Prusak, 2000). The literature stresses the importance of auditing and organizing explicit knowledge, but as only one dimension of the knowledge system.

2.4 Tacit Knowledge

Organization gains true competitive advantage by capturing and sharing tacit (implicit) knowledge to stimulate innovation. Implicit knowledge is difficult to define, capture and

disseminate. Polanyi (1966) is credited with linking tacit knowledge to theoretical writing of Plato in his book The Tacit Dimension. Polanyi (1966) explained the essence of tacit knowledge as, *"We can know more than we can tell"* (Crowley, 2001). Nonaka (1998) defines tacit knowledge as *"personal, context-specific, and therefore, hard to formalized and communicate. Explicit knowledge or codified knowledge, on the other, refers to knowledge that is transmittable in formal, systematic language"* (Crowley, 2001). There is considerable agreement in the literature that tacit knowledge is:

- Personal in origin
- Valuable to compressor
- Job specific
- Related to context
- Difficult to fully articulate
- Both known in part and unknown in part to the processor
- Transmitted, where transmission is possible, through interpersonal contact
- Operative on an organizational level
- Applied, in part, through "if-then' rule. "If certain conditions exist, then apply the following"
- Intertwined with explicit knowledge along unstable knowledge borders
- Poorly reflected in contemporary literature on knowledge (Crowley, 2001).

2.5 Interaction between Tacit and Explicit Knowledge

Explicit and tacit knowledge can further be subdivided into the interaction between each type and other subdivisions of the primary knowledge states. Nonaka (1988) defines these as states in the knowledge-creating environment as:

- Tacit to Tacit
- Explicit to Explicit
- Tacit to Explicit
- Explicit to Tacit

The flow of tacit to tacit knowledge transfer would be akin to the master training the apprentice. Explicit to explicit is the transformation of documented knowledge into other documented forms or other explicitly defined formats. Tacit to explicit would be a far more difficult prospect than any other and it may be argued that if the knowledge can be made explicit then it was not tacit to begin with. It may be that there has been an improvement in capability to define it. Explicit to tacit may be associated with the absorption of explicit material in order to be come proficient to a degree where action is taken in a tacit fashion.

Themes that are of particular significance can be derived by looking at the keywords associated with the knowledge management activities at certain stages in its use (of knowledge). Nonaka and Takeuchi (1995) stated that for an organization to be knowledge creating company it must be able to acquire, accumulate, exploit, and create new knowledge continuously and dynamically, and to re-categorize and re-contextualize knowledge. Other writers appear to focus on other specific concepts. O'Dell (1998) in her book, "*If only we knew what we know: transfer of internal knowledge and best practices"* concentrates on internal transfer of knowledge and benchmarking for best practices.

The body of knowledge management that a person needs to hold must be constantly updated to relevant to the situation and this can be thought of in four areas of increasing importance. These can simply be called "know-what", "know-how", "know-why" and "care-why" (Quinn, Anderson and Finkelstein, 1996). Know-what is the knowledge gain through training. Know-how is putting the training into action by doing; the know-why is the knowledge that permits a person to understand the underlying cause and effect of the doing and finally, the care-why is the motivational knowledge (i.e. care-why because).

Collins (1995) identifies 4 types of knowledge, which he categorizes as symbol, embodied, embrained and encultured. Symbol knowledge is that which can be explicitly passed by documentation without loss of understanding. Embodied literally refers to knowledge that is inherent in the physical nature of a person such that one tennis player is naturally better adapted than another. Embrained could be explained by thinking of the brain as being hard-wired to undertake certain knowledgeable activities. Encultured knowledge is that we obtained by means of socialization in-groups.

2.6 Learning Organizations and Culture

Nonaka (1991) described learning organizations as companies "*where inventing new knowledge is not specialized activity …it is a way of behaving, indeed, a way of being, in which everyone is a knowledge worker'* (Gregory, 2000). All of these critical elements of learning organizations have particular relevance to library world. The search to add to the body of knowledge in specific areas is an important goal of most libraries. It is extremely relevant that the National Library of Malaysia move toward becoming a

learning organization to achieve its mission and vision for the future. The salient characteristic of a learning organization, mentioned above, should be embedded in the organizational culture to stimulate innovation and change.

Garvin (1993) and Senge (1994), leading thinkers on the learning organisation, advocated that the opening up of boundaries across the value network is a necessary requirement in order to stimulate the flow of knowledge for innovative purposes. They espoused that an organisation possessing a variety of cognitive and communications styles will not benefit from them if they are contained by functional departmental boundaries, political in fighting, excessive internal competition and a culture that does not value learning and knowledge sharing. This approach to leveraging knowledge is focused on enabling the organisation to handle new business strategies. It is oriented toward cultural reform of organizational attitudes, structure and practices surrounding knowledge. The learning organisation focuses on team learning through the exchange of tacit knowledge between employees that network with each other and clients. This approach, according to Garvin (1993) and Senge (1994), facilitates the flow of knowledge and develops a team knowledge that is less susceptible to loss via the exit of employees. The objective of the learning organisation is to increase competitiveness via vigilant environmental awareness and innovation through critical evaluation of corporate paradigms.

A learning organization combines the essential elements of strategy development and personal development. It increases a space for people to achieve tremendous business and

personal results. It values the scientific method of hypothesis development, testing and validation, as well as the personal development pathway found in the concepts of 'personal mastery'. Connecting human to organizations in a vital mutually beneficial way why learning organizations are worth creating. (Hidayat, 2001)

2.7 Knowledge management and organizational culture

Knowledge management is a framework for capturing, collecting, disseminating and brokering of knowledge. People in the organization are the heart and sole of knowledge management. Technology works as a vehicle to deliver the information people need to make decision and knowledge, which comes from information prerequisites to develop a KM system. In many examples it has been seen that well-designed knowledge management tools and processes failed because people are reluctant to share knowledge and their efforts for sharing don't get any reward from the top management. McDermott and O'Dell (2001) said, "*However strong your commitment and approach to knowledge management, your culture is stronger. Companies that successfully implement knowledge management do not try to change their culture to fit their knowledge management approach. They built their knowledge management approach to fit their culture. As a result, there is no one right way to get people to share, but many different ways depending on the values and style of the organization"*.

The literatures emphasizes in detailed the importance of establishing a knowledge management culture as part of a complete knowledge management system (Prusak, 2001). *"Culture change is key to success, and is closely related to two other factors,*

establishing communities of practice within the organization dedicated to knowledge management and having support from senior-level officials" (Caterinieechia, 2002).

2.8 Models and frameworks use by previous research

Knowledge management is a complex area, and one that spans boundaries – learning and development, information technology, human resources etc. Having a model that describes the scope of activity that knowledge management efforts cover can be a powerful way to both monitor and communicate what the approach encompasses. A few models and approaches that have been use by previous scholars or researchers are listed below.

2.8.1 Knowledge Management Building Blocks (Wiig, 1999)

Wiig (1999) introduced a complicated but well-structured model of how to introduce and sustain knowledge management practice in an organization. The model represents a systematic consultant's perspective on knowledge management, and it is particularly interesting because it points out the variety in what practicing consultants include in knowledge management. He suggests that the organization builds a system of blocks, interconnected activities for knowledge management that support each other in a functional manner. Moreover, he pointed out that the organization may focus on a limited number of blocks and expands step by step, moving from implementation to administration. The model proposed by Wiig and reproduced in Figure 2.1 is one of the most highly developed in the knowledge management literature, as it covers both strategic and operative aspects in some detail.

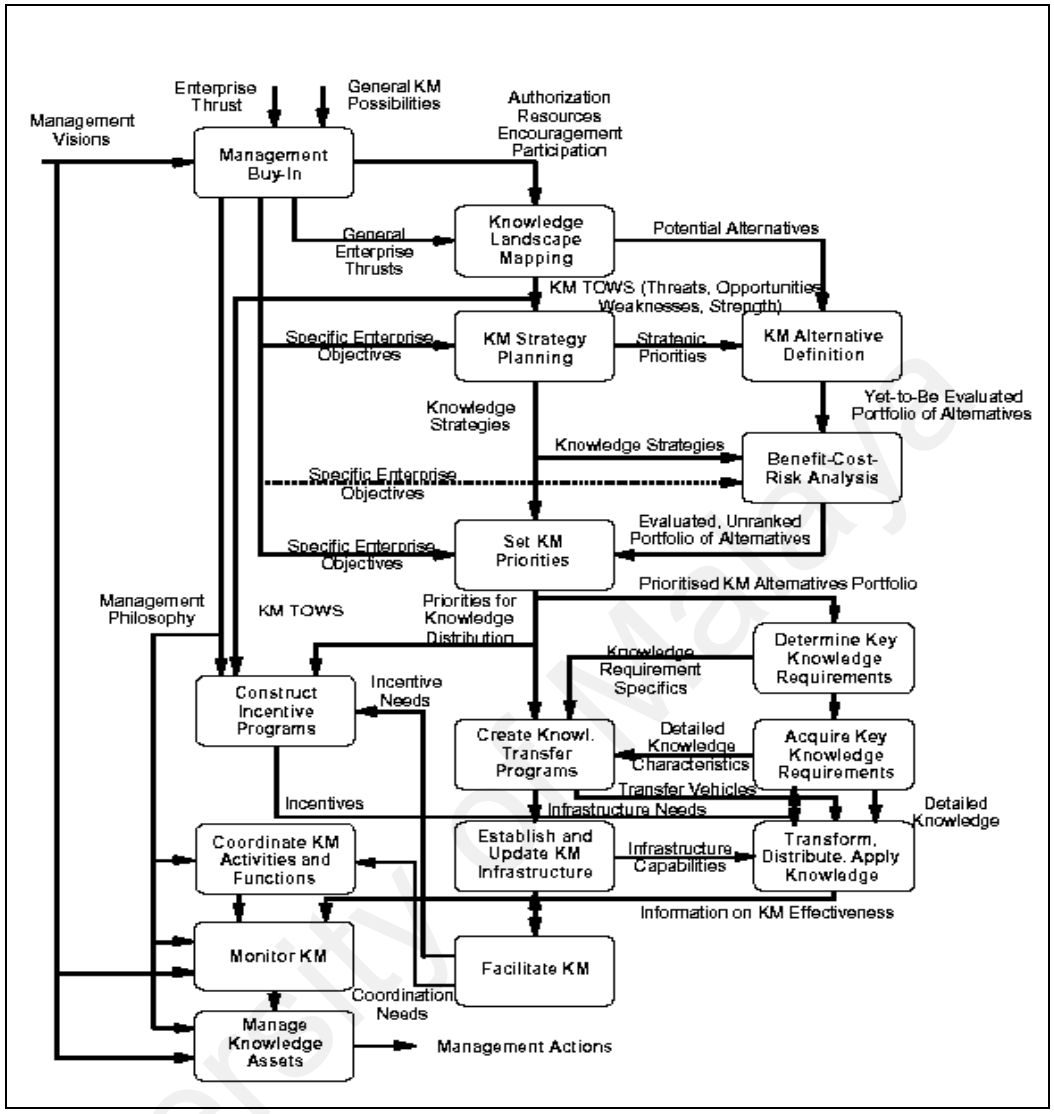


Figure 2.1: Relationship between knowledge management building blocks (Wiig, 1999)[Source: Sverlinger (2000), p.48]

2.8.2 The Holistic Model (Collison and Parcell, 2001)

In this model Collison and Parcell (2001) have generously shared their practical experiences and lessons learned in one leading global communities of knowledge-BP. The model describes how to turn objectives into results by learning before, learning during and learning after. Another key element of the holistic model is the captured knowledge. This means capturing know-how in

such a way that it can be reused. They emphasized that knowledge needs storing for reuse because you cannot leave it in people's head. If you can find and effective way to capture it for transfer, others can look for it and find it, and the know-how will stay in the corporation even if the staff leaves. One of the best ways that they have found to store know-how for effective reuse is by building a knowledge asset.

In this model there need to be a link between the learning before/ during/ after circle and the knowledge itself, both to accessing what has already been captured and to capturing new knowledge. Networks and communities of practice are primary route for enabling this access. They likened the way customers use a bank – making a withdrawal from a 'knowledge bank' at the start of a project and depositing new knowledge at the end. The real business benefits come from working on all parts of the model and embedding the activities into the routine business processes. This develops a sustainable capability rather than an ongoing dependency on 'experts'.

2.8.3 Integrative Knowledge Management Model (Hidayat, 2001)

Hidayat (2001) from the University Industry Selangor, Malaysia noted that the core of the knowledge management system is the knowledge base or the organizational memory. It is the repository of effective knowledge. Effective knowledge is not just information but it is an output resulting from the interference of human that provides their attention by using their creativity and innovation with the use of information technology. The dynamism of knowledge

creation requires the human attention, innovation and creativity for renewal of archived knowledge, creation of new knowledge and innovation applications of knowledge.

The human aspect of the model is presented by employees of the organization. They are the major players and catalyst of the knowledge management system. The interaction between employees in properly managed organization will lead to pervasive learning and sharing of knowledge that will increase knowledge base richness. The conducts of the employees' interaction depend on organizational culture. The culture should emphasize on the use of information technology. Since information requires human attention for creation of knowledge, the information technology infrastructure must be designed to provide the tools for assessing internal and external information at the right time, the mutual consultation and sharing of information, collaboration and storage of information.

2.8.4 KAFRA (Kontext aware FRAmework) (Okunoye, 2003)

KAFRA is a framework that encompasses all the organization aspects of knowledge management and the context-aware framework of knowledge management that could support organizations in developing countries and guide their transition to a knowledge economy (see Figure 2.2).

This framework that is produced by Okunoye (2003) differs from those presented earlier is that it considers the relationships between an interdependency of all

components, with particular attention to the environment context. This framework enables organizations to pay attention to the environmental context and how this affects the assumptions about each component, the method and the research approach used to arrive at the actual users. Also, the gaps between the worlds inscribe in it and the world that will be described by its displacement can be expected to be narrowed, if not eliminated.

The framework produced could be used by any organization, irrespective of size, location and economic background. The only prerequisite is the willingness of the organization to be competitive and to participate in the knowledge economy. Any consultant with adequate background training could also adapt the framework in providing knowledge management solution for their client. Firstly, this framework could guide organizations in their knowledge management initiatives, in order to analyze their environmental factors, and determine what organizational and technological factors need to be addressed. Secondly, a chief knowledge officer, or other knowledge role person, could use the framework to establish a knowledge management project team and justify the decision to the organizations leaderships. Thirdly, the framework could be used to support the argument that knowledge management is neither a technological nor organizational issue; rather it is a holistic approach that requires interaction of both. All these could make knowledge management appealing to organizations and assist them to reap the accomplished benefits. They could also save resources, by doing the right thing at the right time.

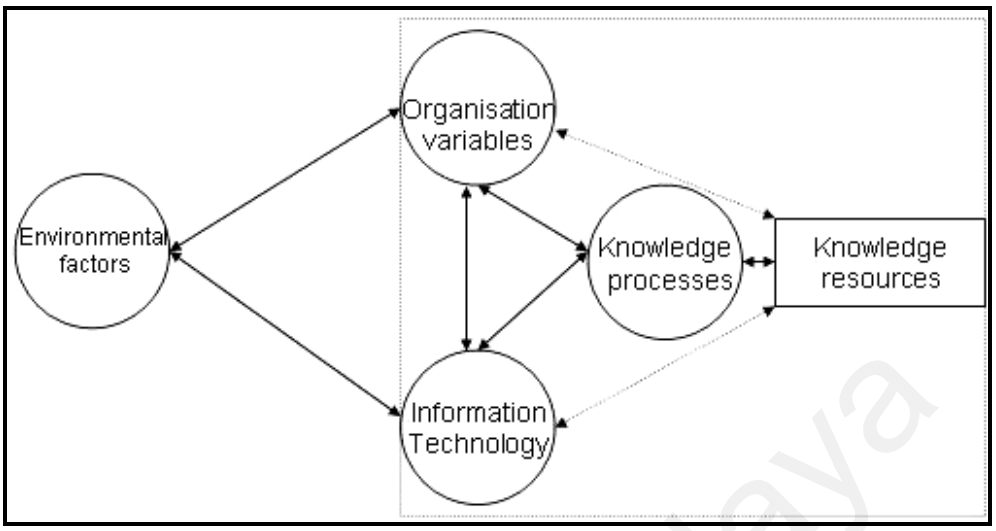


Figure 2.2: KAFRA – Context-aware framework of Knowledge Management [Source: Okunoye (2003), p. 93]

2.8.5 The Organizational Infoarchitecture (Vegas, 2004)

The Organizational Infoarchitecture is an integral model for information and knowledge organization in the context of knowledge management strategy. Knowledge management is conceived from a systematic perspective: organizational reality is thought of as a complex unit of linked relationships. The working definition of knowledge management strategy refers to the deliberate effort of an organization to create, develop, keep and use its intellectual capital to achieve the organizational strategic objectives.

The intellectual capital – and the intangible knowledge assets – becomes the most important assets of the organization and its single most important competitive advantage. The new resource for value creation is intellectual capital. In this perspective, intellectual capital constitutes the key concept of

knowledge management and encompasses three components: relational capital (or customer capital), structural capital and human capital.

From this knowledge management conceptual perspective, intellectual capital with its three components is conceived as a triangular model to denote their interdependence. The basis of the alignment with its strategic intention is the axis of the organization, always in accordance with continuous improvement, innovation, new models and business expansion objectives.

Vegas (2004) defined Organizational Infoarchitecture as a knowledge environment. Thus, the Organizational Infoarchitecture is based on technological platforms and network systems (digital platforms, development in collaborative working environments, data retrieval and information storage system, hypermedia, artificial intelligence system, simulation system, and others) making communication and information exchange between individuals and teams possible to pursue a wide range of activities (participation in communities of knowledge, virtual forums, database queries, information analysis, preparation of technical reports, research and development, etc.) associated to knowledge processes in organizational context of a knowledge management strategy. In summary regardless of the size of complexity of organizations and their technological capacity, learning and knowledge processes are deliberately created by organization when it creates a learning and knowledge environment. This is what Vegas (2004) refer to as Organizational Inforarchitecture and it is fitted to the needs of individual, team and the organization.

The review presented here suggests that there are various conceptual framework being carried out by different types of organization managing different type of business but again the goals and objectives of the framework is non other than to manage knowledge creation, articulation and dissemination processes which facilitates the practice of sharing and learning in the organization. This study could further develop or modify the presented framework which serves as a starting point for developing and understanding of the relationship between knowledge management and organizational performance.

2.9 Previous studies

Previous studies done by other researchers regarding managing knowledge in various organizations is presented in this sub-section with the aim of obtaining the overview of how the research was conducted. The results and findings by previous researcher can be used as criteria to evaluate the findings of the proposed study.

2.9.1 Knowledge management and global diversity

"A study on *Knowledge Management and global diversity: a framework to support organizations in developing countries*" was presented by Okunoye (2003) at the University of Turku, Finland. The main goal of this study was to develop a context-aware framework to guide organizations in their efforts to manage knowledge, and thus contribute to the development of organizations in the global knowledge economy.

To achieve the main goal, multiple case studies were conducted of six research organizations in two developing countries – Nigeria and Gambia. The analysis of the data reveals some local contextual issues and assumptions that area importance in a framework to support organizations in developing countries. The study shows that the availability and usage of information technology in an organization depends on the broader context of national information technology infrastructure. The organization variables - which include people, leadership, structure, and culture – can all be influenced by the societal culture and orientation of the local people. The findings also confirm the difficulties associated with information technology in developing countries, and how these can affect organization's effort to manage knowledge

2.9.2 Managing Knowledge in Professional Organizations

Sverlinger (2000) studied on managing knowledge in professional service organizations. The aim of the investigation was to create understanding of how technical consultancy firms serving the construction industry manage knowledge. Sub-process of knowledge transfer: acquisition, distribution, making meaning, organizational memory and retrieval are integrated in business service process of such firms. Six enablers for learning and knowledge transfer were identified: organizational structure, communication and monitoring of strategy, process, and culture, systems for training and learning, and technology.

Four Swedish construction consultancy groups with between 800 and 2,300 employees each were selected. Within each of these, one or more departments

were surveyed in 1997 – 1998 and again using questionnaires and semi – structured interview. Results showed that respondents considered marker knowledge and project knowledge crucial, the former being stored mostly in the heads of people and the latter in several ways.

There was evidence of a shared business vision and knowledge management tended to occur on the departmental level. Socialization in daily work, talking to colleagues in the department, was dominating method for creating and transferring knowledge. Respondents preferred proximity to sources and informal media. While managers confirmed the existence of strategies for knowledge management, these remained largely unknown to employees, and no particular manager was identified as responsible for all knowledge management efforts.

Reported obstacles to knowledge transfer include lack of time, lack of rewards for sharing knowledge and shortage of funding. Strong relations on the individual level were found between communicative problem solving, high functional position in the department and choice of traditional media. The result also showed that age of consultants was found to influence knowledge transfer.

2.9.3 Knowledge management and hospitality

Yang and Wan (2004) from Development National Kaohsiung Hospitality College, Taiwan wrote a paper on "*Advancing organizational effectiveness and knowledge management implementation"*, which they did on hotel industry.

They found out that in the recent past, most practitioners and researchers in hospitality have focused on the development of programs and practices for preventing employees leaving a job. The purpose of the paper was to examine an alternative focus, which was the possibility of sharing and retaining the knowledge, which resides in employees' minds. The operational practices of the focus would not only add value for internal and external customers, but also benefit overall organizational effectiveness in today's knowledge-oriented era. Semi-structured interviews were administered in four International five-star hotels in Taiwan. The study aimed to examine the extent to which the hotels implement knowledge management (KM) practices, the manner in which they are implemented and the impediments they face. The data clearly shows that KM practices, such as programs and cultures that support knowledge acquiring, sharing and storing, can benefit such hotels.

2.9.4 Knowledge management and banking

Hafizi and Zawiyah (2004) wrote about the "*Knowledge management in Malaysian bank: a study of causes and effects"*. This paper reported the results of a study of knowledge management in local banks in Malaysia carried out in the year 2003, with the support of University Utara Malaysia. From their survey using questionnaires that were developed and delivered in person to the human resource mangers of ten local commercial banks situated in Klang Valley, they found out that the adoption of knowledge management practices by local commercial banks in Malaysia could equip them to be more competitive and

ready to face the challenges of financial liberalization, accelerating the materialization of the K-Economy foreseen in Malaysian Vision 2020.

Analysis of the results confirmed that there is a relationship between the cause and effects of implementing KM practices. KM equips organizations to be more competitive and provide better integration and sharing, both horizontally and vertically, along with increases in workers efficiency, appear to be common effects resulting from adopting KM practices.

2.9.5 Knowledge management in large marketing departments

"A study on organizational factors and knowledge management within large marketing departments" was done by Bennett and Gabriel (1999). The study sought to gain an insight on how marketing executives in large companies managed knowledge and to explore the relationship between the extent and nature of a company's KM and certain organizational factors. They developed four hypotheses and in order to test these hypotheses relevant issues, a questionnaire was developed consequent to a review of relevant literature in the KM field and pre-tested on sub-sample of 75 large UK companies selected random from sampling frame for the investigation. The result of the study conveyed that companies that used KM extensively were those reported to be more innovative, reedier to cope with change, and better able to access knowledge than other firms. In general the contribution of KM to both direct marketing and sales management were highly regarded. It is clear from the

results that KM is being taken seriously by the sample of large UK companies, and that the new KM techniques are being introduced at a rapid rate.

2.9.6 Knowledge management in Academic Libraries

A case study conducted at the University of Natal, Pietermarizburg Libraries was carried out by Maponya (2004). The research was aimed at understanding the knowledge situation of the library and to establish the ways in which the academic librarians could add value to their services by engaging with knowledge management. The study employed the descriptive research design utilizing the case study approach. Participants for the study comprised of all academic librarian across library section namely, acquisition librarian, subject librarian and cataloging librarian. The study used questionnaires, interview and observation to collect data. The result showed that 87.0% respondents who indicated that knowledge sharing happens informally within the library. The possible reason for applying knowledge management practices in the library was found through the practice of promoting and sharing or transfer of knowledge to users such as lecturers and students due to the role of academic library in providing and dissemination of information to users.

White (2004) reported finding of a case study carried out at Oxford University Library Services (OULS) and found how academic libraries can benefit from KM in integrating librarians' knowledge into the whole process of library services. She concludes that an effective knowledge sharing culture exists at OULS and that librarians consider their organization as a learning organization.

It is rather difficult to state the status of knowledge management adoption in libraries because although libraries are starting to embrace KM it has not been widely integrated into the business processes of most libraries. Very few libraries are initiating "real-life" KM projects that are linked to the corporate business strategy and therefore it is very difficult to obtain reports on the implementation of knowledge management in other type of libraries.

2.9.7 Knowledge management in public sectors

An extensive study on the perceptions and used of knowledge management in both public and private sector was undertaken by McAdam and O'Dell (2000). The study was performed by analyzing four key dimension of KM: knowledge construction, knowledge embodiment, knowledge dissemination and knowledge use/benefit. In the survey, it was clearly shown that knowledge transfer, capture and dissemination and organizational knowledge are some of the important element in knowledge management. When a comparison was made between the public and private sectors, it became obvious that the organizational knowledge was seen to be much more important in the public sector than the private sector. This is mainly because the employee has long been identified as the key knowledge repository in public sector.

Pertaining to the embodiment of knowledge, McAdam and O'Dell (2000) discovered that both sectors have systematically captured knowledge in the organizations. However, the knowledge seems to be systematically captured only at the senior and middle managerial level.

The use/benefits of KM in the survey also revealed that both sector perceived benefits through improved quality, efficiency, management learning, products and services operating cost. However, the public sector's responses were positive, *"reflecting the current driver for efficiency in all area of the public sector and recognition that knowledge can make an important contribution"* (McAdam and O'Dell, 2000, p. 327).

Al-Athari and Zairi (2001) have carried out another research project on knowledge management in both private and public sector organizations. Their study examined the actual situation on the availability of knowledge management system (KMS) in 77 Kuwaiti organizations. Their findings reveal that 52.5% of respondents from the public and 51.4% from private organizations felt that knowledge is very important to organization. All respondents in both public and private organizations considered employees and organizational knowledge as an important source for their KM system. Changing people's behavior to share knowledge is one of the most difficult issues in managing knowledge in an organization.

Liebowitz and Chen (2003) investigated management issues in public sector organization to see how knowledge management could build and nurture a knowledge sharing culture in the organization. In order to rate how well an organization is performing knowledge sharing activities, they developed a knowledge sharing effectiveness inventory (Liebowitz and Chen, 2003) and used the learning resources group of government agencies for testing the inventory.

The findings showed that only 5.3% of respondents agreed that individualized learning was usually transformed into organizational learning through documenting this knowledge into organization's knowledge repository.

Only 15.8% of the respondents believed that they have a knowledge sharing culture within the organization and only 10.5% or respondents agreed that organization has online communities of practice that allow them to exchange views and ideas in area of common interest. No respondents either agreed or strongly agreed that success, failure or war stories are systematically collected and used in the organization and 57.9 % respondents agreed or strongly agreed that they have technological infrastructure to promote knowledge-sharing environment within their organization.

Syed-Ikhsan and Rowland (2004) later did benchmarking of knowledge management in a public organization in Malaysia. To achieve an in-depth study, the Ministry of Entrepreneur Development of Malaysia was chosen for the case study. They used questionnaires as their main instrument in gathering data and a total of 154 respondents were involved in the survey. A total of 96.8% of respondents agreed to the importance of having knowledge management strategy. They also agreed that by managing knowledge, the ministry could improve work quality (77.9%), have up-to-date information (76.6%), improved efficiency (75.5%), improved decision making (66.9%) and be able to respond to customers needs (64.9%). The study revealed that the most difficult issues to be managed in the Ministry is to changed employees' behavior and the highest

reposes were found in the group with work experiences of 16 – 20 years where 84.9% of respondents felt it was either 'difficult ' or 'very difficult' to change the employees' behavior.

2.9.8 Other related studies

Assessing Knowledge Management initiative successes as a function of organizational culture was done by Ribière (2001). The purpose of the research was to explore possible relationships between the successful implementation of knowledge management initiatives and specific organizational cultural orientations and attributes. A survey tool was developed that could help the companies to select a KM initiative type (codification versus personalization) based on their culture (level of organizational trust and solidarity). A validated questionnaire was used to survey 58 organizations involved in KM, predominantly large organizations in the consulting and IT - telecommunication field as well as agencies in the Federal Government. The respondents were mainly service-oriented offering both standardized and customized products/services and were predominantly located in the Washington, DC area. The results of the findings showed that 4 (80%) of the companies having a mercenary (high solidarity, low trust) culture that launched a KM initiative focusing on the codification approach happened to be successful (achieving KM expected benefits) while the companies having a fragmented (low solidarity, low trust) culture that launched a KM initiative focusing on the codification approach failed to achieve KM expected benefits.

Shiota (2000) studied on Knowledge Management and organizations in Malaysia and found out that the enhanced KMS (Knowledge Management System) did not always have direct significant effect to the corporate competitiveness, but innovation and adaptability had a causal relationship with knowledge. The causal relationship between KMS and KPL (Knowledge process level demonstrated that KMS enhanced KPL and proves that the hypotheses stating that, *'The more knowledge management is implemented in the company, the more the knowledge process level is enhanced'* is true (Shiota, 2000. p 48).

The study on technological infrastructure used in the selected organizations in Malaysia was done by Abdul Rahman, Norazuwa and Ruslan (2001). Eight technological infrastructures were identified such as Internet, Intranet, Document Management System (DMS), Groupware, Data Warehousing/ mining, decision Support System (DSS), extranet, Unifying Messaging System (UMS) to be technological infrastructure for knowledge management. This study utilized the survey research method where samples were chosen based on purposive sampling. This study is considered as an exploratory study since the phenomena studied to be the pioneer in the context of Malaysian organizations. The sample of this study consists of 51 organizations where it was selected from several sectors like manufacturing, retail/wholesale, utilities/telecommunication, financial services, government, state owned, education and construction. The result shows that most of the companies have the technological infrastructure in their organization, however, they do not realize on the importance of the usage of those technological infrastructures for knowledge management purpose.

Knowledge management implementation in twenty Malaysian companies in Klang Valley, Malaysia was explored by Khong (2001) through random sampling survey using questionnaires. He found out that 74% of managers in the surveyed do perceive that KM is mandatory for success. They also agreed that managing information technology is very crucial in success of knowledge management and Internet was the most common information technology system being used in the organization. The most common practice of knowledge management system was the performance appraisal of the organization followed by on job training.

Changing peoples' behaviors was the major challenge faced by organizations managing knowledge followed by retaining talented people in their organization. This was revealed by Narayanan (2000) who surveyed 137 executives of major engineering companies involved in the oil, gas and power industry in Malaysia concerning knowledge management in their organization. His study also showed that 76.6% respondents surveyed used electronic mail such as lotus notes to share expertise followed by 76.6% who use technical libraries within organization.

Liao et. al. (2004) studied on the employee relationship and knowledge sharing proposed statistical hypotheses and implement statistical test in a branch of a Taiwanese finance and securities firm. By testing four hypotheses, they found out that the relationship between some employees and the case firm is good, and those employees would like to share working knowledge and experience with colleagues voluntarily and unconditionally. On the other hand, the relationship

between some employees and case firm is not probably good, and those employees are reluctant to share working knowledge and experiences with colleagues or under some conditional terms. They concluded their research statement by stating that the success of knowledge sharing in organizations, depend not only technologically but also relate to behavioral factors and the most important task of managing knowledge of an organization is to manage employees relationships.

2.10 Summary

The literature review reveals that knowledge management equips organizations to be more competitive. By leveraging knowledge, an organization can achieve a multitude of benefits, including savings in research and development costs, transfer of best practices, increased employees' capabilities or efficiencies (Hafizi and Zawiyah 2004), enhanced employee satisfaction and improving career paths for younger worker (Sverlinger, 2000).

Creating a learning organization is a necessity for any knowledge management initiatives. Organization must recognize that people operate and communicate through learning, which includes the social processes of collaborating, sharing knowledge and building on each other ideas. Knowledge sharing is not merely a neutral exchange of information but it affects working relationships, distribution of power, patterns of influence and alters how individuals define their responsibilities.

As seen through most research, organization may need to change employees' behaviors and built social cohesion and allegiance or commitment to make their knowledge management initiatives works. This is due to the fact that changing peoples' behaviors was the major challenge faced by organizations managing knowledge (Al-Athari and Zairi, 2001; Syed-Ikhsan and Rowland, 2004) followed by retaining talented people in their organization.

2.11 Relation to purpose study

Knowledge management actually is a very intriguing area to study. From the core concepts to potential periphery impact, there is no general agreement or universal standards on how to evaluate and measure the performance and outcome of knowledge management. Through this literature review, most previous researchers conveyed that analytical findings and results could be obtained through case studies, questionnaires and observation. This methodology can be adopted to obtain reliable findings for the proposed study.

Questionnaire distributed by Syed-Ikhsan and Rowland (2004) who did benchmarking for the Ministry of Entrepreneur Development of Malaysia can be used as a guideline for formatting reliable questions for the proposed respondents in this study based on the comprehensiveness of the questionnaires. Furthermore, The National Library of Malaysia like to the Ministry of Entrepreneur Development of Malaysia, are both government departments serving the public that are bound by the rules and regulations of the government of Malaysia. The only difference in both organizations is their core business that is librarianship versus entrepreneurship. In the struggle to fulfill the needs

of their clients, like any other public organization in Malaysia, they need to manage knowledge to pave the way towards fulfilling Vision 2020 which is based on K-economy that emphasis on acquiring, generating, utilizing and diffusing knowledge in all activities to create value for the prosperity of the country.

As for the framework or models, it is found that no particular model best suits the propose study in the National Library of Malaysia. However, a prolific result is hoped to be achieved by enhancing or blending some of the models. This study could use the KAFRA Framework (Okunoye, 2003) to evaluate the working environmental factors, of the National Library of Malaysia before it embarks on the practice of knowledge management. The link between the learning before/ during/ after circle from The Holistic Model (Collison and Parcell, 2001) may perhaps be used to propose a conceptual model on how to implement knowledge management in the National Library of Malaysia.

The next chapter will present the methodology adopted to gain the required data for the proposed study. It will discuss what method had been chosen to research, examine and evaluate the organization's working culture as to whether it will hinders or complement the process of managing knowledge in the organization.

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter will present the methodology used to obtain required information on the proposed study. As the research topic and its objective need not prove any hypothesis testing nor disapprove it by a scientific method therefore it is appropriate to use an inductive approach to obtain answers. With inductive approach theory would follow data collection and analysis. This is practical in researching knowledge management, as the subject is an overarching theory that emerges from a variety of disciplines such as cognitive sciences, expert systems, organizational science, business strategy, IT groupware development and Artificial Intelligent.

3.2 Research Design

This study is explorative and descriptive in nature. Explorative in the sense that this research is undertaken with insufficient information available about the research subject, and also undertaken in order to gain information or issue per se (Sarantokas, 1993). It is also said to be a descriptive study because this is an aperture study on the issue and is aimed to describe the characteristic of the variables that is to understand the characteristic of the organization (Sekaran, 1992) by providing background information about the issue in question as well as stimulating explanation. For the purpose of the study, the organization concern refers to the National Library of Malaysia.

To achieve the aims and objectives of the study, the appropriateness of using the quantitative method is considered for the purpose of collecting data through the research instrument, therefore a survey has to be conducted and the main instrument proposed was the questionnaires. Besides that, interview will be used, as it is a qualitative way of obtaining data and will be conducted at the initial stage of the study. Besides being able to explore the background information for the study, the interview also aided in developing the right instrument for the study. As mentioned by Breakwell (2000), interviews can be done at any stage in a research process. It can be done in the initial phase as to identify areas for more detailed explorations or it can be done once findings have been compiled to check whether the interpretation of other data makes sense to the sample which was involved.

Patton (1990) mentioned that combination of methodologies strengthen a research design. Qualitative and quantitative research provides complimentary type of information. Furthermore, the strength and weakness of qualitative and quantitative research can compliment each other. Therefore both methodologies were seen relevant for this study.

3.3 Research Instruments

As mentioned above, this research uses triangulation methods that were derived from qualitative and quantitative methods that include survey, interviews and observations briefly explained below:

3.3.1 Survey

The purpose of the survey is to produce quantitative descriptions of some aspects of the study population. The survey instrument used for this study is the questionnaire. It contains six (A-F) sections with 28 questions.

A. The first part captures details on the respondent profile. In this section, the level of education and years of services of the respondents were asked.

B. The second section deals with the understanding of knowledge management of the staff of the organization.

C. The third section deals with the organizational culture. Respondents will be tested to see whether the organizational culture welcomes the implementation of knowledge management practices.

D. Section four, caters for the knowledge sharing climate though it has close relation with organizational culture, it is separated due to the nature of questions.

E. This section assesses the technology and system used by the staff in transferring and obtaining knowledge.

F. The last part is dedicated to obtain user perception on Knowledge Management initiatives of the organization.

The sample of the questionnaire is attached in Appendix 3A

The survey was carried out between February 2nd and February 21st, 2005 where 200 printed questionnaires were distributed to the respondents randomly. Designing and creating the survey questions was quite an

experience because it was very difficult to produce a good survey questionnaire. For this reason there is always some doubt to the reliability of the questions asked. In most research the design of the questionnaire has effects on the response rate. Contamination of the respondents' answers will reduce the data's reliability (Saunders et. al., 2002). Possible sources of contamination are uninformed responses and discussing the answers with others. As there were limited resources, therefore a few practical ways to minimize the above effects includes:

- Careful design of individual questions;
- Clear layout of the questionnaire;
- Lucid explanation of the purpose of the questionnaire;
- Consultation with the academic advisor; and
- A small pilot test.

3.3.2 Interviews

In the early stage of the study, interviews and discussions were conducted with a few personnel from the organization to collect qualitative data. This qualitative method of data collection was carried out on the 28th December 2004 with the Deputy Director of the Library Networking Division and the Director of the Human Resource and Development Division. Both were selected for the interview because of their wide knowledge of IT infrastructure of the organization and they were also involved in mobilizing the Strategic Plan of the organization. Besides that they were said to be the champion to shape the organizations future directions. The interviews were

unstructured ones. Issues regarding managing knowledge in the organization and their perceptions on knowledge management were also discussed. Background information regarding IT infrastructure of the organization was obtained through the discussion. Without any doubt, these interviews contributed to the refinement of the research and help placed this research in its perspective.

A few weeks later a personal interview was carried out with Deputy Director of the Corporate Planning and Policy Division to shed light on some of the key research questions discussed earlier. As one of the senior management and an experience worker, she was asked to comment on the draft of the questionnaires. The respondent said that the questionnaires would work well with various posts in the organization based on the clarity of the questions and the simple language used. This increases the confidence in the design and content of the instrument.

During the interviews some of the data were carefully noted and later collated in the instrument. Samples of the interview questions can be obtained in Appendix 3B

3.3.3 Observations

Observation is the first stage in which one sense that certain changes are occurring, or that some new behaviors, attitudes and feeling are vaguely surfacing in one's environment (Sekaran, 1992) that is the working environment.

Upon visiting the organization while conducting the interview some insights of the working environment were gained. Therefore the trend of the observation is not able to be plotted out but the observation did give an insight of how the staff in the organization do their work, share their knowledge, accessed the systems and other essential information were obtained. This is considered as unstructured non-participation observation since the observer is not an integral part of the organization system and physically present at the workplace for extended period of time (Sekaran, 1992).

As the respondents are well informed of the nature of the study and were aware of the person conducting the research, this 'open observation' (Santakos, 1993) cannot offer quantitative generalization on the results as mentioned in the limitation. However the open observation has allowed the collection of wide range of information even when this information is thought to be, at the time of the study as irrelevant but later it forms as the foundation to justify some of the research questions.

3.4 Research ethics

All respondents were made aware of research intentions and design by an Introduction Letter (Appendix 3C). Findings have been treated with the utmost confidentiality where no source or individual will be correlated with specific findings without the express permission of the originator. All discussions made will remain confidential and no names will be mentioned during the reporting of findings. All respondents have the right of anonymity and it was made clear to them that they had

the right to decline to respond to any question. Respondents were treated with the utmost respect and their rights not to answer a question or withdraw from participation were appreciated. In order not to intrude on their privacy no further efforts were made to contact a potential respondent after two attempts were made.

3.5 Sampling Design

In gathering information pertaining to the above study, a questionnaire was used as the main instrument for data collection. The survey was carried out for 20 days in February, 2005 where printed questionnaires were distributed to the respondents expediently.

To ensure full coverage of potential respondents, a current list of divisions and the number of manpower in the all divisions were obtain from the Management Services and Human Resource Division of the National Library of Malaysia. The number of staff and divisions is shown in Table 3.1. It was then used as a guide for distributing the questionnaires. This is to ensure that the correct numbers of respondents in the organization are covered in the study.

The Organizational Chart (refer to Appendix 1A) indicated that the National Library of Malaysia is supported by three main Programs; Management Program, Library Development Program and Information Services Program. These Programs were further developed into six main activities as follows:

- Management Services and Human Resources Activities
- Planning and Corporate Communication
- Knowledge and Information Infrastructure
- National Collection Development and Documentation

- Malaysiana Services Activities
- General Services Activities

As at 1st of January 2005 (Appendix 3D), the organization has 466 staff with various educational backgrounds and they were holding different posts or job titles as listed below:

- Directors
- Deputy Directors
- Assistant Directors
- Assistant Library Officers
- Library Assistants
- Other support staff that includes typist, clerks, IT personnel, designer and technicians.

To ensure a representative sample is obtained from whole population, therefore a total of 250 questionnaires were printed for the purpose of the study. However, only 200 questionnaires managed to be distributed expediently to all the various divisions. In return, 145 (72%) questionnaires were duly filled by the respondents and later collected by the researcher.

Table 3.1
Distribution of questionnaire

Activities / Division	Total No. of Manpower	No. of Questionnaires		Percentage of Response	
		Distributed	Returned	To Distributed Questionnaire	To Total Population
Management Services & Human Resource	69	10	5	2.5%	1.0%
Human Resource Development	15	12	7	3.5%	1.5%
Information Technology	14	14	12	6.0%	2.6%
Internal Audit	3	0	0	0	0
Planning and Corporate Communications	36	17	7	3.5%	1.5%
Knowledge and Information Infrastructure	42	4	4	2.0%	0.9%
National Collection Development and Documentation	153	48	39	19.5%	8.3%
Malaysiana Services	51	44	33	16.5%	7.0%
General services	83	51	38	19.0%	8.2%
Total	**466**	**200**	**145**	**72.5%**	**31.0%**

All the divisions participated in the survey except the Internal Auditors' Division due to unforeseen circumstances; they were busy with their auditing and were not around when the survey was conducted. On the whole the survey managed to obtain representatives from all working grades that are from Grade S17 to the highest Grade S54 (support staff to management staff).

3.6 Pilot Study

The pilot test was conducted at the National Library of Malaysia on 13th January 2005. The questionnaires were delivered to and completed on the same day by 16 staff of the organization chosen from various divisions and from different posts and grades (from S17 to S48). The respondents were encouraged to point out unclear

items and make comments and criticism regarding the questionnaires length, format and clarity of ideas. They were encouraged to raise questions so that uncertainties could be eliminated. Based on these responses a few areas that merited further study have been identified. Certain items considered ambiguous and inappropriate, were revised or eliminated from the final version. On the whole the respondents encountered no difficulty in answering the questionnaire. After it was determined that the survey instrument was of acceptable quality, the final version of the questionnaire were then printed for 250 copies.

3.7 Administration

A cover letter was drafted to accompany the survey instrument (Appendix 3E). The questionnaires were intended to be delivered personally by hand over to the respondents, but due to the fact that the National Library has various Activities and Divisions and in addition to it, the staff were housed in two different buildings (the services divisions which serve the public were housed at the main National Library building and other divisions were renting spaces in the TH Selborn building which is located on the other side of Jalan Tun Razak) therefore a few personnel were sought at every division as a station for distribution and collection of the questionnaires. This sampling technique is considered as a 'convenience random sampling'. As the name implies, 'convenience sampling' involves collecting information from members of the population who are conveniently available to provide the information (Sekaran, 1992)

The available respondents were given two weeks to answer the questionnaires considering the fact that some of the respondents were already in their festive mood

at that time. The Chinese were looking forward for the approaching Chinese New Year holiday at that time in the month of February, while the Muslims were about to celebrate their 'Awal Muharram' for the year 2005. A two-week grace was considered quite sufficient for them to answer the questionnaires and return it to the persons that have volunteered in distributing and collecting the questionnaires. As gratitude small tokens were given to these volunteers for their support and help.

3.8 Data Analysis

The Statistical Package of the Social Science (SPSS) version 12.0 software programme will be used to analyze the data collected from the questionnaires. The raw data collected from the respondents were edited, coded, entered into the Statistical Package for analysis that will be presented in the next chapter. Besides obtaining the frequency, means and mode of the data, cross-tabulation and statistical tests to explain the occurrences and strengths of the relationship will be done.

3.9 Summary

This chapter has presented the issues involved in selecting a research methodology for the study, the population selected, the questionnaire design and its contents and the various processes involved in gathering the data for the study. Details of data analysis and results will be presented in Chapter 4.

CHAPTER 4

DATA ANALYSIS AND RESULT

4.1 Introduction

The purpose of this research is to access the organizational working culture that would supplement the implementation of Knowledge Management in the National Library of Malaysia. Organizational culture and attributes were accessed through three main perspectives of successful knowledge sharing culture: the corporate, operational and individual perspectives based on the questionnaires listed by Kermally (2001). These three perspectives were than broken down into five main groupings: understanding of knowledge management concepts, the organizational culture, the knowledge-sharing climate, system used and practices in the organization and respondents perceptions on knowledge management initiatives. Depending on the organization's degree of integration of these factors, it is expected that specific KM initiatives if implemented will be more likely to succeed in the organization.

4.2 Descriptive Analysis

SPSS (Statistical Package for Social Science) and Microsoft Excel software were used as main statistical analysis tools. All usable responses data was analyzed using these two tools. Various analyses authenticated the instrument reliability and validity, and produced a descriptive analysis of the respondents' demographics and their organizations' profiles.

4.3 Population and sample

The overall target population of this study is 466 staffs of the National Library of Malaysia based on the statistic given by the Management Services and Human Resources Division. Out of the total population, 200 questionnaires were printed and distributed randomly to the target population. A total of 145 (72%) questionnaires were completed and returned.

4.4 Results

This section will reveal the findings of the survey carried out at the National Library of Malaysia which is investigate as to whether the working environment will support the practice of managing knowledge in the organization.

4.4.1 Demographic profile of the respondents

The first section of the questionnaire is dedicated to obtain the demographics profile of the respondents and the divisions that they are attached to. This section includes the number of years of employment, the education level and their present post.

Table 4.1 shows that the respondents came from six main activities and divisions of the organization as follows:

- Management Service and Human Resources
- Planning and Corporate Communication
- Knowledge and Information Structure
- National Collection Development and Documentation
- Malaysiana Services
- General Services

Statistic from the Management Services and Human Resources Division listed that the total workforce of the organization is 466 (as at 1 January 2005). Based on the number of the total workforce therefore 250 questionnaires were printed and distribute randomly to the whole population to obtain a good sampling size. However, only 200 copies of the printed questionnaires were distributed by hand. Of these, 145 copies of the questionnaires were completed and returned, giving an overall response rate of:

N = Population	N = 466
n = Sample size	n = 145
Therefore, n/ N	= 145/466
	= 31.0%

Since only 31% of the total population participated in the survey therefore generalization for the whole survey has to be made very carefully.

Table 4.1
The percentage of respondents that participated in the survey
(N= 466, n = 145)

Activities/ Divisions	No. of Manpower	No. of Respondents	Percentage
Management Services & Human Resource	69	5	7%
Human Resource Development	15	7	46%
Information Technology	14	12	85%
Internal Audit	3	0	0
Planning and Corporate Communications	36	7	19%
Knowledge and Information Structure	42	4	9%
National Collection Development and Documentation	153	39	25%
Malaysiana Services	51	33	64%
General services	83	38	45%
Total	**466**	**145**	**31%**

* Whole organization – 31%
* Questionnaires return – 72% (145 of 200 questionnaires distributed)

Table 4.1 above indicated that from 9 separate activities/ divisions of the organization the Information Technology Division scored highest in list of participation where 12 (85%) of the staff from the whole division kindly participated in the survey. This is followed by Malaysiana Services where 33 (64%) of the staff who generously spared their precious time to fill in the questionnaires distributed to them. Though some division did not score very high in the percentage of participation, their contribution to the response rate are much higher because they have a larger amount of workforce on the division as compared to others. For example only 25% of the staff in The National Collection and Development and Documentation Center participated

in the survey but on the whole they were 26.9% out of the total respondents and this happens to be the highest score among the activities/ divisions. This is followed by the General Service Divisions that contributed 26.2% to the whole sampling size. Though 64% of the workers of the Malaysiana Services Divisions participated in the survey they only contributed about 22.8% to the total number of respondents (145 respondents).

The total returned of the questionnaires is considered very high that is 145 out of 200 questionnaires that were being distributed, giving a total return of 72%. Table 4.2 below shows the number of respondents and the frequency of their participation in the survey.

Table 4.2
Respondents and their various divisions in the National Library of Malaysia
(n = 145)

Activities/ Division	No. of respondents	Percentage (%)
Management and Human Resource Services	5	3.4
Human Resource Development	7	4.8
Information Technology	12	8.3
Planning and Corporate Communication	7	4.8
Knowledge and Information Infrastructure	4	2.8
National Collection Development and Documentation	39	26.9
Malaysiana Services	33	22.8
General Services	38	26.2
Total	**145**	**100.0**

4.4.1.1 Job title

Job titles of the respondents can be classified as follows:

Grades	Title	Level
S48 and above	Directors/ Deputy Directors	Top management
S41 – S44	Assistant Directors	Middle management
S27 – S32	Assistant Library Officers	Support staff
S17 – S22	Library Assistants	Support staff
Others	Clerical staff and non library professions (e.g. IT Personnel, Graphic Designers etc.)	(Mixed level)

4.4.1.2 Position level

One factor that has impact upon the ability to create or discover new knowledge is the position of the staff within the social structure. In any organization, certain people are connected to certain others, trusting certain others, obliged to support certain others and dependent on exchange with others. The position in this context exchange structure can be an asset in its own right (Burt, 1997). Therefore it is essential to include the position level of the respondents as part of the survey question so that the perception and opinions of this different level can give a more practical result to the survey done.

Figure 4.1 and Table 4.3 show that 8 (5.5%) of the respondents who participated in this study were from Grade S48 and above indicating that they were Directors or Deputy Directors of the Divisions, 40 (27.6%) were Assistant Director from Grade S41 – S44 who are

middle management of the organization, 25 (17.2%) were from Grade S27 – S32 who were the Assistant Library Officers, 50 (34.5%) were Library Assistants and 22 (15.2%) others are those who were involved with the IT services and some of them were the clerical staff. This is considered as a desirable distribution of the respondents with representatives from all the job grades in the organization.

45)

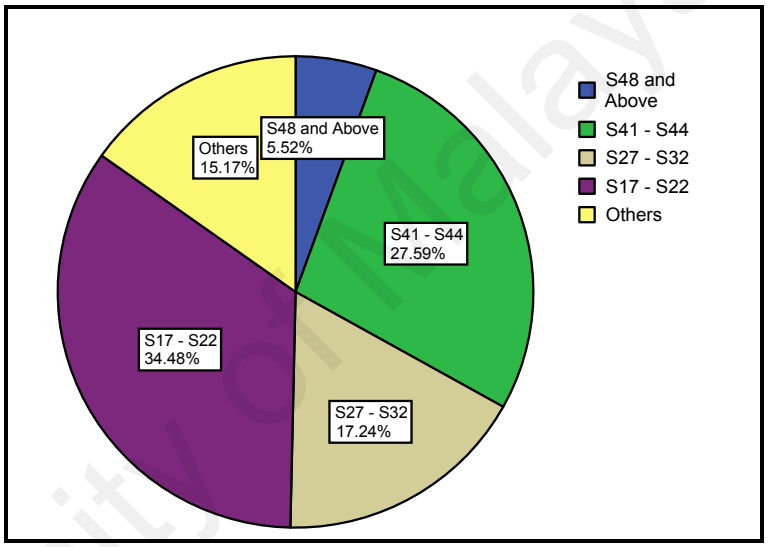


Figure 4.1: Percentage of respondents divided according to their post

Table 4.3
Frequency of respondents according to their position level
(n = 145)

Position level	Frequency	Percent	Valid Percent
Directors/ Deputy Directors	8	5.5	5.5
Assistant Directors	40	27.6	27.6
Assistant Library Officers	25	17.2	17.2
Library Assistants	50	34.5	34.5
Others	22	15.2	15.2
Total	**145**	**100.0**	**100.0**

4.4.1.3 Years of services

Table 4.4 below categorizes the respondents into numbers of years of services and 100 (69%) of the respondents has 1- 5 years of working experience followed by 15 (10.3%) of those who have been working for 6 – 10 years and 8 (5.5%) have a working experience of 16 – 20 years. Seventeen respondents (11.7%) have the experience of more than 20 years of service. The mean, minimum and maximum numbers of years of services of the respondents are listed below:

- Minimum 1 year
- Maximum 34 years
- Mean 6.97 years

The item in this section is very important because experience workers are usually considered very knowledgeable and this will certainly have impact on how they work and solve working problems. Besides that, their opinion and working experience will certainly have impact on the survey results. However, it is also important to have respondents from the group of less experience workers so that the survey result would illustrate as to whether knowledge sharing practice really occurs in the organization between the more experience workers and the new employees in the organization. The mean for the number of years of service is 6.9% indicating that the respondents should have good knowledge of their organization, its policies, working culture, and users/clients. This, to some degree, will increase credibility of their responses.

Table 4.4
Years of the services in the organization (grouped)
(n = 145)

Years of service	Frequency	Percent	Valid Percent
1 - 5	100	69.0	69.0
6 - 10	15	10.3	10.3
11 - 15	5	3.4	3.4
16 -20	8	5.5	5.5
21 -25	7	4.8	4.8
26 - 30	8	5.5	5.5
More than 31	2	1.4	1.4
Total	**145**	**100.0**	**100**

4.4.1.4 Education background

In terms of education background, 17 (11.7%) of them are Masters Holders, 43 (29.7%) with a degree and 6 (4.1%) of respondents have diplomas. Figure 4.2 indicated that 59 (40.7%) respondents completed their secondary education with a Sijil Pelajaran Malaysia (Malaysian Certificate of Education) and 19 (13.1%) completed their Sijil Tinggi Persekolahan (Higher School Certificate). Only 1 (0.7%) respondent uses his/her certificate in Computer Studies besides using the SPM as a prerequisite entrance for his/her job.

The educational background certainly has some relation to the field of work the respondents do and to whom they provide the services. It also depicts to whom the respondents mostly interact.

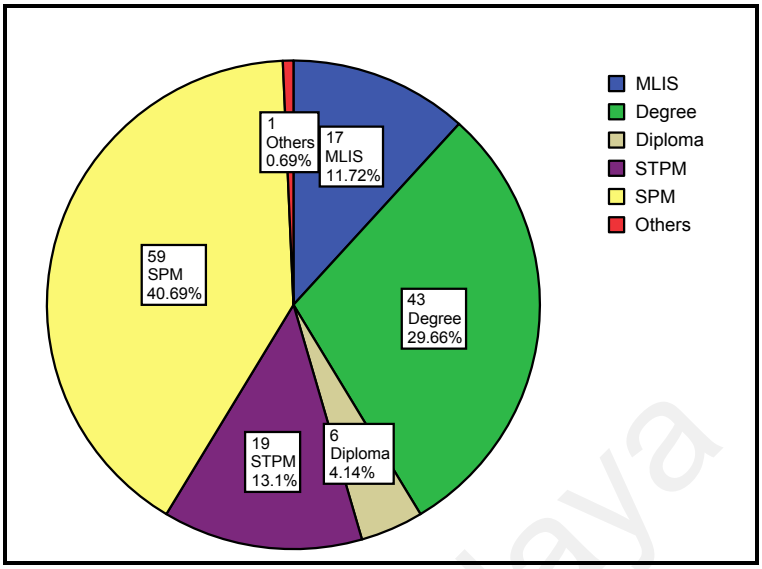


Figure 4.2: Education levels of the respondents

4.4.2 Understanding of Knowledge Management

This section surveyed the knowledge of the respondents on the term 'Knowledge Management' or KM as to whether they are familiar or has heard about it because understanding knowledge is the first step to managing it effectively.

4.4.2.1 Knowledge on KM

Knowledge Management is already a well known phrase to the staff of the National Library where 125 (86.2%) out of 145 respondents indicated that they have heard about it either through reading (52.4%), trainings (57.9%) or even discuss (43.4%) it with their fellow colleagues. Only 1 (0.7%) mentioned that he/she had formal education on Knowledge Management while attending the Degree or Master education in the university.

The highest score for those who do not know about Knowledge Management are those from the category of S17 – S22 (Library Assistants) where 12 (8.4%) of them said they never heard about it and 5 (3.5%) from the clerical staff who indicated that they do not know what KM is all about. Figure 4.3 below shows the number of respondents that knows about KM tabulated according to their job title.

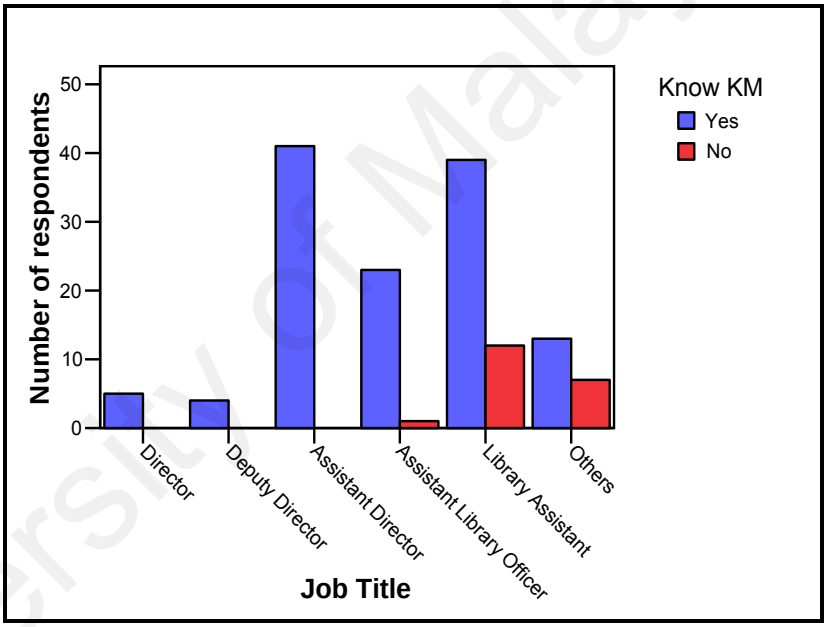


Figure 4.3: Respondents that know about Knowledge Management

Through cross tabulation (Figure 4.4) between years of service and the knowledge on KM, it is found that those who do not know about KM are those who have the working experience of less than 3 years that is 6 (4.2%) respondents with 1 year working experience and 13 (9.1%) with 2 years working experience. Through observation it is found that these respondents were those recruited on the year 2003

when National Library of Malaysia practiced its 'Organizational Restructuring'. Only 1 (0.7%) clerical staff with 12 years experience indicated that she/he do not know what KM is all about.

(n = 145)

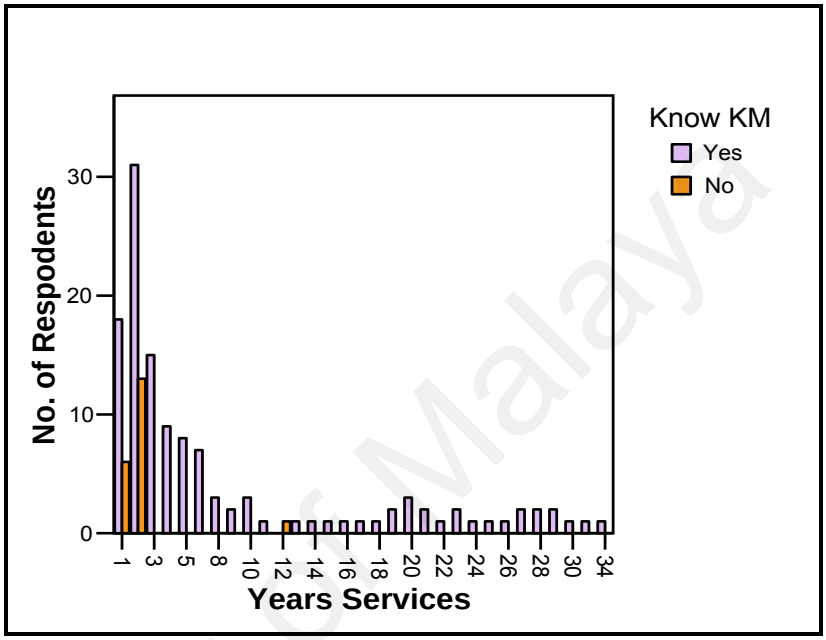


Figure 4.4: Numbers of respondent that knows about KM Categories under years of services

4.4.2.2 The medium

From the survey it is found that all the staffs of the higher management levels were given training on Knowledge Management. Interviews with certain personnel conveyed that the topic on Knowledge Management was included in the syllabus for those who have to go through the Competency Level Assessment for higher ranking or grade, i.e. from Grade S44 to Grade S48. Table 4.5 shows that 100% respondent from Grade S48 and above have had training on KM while those lacking in training were respondents that were of

Grade S17 – S22 where only 17 (34.0%) picked training as the medium where they obtain information on KM.

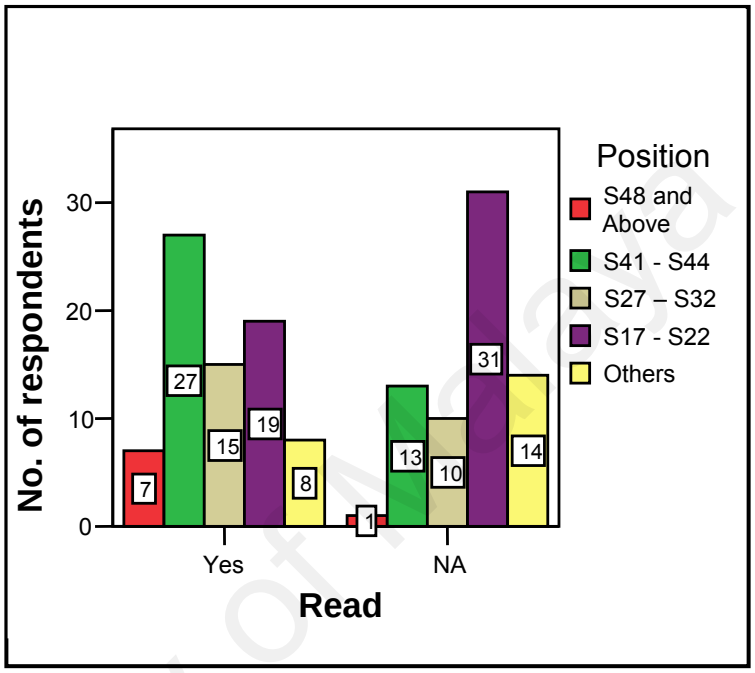
Table 4.5
Number of respondents who had training on KM
(n= 145)

Position		Training		Total
		Yes	NA	
S48 and Above	Count	8	0	8
	% within Position	100.0%	.0%	100.0%
	% of Total	5.5%	.0%	5.5%
S41 - S44	Count	33	7	40
	% within Position	82.5%	17.5%	100.0%
	% of Total	22.8%	4.8%	27.6%
S27 - S32	Count	19	6	25
	% within Position	76.0%	24.0%	100.0%
	% of Total	13.1%	4.1%	17.2%
S17 - S22	Count	17	33	50
	% within Position	34.0%	66.0%	100.0%
	% of Total	11.7%	22.8%	34.5%
Others	Count	7	15	22
	% within Position	31.8%	68.2%	100.0%
	% of Total	4.8%	10.3%	15.2%
Total	**Count**	**84**	**61**	**145**
	% of Total	**57.9%**	**42.1%**	**100.0%**

Reading through printed and unprinted materials rank second after training. Out of 145 respondents, 76 (52.4%) stated that they either read from books or journals on KM and some even mentioned that they are aware of KM through Internet and articles from the newspapers. Figure 4.5 shows that 27 respondents from grade S41 – S44 who were the Assistant Directors read about KM, followed by 19 of those from grade S17 – S22 (Library Assistants) and 15 of the Assistant Library Officers from grade S27 – S32 acquire some knowledge regarding KM through reading. Though 52.4% of the respondents read about Knowledge Management the organization has

yet to enhance their knowledge regarding KM through a proper training program.

(n = 145)



* NA stands for 'Not Applicable'

Figure 4.5: Number of respondents who reads about KM

4.4.2.3 Importance of Knowledge

The importance of knowledge is certainly being communicated to the staff in the organization as indicated in Table 4.6 when 133 (91.7%) out of 145 respondents 'agree' to the statement while 12 (8.3%) 'disagree' to it. Most of those who 'disagree' to the statements are from the grade S41 and below: 2 (1.4%) who are the Assistant Directors, 2 (1.4%) from grade S27 – S32 the Assistant Library Officers, 3 (2.1%) of the Library Assistants and 5 (3.5%) others who are either the IT personnel or the clerical staff.

Table 4.6
The importance of knowledge is being communicated
(n = 145)

Job title	Importance of Knowledge		Total
	Yes	No	
Director	5	0	5
Deputy Director	4	0	4
Assistant Director	39	2	41
Assistant Library Officer	22	2	24
Library Assistant	48	3	51
Others	15	5	20
Total	**133**	**12**	**145**

4.4.2.4 Knowledge Management Program

Knowledge Management Programs were practiced in some of the divisions but not as a holistic approach. This justifies the assumption made in Chapter 1 about the implementation of Knowledge Management in the organization. Only 14 (9.3%) of the respondents mentioned that they practice the program in their division. Programs like TQM (Total Quality Management), KMK or QCC (Quality Control Circle), ISO 9000 and On Job Training and Practices were listed as the examples of Knowledge Management Program in certain divisions (Table 4.7).

Table 4.7
KM System or Team implemented by certain divisions
(n = 145)

Name of team or system	Frequency	Percent
No team or system	131	90.3
Human Resource Planning Unit	1	0.7
Ice breaking	2	1.4
Ice breaking / Mentor Mentee	1	0.7
KMK/ QCC	2	1.4
Knowledge Bank	1	0.7
On job training	3	2.1
TQM	1	0.7
TQM/ KMK	1	0.7
Virtua System	2	1.4
Total	**145**	**100.0**

4.4.2.5 Sharing knowledge

For an organization to succeed in Knowledge Management program, knowledge sharing should be a culture in the organization. Table 4.8 shows that 129 (89.0%) of the respondents said that they shared knowledge or information on what is going on with each other in their respective divisions. The activities or divisions that have all the respondents who 'agree' to the statements were the Management Service and Human Resources Division and the Knowledge and Information Infrastructure Activities.

Table 4.8
Knowledge sharing practices in the divisions
(n = 145)

Division	Count within division	Sharing knowledge		Total
		Yes	No	
Management Services and Human Resource	Count	5	0	5
	% within Division	100.0%	.0%	100.0%
Human Resource Development	Count	6	1	7
	% within Division	85.7%	14.3%	100.0%
Information Technology	Count	11	1	12
	% within Division	91.7%	8.3%	100.0%
Planning and Corporate Communication	Count	3	4	7
	% within Division	42.9%	57.1%	100.0%
Knowledge and Information Infrastructure	Count	4	0	4
	% within Division	100.0%	.0%	100.0%
National Collection Development and Documentation	Count	36	3	39
	% within Division	92.3%	7.7%	100.0%
Malaysiana Services	Count	27	6	33
	% within Division	81.8%	18.2%	100.0%
General Services	Count	37	1	38
	% within Division	97.4%	2.6%	100.0%
Total	**Count**	**129**	**16**	**145**
	% within Division	**89.0%**	**11.0%**	**100.0%**

4.4.2.6 Collecting best practices

Collecting best practices will help the organization to stop "reinventing the wheel". The staffs in the Management Services and Human Resources Divisions and Knowledge and Information infrastructure Divisions undoubtedly do collect and share information about best practices in their divisions with a score of 100% followed by the General Services Division that scored 94.7% and National Collection Development and Documentation Center that scored 92.3% (Table 4.9).

Table 4.9
Collecting best practices in the organization
(n = 145)

Activities/ Division		Collecting best practices	
		Yes	No
Management Services and Human Resource	Count	5	0
	% within Division	100.0%	.0%
Human Resource Development	Count	3	4
	% within Division	42.9%	57.1%
Information Technology	Count	10	2
	% within Division	83.3%	16.7%
Planning and Corporate Communication	Count	3	4
	% within Division	42.9%	57.1%
Knowledge and Information Infrastructure	Count	4	0
	% within Division	100.0%	.0%
National Collection Development and Documentation	Count	36	3
	% within Division	92.3%	7.7%
Malaysiana Services	Count	26	7
	% within Division	78.8%	21.2%
General Services	Count	36	2
	% within Division	94.7%	5.3%
Total	**Count**	**123**	**22**
	% within Division	**84.8%**	**15.2%**

4.4.2.7 Free access to information

Figure 4.6 shows that among the staff of National Library, 5 (100%) Directors and 4 (100%) Deputy Directors 'agreed' that they were free to access to information on their organization if they approach the appropriate individuals or departments. On the whole 121 (83.4%) respondents 'agreed' to the statement and some how, about 24 (16.6%) respondents from the lower grades do not really agree to the

statement probably due to the fact that they were not given the right to access some of the information that were considered as 'confidential'.

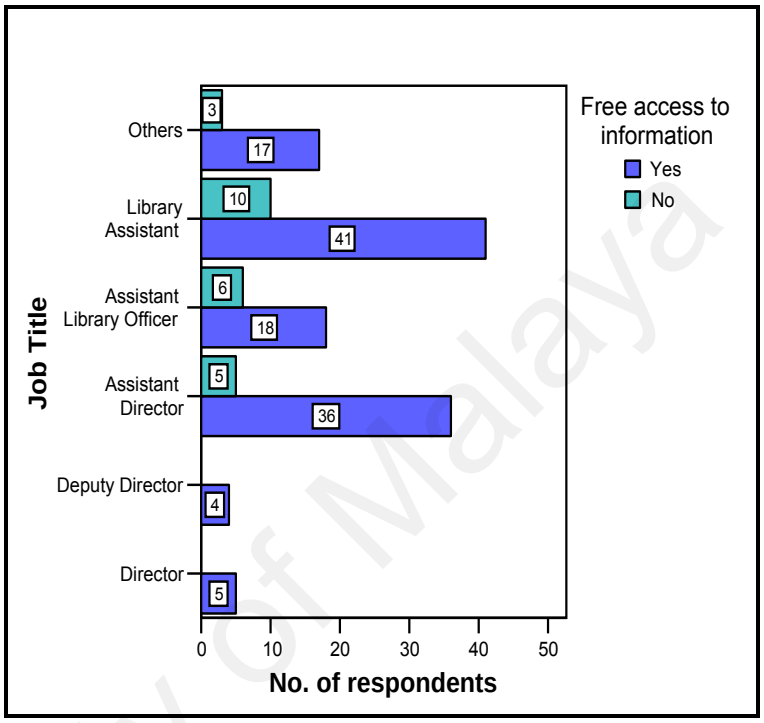


Figure 4.6: Free to access information in the organization

4.4.2.8 Awareness on written mission statement

For an organization to be effective, a mission statement should be communicated all the way from top management to the rank and file. It should be shared with all the employees, the customers, the suppliers, stakeholders and when possible, with the community it serves (Canno, 1995). Out of a total of 145 respondents, 129 (89%) agree that there is a mission statement and out of that 122 (84%) 'agreed' that most employees know and are aware of their organization's mission statement. Less than 10% of the respondents do not know that the organization has a mission statement and

therefore 'disagree' that everyone in the organization knows about it. Table 4.10 shows the cross tabulation between those who agree that the organization possess a mission statement and as to whether they are aware of it.

Table 4.10
Awareness on the written mission statement of the organization
(n = 145)

Written Mission Statement	Aware of Mission Statement		Total
	Yes	No	
Yes	122	7	129
No	6	10	16
Total	128	17	145

4.4.3 Organizational Culture

A knowledge-friendly organizational culture is one of the most important conditions leading to success of KM initiatives in organization (Davenport & Prusak, 1998). Organizations that want to develop a KM program need to provide a culture that is capable of nurturing behaviors that motivate knowledge sharing, transfer and application (Brand, 1998; Hickins, 1999). Therefore, this section is focus on surveying the respondents' opinion as to whether an appropriate organizational culture exists in the organization that can lead to effective leadership in managing knowledge.

4.4.3.1 Communication flow

Communication is an important concept in this study as it entails the sharing and transfer of knowledge. Based on the survey 113 (78%) respondents stated that they either 'agree' or 'strongly agree' that there is a good communication in the organization. Only 6 (4.1%) either 'disagree' or 'strongly disagree' with the statement, while 26 (17.9%) remain 'neutral'. Figure 4.7 below illustrates the response rate of the respondents regarding this matter.

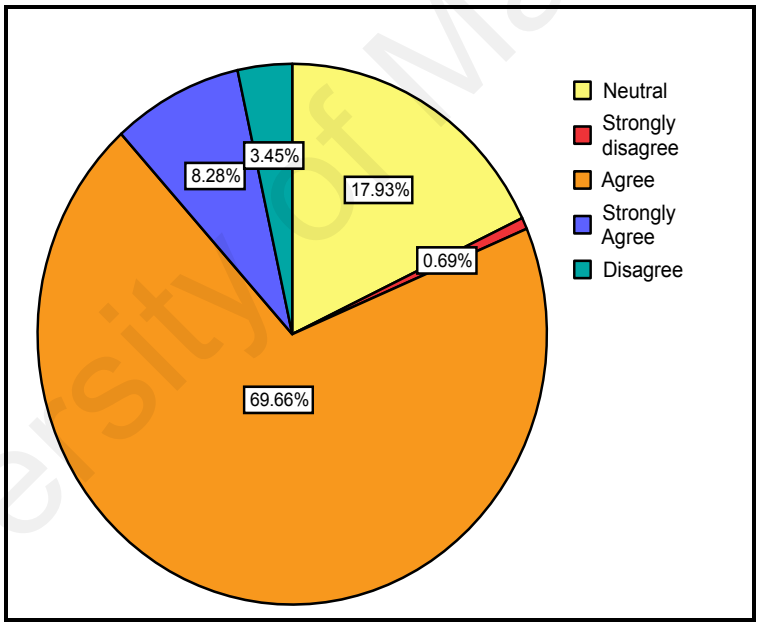


Figure 4.7: Perception on the communication in the organization

4.4.3.2 Clear and specific objectives

Success normally happens when a group of capable individuals pursue a well define objective. As stated by Herzberg's Dual Factor Theory that distinguished between hygiene factors and motivators "*In knowledge driven organization specific goal should be set and*

measured ... and these goals should be clear and specific". Therefore in this section the respondents were asked as to whether all departments/ section in the organization have clear and specific objectives and 113 (78%) of the respondents either 'agree' or 'strongly agree' with the statement. Figure 4.8 shows that less than 5% 'disagree' with the statements while 26 (18%) respondents remain neutral.

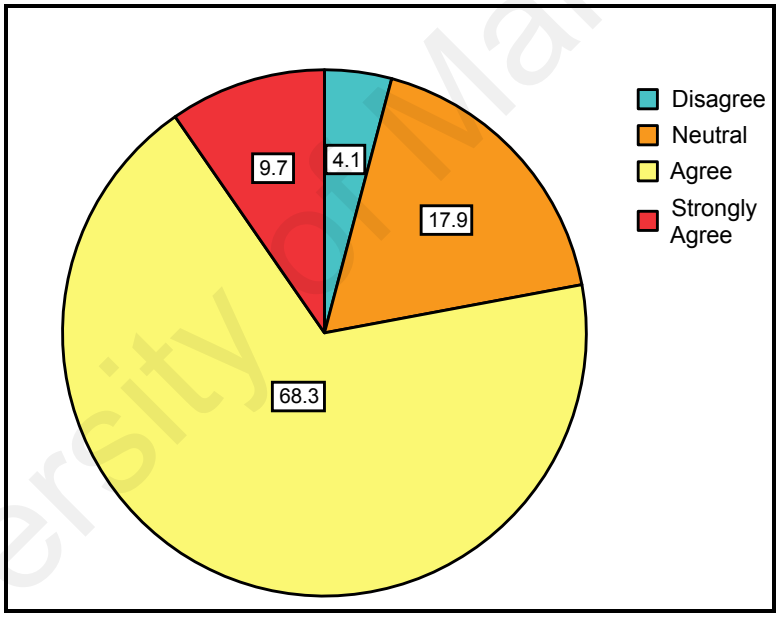


Figure 4.8: Clear and specific objective of the organization

4.4.3.3 Staff pride

The core of any organization is its people. But in a successful organization, people are proud of the quality of what the organization does, proud of the contributions they make and proud to be associated with the organization (Hayes, 2000).

The response rate in Table 4.11 shows that 131 (89.5%) either 'agree' or 'strongly agree' that they have pride and are proud to work with the organization. Only 13 (9%) do not agree or disagree to the statements while 1 (0.7%) stated his/her total disagreement.

Table 4.11
Proud of the organization
(n = 145)

Proud of the organization	Frequency	Percent
Strongly disagree	1	.7
Neutral	13	9.0
Agree	91	62.8
Strongly Agree	40	27.6
Total	**145**	**100.0**

4.4.3.4 Confidence in superior and management

Trust is a must for knowledge creation and it has to be part of the corporate culture and manifested by top management. It is, as some experts put it, 'the gateway to successful relationships'. The word trust incorporates confidents, expectation, reliance and hope (Kermally, 2001). When asked whether the respondents are confident of their superior and the management the response was overwhelming when 124 (85.5%) stated they have the confidence in their superior and the management. Only 3 (2.1%) 'disagreed' to the statement while 18 (12.4%) remain neutral (refer to Table 4.12).

Table 4.12
Confidence of the superior and their management
(n = 145)

	Frequency	Percent	Valid Percent
Disagree	3	2.1	2.1
Neutral	18	12.4	12.4
Agree	97	66.9	66.9
Strongly Agree	27	18.6	18.6
Total	**145**	**100.0**	**100.0**

4.4.4 Knowledge Sharing Climate

Knowledge sharing and transfer requires an organizational culture that constantly guides organizational members to strive for knowledge and a climate that is conducive to it (Alavi and Leidner, 2001). This part of the survey was committed to identify as to whether the organization posses the ecology that would support the knowledge sharing practices.

4.4.4.1 Accepts new ideas

Hamel (2000) highlighted ten rules for designing a culture that inspire innovation and noted that a knowledge sharing organization should have an 'open market for ideas'. In relation to the statement about 118 (81.4%) respondents in this organization 'agreed' and 'strongly agreed' that they are encouraged to suggest new things or ideas. When studied further a total of 108 (74.5%) 'agreed' and 'strongly agreed' that the people in the organization can accept new ideas. Only

11(7.6%) respondents 'strongly disagreed' to both statements as indicated in Table 4.13 below.

Table 4.13
Response to the act of accepting and suggesting new ideas
(n = 145)

Accept new ideas	Able to made suggestion				Total
	Disagree	Neutral	Agree	Strongly Agree	
Disagree	2	2	1	0	5
Neutral	0	14	16	2	32
Agree	1	8	71	16	96
Strongly Agree	0	0	1	11	12
Total	**3**	**24**	**89**	**29**	**145**

4.4.4.2 Teamwork

Through observation and interview it is found that most processes and work require input from more than one individual and in order to perform to the best of their ability, individuals need to work as a team. This is agreed by the 117 (80.7%) respondents in Figure 4.9 who either 'agreed' or 'strongly agreed' that they work as team in their organization. A number of 24 (16.6%) respondents are neutral about the statement while only 4 (2.8%) 'disagreed' with working in teams. When cross-tabulated further (Table 4.14) it is found that those who do not work in teams are those who are from grade S32 and below who were categorized as the support staff or the non professional staff.

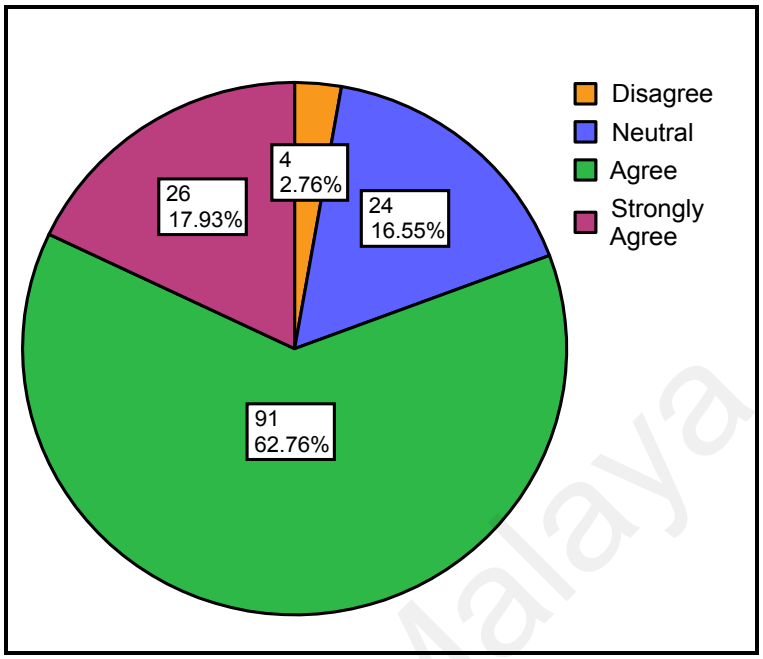


Figure 4.9: Response to working in team

Table 4.14
Position level of respondents that response to working in teams
(n = 145)

Position	Work as team				Total
	Disagree	Neutral	Agree	Strongly Agree	
S48 and Above	0	2	5	1	8
S41 - S44	0	9	25	6	40
S27 - S32	2	2	15	6	25
S17 - S22	1	8	29	12	50
Others	1	3	17	1	22
Total	4	24	91	26	145

4.4.4.3 Help each other

There are two ways to deliver the knowledge to others. One is sharing between individuals, the other one is between organization and

individual. The former, sharing is based on the personal relationship, which shows people are willing to help each other by heart and develop the new ability together. Individual knowledge is an important part of organization. Employees absorb this knowledge through social interaction and working with the person who knows how to apply knowledge from past successful experiences. While individual knowledge interacts with others, the collective knowledge will drive individual performance. In, practice people usually seek for information or advice to the colleague who they trust and capable rather than to check with databases, policy or operation manuals. In fact, the assistance from friends or colleagues is 5 times more than the help from other sources (Cross, 2000)

In this organization the knowledge sharing practice is delivered through the helping hand and this is proofed by Table 4.15 when 129 (90%) of the respondents either 'agreed' or 'strongly agreed' that they help each other when necessary in their departments. At least four Activities/ Divisions listed below score total agreement where every respondent stated that they help each other as and when necessary:

- Management Services and Human Resource Activities
- Human Resource Development Division
- Information Technology Division
- Knowledge and Information Infrastructure Activities

Table 4.15
Divisions that have respondents who help each others to do their daily tasks
(n = 145)

Division	Help each other					Total
	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	
Management and Human Resource Services	0	0	0	2	3	5
Human Resource Development	0	0	0	4	3	7
Information Technology	0	0	0	12	0	12
Planning and Corporate Communication	1	0	2	4	0	7
Knowledge and Information Infrastructure	0	0	0	4	0	4
National Collection Development and Documentation	0	2	1	32	4	39
Malaysiana Services	0	0	2	22	9	33
General Services	0	0	8	19	11	38
Total	**1**	**2**	**13**	**99**	**30**	**145**

4.4.4.4 Record experiences

One of the benefits of experience is that it provides a historical perspective from which to view and understand new situations and events. Knowledge born of experience recognizes familiar patterns and can make connections between what is happening now and what happen then (Davenport and Prusak, 1998). Because knowledge management promotes the sharing of what we know, it becomes more important to record and maintain what we know in a quality manner. Knowledge becomes manageable, shareable, and reusable only if it is recorded and made available. Out of 145 respondents 104 (72%) do record their experience for the benefits of others as shown in Figure 4.10 below. When cross tabulated further in Table 4.16, the highest

score within the job title who recorded their experience for the benefits of others are as follows:

- Library Assistance - 41 (80.4%)
- Assistant Library Officers - 19 (79.1%)
- Assistant Directors – 30 (73.2%)
- Others – 12 (60%)

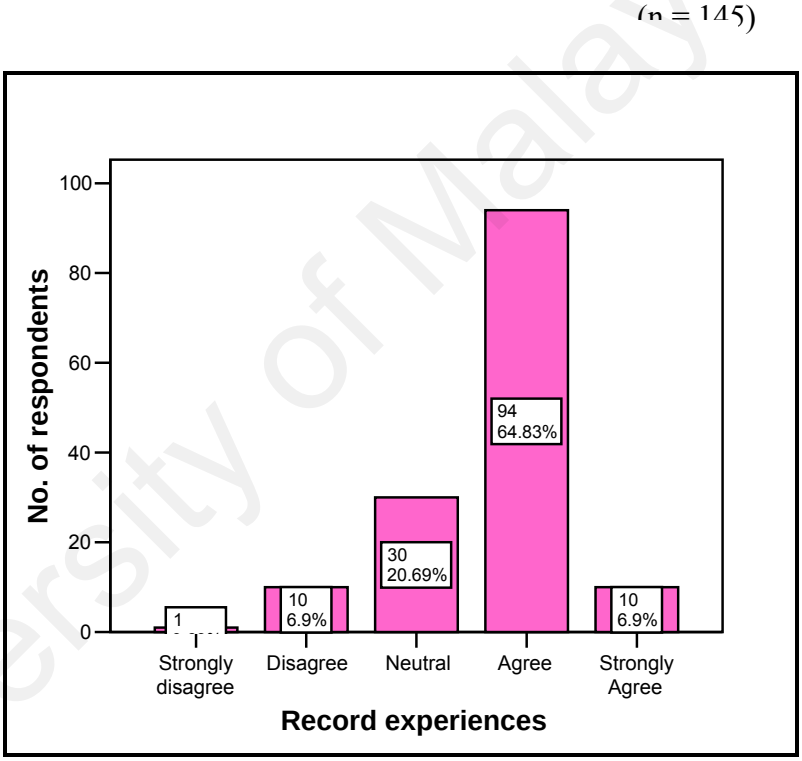


Figure 4.10: Response to practice of recording their experience

Table 4.16
The respondents that recorded their working experiences
(n = 145)

Job title	Record experiences					Total
	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	
Director	0	1	3	1	0	5
	.0%	20.0%	60.0%	20.0%	.0%	100.0%
Deputy Director	0	0	3	1	0	4
	.0%	.0%	75.0%	25.0%	.0%	100.0%
Assistant Director	0	4	7	26	4	41
	.0%	9.8%	17.1%	63.4%	9.8%	100.0%
Assistant Library Officer	1	2	2	17	2	24
	4.2%	8.3%	8.3%	70.8%	8.3%	100.0%
Library Assistant	0	2	8	38	3	51
	.0%	3.9%	15.7%	74.5%	5.9%	100.0%
Others	0	1	7	11	1	20
	.0%	5.0%	35.0%	55.0%	5.0%	100.0%
Total	**1**	**10**	**30**	**94**	**10**	**145**
	.7%	**6.9%**	**20.7%**	**64.8%**	**6.9%**	**100.0%**

4.4.5 System tools used and practices

Information technology (IT) is the most visible part of the organization's knowledge management program. The purpose of this enabler is to provide the tools needed to connect users together to share knowledge. Having an IT solution in place will not cause knowledge sharing to occur by itself, but it will facilitate it by providing speed and access (Vogel, 1996). This section is focus on the use of IT, training and also user perception as to whether it is part of the knowledge sharing tools.

4.4.5.1 Information Storage

When asked whether IT is the best information storage utility for knowledge acquisition and sharing, 138 (95.2%) respondents 'agreed'

with the statement (Figure 4.11). This is considered very normal as most people still think that technology is the answer to managing knowledge in most organizations.

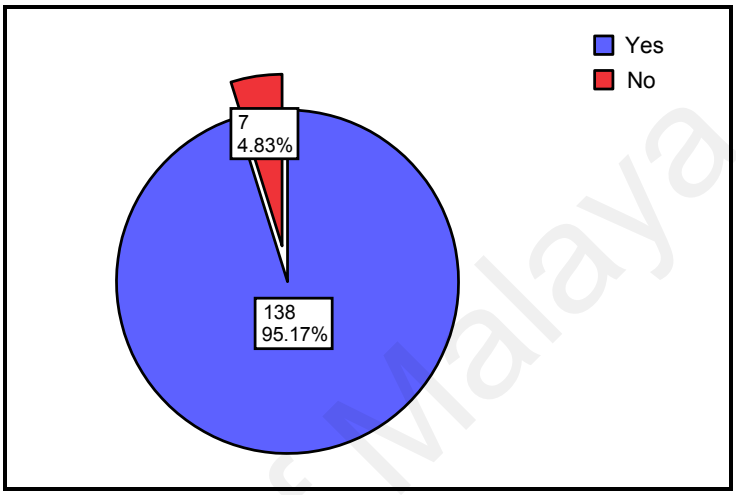


Figure 4.11: Perception on IT as the best information storage

4.4.5.2 Systems used and updating

The systems that the respondent normally used to perform their daily tasks are listed below in Table 4.17. Out of 145 respondents, 143 (98.6%) stated that they used the Internet to retrieve and transfer information. From that figure, 126 (86.9%) said that whatever they search for in the Internet were updated frequently.

The second most preferred database in the organization is the OPAC (Online Public Access Catalog) where 119 (82.1%) of the respondents used it as a means of retrieving information probably while satisfying user request for information. In the case of updating the OPAC, 99

(83.2%) out of 119 respondents that used the system said that 'yes' it is updated frequently.

A total 71 (48.96%) of the respondents stated that they used E-Mail as a means of transferring information. This is followed by Intranet 60 (41.0%), Reading Promotion 57 (39.3%), Mylib Web Portal 53 (36.6%), Services 44 (30.3%), E – Library User Education 42 (29.0%), Corporate Information 40 (27.6%) and I – Komuniti 35 (24.1%).

Other databases were also listed but were less preferred which includes; National Digital Library System or PERDANA, Malaysian Technical Cooperation Library Programme (MTCP), Online Bibliography/ Directory, Statistics, Virtual Exhibition, Union Catalog, Services to Publishers etc.

Updating of the databases were done regularly and this is proven in Table 4.17 below where the scoring for up-to-datedness of the system gave a maximum score of 98.2% (Reading Promotions database) and the least being 76.2% (E – Library User Education database). This is probably due to the fact that the staffs of the organization were aware that nothing drives user of the system faster than outdated information. Through the interview done, the management who were put responsible for the databases have to make sure that it is update regularly so that no complaints were made about it or else they have

to come up with a reasonable explanation during their monthly Managerial Meeting (Top Management Meeting) chaired by the Director General of the Organization.

Table 4.17
System used and updating
(n = 145)

System	Usage		Update	
	Frequency	Percent	Frequency	Percent
Internet	143	98.6	126	86.9
OPAC	119	82.1	99	83.2
E-Mail	71	49.0	64	90.1
Intranet	60	41.0	54	90.0
Reading Promotions	57	39.3	56	98.2
Mylib Web Portal	53	36.6	47	88.7
Services	44	30.3	39	92.8
E -Library User Education	42	29.0	32	76.2
Corporate Information	40	27.6	32	80.0
I- Komuniti	35	24.1	32	91.4

4.4.5.3 IT training

Training is the most formalized approach to knowledge transfer and skill development, and as such it will often be important in achieving knowledge transfer outcome (Burt, 1997). Table 4.18 shows that 132 (91.0%) of the respondents 'agree' that the organization regularly sends employees for IT training. Only 13 (9.0%) respondents stated 'no' for an answer. When tabulated further it is found that training is lacking among those categories under the post of Assistant Directors 6(4.1%), Library Assistants 5(3.4%) and Assistant Library Officer 1(0.7%). Through document analysis, it is found that The Human Resource Development Division had table out the yearly courses and

training for the staff of the organization. IT training is among others courses that were included in the yearly program. Therefore it is proven that the employees of the organization were sent regularly for training on IT.

Table 4.18
IT training for employees
(n= 145)

Job title	IT training		Total
	Yes	No	
Director	5	0	5
Deputy Director	4	0	4
Assistant Director	35	6	41
Assistant Library Officer	23	1	24
Library Assistant	46	5	51
Others	19	1	20
Total	132	13	145

4.4.6 Perception on Knowledge Management initiatives

This section is to gather information on the respondents' perception on the Knowledge Management initiatives that should be undertaken by the organization.

4.4.6.1 Knowledge system

It is about time that The National Library of Malaysia should come up with a system whereby persons with specific knowledge and expertise can be located easily. This is 'agreed' and 'strongly agreed' by 135 (93.1%) respondents as seen in Table 4.19 below.

Table 4.19
Response to having a Knowledge System
(n = 145)

Knowledge system	Frequency	Percent	Valid Percent	Cumulative Percent
Disagree	1	0.7	0.7	0.7
Neutral	9	6.2	6.2	6.9
Agree	83	57.2	57.2	64.1
Strongly Agree	52	35.9	35.9	100.0
Total	**145**	**100.0**	**100.0**	

4.4.6.2 Documenting best practices

Figure 4.12 demands the organization to document the best practices and expertise it requires because when there is a sharing atmosphere in an organization it creates pockets of best practices (Kermally, 2001). Out of 145 respondents, 135 (93.1%) either 'agreed' or 'strongly agreed' that the organization should document the best practices and expertise it requires to successfully conduct its services.

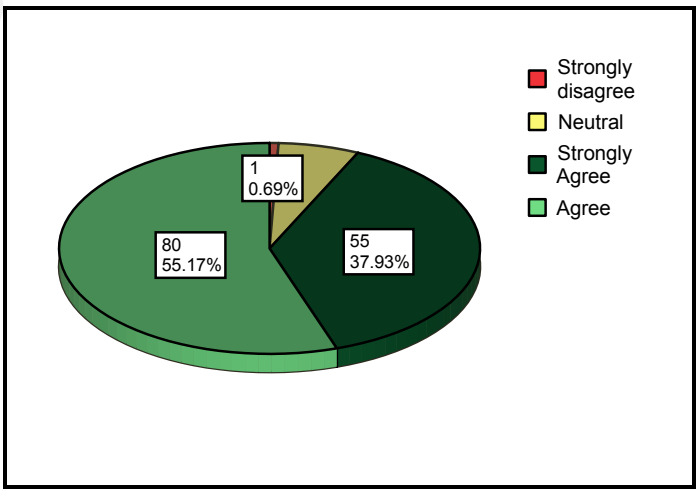


Figure 4.12: Response to documenting best practices

4.4.6.3 Knowledge Management Policy

Table 4.20 stated that 136 (93.8%) respondents 'agreed' and 'strongly agreed' that The National Library should define and document the organization's policy for knowledge management making it known to all staff or personnel. All respondents representing the managerial level (the Directors, Deputy Directors and Assistant Directors) were among those who 'strongly agreed' to the statement giving 100% score when calculated within the job title. This indicates that the organization will be defining the organization's Knowledge Management Policy in the near future as suggested by the number of the respondents who 'agreed' with the statement.

Table 4.20
Defining National Library KM Policy
(n = 145)

Job Title	Count within job title	PNM should define KM policy				Total
		Strongly disagree	Neutral	Agree	Strongly Agree	
Director	Count	0	0	2	3	5
	% within Job Title	.0%	.0%	40.0%	60.0%	100%
Deputy Director	Count	0	0	1	3	4
	% within Job Title	.0%	.0%	25.0%	75.0%	100%
Assistant Director	Count	0	0	19	22	41
	% within Job Title	.0%	.0%	46.3%	53.7%	100%
Assistant Library Officer	Count	1	0	9	14	24
	% within Job Title	4.2%	.0%	37.5%	58.3%	100%
Library Assistant	Count	0	7	29	15	51
	% within Job Title	.0%	13.7%	56.9%	29.4%	100%
Others	Count	0	1	16	3	20
	% within Job Title	.0%	5.0%	80.0%	15.0%	100%
Total	**Count**	**1**	**8**	**76**	**60**	**145**
	% within Job Title	**.7%**	**5.5%**	**52.4%**	**41.4%**	**100%**

4.5 Summary

This chapter comprehensively described the findings of the survey that was conducted from February 2nd to February 21st, 2005 at the National Library of Malaysia. The main aim of the survey as stated was to assess the organizational working culture in implementing Knowledge Management in the organization. Out of 466 staff of the organization, 145 of them participated to the survey conducted giving a total amount of 31% response.

KM or 'Knowledge Management' is already a well known phrase to the staff of the organization when 125 (86.2%) of the respondents indicated that they have heard about it either through reading (52.4%), training (57.9%) or even discuss it with their fellow friends (43.4%). The organization has also communicated the importance of knowledge to its staff and this is agreed by 91.7% of the respondents.

Knowledge sharing climate occurs in the organization when respondents in the organization can accepts new ideas 118 (81.4%), works as team 117 (80.7%), help each other 129(90%) and even records their experiences for the benefits of others 104 (72%).

Internet followed by E-mail, OPAC and Intranet was seen as the most utilized system to obtain and transfer knowledge in the organization. These systems were updated regularly as indicated by the respondents. Trainings on the use of IT were also given regularly to the staff that could ease the transferring and acquiring of knowledge.

Result of the survey also indicated that the organization should come up with the Knowledge Management System as indicated by 135 (93.1%) respondents, document its best practices 135 (93.1%) and defined the organization's policy for knowledge management to assist its staff to successfully conduct their services.

This result will further be discussed in the next chapter, which will also include the summary of the findings, its implication and recommendations. Suggestion on future research will also be presented as to draw more useful findings for the purpose of implementing knowledge management in organization similar to National Library of Malaysia.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

A synthesis of results after the evaluation procedures described in the Data Analysis Chapter is presented in this chapter. It begins with a summary of the results from the descriptive analysis of the surveyed data, and then proceeds with a discussion of the results from the evaluation of the explorative study on assessing the organizational working culture of the National Library of Malaysia as to determine whether it would supplement or hinder the implementation of knowledge management. As part of the aim of the study, a proposed conceptual framework will be laid out in this chapter before it ends off with the recommendation for future research and the conclusion of the whole study.

5.2 Summary of Research Findings

This section summarizes the findings on the understanding and awareness of the staff in the organization on the concept of knowledge management, details out the findings on the organizational working culture, describe the existence or non-existence of the knowledge sharing climate in the organization, notes down the system or technology in used and the employees' perceptions on knowledge management initiatives of the organization. Through the statistical analysis in Chapter 4, this study identifies the followings as the most significant findings:

a) (KM) or Knowledge Management is a well-known phrase to the employees of the organization that acquire it through various mediums.

b) The importance of knowledge has definitely being communicated to the employees in the organization.

c) Knowledge Management Programs were practiced in some of the divisions but not as a holistic approach. Programs like TQM (Total Quality Management), KMK (Kumpulan Meningkat Mutu Kerja) or QCC (Quality Control Circle), ISO 9000 and On Job Training and Practices were listed as the examples of Knowledge Management Program in certain divisions.

d) There were evidence of the act of collecting and sharing of information about the best practices in organization.

e) Workers were free to access to information on their organization if they were to approach the appropriate individuals or departments.

f) A knowledge-friendly working culture certainly exist in the organization based on the following criteria:

- The ability to share knowledge or information in various divisions
- The existence of a good communication system in the organization
- The organization possesses clear and specific objectives
- There is a shared written mission statement of the organization
- The employees are proud of the organization
- The employees have confidence in their superior and the management.

g) Knowledge sharing climate do exist in the organization based on the fact that the workers were encouraged to:

- suggest new things or ideas
- help each other as and when necessary
- work as team in the organization
- record experiences for the benefit of others

h) The Internet was seen as the most used technology in the organization followed by E-Mail, OPAC (Online Public Access Catalog) and Intranet.

i) IT trainings were also scheduled and given regularly to the staff or employees.

j) To successfully conduct its services, the organization was anticipated to:

- come up with a system whereby persons with specific knowledge and expertise can be located easily,
- document the best practices and expertise it acquire,
- define and document the organization's policy for knowledge management and thus acknowledge it to all staff or personnel.

5.3 Discussion

To further discuss the findings that were summarized above, it is therefore important to highlight the research questions formulated in Chapter 1, which is closely related to the aim of the study.

5.3.1 Research question 1: "What is the level of understanding of knowledge management among the staff of National Library of Malaysia?"

Analysis of data in Chapter 4 showed that 'KM' or 'Knowledge Management' is already a well-known phrase to most of the staff of the organization. About 86.2% of the respondents indicated that they have heard about it either through reading (52.4%), trainings (57.9%) or even discuss (43.4%) it with their fellow colleagues. Only 1 (0.7%) respondent mentioned that he/she has had formal education on Knowledge Management while attending the Degree or Master education in the university.

The remaining 13.8% respondents who do not know about 'Knowledge Management' are those categorized as the supporting staff where 12 (8.4%) were from grade S17 – S22 (Library Assistants) and 5 (3.5%) from the clerical staff. Reasons for not knowing about KM is probably due to the fact that training on KM at that time was only given to the professional staffs, and as mentioned earlier KM was placed as one of the topic in the Evaluation Competency Level Examination (those sitting for the PTK3 examination) who were moving from grade S44 to a higher post (grade S48 and above). Observation through the National Library Official Home Page accessed at *www.pnm.my* confirmed that Knowledge Management is one of the subject listed for training in the year 2005. The targeted groups for training on KM in the year 2005 are the professionals and Semi-Professionals. Other supporting staff probably will have their training on KM when the organization completed the training scheduled for those groups already targeted for the year 2005.

Although the data gathered showed that there were a few respondents that were still unfamiliar with the concept of 'Knowledge Management', the importance of knowledge has definitely been communicated to the staff in the organization as indicated by 133 (91.7%) respondents in Table 4.6. This is further justified by the fact that there were already, Knowledge Management Programs, which were practiced in some of the divisions, which includes programs like TQM (Total Quality Management), KMK or QCC (Quality Control Circle), ISO 9000 and On Job Trainings and Practices, which were listed by some of the respondents. Looking back at the assumption made in Chapter 1, it is true that these programs were not implemented on a holistic approach but rather practiced as a group task or project in certain divisions or units.

5.3.2 Research question 2: "Will the working environment support the implementation of knowledge management?"

Effective knowledge management requires a 'knowledge sharing' culture to be successful. Organizational culture is a set of values, beliefs, assumptions and attitudes that are deeply held by the people in an organization. They influence the decisions people make and the ways in which they behave. In organizations that recognize only individual achievement, people are rewarded for their personal knowledge and have no incentive to share it. In a knowledge sharing culture, people not only can be rewarded for individual achievements, but are also recognized and rewarded for their knowledge sharing and contributions to team efforts. National Electronic Library for Health, a specialist library in knowledge

management at their homepage available at *www.nelh.nhs.uk* listed some of the key characteristics of a knowledge sharing culture

- top leadership sees knowledge as a strategic asset and provides incentives and support for knowledge management processes;
- the organization focuses on the development and exploitation of its knowledge assets;
- tools and processes for managing knowledge are clearly defined;
- knowledge creation, sharing and use are a natural and recognized part of the organization's processes, not separate from normal work processes;
- groups within the organization cooperate instead of compete with each other;
- knowledge is made accessible to everyone who can contribute to it or use it;
- rewards and performance evaluations specifically recognize contributions to, and use of, the organization's knowledge base; communication channels and a common technology infrastructure that enables and enhance knowledge management.

Although there is no prescription for an ideal culture that can fit all organizations, but there are certain values that must be honored in a culture if its members are going to feel free and motivated to share what they know and to collaborate around their shared knowledge (Figallo and Rhine, 2002). The above listed

characteristics were than compared to findings of the study and therefore noted below:

- ***Top leadership support for knowledge management***

The management of the National Library of Malaysia certainly accepted knowledge as a strategic asset. This is even stipulated in the National Library organizational philosophy:

"*To develop culturally advanced individuals with a love for knowledge acquired through lifetime reading in order to nurture the minds of Malaysians towards excellent; thereby bringing about innovations that can enhance the tradition of knowledge in the country."*

To rationalize further, Table 4.20 in Chapter 4 showed that all respondents representing the managerial level (the Directors, Deputy Directors and Assistant Directors) were among those who 'strongly agreed' that National Library should define and document the organization's policy for knowledge management making it known to all staff or personnel. Given the support and blessings from the managerial level, if implemented, the knowledge management programs will certainly produce fruitful results.

- ***Accessible knowledge in the organization***

Table 4.8 shows that 129 (89.0%) of the respondents said that they shared knowledge or information on what is going on with each other in their respective divisions. At least two Activities/Divisions have all the respondents 'agreeing' to the statements. They were the Management Service and Human Resources Division and the Knowledge and Information Infrastructure Activities. The good practice was also performed by other divisions namely the General Services Division that is 'agreed' by 94.7% of its respondents and National Collection Development and Documentation Center with a total score of 92.3% agreement.

- ***Use of communication channels***

Communication channels are the medium through which organisation members interact and share knowledge among them. Different channels of communication available in the organisation include those conventional ones as well as those that are technology-enabled. The appropriateness and effectiveness of a channel to convey a message are related to its media richness. Though types of communication channels is not being impose in the survey questionnaire, it is however noted that the organization has a good communication system, which is either 'agree' or 'strongly agree' by 113 (78%) respondents. Observation however revealed that some of the common communication channels in the

organization include face-to-face conversation (inclusive of meetings, talk, and gathering), written-documents (such as memos, procedures and manuals), telephone, electronic mail, bulletin board, electronic and discussion forum.

- ***A common technology infrastructure***

Through observation it is found that the organization is all hooked up through a local area network (LAN). It is also functioning on the Oracle environment that facilitates the processes of managing knowledge and enhances the ability of the staff to communicate with one another. As far as technology is concerned the organization will not face any difficulties because they have the required technology to manage the organizational knowledge. Interview with the IT personnel confirmed that they were promoting the use of Intranet in the organization to further enhance the capability of communication and networking between staffs. They have also presented and published the *Information and Communication Technology Strategic Plan (ISP)* for the organization which encompasses of the strategic plan for ICT development and 'Knowledge Management' was proposed as one of the application strategy.

- ***Group corporation***

Teams or group work accomplishes most important work in organizations. Strong relationship usually develop in project teams or groups assigned

with an organizational task. These relationships are easy to over look, yet they are part of the crucial component of knowledge sharing in the organization. While working in teams, a staff has the opportunity to learn precisely how the knowledge of colleagues can help solve a problem. Through observation and interview it is found that most of the processes and work in the organization require inputs from more than one individual and in order to perform to the best of their ability, these individuals need to work as a team or group. This statement is 'agreed' or 'strongly agreed' by 117 (80.7%) respondents as shown in Figure 4.9.

To further justify that there is a knowledge-friendly culture in the organization that can be consider as the critical success factor for future Knowledge Management initiatives in the organization, the following findings are noted as well:

- The organization has a clear and specific objective, which is acknowledged by 113 (78%) of the respondents as shown in Figure 4.8.
- The existence of a shared written mission statement which were 'agreed' by 129 (89%) respondents and out of that 122 (84%) respondents further 'agreed' that most employees know and are aware of their organization's mission statement. The communicated mission statement helps create the organization knowledge friendly cultures because it could guide the action carried out by the staffs or employees.

- There is a sense of loyalty and belonging to the organization because most of the surveyed staffs (131 respondents - 89.5%) are proud to be associated with the organization as featured in Table 4.11. To inflate more they also have the confidence in their superior and the management as dictated by 124 (85.5%) respondents in Table 4.12

Organizational culture is seen as particularly important in knowledge management because it gives the people a basis for stability, control and direction and helps them to adapt and integrate other variables and technology with the operating environmental factors. With the findings listed above there is no doubt that the working environment will support the implementation of knowledge management in the organization.

5.3.3 Research question 3*: "Does knowledge sharing practices occurs in the organization?"*

Knowledge sharing emphasizes the concept of knowledge-in-motion: effective knowledge management requires a constant flow of knowledge, rather than a stock of it. Flows are what facilitate the connections between seekers of specific knowledge and the providers of needed knowledge (Holtshouse, 1998). Knowledge flows is the way knowledge travels and grows within an organization. It is more about the human elements than the technology that supports it. Similarly, knowledge flow also requires a working environment that nurtures and accelerates the sharing of knowledge.

To answer to the research question as to whether knowledge sharing occurs in the organization, therefore there is a need to identify elements of knowledge sharing and arrange them in the light of culture. Knowledge sharing is an important mechanism that will turn individual knowledge into group organizational knowledge. Three aspects of knowledge sharing can be distinguished. Firstly, knowledge sharing is a process, and therefore involves a sequence of events, actions and activities, that evolve in time. Secondly, knowledge sharing asks for at least two parties or roles, played by individuals or groups: the role of bringing (offering, showing, teaching etc.) and the role of getting (acquiring, learning, etc.) knowledge. Thirdly, knowledge sharing is typified by the characteristics of knowledge that is shared (Hendriks, 2004) and the findings below are being noted:

1. There is an 'open market' for ideas in the organization when more than half of the surveyed respondents (118 - 81.4%) stated that they can suggest new things or ideas while working. This is referred to the act of 'offering of ideas' and is a suitable atmosphere for knowledge innovation and sharing in the organization. To further justify it a total of 108 (74.5%) 'agreed' and 'strongly agreed' that the people in the organization can even accept new ideas suggested or proposed to them ('acquiring' and 'learning' – Hendriks, 2004)).
2. People in the organization normally give a helping hand to their colleagues. Helping hand is also and 'offering' which could speed up productivity and provide learning by doing situation. As depicted in

Chapter 4, a total of 129 (90%) respondents confessed in the survey that they helped each other as and when necessary in their departments. At least four Activities/ Divisions attain total agreement (100%) from all the respondents representing them:

- Management Services and Human Resource Activities
- Human Resource Development Division
- Information Technology Division
- Knowledge and Information Infrastructure Activities

3. Knowledge becomes manageable, shareable, and reusable only if it is recorded and made available, a total of 72% of the respondents 'agreed' that they do record their experience (action or activity that evolve in time – Hendriks, 2004) for the benefits of others as shown in Figure 4.10. Data analysis in Chapter 4 even showed that the highest score within the job title who recorded their experience for the benefits of others were as follows:

    - Library Assistance - 41 (80.4%)
    - Assistant Library Officers - 19 (79.1%)
    - Assistant Directors – 30 (73.2%)
    - Others – 12 (60%)

Most probably there are other knowledge sharing activities that existed in the organization that the survey failed to capture but with all the given data, knowledge sharing climate certainly exist in the organization in view of the fact

that the workers were encourage and able to perform the good-practices mentioned above.

5.3.4 Research question 4: "What are the systems used in National Library of Malaysia to capture the knowledge created?"

Information Technology (IT) can support the process for knowledge creation, sharing, application and storage (Alavi and Leidner 2001). It can also enhance the interaction of individual, group, organizational, and inter-organizational knowledge (Nonaka and Takeuchi, 1995). Information technology availability and use varies even within countries and between organizations. Funding play an important role in the use of IT in an organization; meaning that if the organization has a big fund for IT applications therefore they will acquire the required amount of computers and software applications for use, with required access time to the Internet and other IT services.

Knowledge Management processes can be supported by many technologies. However, these technologies require a basic IT infrastructure, such as local area networking and Internet connectivity, to function optimally. There is also a need for basic hardware and software. Through observation it is found that the organization is all hooked up through a local area network (LAN). It is also functioning on the Oracle environment which has the capability to handle large amount of data and can be configured to operate in a multitude of platforms as well as operating system. Both technologies that exist in the organization could

help to facilitate the processes of managing knowledge within the organization and enhance the ability of the staffs to communicate with one another.

The Internet was marked as the most used system in the organization for knowledge sharing purposes. Out of 145 respondents surveyed, 143 (98.6%) stated that they used the Internet to retrieve and transfer information. The second most preferred database in the organization is the OPAC (Online Public Access Catalog) where 119 (82.1%) respondents used it as a means of retrieving information probably while satisfying user request for information. E-mail which is accepted as one of KM enablers is also being used frequently by 71 (48.9%) respondents as a means of transferring information. However there is a need to promote the use of e-mail in the organization since the usage is rather low compared to the usage of other IT facilities. Other databases that were found to be present in the organization include the Intranet, Reading Promotion, Mylib Web Portal, Services Database, and E –Library User Education, Corporate Information and I – Komuniti Database. Other facilities were listed too but were less popular among the staffs which include; National Digital Library System or PERDANA, Malaysian Technical Cooperation Library Programme (MTCP), Online Bibliography/ Directory, Statistics databases, Virtual Exhibition, Union Catalog and Services to Publishers.

IT trainings were also given frequently to the staff of the organization to familiarize and promote the usage of the facilities provided. Table 4.18 in Chapter 4 shows that 132 (91.0%) of the respondents 'agreed' that the

organization regularly sends employees for IT training to enhance the use of the knowledge tools. Browsing through the list of Training Programme, via the National Library homepage, there are about 9 courses/ workshops which deals with IT in the year 2005, scheduled for the staffs which includes:

- Workshop on MS-PowerPoint XP – (8 - 10 March, 2005)
- Workshop on Metadata – (15 - 17 March, 2005)
- Workshop on MS-Word XP (4 - 6 April, 2005)
- Workshop on Web Design & Development (12 - 14 April, 2005)
- Workshop on Adobe Acrobat 6 Professional and Acrobat Reader (18 - 20 April, 2005)
- Workshop on digitization (3 – 6 May, 2005)
- Workshop on WINISIS/ Template CUTe (13 - 16 Sept., 2005)
- Course on Digital Library Planning (28 Nov. – 1 Dec., 2005)
- Workshop on Multimedia Digital Animation: Macromedia Flash MX (6 - 8 Dec., 2005)

The above listed of courses and workshops are definitely related to the type of systems used in National Library of Malaysia to capture the knowledge created.

5.4 Recommendations

Analysis of the survey findings above indicated that the National Library of Malaysia has the required working ecology, which could gear towards the successful implementation of knowledge management in the organization. To achieve the above intention the organization was anticipated to:

- come up with a system whereby persons with specific knowledge and expertise can be located easily,
- document the best practices and expertise it requires to successfully conduct its services, and
- define and document the organization's policy for knowledge management thus making it known to all staffs or personnel.

To implement the above recommendations made by the respondents, therefore there is a need to propose some appropriate models of managing knowledge in the organization.

5.4.1 A conceptual framework of managing knowledge in the National Library of Malaysia

A rudimentary model to implement knowledge management for National Library of Malaysia will be proposed in this section, based on the literature review on current practices of some organizations that have been managing their intellectual capital systematically. The proposed model will basically glean the insight of some published models and theory as foundation for formulation. From the numerous knowledge management models and frameworks that have been published and accessible that were noted on Chapter 2, only a few are selected as a guide to shape the proposed model of the studied organization.

5.4.2 The Proposed conceptual framework

Setting up frameworks for knowledge transfer (sharing) is the most important task in developing successful knowledge management tools (Dixon 2000). Organization needs to defined frameworks in which members in the organization can learn from each other. In order to be successful, these frameworks have to be supported by consistent and up-to-date knowledge. In order to assure the knowledge up-to-datedness, it is proposed that knowledge update activities should be properly planned and coordinated in a collaborative way. In this way, a knowledge management system becomes a way of enabling organizational learning for continuous process improvement based on continuous collaborative knowledge filtering and refining.

5.4.2.1 'Knowledge Bank'

The original concept is to have a processed database where knowledge resides in a centralized database rather than extracted through interactions with peers (Skryme, 2001). Introduction of this process has helped overcome cultural barriers within an organization, which hinders sharing of knowledge. To automate the process of sharing and make information available to all, 'Knowledge Bank' is therefore proposed.

The proposed Knowledge Bank should acts as an organizational repository or warehouse which acts as both the "referatory" and "repository", capable of archiving the increasing volume of digital content created in the organization for long term use, dissemination and

preservation. The Knowledge Bank will also include the full array of digital assets and information services available to or being created by the staffs of the organization. Using this broad definition, many components of the Knowledge Bank already exist in the organization – for example, the on-line Library catalog, the created and subscribed on-line services, digital content databases and others.

5.4.3 Proposed Framework for Knowledge Bank

The 'PNM (Perpustakaan Negara Malaysia) Knowledge Bank' is the conceptual framework proposed to support knowledge management in the National Library of Malaysia. It has to be considered as the standard way of working and thus ensuring continuous improvements of the content and quality in the work processes.

The framework is designed based on the review of the literature in knowledge management approaches. The goal of the proposed framework is to defined knowledge management roles of various knowledge workers in the organizations. It also defines routes to knowledge generation, qualifications and sharing among various divisions and posts.

5.4.3.1 'PNM Knowledge Bank'

PNM Knowledge Bank is about capturing and organizing systematically the wealth of various resources of knowledge, which is readily accessible

to a wide audience internally and externally. This could be created between group and communities working on similar topics.

PNM Knowledge Bank will provide information services to support National Library of Malaysia's decision-makers, permitted users and relevant external agencies. It should also abide the following characteristics:

1. Capturing formal as well as informal knowledge
2. Integration into existing work environment
3. Managing knowledge evolution
4. Human issues in organization knowledge sharing
5. Maintaining expertise network
6. Framework for continuous collaborative organization learning

The Knowledge Bank has the obligation to provide information services to staff and public, which allow the access of all the information and knowledge from National Library of Malaysia data centre. There should be different level of accessing permission between staff and users. Privilege access will be given to organization's staff to drill down or to view details of the information from the centre.

The Knowledge Bank should be able to put knowledge on par with money and reinforce continuous learning. Knowledge can be shared effectively and ensure people inside and outside the organization that

need the knowledge required gets it on time. People can easily access from data centre at anytime and anyplace. The proposed PNM Knowledge Bank should provide the following services:

a) Community Information System
b) Conferences, Seminars, Papers, Proposals and synopsis of case studies
c) Yellow Pages and staff profiles
d) Library Info Kiosk (NLM Info Kiosk)
e) Discussion database
f) ISO 9000-2000 document
g) Presentation and training materials
h) Internal circulars
i) Work manual/procedures

5.4.4 The framework conceptual components

The framework adopts this central approach to knowledge update for the sake of maintaining the consistency and relevance of the knowledge-base organization. The relevant organization's knowledge would be maintained through collaborative and continuous refining of the knowledge- based on a define knowledge cycle. According to Zack (1988), the management of explicit knowledge utilizes four primary resources:

- Repositories of explicit knowledge

- Refineries for accumulating, refining, managing, and distributing that knowledge.
- Organization roles to execute and manage the refining process and
- Information technology to support those repositories and process.

However, the PNM Knowledge Bank may consist of several repositories, each with a structure appropriate to a particular type of knowledge or content. These repositories may be logically link to form a composite on 'Virtual repository'. The content of each providing context for interpreting contents of each others. For example, the best practices, directories, patron information, catalogues etc., might be stored separately but viewed through and contained in one Data warehouse.

With the present technologies in the organization such as the Internet and the Oracles back-end, there is a potential useful environment within which the organization can build a multimedia repository for rich, explicit knowledge. The knowledge repository will become the primary medium for knowledge exchange, providing a place for members of the organization to contribute their knowledge and views and depositing them in what ever format the technologies can support.

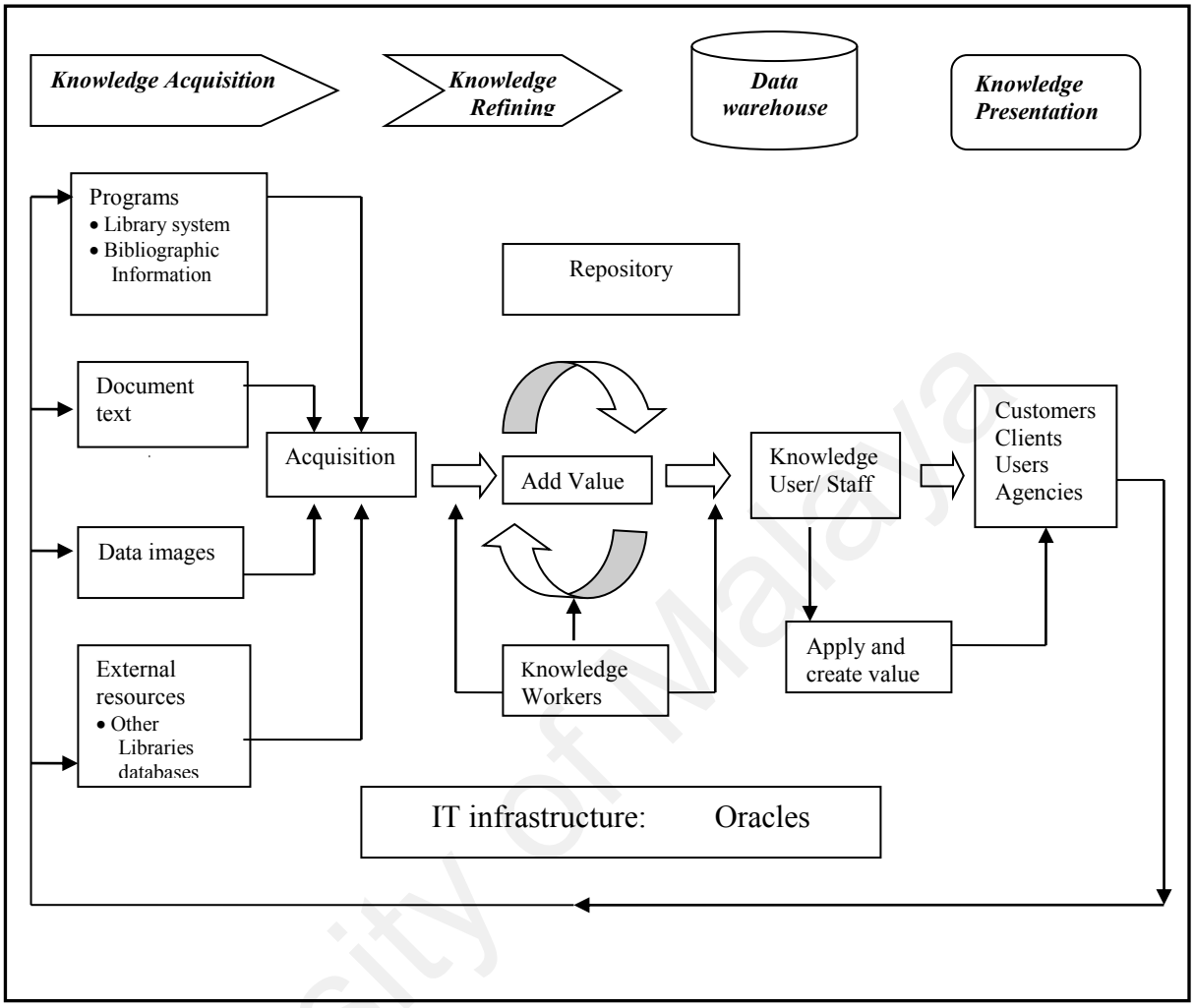


Figure 5.1: Conceptual framework of PNM Knowledge Bank

The propose PNM knowledge Bank as shown in Figure 5.1 will go through 4 main processes as noted below:

1. Knowledge Acquisition

Information and knowledge is either created within the organization or can be acquired from many different internal and external sources. Internal sources include the Library system and programs available,

Bibliographic information, Document Text and Data images. Knowledge can also be acquired from external source e.g. other libraries databases, other Ministries and departments etc.

2. Knowledge Refining (Adding Value)

Captured knowledge, before being added to the Data warehouse, is subjected to value adding process (refining) such as cleansing, labeling, indexing, sorting, abstracting, standardizing, integrating and re-categorizing.

3. Knowledge Storing and retrieval (Repository or Data warehouse)

To reflect the full range of explicit organizational knowledge, repositories should strive to record significant and meaningful concepts, categories and definitions (declarative knowledge), processes, action and sequences of the events (procedural knowledge), circumstances and intentions under which knowledge was developed and is to be applied (specific contextual knowledge) and the linkages among them. The Data warehouse should be indexed according to those concepts and categories (Taxonomy), providing access paths that are meaningful to the organization. It should accommodate changes to additions to that knowledge (e.g. by linking annotations) as subsequent authors and creators adapt the knowledge use in additional contexts.

4. Knowledge Presentation or Knowledge Generation

The knowledge that is being refined and has value added to it can then be retrieve or queried to be use or analyze in reported form or other preferred formats.

The information technology infrastructure in the organization has an important role to play in the propose framework. It should provide a seamless 'pipeline' for the flow of explicit knowledge through the 5 stages of the refining process to enable:

- knowledge capturing,
- defining, storing, categorizing, indexing and linking digital objects corresponding to knowledge units,
- searching for ("pulling") and subscribing to ("pushing") relevant content,
- presenting content with sufficient flexibility to render it meaningful and applicable across multiple contexts of use.

The PNM Knowledge Bank will need to provide 'open' education and knowledge because it can be access by anyone, from anywhere and at any time. Users can immediately access all the data from various sources and allows for easily upload and share any kind of document/web content through the personalized interface that delivers vision of this web content and application. Knowledge bank can generate reports/statistics, be a knowledge resource and as analytical utilities.

It is hoped that the proposed PNM Knowledge Bank is able to act as a medium for knowledge capturing and dissemination in the organization. Working as a living memory through a defined 'knowing and forgetting' scenarios it should be able to serve as a knowledge source that facilitates delivery to the right person at the right time.

Future expectations of the PNM Knowledge Bank include improving decision making of the top management in the organization. Besides that it should enhance responsiveness to the customers need or the library users. It is hoped that after implementing PNM Knowledge Bank, there is an improvement in the efficiency of the staff and the operations, which can lead to innovation of services, which could best serve the public.

5.5 Future Research

This study has focused its attention on the working environment or organizational culture without taking other influential factors like organizational structural design, financial aspects, and organizational members' effectiveness into account. As such, future researchers may include these factors in investigating the degree of knowledge management implementation success in libraries. The fact that only the working environment or organizational culture is studied provides an avenue for new research to be done in other type of libraries that may already have KM in place.

Future researchers should also explore the factors that are most likely to hinder organizations from achieving the objectives of managing knowledge in their

organizations. The same organization can also be studied after it has implemented the knowledge management program to highlight the constrains and benefits of embarking the process of managing knowledge in the organization and the findings will be of beneficial value to other libraries that were likely to follow the footstep.

5.6 Conclusion

The literature reviewed in Chapter 2 of this study has revealed that there is no doubt about the important role of the knowledge management initiative in supporting the work of knowledge intensive organization like the libraries. However, there are many knowledge management issues that have to be examined carefully before embarking on any knowledge management approaches. Addressing knowledge management determinants such as clear organizational strategy and the right understanding of knowledge management potentials and challenges could be described as the basic formula for success. The survey conducted at the National Library of Malaysia revealed that the organization has all the required knowledge management tools and enablers in place, therefore a conceptual framework was proposed in this chapter which is hope to assist the implementation of knowledge management in the organization. However, before the organizations embarks on the program it is wise to note that enhancing the organizational working culture would definitely lead to a more successful knowledge management practices in the organization. The organization should realize that the library systems and the building acquired are only the technology and infrastructure that could help in the process of managing knowledge in the organization; the biggest component of the intangible asset is still floating around in the organization, residing in

the head of the staffs and librarians that necessitate the organization to capture, codify and manage it for future use as to remain sustainable in this millennium.

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