DETERMINING FACTORS OF KNOWLEDGE MANAGEMENT IMPLEMENTATION IN KNOWLEDGE – BASED ORGANIZATIONS

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Determining Factors of Knowledge Management Implementation in Knowledge-Based Organizations

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ABSTRACT

Knowledge management (KM) is regarded as a potential management tool in running modern organizations. It contributes significant roles in creating long term internal strength and supporting external competitive advantage. The study seeks to gauge level of KM implementation in Multimedia Super Corridor (MSC) status organizations. MSC certified firms are acknowledged as knowledge-based organizations. This study also examines relationship between demography of respondents with KM influential factors in those organizations. Results of 121 data sets have been collected from 4 MSC-status organizations. Mean score and One Way ANOVA are applied to identify the level of KM practices. This also identifies the relation between the demography and KM factors. It is reported that KM practices in MSC status organizations are at medium level. There are significant differences in KM practices with respect to age of respondents and job designation. It is suggested that sufficient attention should be given to culture, information technology, organization structure and people to achieve success in KM implementation.

Keywords
Multimedia Super Corridor, Knowledge Intensive Firms, Knowledge Management, Malaysia

1.0 INTRODUCTION

Knowledge management's primary goal is to facilitate opportunistic application of fragmented knowledge through integration system (Tasmin, 2008). KM can be defined as a process of transforming information and intellectual assets into enduring value. It connects people with the knowledge that they need to take action. By applying knowledge management into organization, it can integrate, identify, manage and share all of the department's information assets. According to Darroch (2005), knowledge management has emerged as a new discipline in an organization, and it plays an essential supporting function by providing a coordinating mechanism to enhance conversion of resources into capabilities.

2.0 BACKGROUND

Multimedia Super Corridor (MSC) is the Malaysian government initiative. It was designed to leapfrog Malaysia into the information and knowledge age. The MSC was initiated as a part of Malaysia's long term plan to become a knowledge-based and a fully developed country by the year 2020. This corridor houses core MSC initiatives which include high-technology projects such as e-Government, Telemedicine, Smart School, Multipurpose Smart Card System, Research and Development Cluster, e-Business and Technopreneur Development.

The idea of the importance of knowledge management in Malaysia was first expressed by the former Prime Minister, Tun Dr. Mahathir Mohamad in 1991. He highlighted that there is a need to transform economy of Malaysia towards a knowledge-based economy in order to achieve vision 2020. The common knowledge management approaches in Malaysia was implemented through knowledge management applications in Multimedia

Companies such as the one applied at Microsoft Malaysia (KMtalk .net).

3.0 PROBLEM STATEMENT

According to Gan (2006), there is lacking of knowledge management surveys from Malaysian perspectives. Most Malaysians do not understand well about knowledge management and it functions. Furthermore, most companies do not investigate the implementation of knowledge management The knowledge transfer and knowledge sharing in an organization may be limited if they do not apply appropriate knowledge management approaches.

A survey reported that many top executives of firms view knowledge management resources as critical for a firm's success (Amlus Ibrahim *et al.* 2006). This implies that many firms are lacking knowledge management strategy in their firms. The success of firms is strongly related with managing knowledge.

Amlus Ibrahim *et al.* (2006) stated that there is no single department or function alone that can deliver corporate objectives. The shifting winds of change in today's business environment, together with the pressure of the emergence of global knowledge-based economy, have made organizations realize that the knowledge is their key asset (Chong *et al.*, 2006). Without knowledge-based approach, company may face several problems and tougher competition in global market.

Traditional disciplinary knowledge is limited in its ability to support challenging decisions that lie ahead. This causes organizations to have urgent measure for seeking fundamental insight to help them immense potential of their knowledge asset for capability to excel at the leading edge of innovation (Syed Z. Shariq, 1997).

4.0 RESEARCH QUESTIONS

- What is the level of knowledge management practices among MSC status organizations?
- What is the relationship between demographic elements and knowledge management factors that can influence the implementation of knowledge management practices in MSC status organizations?

5.0 OBJECTIVES

- To measure the level of knowledge management practices in MSC status organizations.
- To identify the relationship between demographic elements and knowledge management factors that can influence the implementation of knowledge management practices in those organizations.

6.0 RESEARCH SIGNIFICANCE

The purpose of this study is to provide a clear understanding of knowledge management research. Besides that, this study is to find out the current levels of knowledge management practices among Multimedia Super Corridor companies in Malaysia. It allows better understanding of knowledge management practices in these companies. Apart from that, it also allows organizations to understand all the process which is needed in knowledge management to build appropriate knowledge management strategies for competitive advantage.

7.0 RESEARCH SCOPE

This research is conducted in Pahang, more specifically in the area of Kuantan. Research are conducted at MSC status organizations in Kuantan. The samples of this research are derived from organizations which were registered under the category of MSC-certified organizations which are certified by MSC Malaysia, Cyberjaya.

8.0 LITERATURE REVIEW

Subsequent sections highlight the basis of this study such as background of KM, definitions, and theories.

8.1 Definitions of Knowledge

At the fundamental level, knowledge is defined as information possessed by individuals within the organization. We change the information into knowledge form in an individual, and then distribute and sharing the knowledge within the organization. Systems designed to support knowledge may not appear to be radically different from other forms of information systems, but will be aimed towards enabling users to assign meaning to information and to capture their knowledge (Randeree, 2006).

According to Greiner (2007), knowledge emerges from the processing of the perceived information and contextualization of a person. This shows that knowledge can only exist in the context of person and his beliefs and experience. "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, 1998). Thus, knowledge can also be defined as the ability of persons to evaluate information and act efficiently (Sveiby, 1998). Knowledge can provide added value if it results in actions and decisions (O'Dell and Grayson, 1998).

8.2 Types of Knowledge

There are two main types of knowledge, namely tacit knowledge and explicit knowledge. Explicit knowledge is formalized and written knowledge, expressed in the form of data, scientific formula, specifications, manuals, or textbooks. It can be articulated, explained, and may sometimes help individual articulate what they know. While tacit knowledge is action-based and unformulated, highly personal and hard to transfer.

8.3 Definitions of Knowledge Management

Knowledge management was defined as an organizational capability that allows people in organization working as a individual, or in teams, project, or other such communities of interest, to create, capture, share, and leverage their collective knowledge to improve performance (Lakshman, 2007). By appling knowledge management in organizations, it can increased globalization of competition, speed of information and knowledge aging, dynamics of both product and process innovations, and competition through buyer markets (Greiner *et al.*, 2007).

Malhotra (2005) argued that knowledge management is a function of the generation and dissemination of information, developing a shared understanding of the information, filtering shared understandings into degrees of potential value, and storing valuable knowledge within the confines of an accessible organizational mechanism. Knowledge management systems must connect people to enable them to think together and to take time to articulate and share information and insights they know are useful to others in their community (Josephine Lang C.Y. 2001).

Rosmaini Tasmin and Woods (2007) argued that, knowledge management as a socio-technology-based system that supports the collaboration and integration among interlocking organizational function to create more innovation and value-added products and services for the market. According Amlus Ibrahim *et al.* (2006), knowledge management is a more detailed and 'everyday management approach than intellectual capital management; it focuses on facilitating and managing knowledge-related activities.

9.0 KM IN MALAYSIA

Knowledge management only really began to take off in the late 1990s. Malaysian government through its "Knowledge Economy Master Plan" had inspired government agencies as well as local companies to adopt knowledge management. There are limited number of Malaysian organisations which have initiated knowledge management programs in Malaysia.

Government agencies are among the earliest organizations to initiated knowledge management approaches in Malaysia. Government Linked Companies (GLCs) are in advanced stage in term of knowledge management practices. Only few private companies have taken advanced approach in knowledge management initiatives.

According to some researchers, in order to launch knowledge management successfully, Malaysian companies need to develop strategic perspectives at viewing and sharing knowledge.

9.1 Multimedia Super Corridor

The Malaysian government set up the Multimedia Development Corporation in 1996 to oversee the development of a Multimedia "Super Corridor" (trade zone). The idea was to make Malaysia a major production and service sector for high tech and multimedia industries. By the year 2020, the MSC will be extended to the whole country, transforming Malaysia to a knowledge-based economy and society, as envisaged in Vision 2020.

The Government recognises local and international companies that undertake ICT activities in the MSC initiative by awarding them with a MSC Status. MSC-status companies enjoy a host of incentives and benefits from the Malaysian Government that is backed by the ten-point Bill of Guarantees. These MSC status companies are actually involved in software development, software design, internet-based solution and content development (MDC).

9.2 KM Practices in Malaysia

One of the earliest studies on knowledge management in Malaysia indicated that Malaysian organizations tend to be slow in uptaking of knowledge management and that levels of knowledge management are still in the infancy stage (Goh, 2006). The knowledge sharing among manufacturing firms was found that at a moderate level, electrical and electronics-based organizations revealed that there is no clear and identifiable knowledge management strategy in place (Goh, 2006).

There are several causes that influence the implementation of knowledge management practices in Malaysia. According to Goh (2005), the primary challenge faced by organizations in Malaysia is changing the employees' behavior and practices. Organizations in Malaysia tend to be highly

bureaucratic and have a centralized decision-making structure with lower levels of knowledge management applications and system in place (Ramanathan Narayanan *et al.*, 2003).

10.0 DETERMINING FACTORS

10.1 Culture

According Tasmin and Woods (2007), knowledge culture constitutes of the accumulation and combination of common expectation, tacit rules, shares experiences and social norms that shape our attitudes and behaviors. Successful organizations empower employees to want to share and contribute intellectual information, by rewarding them for such actions (Mathi, 2004).

10.2 Information Technology

According Chourides *et al.* (2003), Ruggles and Leug argued that knowledge building is dependent upon IT. In order to build knowledge sharing capabilities, the organization must develop a comprehensive infrastructure that facilitates the various types of knowledge and communication (Kim and Lee, 2004).

10.3 Organizational Structure

Gan (2006) stated that the structure of the organization impacts the ways in which organizations conduct their operations and in doing so, affects how knowledge is created and shared amongst employees. The hierarchical structure of an organization affects the people with whom individuals frequently interact, and to or from whom they are consequently likely to transfer knowledge (Wei *et al.*, 2006).

10.4 People

Goh (2006) articulated that people are the heart of creating organizational knowledge as it is people who create and shared knowledge. People are said to be true agents in business where all tangible and intangible assets are result of human action and depend ultimately on people for their continued existence (Syed Omar Sarifuddin and Rowland, 2004).

11.0 METHODOLOGY

According Chua (2006), the outcome of research is determined by method and the research design. The research design is determined by the objective of the research. In this research, a quantitative research methodology will be applied. Chua (2006) stated that not all research designs can be used in all the research, but a research can use several types of research design (Chua, 2006). There are two types of research, which are experimental and non-experimental. This research will apply non-experimental research design.

12.0 SAMPLING

Sampling is a process of choosing a number of subjects from a population to become research respondents (Chua, 2006). According Saunders *et al.* (2007), sampling technique provides a range of methods that enable research to reduce the amount of data to be collected by considering only data from a subgroup rather than all possible cases or elements. There are two types of sampling method which is probability sampling and non-probability sampling (Saunders *et al.*, 2007). In this research, the applied sampling method is non-probability sampling. Non-probability sampling provides a range of alternative techniques to select samples based on subjective judgement (Saunders *et al.*, 2007).

12.1 Sampling Method

The sampling method in this research is non-probability sampling. The technique will be choosing is purposive sampling. Purposive sampling is a sampling which is a group of respondents will be choose have same characteristic and enable answer research question and meet the objective.

13.0 RESEARCH INSTRUMENT

Research instrument is a tool that specially designed to collect data for the research. The method for data collection applied in this research is via survey, quantitative measurement approach.

13.1 Survey

The survey question is distributed randomly to the employees of MSC status companies in Kuantan. The survey is divided into two parts. The first part of survey is personal information of the respondents. The second part of the survey is the questionnaire of the critical KM implementation factors to be measured by a 5-point Likert scale format.

14.0 RELIABILITY TEST

Table1: Survey data reliability

Factors	Cronbach's Alpha (α)	No. of Items	No. of Respondent
Culture	0.779	10	121
Information Technology	0.857	7	121
Organizational Structure	0.834	6	121
People	0.852	13	121
Total	0.929	36	

15.0 RESPONSE RATE

180 sets of questionnaires have been distributed to employees and knowledge-based workers in Cosmopoint College, OPEN University, Universiti Malaysia Pahang, and IKIP College. A total of 121 questionnaires have been collected which is equivalent to 67.2%. As many as 59 sets of questionnaire cannot be collected because the researcher has distributed them during the semester break when most of the employees were on holiday.

16.0 DEMOGRAPHIC ANALYSES

The subsequent section reports the basic findings of the research in terms of demographics of respondents. It consists of respondents' age, gender, designation, number of years working in current firms, overall working experience, and familiarity with KM.

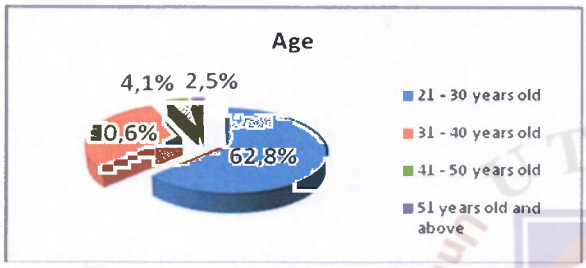

Figure 1: Respondent age distribution

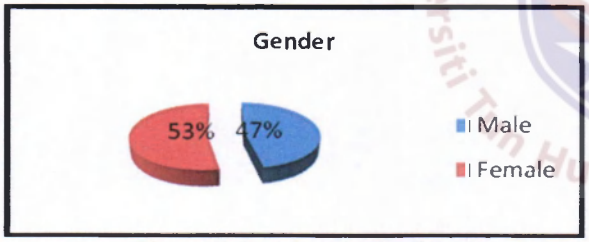

Figure 2: Gender distribution

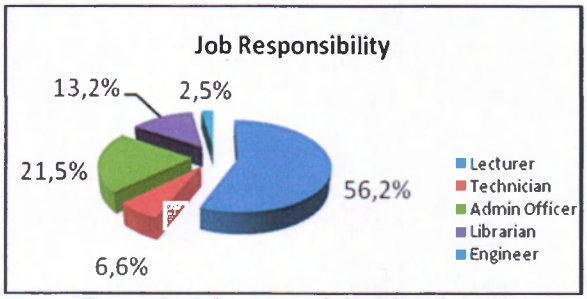

Figure 3: Job responsibility distribution

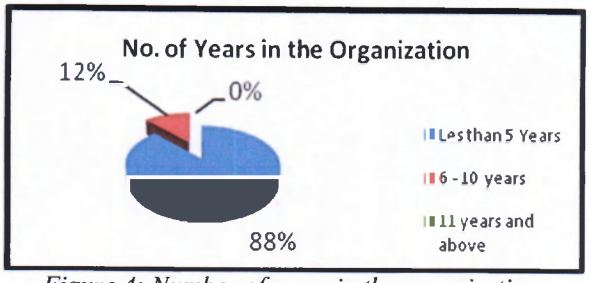

Figure 4: Number of years in the organization

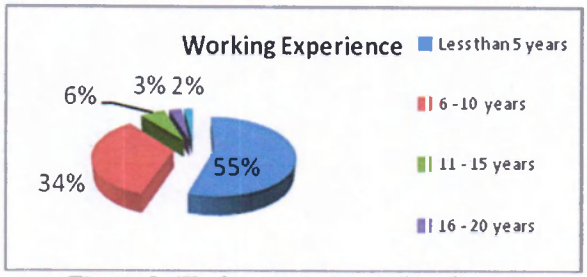

Figure 5: Working experience distribution

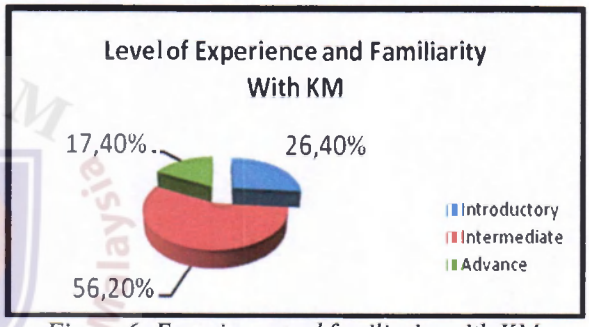

Figure 6: Experience and familiarity with KM

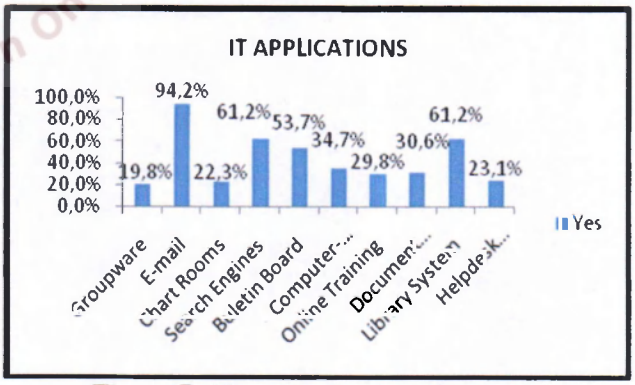

Figure 7: IT application distribution

17.0 MEAN AND STANDARD DEVIATION

Table 2: Extent level for mean range

Extent	Range
Low	1.0 – 2.3
Medium	2.4 – 3.7
High	3.8 – 5.0

Table 3: Actual level of each KM factor

Factors	Mean	Std Deviation	Extent
Culture	3.5033	0.47363	Medium
Informational Technology	3.6883	0.54242	Medium
Organization Structure	3.4411	0.57521	Medium
People	3.5149	0.48669	Medium
Overall	3.5381	0.42649	Medium

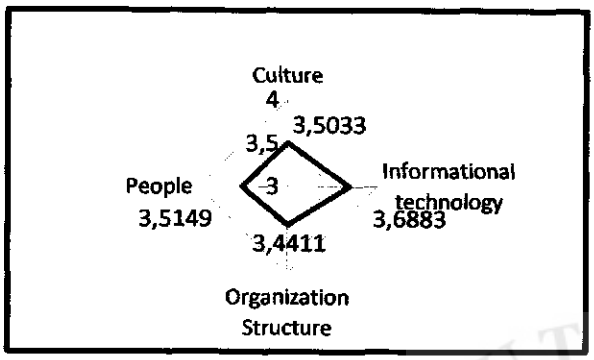

Figure 8: KM Radar Chart

18.0 ONE WAY ANOVA ANALYSIS

The organization demography included age of respondent, number of years in the organization of respondent, working experience of respondent, and job designation of respondent. The significant value in One Way ANOVA is 0.05 (5%). For any values more than 0.05, it means that the variables have no significant difference. On the other hand, if the value is less than 0.05, it means that the variables have significant differences between the dependent list and factor.

Table 4: Comparison of relationship between age and element in organization structure (There is significant difference)

Age	Numbers	Mean	Std. Deviation
21 - 30 years old	76	3.5263	0.52638
31 - 40 years old	37	3.4369	0.61281
41 - 50 years old	5	3.4333	0.67289
51 years old and above	3	2.5556	0.63099
Total	121	3.4711	0.57521

One Way ANOVA

	Sum of Squares	Df	Mean Square	F	f
Between Groups	2.797	3	0.932	2.955	0.035
Within Groups	36.908	117	0.315		
Total	39.704	120			

Table 5: Comparison of relationship between job designation and element in culture (There is significant difference)

Job Designation	Numbers	Mean	Std. Deviation
Lecturer	68	3.3941	0.41641
Librarian	16	3.4437	0.32653
Technician	8	3.6125	0.34821
Admin Officer	26	3.7462	0.62816
Engineer	3	3.9000	0.10000
Total	121	3.5033	0.47363

One Way ANOVA

	Sum of Squares	Df	Mean Square	F	f
Between Groups	2.968	4	0. 742	3.594	0.008
Within Groups	23.950	116	0. 206		
Total	23.950	120			

Table 6: Comparison of relationship between job responsibility and element in information technology (There is significant difference)

Job Designation	Numbers	Mean	Std. Deviation
Lecturer	68	3.6092	0.51751
Librarian	16	3.7857	0.42378
Technician	8	3.7500	0.23844
Admin Officer	26	3.7033	0.65143
Engineer	3	4.6667	0.29738
Total	121	3.6883	0.54242

One Way ANOVA

	Sum of Squares	df	Mean Square	F	f
Between Groups	3.485	4	0. 871	3.176	0.016
Within Groups	31.821	116	0. 274		
Total	35.306	120			

Table 7: Summary of 'f' values of one way ANOVA

	Age	No. of Years in the Organization	Working Experience	Job Designation
Culture	0.689 Not Significant	0.931 Not Significant	0.313 Not Significant	0.008 Significant
Information Technology	0.795 Not Significant	0.70 Not Significant	0.944 Not Significant	0.016 Significant
Organization Structure	0.035 Significant	0.975 Not Significant	0.061 Slightly Significant	0.075 Slightly Significant
People	0.679 Not Significant	0.353 Not Significant	0.231 Not Significant	0.154 Not Significant

19.0 DISCUSSION

Based on the findings, it shows that the level of knowledge management in MSC status organizations in Kuantan is at a medium range. According Chong *et al.* (2006), there are many organizations which have just started implementing knowledge management initiatives. However, they are not aware of the whole spectrum of knowledge management implementation.

Another reason that may lead to the knowledge management level of this study to be in the medium range is because of human behavior. Lee and Fariza Hanum (2008) stated that Malaysians do not seem to practice sharing of knowledge in their working environment. Malaysians tend to keep their knowledge to themselves rather than sharing it with their colleagues. Besides that, the reason knowledge management in Malaysia is not that successful is due to the fact that most of the Malaysians are quite self-centered, termed as *"Chinese-man"* culture. Most of the people do not teach their skills to others. It is believed that once they teach their specific skills to others, they will lose their specialty or advantage.

The second objective of this study is to find out the relationship between demographic elements and knowledge management factors that can influence the implementation of knowledge management practices in MSC status organizations in Kuantan. Table 5 shows that job designation of respondents is the most important demographic factor that can influence the implementation of knowledge management practices and subsequently followed by age of respondent.

Table 7 shows that job designation has significant relationship with culture and information technology. There is a significant difference between job designation of respondents and culture. Perhaps, respondents with different job designation has different thinking pattern regarding sharing of knowledge. For example, lecturer is in the position to teach or share their knowledge with student. Thus, lecturers have higher tendency of sharing culture which is embedded into their daily work.

20.0 CONCLUSION

As a conclusion, the current knowledge management level among MSC status organization in Kuantan is in the medium range. The most important factor ranked is information technology which is in accordance to the finding of Syed Omar and Rowland (2004). It also shows that there is relationship between some demographic elements and knowledge management factors which are represented by (1) the relationship between job designation with culture and information technology and (2) the relationship between age and organizational structure. Successful knowledge management practices in an organization depend on its wholesome integration of culture, structure, technology, and people. Although information technology plays a more significant role in knowledge sharing in an organization, the other three factors cannot be discounted. As such, information technology, culture, organizational structure and people should always be taken into critical considerations in KM implementations.

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