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**KNOWLEDGE MANAGEMENT ENABLERS AMONG IT
ORGANIZATION IN CYBERJAYA MALAYSIA**

EMILIA BINTI AB WAHAB

A dissertation submitted in partial fulfillment of the
requirements for the award of the degree of
Master of Science (Information Technology Management)

Advanced Informatics School
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MARCH 2014

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Name : EMILIA BINTI AB WAHAB

Date : March 2014

Specially dedicated to *My family Daddy, Aji, Alya for your patience*

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ABSTRACT

Knowledge Management (KM) is best carried out through the optimization of both technology and social systems especially in Information Technology (IT) organization that are knowledge driven. It is crucial for IT organization to recognize the key KM enablers (KME) that facilitate knowledge management initiatives to ensure the right focus and investment in terms of resources and time has been made. In Malaysia, even though IT organizations are interested in committing organizational resources for their KM activities, they still lack of understanding about KM. Therefore this research is conducted to investigate the key KME within the scope of IT organization in Cyberjaya as the ICT hub for Multimedia Super Corridor Malaysia from the perspective of Knowledge Creation Process (KCP) to provide reference for IT organization to formulate appropriate knowledge management initiatives for competitive advantage. Research model was developed based on the identified KME that includes culture, structure, T-shape skills and IT support while KCP based on Nonaka Knowledge Spiral model (SECI). Quantitative research approach was employed using survey method by distributing questionnaires among IT worker in Cyberjaya to measures the extent of KME and KCP practices. Data was analyzed using correlation analysis and multiple regression, and it was found that Learning, T-shape skills and IT support were the key KME that positively correlate to KCP. Therefore this research is suggesting that KM initiatives should be implement by focusing on these three enablers to achieve positive result

ABSTRAK

Pengurusan Pengetahuan (KM) yang terbaik adalah melalui penggunaan optimum teknologi dan sistem sosial terutamanya dalam organisasi Teknologi Maklumat (IT) yang di dorong oleh pengetahuan. Ia adalah penting untuk organisasi IT untuk mengiktiraf KM pemboleh utama (KME) yang memudahkan inisiatif pengurusan pengetahuan bagi memastikan fokus yang betul dan pelaburan dari segi sumber dan masa telah dibuat. Di Malaysia, walaupun IT organisasi berminat untuk memasukkan sumber organisasi untuk aktiviti KM mereka, mereka masih kekurangan kefahaman tentang KM. Oleh itu, kajian ini dijalankan untuk mengkaji KME utama dalam skop IT organisasi di Cyberjaya sebagai hab ICT bagi Multimedia Koridor Raya Malaysia dari perspektif Proses Penciptaan pengetahuan (KCP) sebagai rujukan bagi organisasi IT untuk merangka inisiatif pengurusan pengetahuan yang sesuai untuk kelebihan daya saing. Model kajian telah dibangunkan berdasarkan KME yang telah dikenalpasti termasuk budaya , struktur , kemahiran T, dan sokongan IT manakala KCP berdasarkan model Pengetahuan Nonaka (SECI)]. Pendekatan penyelidikan menggunakan kaedah kuantitatif melalui tinjauan dengan mengedarkan soal selidik di kalangan pekerja IT di Cyberjaya bagi mengkaji amalan KME dan KCP mereka. Data di analisis dengan menggunakan analisis korelasi dan regresi, dan didapati bahawa Pembelajaran, kemahiran T, dan sokongan IT adalah KME utama yang positif berkait dengan KCP. Oleh itu kajian ini mencadangkan bahawa inisiatif KM perlu dilaksanakan dengan memberi tumpuan kepada ketiga-tiga pemboleh tersebut untuk mencapai hasil yang positif.

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LIST OF ABBREVIATION

COL	Collaboration
COMB	Combination
EXT	Externalization
INT	Internalization
IT	Information Technology
KM	Knowledge Management
KME	Knowledge Management Enabler
KCP	Knowledge Management Process
LEARN	Learning
SECI	Socialization, Externalization, Combination, Internalization
SOC	Socialization
SME	Small Medium Enterprise

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CHAPTER 1

INTRODUCTION

This research investigates knowledge management practices among IT organization in Cyberjaya, Malaysia in particularly from the perspective of knowledge management enablers and the relationship with knowledge creation processes. This research was conducted based upon previous research on knowledge management enablers and knowledge creation processes conducted in other countries as baseline to study the knowledge management practices within the context of IT organization in Cyberjaya. Based on the findings in this research, the key KM enablers were identified and the result shall presents the research model that formulate the relationship between knowledge management enablers and knowledge creation processes as guidelines for knowledge management implementation.

This chapter introduces the study by providing related information regarding the importance of knowledge management practices from global perspective and to the local context in IT organization in Cyberjaya by highlighting the needs to investigate the current knowledge management practices for better understanding of the current enablers related to knowledge management practices for successful KM implementation. Next, this chapter presents the significance of study, problem statement, research objectives and corresponding research questions, followed by the operational definitions of key terms. The organization of the research is then presented at the end of this chapter.

1.1 Background

Knowledge has become an important asset in the 21st century organization. In this global and knowledge economy era, knowledge are more valuable than physical asset (Dalkir K, 2005) and knowledge resources such as skill and expertise are as crucial as other economic resources. Knowledge is not new, but recognizing knowledge as corporate asset is new, and to develop extensive value out of knowledge is in greater pressure now than before (Davenport and Prusak, 2000). The dynamics atmosphere of the new economic era can be seen in the fast moving change towards globalization, and knowledge-intensive products and services that causes knowledge management essentials to organizations (Donate and Guadamillas, 2011) causing great demands on an improved organizational knowledge management and knowledge management system (Yang et. al, 2009). Past researchers have recognized the importance of managing knowledge as a critical source of competitive advantage (Zhenzhong and Kuo-Hsun, 2010; Anantatmula and Kanungo, 2010; Chin, 2009; Nonaka I., 2007; Leidner D. E. and Schultze U., 2002; Drucker P., 1998) and positively influence business performance (Martina et. al, 2007), improve company's operational processes (Chin, 2009), enhance innovation and increase corporate performance (López-Nicolás and Meroño-Cerdán, 2011).

Firms in particularly Information Technology (IT) organization need to be innovative by offering unique value by creating, capturing, and capitalizing on their knowledge assets in order to sustain in the current competitive advantage (Ichijo et al, 1998). Knowledge assets such as, the know-how, know-why, experience, and expertise that reside in knowledge workers, need to be synchronized between organization's people, technology, processes, and organizational structure in order to add value through reuse and innovation of knowledge, which can be accomplish through knowledge management (Dalkir K, 2005; Chin, 2009). IT organization that are knowledge driven, requires knowledge workers for their knowledge, expertise and skills to deliver related IT job such as programmer, system analysts, technical designer, researcher and so forth. Knowledge workers contributed to the IT organization as they use thinking to deliver 'their ideas, their analyses, their

judgement, their syntheses, and their design', which makes knowledge workers as key organizational assets (Reinhardt W. et. al, 2011; Drucker P., 1998).

In Malaysia, it is important for IT organization to be able to understand KM practices in particularly the enablers that will influence the knowledge creation as previous research had proven KM benefit towards organization competitive advantage and sustainability. Knowledge management enablers are the mechanism for the organization to create and motivate the creation of knowledge and for sharing and protection of knowledge within the organization. They are also the crucial building blocks in the improvement of the effectiveness of activities for knowledge management (Ichijo et al., 1998). The presence of key KM strategic enablers to encourage the KM practices is greatly important (Chong et al., 2000). To ensure success of KM implementation, it is imperative that the key enabler that potentially can support for the effective utilization of organization's limited resources such as the use of manpower, material and time, is recognized and at the same time still able to achieve the expected results (Migdadi M., 2009; Yeh et al., 2006). If organization can be assured of the key enablers for implementing knowledge management especially at the initial planning stage (Chin, 2009), they will be able to speed up the process and implementation will be much easier (Yeh et al., 2006).

IT organisations in Malaysia have not been very effective in managing their knowledge due to the failure in understanding and recognising knowledge as their core competencies (Chong and Lin, 2008). Although there is high percentage of IT organization in Malaysia, that are interested in committing organizational resources for KM implementation, they are still unsure what constitute KM and the enabler that would facilitate KM initiatives. This matter need to be address as the speed in developing KM programme is important to their survival as they cannot afford to spend long hours in evaluating KM programme before implementing one (Chong and Lin, 2008). IT organizations must be aware of the enablers that facilitate the successful management of the primary knowledge activities in order for them to manage their KM efforts systematically (Chong and Lin, 2008).

Past researchers have found that the cultural factor is more essential than other enablers such as information technology (Rahmatollah et al., 2010; Lee and Choi, 2003). Understanding the role of organizational culture is crucial for knowledge management. Each organization's culture is unique, and it is important to assess culture at the start of any knowledge management planning (Plessis, 2007) in order to address the complexity associated with KM initiatives by identifying barriers and enablers that are unique to every organization (Anantatmula and Kanungo, 2010). Therefore, it is important to understand the knowledge management enablers or the influencing factors from the actual environment (Okunoye and Karsten, 2002) as the success of KM initiatives is considerably dependent on the basic conditions under which it has to be implemented (Heisig, 2009). Proper KM assessment related to knowledge management enablers should be carried out at the start of any KM initiative as successful implementation generally requires adequate measures within each of the knowledge management enablers (Heisig, 2009) and it has been shown that identification of appropriate KM enablers can lead to organization effectiveness (Nejatian et al., 2013).

The understanding of KM within Malaysia is difficult due to limited published work on this domain with Malaysia data (Goh G.G. et al., 2006). Most of the journal in KM research has been conducted mainly in Europe as compared to Asia (Chauvel and Despres, 2002) and studies in KM conducted among Malaysian organizations are limited, especially in the ICT industry (Chong and Lin, 2008; Chong, 2006) even though IT companies are long recognized as knowledge intensive organizations (Mohammad Nazir et al., 2005). For some of the published work in Malaysia in this domain, use the prescribed measures that has been found successful in other countries without fully understanding the local context (Goh G.G. et al., 2006) and very few attempts have been undertaken to research on organizational readiness towards KM (Chong C.W. et al., 2009).

There is inadequate information within previous literature in Malaysia on knowledge management enablers, with processes involved in creating knowledge based on IT organization in Cyberjaya. Lee and Sharmila (2012) had confirm the fact that knowledge creation still at low level among most of Malaysian organization, and enablers such as knowledge sharing culture, ICT, organizational structure and human capital has strong relationship with knowledge creation processes. They have found that organization should focus on establishing enabling environments for their people to share knowledge and provide more opportunities to develop human capital to acquire knowledge and also for sharing it with others. However their studies limited to non-IT sector such as electrical/electronics, chemical/fertilizer and services sector that has knowledge extensive activity or research and development.

Tan T.S. and Fakhrol A.Z. (2011), focused their study among Malaysia SME with background of manufacturing, agriculture and ICT with less than 150 employee was aim to help Malaysian SME improved business performance through KM. Their study provide baseline for KM enablers but does not cover all other KM enablers, due to only IT support and strategy as KM enabler was chosen. In their research, IT support and strategy has shown positive relationship with knowledge creation and these two enablers provide good dimension and not too complex project setting for SME organization. For the research performed by Goh, Ryan and Gururajan (2006), they focus on soft KM enablers from the perspective among Malaysian MSC status companies, in which no specific highlight for IT organization in Cyberjaya and do not include the 'hard' type of KM enabler which is the IT perspective. Goh (2006) in his study had performed qualitative research among MSC status company in Cyberjaya, and the result reveal that the most popular modes of knowledge creation are socialization and combination with KM enablers such as trust, mutual respect and teamwork in addition to management support are essentials. The skills and ability of employee like the presence of T-shaped skills are important to enable effective externalization to take place, and combination appears to be heavily exercised in large organisations that store huge amount of knowledge (Goh, 2006).

In Malaysia, knowledge management (KM) was began to be implemented in the late 1990s when multinational organisations like Microsoft and Hewlett-Packard brought their KM practices, processes and applications to the country (Daud S. and Wan Yusoff W.F., 2010). The Multimedia Development Corporation (MDeC), Siemens, Bank Negara Malaysia, Nokia Malaysia, and Telekom Malaysia were among the first organization that implement KM in Malaysia (Daud S. and Wan Yusoff W.F., 2010). During the same period, Cyberjaya as the ICT hub for Multimedia Super Corridor (MSC Malaysia) was created with the vision transforming Malaysia into a knowledge-based economy (Evers et. al, 2010). Cyberjaya, that was opened in 1999 was the first and leading cyber city development in MSC Malaysia, was designed as a cutting edge multimedia centre to attract world class multimedia and ICT companies (Rosalynn P., 2013), home for more than 35 Multinational Corporations, that has worldwide presents consists of a mixture of Malaysian owned, foreign and joint-venture company with Knowledge Workers reaching to more than 30,000 in 2013 (Puspadevi, 2013; Cyberjaya, 2012).

IT organisations in Cyberjaya that were accustomed with all the IT tools are deemed to have the needed infrastructure in place to employ KM. The progress of IT organization in Cyberjaya in relation to IT can be seen in the development of Cyberjaya as the premier ICT and being the biggest Cybercity in Malaysia. IT organizations in Cyberjaya were exposed to KM at the early years of KM implementation in Malaysia, would have the necessary KM environment established in their organization that can provide guidelines to other IT organization. Goh (2006) in his study among MSC status company in Cyberjaya, had found that knowledge management caused encouraging impacts on the organisational effectiveness, competitive advantage and organisational potential and management of knowledge assets. Therefore, it is imperative to understand and examine the KM enablers that exist within IT organization in Cyberjaya as reference for other IT organization in Malaysia to understand KM practices in particularly the enablers that will influence knowledge creation that exist among IT organization in Cyberjaya.

1.2 Significance of Study

There is inadequate information within previous literature in Malaysia on knowledge management enablers, with processes involved in creating knowledge that can provide the right information for IT organization in Malaysia to be effective in managing their knowledge and implement KM. IT organization in Malaysia requires information or guidelines on knowledge management enablers for implementing knowledge management to ensure proper investments of time, money, and personnel and organization effort is not wasted and full benefit of knowledge management is gain. IT organization in Malaysia still unsure what constitute KM and the enabler that would facilitate KM initiatives and they cannot afford to spend long hours in evaluating KM programme before implementing one (Chong and Lin, 2008).

Due to lack of research in Malaysia to provide the right information for IT organization in Malaysia, this research was motivated to pursue the investigation in Malaysia context as to obtain the understanding of KM from Malaysia perspective focusing on IT organization in Cyberjaya as one of biggest cybercity in Malaysia with multinationals and global organization that presents and would influence the KM environment. The author also found that it is important to perform the research in local context or in the real environment in order to examine and identify the key KM enabler that is best suited with the local context. This research shall fill in the gap that exists in relation to the practice of knowledge management in Malaysia and shall provide theory validation with reality in the context of knowledge management within IT organization in Cyberjaya.

This research should provide the reference to IT organization to strategize KM implementation plan by putting the right focus on the key KM enablers that has positive influence on knowledge creation processes. The research shall expand practical implications for KM implementation where it provide baseline for KM initiatives to start and planning by allocating the right focus on key enablers with the

aim to make full use of the organizational resources. This research shall provide important reference for IT organization particularly to understand about key KM enablers and its relationship with knowledge creation processes. At the same times, it is hope that this research can also provide sufficient information to other sector when planning for KM implementation. This research shall provide new and updated data and information in regards to study on KM enablers from samples of knowledge workers in IT organization in Cyberjaya. It also provides evidence for testing the concept of KM enablers that was tested in other countries to expand the testing in local context scenario.

1.3 Problem Statement

IT organizations as knowledge driven organization need knowledge management as its strategic initiatives to become successful organization to drive Malaysia becoming a knowledge-based nation and to withstand global challenges. In KM, knowledge creation is an important initiative for an organization to innovate knowledge and perceived as one of the major assets of innovative organization. Knowledge creation process requires knowledge management enablers as critical influencing factors to increase knowledge management effectiveness and those enablers are factors that incorporate both the social and technical factor that exist in an organizations. Although, there is high percentage of organizations which are interested in committing organizational resources for KM implementation, they are still unsure about KM and the enablers that would facilitate KM initiatives causing non-effective KM implementation. Focusing KM initiatives on KM enabler within the local context and environment is important for effective KM implementation. Proper assessment on knowledge management enabler is required for IT organization to ensure that the right focus and investment in terms of resources and time has been made. This research shall address this problem by providing the understanding on various KM enablers from past research through evaluation of the relationship between KM enabler and knowledge creation process as to identify the key KM enabler based on the current KM environment in the IT organization in Cyberjaya. Research model of KM enablers that constitute these findings is developed to

provide single overview KM enablers and its relationship with knowledge creation process. Therefore, this research shall provide theory validation with reality and provide a reference for IT organization or academia to formulate appropriate knowledge management initiatives for competitive advantage.

1.4 Research Objectives

Based on the discussion on significance of research and problem statement, this research seek to study and evaluate the relationship between KM enablers and knowledge creation process in the context of IT organization in Cyberjaya, Malaysia and the result shall develop the conceptual model of KM enablers and knowledge creation process that can be use as guidelines for KM implementation. In summary, following are the research objectives formulated for this research:

RO1: To evaluate the relationship between KM enabler and KCP in the context of IT organization in Cyberjaya

RO2: To develop a conceptual model of KME and KCP

1.5 Research Questions

Based on the significance of research, problem statement and research objectives, this research seeks to identify the relationship between KM enablers and knowledge creation process and to identify the key KM enablers in the context of IT organization in Cyberjaya, Malaysia. In summary, following are the research questions formulated for this research:

RQ1: “What are the relationship between Knowledge Management enablers and Knowledge Creation process?”

RQ2: “What are the key Knowledge Management enablers that are observe in IT Organization in Cyberjaya?”

In summary, this section develops the two research objectives and the two corresponding research questions that will form the basis for data collection and data analysis to address the research problem. Following are the discussion on the hypothesis developed for this research and the key operational terms use in this research.

1.6 Hypothesis Development

In this research, directional hypotheses were developed for further evaluation. Following are the hypothesis developed for this research:

1.6.1 Culture

Previous studies on knowledge management enablers have acknowledge the significant effect of culture on knowledge creation process (Mehdi et. al, 2012; Lee and Choi 2003). Culture related to the behavior and social customs, and always influence the perception of action and communications of all employee. Appropriate culture should exist to facilitate knowledge creation (Lee and Choi, 2003). Culture includes three major variables namely “collaboration”, “trust”, and “learning” (Lee & Choi, 2003; Nejatian et. al, 2013) which known as the main factors to achieve organization culture that supports knowledge management system. An organization’s culture is central to encourage interaction and collaboration between individuals that are important to facilitate knowledge flow and knowledge exchange (Birinder and Darren, 2011; Nejatian et. al, 2013).

Collaboration enables for shared understanding about organization’s environment to facilitate knowledge creation and facilitating trust among inter-organizational teams and employees is considered as the foundation for knowledge

creation (Nejatian et. al, 2013). Thus, collaboration between team members can also tightens individual differences which can help shape a shared understanding about the organization's environment which important for knowledge creation (Gold et. al, 2001; Goh G.G. et. al, 2006). Therefore many past researcher had considered collaboration as key enabler for knowledge creation (Nejatian et. al, 2013; Migdadi M., 2009), therefore hypothesis constructed as below:

H1 Collaboration has positive effects on knowledge creation

H2 Collaboration is perceive as the key Knowledge Management Enablers

Trust has been regarded as an output of the knowledge creation process, and at the same time moderates platform for knowledge creation process (Krogh, G.V. et al., 2012). High level of trust encourages knowledge creation as it reduces the fear of risk in teams (Lee and Choi, 2003). Therefore the hypothesis is constructed as below:

H3 Trust has positive effects on knowledge creation process

Learning and acquiring new tacit knowledge in practice is part of the internalization of knowledge conversion process that effect the capacity of knowledge creation activities which consequently affects organizational performance (Takeuchi, 2006; Nejatian et. al, 2013). Therefore the hypothesis is constructed as below:

H4 Learning has positive effects on knowledge creation process

1.6.2 Structure

The structure of the organization impacts the way in which organizations conduct their operations and in doing so, affects how knowledge is created and shared amongst employees (Lee and Choi 2003; Nonaka & Takeuchi 1995). This research will consider organizational structure from the perspective of centralization and formalization. High centralization inhibits interactions among organizational members, reduces the opportunity for individual growth and advancement, and prevents imaginative solutions to problems. The concept of centralization includes only formal authority which the rights are inherent in one's position. When decision-making authority is centralized; spontaneity, experimentation and freedom of expression which are key elements of knowledge creation are greatly reduced (Lee and Choi, 2003). Hence, decreased centralization in an organization can lead to increased creation of knowledge (Lee and Choi, 2003; Nejatian et. al, 2013). Therefore the hypothesis is constructed as below:

H5 Centralization has negative effects on knowledge creation process

Formalization refers to the degree to which jobs within the organization are standardized and the extent to which employee behaviour is guided by rules and procedures. Previous studies had shown that formalization restrain communication and interaction necessary for knowledge creation Mehdi et. al, 2012; Nejatian et. al, 2013). However in the context of research conducted in Malaysia, it was reported a positive impact since knowledge creation still in its early stage among business organizations due to formalization structure is seen required for the monitoring and coordinating knowledge creation activities (Lee and Sharmila, 2012). This shows that formalization play a role in knowledge creation and therefore the hypothesis is constructed as below:

H6 Formalization has positive effects on knowledge creation process

1.6.3 T-shape

In literature review, we have discussed the importance of organization to recruits skilled employee as they possess the ability to combine theoretical and practical knowledge and integrate diverse knowledge assets to improve organizational performance (Lee and Choi, 2003; Goh G.G. et. al, 2006; Nejatian et. al, 2013). This shows that skilled employee or also known as T-shaped skills plays important role to enable knowledge creation activities as part of KM process; therefore the hypothesis is constructed as below:

H7 T-shape has positive effect on knowledge creation

1.6.4 IT Support

Information Technology provide assistance in KM, it connects people to both explicit and tacit knowledge, supporting knowledge generation (Elena et. al, 2009). In knowledge creation process, all four modes of knowledge conversion have some sort of IT elements that enable the knowledge creation. IT support refers to the degree in which knowledge management is supported by the use of IT and KM is likely to be successful if broader IT infrastructure is adopted (Nejatian et. al, 2013). IT support as KM enabler mainly refers to the fundamental building block of IT that supports and coordinates KM, enable rapid search, access and retrieval of information, and can support collaboration and communication between organizational members (Plessis, 2007). It is indisputable that IT is one of the key enablers for implementing KM (Migdadi M., 2009, McCampbell et. al., 1999). Therefore the hypothesis is constructed as below:

H8 IT support has positive effect on knowledge creation

H9 IT support is perceive as the key Knowledge Management Enablers

Table 1.1 Summarized the Hypothesis Construct and source of literature use in this research.

Table 1.1 Summarized of Hypothesis Construct and source of literature			
KM enablers	Hypothesis and Construct	Source	
Culture	<i>Collaboration</i>	H1 - Collaboration has positive effects on knowledge creation	Gold et. al, 2001; Lee and Choi, 2003; Goh G.G. et. al, 2006; Nejatian et. al, 2013
		H2 - Collaboration is perceive as the key Knowledge Management Enablers	Nejatian et. al, 2013; Migdadi M., 2009
	<i>Trust</i>	H3 - Trust has positive effects on knowledge creation process	Lee and Choi, 2003; Krogh, G.V. et al, 2012
	<i>Learning</i>	H4 - Learning has positive effects on knowledge creation process	Takeuchi, 2006; Nejatian et. al, 2013
Structure	<i>Centralization</i>	H5 - Centralization has negative effects on knowledge creation process	Lee and Choi, 2003; Nejatian et. al, 2013
	<i>Formalization</i>	H6 - Formalization has positive effects on knowledge creation process	Lee and Sharmila, 2012
T-shaped skills	H7 – T-shape has positive effect on knowledge creation	Lee and Choi, 2003; Goh G.G. et. al, 2006; Nejatian et. al, 2013	

IT support	H8 - IT support has positive effect on knowledge creation	Plessis, 2007; Elena et. al, 2009; Nejatian et. al, 2013
	H9 - IT support is perceive as the key Knowledge Management Enablers	Migdadi M., 2009, McCampbell et. al., 1999

1.7 Operational Definition

The following definitions describe the key terms that were used in this study to clarify the problem statement, research objective, research questions and scope of work. The definitions provide explanations and descriptions of the variables used in the context of this study which are specifically on knowledge management enablers from social and technology perspective.

1.7.1 Culture

Culture is defines as a mixture of collective history, expectations, unwritten rules, and social customs that induce behaviours. It is the set of underlying beliefs that, always there to motivate the perception of actions and communications of all employees (Mehdi et. al, 2012). Culture is a complex entity of values, belief, and behaviour model and symbols (Chin, 2009) and can be simply viewed as how things are done in particular settings. Culture includes three major variables namely “collaboration”, “trust”, and “learning” (Lee and Choi; 2003; Nejatian et. al, 2013) which known as the main factors to achieve organization culture that supports knowledge management system.

1.7.2 Collaboration

Collaboration described as the extent of people in a group dynamically supports each other in their task (Lee and Choi, 2003) that permits the increase levels

of knowledge exchange and flow, which is a prerequisite for knowledge creation (Nejatian et. al, 2013).

1.7.3 Mutual Trust

Mutual trust refers to the faith in the integrity, character and ability of each other (Lee and Choi, 2003) and has been consider as an output of the knowledge creation process that moderates platform for knowledge creation process (Krogh, G.V. et al., 2012).

1.7.4 Learning

Learning refers to the proper process of gaining knowledge from experiences as a way of creating competitive advantage. Learning is crucial in knowledge management as it stipulates the path for the organization to be instilled with new knowledge (Lee and Choi, 2003). Learning and acquiring new tacit knowledge in practice is part of the internalization of knowledge conversion process that effect knowledge creation activities which consequently affects organizational performance (Takeuchi, 2006).

1.7.5 Structure

Organizational structure refers to the structure of the organization that influences the way organizations perform their operations and also affects knowledge creation and sharing among employees (Lee and Choi, 2003; Nonaka & Takeuchi 1995). Organization structure comprises of two variables: centralization and formalization that are recognized as key variables underlying the organization structure and have strong effect on knowledge management (Nejatian et. al, 2013).

1.7.6 Centralization

Centralization refers to the degree to which decision making is focused at a single point, normally at higher levels of management in the organization (Mehdi et. al, 2012; Nejatian et. al, 2013). The concept of centralization includes only formal authority in which the privileges are inherent in one' status. When decision-making authority is centralized; spontaneity, experimentation and freedom of expression which are fundamentals of knowledge creation are greatly reduced (Lee and Choi, 2003).

1.7.7 Formalization

Formalization refers to the extent to which jobs within the organization are standardized, regulated and guided by rules and procedures. In organizations with high level of formalization structure, there are explicit rules and procedures which are likely to inhibit the spontaneity and flexibility needed for internal innovation. Knowledge creation requires flexibility and creativity and less emphasis on work rules (Goh G.G. et. al, 2006). Standardization would eliminate the possibility that members engage in alternative behaviours as members not willing to participate in discussions or considering alternatives solutions (Mehdi et. al, 2012; Nejatian et. al, 2013).

1.7.8 People

People are the core of creating organizational knowledge as it is people who create and share knowledge (Lee and Choi, 2003; Nejatian et. al, 2013). Effective knowledge management depends on the employee capabilities, therefore it is crucial that the organization effectively manages its employees to create and share knowledge (Lee and Choi, 2003; Chin, 2009). Knowledge, abilities and competencies can be obtained by the organization through hiring people with desirable skills, in particular those with T-shaped skills (Goh G.G. et. al, 2006; Nejatian et. al, 2013). For this research, the people perspective is viewed from T-shaped skills perspective.

1.7.9 T-shaped skills

T-shaped skills refers to the ability that possesses in a person which also an employee, that they able to combine theoretical and practical knowledge and to see how their discipline of knowledge interacts with others (Lee and Choi, 2003; Goh G.G. et. al, 2006; Nejatian et. al, 2013). These skills permit employees to expand their competence across several disciplines and thus create new knowledge for the organization (Lee and Choi, 2003) and lays foundations for organizational knowledge (Lee and Sharmila, 2012).

1.7.10 Information Technology (IT) Support

Technology infrastructure includes information technology and its capacities to support organizations to accomplish work, and to effectively manage knowledge that the organization owns. Information technology infrastructure is commonly agreed to be a key enabler of knowledge management and frequently mentioned as one of the anchors for knowledge management activities (Alavi and Leidner, 2001). Information technology is the infrastructure to support knowledge management activities and knowledge management lifecycle. With IT support, quick and efficient accessibility of knowledge as well as the manipulation of knowledge is guaranteed (Plessis, 2007).

1.7.11 Socialization

Socialization refers to knowledge creation mode that involve conveying existing tacit knowledge from one another through shared experience, conversation, face to face or social interaction by which the tacit knowledge is converted to a new tacit knowledge (Alavi and Leidner, 2001; Dalkir K., 2005). Socialization knowledge creation mode can be such as knowledge sharing, brainstorming, mentoring, and apprenticeship in which new knowledge is created through interactions, observation, imitation and practice.

1.7.12 Externalization

The externalization refers to the mode of knowledge creation that converts or articulate the tacit knowledge to explicit knowledge in which knowledge is given a visible form in the shapes of metaphors, analogies, concepts, hypotheses or models. In this mode, individuals able to articulate the knowledge or know-how and written down or captured in more tangible form.

1.7.13 Combination

Combination refers to the mode of knowledge creation process of recombining discrete pieces of explicit knowledge through combining, classifying, reclassifying and synthesizing existing explicit knowledge into a new form of explicit knowledge (Dalkir K., 2005).

1.7.14 Internalization

Internalization mode of knowledge creation refers to knowledge creation process that converts or integrates individual experiences and knowledge into mental models. Once internalized, new knowledge is use by the employee who broadens it, extend it, and reframe it within their own existing tacit knowledge bases. Basically internalization converts the explicit knowledge to tacit knowledge through diffusing and embedding the newly acquired understanding and it is strongly linked to “learning by doing” (Dalkir K., 2005).

1.8 Structure of Dissertation

This dissertation is structured or breaks into 5 main chapters as follows:

1.8.1 CHAPTER 1 Introduction

This chapter introduces the research by providing background information relating to knowledge management practices from global to the context of IT organization in Cyberjaya, highlighting the need to explore the current levels of knowledge management practice to allow for a better understanding of the current factor relating to knowledge management practice in particularly for IT organization in Cyberjaya. Next, this chapter presents the significance of study, problem statement, research objectives and corresponding research questions, followed by the operational definitions of key terms

1.8.2 CHAPTER 2 Literature Review

This chapter presents the literature review on Knowledge Management (KM) practices and the enabler that constitutes to the success of KM implementation especially in the context of IT organizations. The first section covers literature review on the definition and concept of data, information, knowledge and the knowledge management itself to understand the background theories related to KM and to discuss from the perspective of the benefits and the importance of KM in organization. Then in the second section we shall look at the KM enabler which is the influencing factors that in the past literature has shown strong relationship with the success of KM implementation. In the third section, the literature reviews shall touch about KM within the context of IT organization in Malaysia and how this research is significant to fill the gap of existing KM research in Malaysia.

1.8.3 CHAPTER 3 Research Methodology and Design

This chapter describes the research framework and hypotheses development of this research. It commences with introduction and discussion on theories underpinning the framework and followed on with the hypotheses development. The

primary interest of this research is the relationship between knowledge management enablers that consist of culture, structure, people and IT as the independent variables with knowledge management process as dependent variables. The degree of knowledge management enabler's influence on knowledge management process is examined within the research context. The conceptual framework is then illustrated to show the overall view of the relationship. This chapter identifies and describes the appropriate research methodology that has been design for this research to achieve the research objective and to analyze the answers to the research questions being advanced in this research. This chapter also provides justification for the research paradigm and methods being selected.

1.8.4 CHAPTER 4 Findings and Discussions

This chapter presents findings of the research as gathered from the results of data analysis conducted from the sample population of this research. The findings covers profile of the respondents, results of reliability and validity measures, data distribution analysis, correlation and multiple regression statistics results. Then follows by the discussion on the findings to explore it in light of the research objective and problem statement, and evidence it with literature to support the findings. Finally the overall hypothesis results were summary at the end of this chapter.

1.8.5 CHAPTER 5 Conclusions

This chapter shall present the conclusions of the research with the summary of key findings. The revise and the final research model is developed and included in this section. The next section shall highlight the contribution made to the body of knowledge and discussion on the implications of the research with recommendation on future work. The limitations and recommendations for this research are discussed at the end of the chapter.

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