

## KNOWLEDGE MANAGEMENT ADOPTION: A CASE STUDY OF MALAYSIAN ELECTRICITY SUPPLY INDUSTRY

Sulfieza Mohd Drus<sup>1</sup>, Siti Salbiah Mohamed Shariff<sup>2</sup>, and Marini Othman.<sup>3</sup>

<sup>1</sup>Universiti Tenaga Nasional (UNITEN), Malaysia, [sulfieza@uniten.edu.my](mailto:sulfieza@uniten.edu.my)

<sup>2</sup>Universiti Tenaga Nasional (UNITEN), Malaysia, [sitisalbiah@uniten.edu.my](mailto:sitisalbiah@uniten.edu.my)

<sup>3</sup>Universiti Tenaga Nasional (UNITEN), Malaysia, [marini@uniten.edu.my](mailto:marini@uniten.edu.my)

**ABSTRACT.** This paper discusses the current approach adopted by electricity companies in Malaysia in managing organizational knowledge, which was investigated using a mixed method research approach. The analysis reveals that there are a number of inefficiencies in the method currently adopted by electricity companies in Malaysia in managing their organizational knowledge. These companies are recommended to improve the approach undertaken in their knowledge management, in the hope of leveraging the organizational knowledge in attainment of advantage over other players in the industry.

**Keywords:** knowledge management, electricity supply industry, Malaysia

### INTRODUCTION

Over the past several decades, it can be observed that the global economy has shifted towards greater reliance on the utilization and exploitation of intangible assets, such as information and knowledge related resources (Alavi & Leidner, 2001; Nonaka, 1994; Singh, 2007), which triggers the notion of knowledge as the strategic commodity in the new economy that provides means of creating innovative products and services, which must be well-protected and safeguarded from external leakages (Choi, Poon & Davis, 2008; du Plessis, 2005; McBriar et al., 2003). Collaboration and cooperation among business partners and allies to share, utilize and exploit knowledge are fundamental in this business environment as it will determine the creation of sustainable competitive advantage and economic wealth (Alavi & Leidner, 2001; Hicks, Dattero & Galup, 2007; Singh, 2007). This scenario initiates the conception of knowledge economy, which is defined by Powell and Snellman (2004) as “production and services based on knowledge-intensive activities that contribute to an accelerated pace of technical and scientific advance, as well as rapid obsolescence” (p. 199).

In line with this global economic transformation, Malaysian government has also embarked on several initiatives such as Knowledge-Based Economy Master Plan, National IT Agenda (NITA) and Multimedia Super Corridor (MSC) in preparation towards becoming a knowledge economy nation. It is hoped that by attaining the knowledge economy status, Malaysia is able to achieve sustainable rapid economic growth and competitiveness. A reliable, stable and affordable telecommunication, electricity, water and transportation infrastructure are vital to assist Malaysia in realizing this goal.

As one of the most essential type of utilities, electricity plays an important role in ensuring that Malaysia is able to fulfil its aim of attaining the knowledge economy status. Literatures such as Choy (2005); Mohamed and Lee (2006); and Ong, Mahlia and Masjuki (2011) indicate that a stable, economical and abundant supply of electricity is the catalyst of a modern economic development. Mohamed and Lee (2006) assert that “globally, per capita consumption of energy is often used as a barometer to measure the level of economic development in a particular country” (p.2388). As electricity supply industry (ESI) plays a significant role in the Malaysian economic landscape, it is essential for the players in the industry such as the electricity companies to create, capture, share and utilize quality knowledge for their strategic and operational purposes.

Many organizations have embarked on initiatives in streamlining the activities and processes related to the creation, management and exploitation of organizational knowledge (BenMoussa, 2009; Hicks et al., 2007). In the broadest context, these activities and processes are known as knowledge management or KM. Knowledge management (KM) can be regarded as the process of generating enduring value from organizational intellectual capital or knowledge-based assets (Alavi & Leidner, 2001; Singh, 2007). However, according to BenMoussa (2009), many organizations have yet to see the positive results of the investment in KM initiatives. This research attempted to identify the approach adopted by the main electricity companies in managing their organizational knowledge, and the current problems and challenges that they may face in the current approach of managing knowledge in their organizations.

## RESEARCH METHOD

Case study using single-case design was chosen as the strategy of inquiry for this research, where two (2) main electricity companies in Malaysia were chosen as the primary case companies. The primary data were gathered using semi-structured interview and survey questionnaire, which have helped this research to understand the research problem in-depth as well as provided a complete comprehension of the main research domain.

The interview participants and survey respondents for this research had been selected based on selective and purposeful sampling. Several departments from the main business units of the two (2) case companies were selected as the participants for this research. The selected business units perform the core business functions of the case companies, and thus the knowledge contained in these business units are critical to the operations of the company. This research employed self-administered questionnaires, where 180 questionnaires were initially distributed to nine (9) business units from the two (2) case companies. However, due to operational matters, two departments were not able to respond to the distributed questionnaires. The response rate for the survey questionnaire is 46.7%, and it was adequate to complement the data collected from the interview sessions.

## ANALYSIS

In order to understand how the case companies manage their organizational knowledge, the implementation and practices of KM in the case companies were enquired in the survey questionnaire. 45.2% of the respondents answered that their companies have implemented and practiced KM. The high percentage of responses that indicated their companies have yet to implement KM may imply the absence of a formal enterprise-wide KM initiative in the case companies. Furthermore, for the respondents that indicated their companies have already implemented and practiced KM, only a small percentage of 36% were involved in KM projects or initiatives in their companies. Table 1 shows the mean for implementing and practicing KM in their companies. The Cronbach's coefficient alpha is 0.94 which is considered as good

indicator to test the consistency of respondents' answer to all the factors and scale that are used in the measure. A four-point Likert scale ranging from '1' which means *Not Important At All* to '4' which means *Very Important* was used to test the items. The results show that all three groups of respondents (based on their current positions) have similar opinions and agreement on the reasons for implementing and practicing KM. The ANOVA tests indicated that there are no statistically significant differences on the factors in level of importance (mean score) on the reasons for implementing and practicing KM by the different groups of respondents (i.e. management, executives and non-executives) at 5% level of significance. The high p values can be observed in few factors such as to reduce information overload; capture and reuse best practices; reduce exposure to risk and improve employees' skills and knowledge (i.e. these factors have p values greater than 0.5). Thus, it can presume that the respondents have statistically significant similarity opinions on these factors.

**Table 1. Mean score for implementing and practicing KM in case companies**

Factor	Mean Score			ANOVA Sig. p<0.05
	Management	Executive	Non-Executive	
To improve employees' skills and knowledge	2.88	2.92	4.00	0.526
To protect loss of knowledge when employees resign or retire	3.13	2.62	3.50	0.435
To identify knowledge that is present and available in the company	2.75	2.73	4.00	0.398
To identify knowledge that is required but not available in the company	2.63	2.65	4.00	0.357
To reduce information overload	2.00	2.12	2.50	0.864
To use knowledge to meet company's objectives and goals	2.75	2.77	4.00	0.337
To promote knowledge sharing in the company	3.00	2.65	4.00	0.302
To capture and reuse best practices	2.88	2.85	3.50	0.795
To gain advantage over the competitors	2.75	2.65	4.00	0.390
To reduce exposure to risk	2.75	2.73	3.50	0.692
To improve quality	2.75	2.65	4.00	0.390
To reduce costs	2.38	2.69	4.00	0.272
To accelerate innovation	2.50	2.69	4.00	0.281
To boost revenue	2.13	2.65	4.00	0.272
To increase added values for customers	2.63	2.50	4.00	0.354

Despite the lack of formal method in the case companies to manage their organizational knowledge, most of the interview participants were able to give fair definitions of knowledge management (KM). The answers indicated that the interview participants have some fundamental understanding of KM (as shown in Table 2). Thus, it can be reckoned that although KM is being practiced and implemented in restricted manner in the case companies, KM is not an unfamiliar or new concept to them.

**Table 2. Definitions of KM (by interview participants)**

Participant	Definition of KM
Participant 1	How knowledge is managed in the company by making it accessible to everybody; how knowledge is utilised; to increase, maintain and retain staff knowledge
Participant 2	How to manage, utilise and optimise knowledge in the working environment

Participant	Definition of KM
Participant 3	KM consists of two (2) components, which are a) organising knowledge in such a way that can be beneficial to the employee to use; and b) retaining organisational knowledge that is valuable
Participant 4	The right people must have the right knowledge at the right time of need
Participant 5	Holistic approach towards knowledge, which comprises financial, technical, politics, economic and spiritual knowledge
Participant 6	How to manage knowledge, in terms of acquiring new knowledge, retrieving knowledge as well as disposing of irrelevant knowledge
Participant 7	Ensuring that we have the accurate and right knowledge on time when we need it, how to acquire new knowledge and filter irrelevant or unnecessary knowledge
Participant 8	A process that involved the understanding the knowledge requirements for the subject matter, retain and optimise the knowledge for decision making and sharing
Participant 9	A process of acquiring knowledge through training, learning, etc.

Based on the definitions of KM, it can be summarised that KM is defined by the interview participants as 1) *holistic approach towards acquiring, managing, utilizing and optimizing knowledge*; and 2) *a process of understanding the knowledge requirement and how to acquire, retain and optimize knowledge for decision making*.

**Table 3. Mean score for perceived benefits of KM initiatives in case companies**

Perceived benefits of KM initiative	Mean Score			ANOVA Sig. p<0.05
	Management	Executive	Non-Executive	
Better decision making	3.00	2.73	4.00	0.368
Improved work routines	3.00	2.62	3.50	0.525
Improved employees' skills	2.88	2.88	4.00	0.260
Improved connection and communication with the experts	2.75	2.69	4.00	0.382
Improved client/customer relation	2.88	2.69	4.00	0.387
Increased sharing of knowledge within the company	3.13	2.88	4.00	0.500
Increased employee retention	2.25	2.73	3.50	0.418
Increased teamwork	2.38	2.88	4.00	0.272
Improved innovation	2.63	2.54	3.50	0.612
Improved employees' satisfaction	2.63	2.69	4.00	0.354
Clear financial returns and benefits	2.25	2.73	3.50	0.418

Despite the restricted implementation and practices in the case companies, KM is deemed beneficial to the companies. Table 3 shows the mean score of the perceived benefits for implementing and practising KM in their companies. The Cronbach's coefficient alpha is 0.92. The results show that all three groups of respondents (based on the current position) have similar opinions and agreement on the perceived benefits of implementing and practising KM in their companies. High p values (i.e. these factors have p values greater than or equivalent to 0.5) can be observed in few factors such as improved innovation; improved work routines and increased sharing as having significant similarity among the different job levels. Thus, it can

be presumed that these factors listed as the perceived benefits of KM implementation in the case companies are deemed statistically similarly significant to the respondents.

Nevertheless, despite the high agreement on the perceived benefits of KM initiatives in the case companies, the respondents faced some problems and challenges in implementing and practising KM in their companies. As depicted in Table 4, the mean score by management, executives and non-executives on the challenges and problems that they face in implementing and practising KM in their companies shows statistically substantial similarity. The Cronbach's coefficient alpha for the factors listed as the challenges and problems in KM implementation is 0.99.

The results show that all three groups of respondents (based on their current positions) have similar opinions and agreement on the challenges and problems that they face in implementing and practising KM in their companies. The ANOVA tests indicated that there are no statistically significant differences on the level of importance (mean score) on the reasons for implementing and practising KM by the different group of respondents (i.e. management, executives and non-executives) at 5% level of significance.

**Table 4. Mean score for challenges and problems faced when implementing KM in case companies**

Challenges and problems in KM implementation	Mean Score			ANOVA Sig. p<0.05
	Management	Executive	Non-Executive	
Too much information	2.25	1.96	3.00	0.437
Unclear benefits and values of KM	1.75	2.00	3.50	0.222
Unsystematic KM processes	2.50	2.15	2.50	0.735
Little or no support from senior management	1.50	1.96	1.00	0.385
No rewards or recognition to appreciate knowledge contributions	1.88	2.15	2.00	0.852
Resistance from employee to share knowledge	1.25	2.23	1.50	0.091
Unavailable technical infrastructure to support KM	1.38	2.15	2.50	0.259
Inflexible and rigid business processes	2.13	1.92	2.50	0.745
Employees losing commitment	1.50	1.85	3.00	0.235
Underestimating the complexity of KM implementation	1.50	1.96	3.00	0.200
Insufficient KM expertise available	2.25	2.15	2.50	0.915
Knowledge quickly outdated	1.25	2.08	2.00	0.217
Experts are too busy	2.13	2.15	2.00	0.984
Difficulties in maintaining the budget allocated	1.25	2.04	3.00	0.092

It can be observed from Table 4, there are five (5) factors with high p values (i.e. these factors have p values greater than or equivalent to 0.5). This shows that the respondents have statistically significant similarity in opinions and agreement on these factors. These factors are experts are too busy; insufficient KM expertise available; no rewards or recognition to appreciate knowledge contributions; inflexible and rigid business processes; and unsystematic KM processes.

Based on the above discussion, it can be summarised that although KM is being implemented and practised in the case companies, the implementation and practices are quite small scale and in restricted manner. Due to its limited practices in the case companies, the compa-

nies face some difficulties in accessing and managing their organisational for both operational and strategic needs. Thus, it is suggested that the processes and initiatives of KM to be better streamlined and organised to allow for better implementation and practices in electricity companies in Malaysia.

## CONCLUSION

This research has identified a number of shortcomings on the management of organizational knowledge currently practiced by the electricity companies in Malaysia. Although some rudimentary exercises of knowledge management are present in the case companies, however improvements are needed. It is proposed that future works related to this research to be carried out in terms of finding the most suitable method or approach that can be adopted by electricity companies in managing their organizational knowledge in ensuring that these knowledge are capitalized on for their current needs and future endeavors, as well as preparing these companies in the event of electricity markets reformations in the future.

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