Determining The Existence Of Knowledge Management Processes Among Academicians

Haslinda Sutan Ahmad Nawi[1] , Nur Syufiza Ahmad Shukor[1] , Suzana Basaruddin[1] ,

Nasrudin Md Rahim[1] , Rohaya Abu Hassan[1] , Kamaruzaman Jusoff [2]

[1] Universiti Selangor, [2] Universiti Putra, Malaysia

ABSTRACT:

The purpose of this paper is to determine the existence of the Knowledge Management (KM) processes among academicians. The processes of KM studied here are knowledge capturing, organizing, refining and transferring. A questionnaires survey method was adopted 'and conducted at the Faculty of Industrial Information Technology (FIIT), Universiti Industri Selangor (UNISEL) where academicians at FIIT were selected as samples. There were two groups of academicians responded to the questionnaires: academicians who served in the year 2006; and academicians who served in 2008. Statistical analysis was conducted to the data collected from the questionnaires. The analysis concludes that all the four KM processes exist and being practiced by the academic staff at FIIT at significance level of 0.05. This paper raises awareness on the importance of the KM processes and as knowledge-intensive organization, this helps to provide initial guidelines to the management in order to cultivate the knowledge sharing society among the academicians. This paper is one of the earliest efforts to determine the existence of KM processes at one of the IHL in Malaysia, a subtle KM activities that receives little attention from the academicians.

Keywords: *Knowledge management, Knowledge capture, Knowledge transfer*

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1. Introduction

Knowledge can be defined as individual's experience and understanding (Marwick, 2001). Knowledge is commonly distinguished from data and information (Zack, 1999). Data can be defined as streams of raw facts representing events occurring in organization (Laudon, 2004). Information results from placing the data within some meaningful context. Knowledge is the process of translating information and past experience including believed and valued into a meaningful set of relationships which are understood and applied by an individual (Awad & Ghaziri, 2004). For example, Kentucky Fried Chicken develops process knowledge (i.e., frying chicken) to an explicable level and articulates the process in recipes that result in fried chicken of consistently high quality throughout the franchise network.

Sveiby (1997) defined two theories of knowledge management. The first theory is knowledge management as managing economic information – knowledge consists of objects which can be identified economically and processed in information systems; and the second theory is knowledge management as managing people – knowledge is equivalent to processes consisting of complex and dynamic human capabilities, behavior, etc.; all of which are constantly changing. In simple word, knowledge management is the process of identifying, capturing, organizing and disseminating the intellectual assets that are critical to the organization's longterm performance. It

is a strategy that could turn an organization's intellectual property (recorded or expert of its members) into a greater productivity, new values and increased competitiveness.

Knowledge can be categorized into two types: tacit and explicit (Nonaka & Takeuchi, 1995). Awad and Ghaziri (2004) defined tacit knowledge as knowledge embedded in the human mind through experience and jobs; and explicit knowledge as knowledge codified and digitized in books, documents, reports, white papers, spreadsheets, memos, training courses and the like. Both types of knowledge exist in an organization. A well-structured and mature organization will have both types of knowledge in balance. It simply means that the tacit knowledge confined in the staff are actively captured and transformed into explicit knowledge. However for most of the organizations, the tacit knowledge is the main knowledge type as the activity of transforming the knowledge into documented and digitized form are not easily done. Which ever types of knowledge available in the organizations, the knowledge must go through processes that will eventually make the knowledge valuable and usable to the organization.

According to Awad and Ghaziri (2004) there are four processes involved in knowledge management that are capturing, organizing, refining and tranferring. Gupta et al. (2000) stated that KM is a process that deals with development, storage, retrieval, and dissemination of information and expertise within an organization to support and improve its business performance. (Ramachandran et al., 2009) identified six common KM processes for Higher Educational Institutions in Malaysia setting as a systematic process of knowledge creation, capture, organization, storage, dissemination, and application. Albers (2009) stated six factors that influence KM which include culture, leadership, organizational intent, knowledge processes, organizational structure and technology infrastructure. Sharma et al. (2010) indicate six similar knowledge management processes which are create, capture, organize, store, search, and transfer.

For this research the KM processes are defined as the process of capturing, organizing, refining and tranferring knowledge. This phase involves the capturing of knowledge form various sources including e-mail, physical documents, digital files and the domain experts. The captured knowledge should be organized in a way that can be retrieved and used to generate useful knowledge. This can be done by indexing, clustering, cataloging, filtering, codifying and other methods for organizing the knowledge. Knowledge that had been organized should be refined, which involve contextualizing, collaborating, compacting and projecting. One can see the pattern in the data, and it can be discovered using any data mining tools that also can be applied at this phase. The last phase is the refining phase; knowledge should be disseminated or transferred. This includes making knowledge available to authorized users to employees in any form.

The purpose of this study was to determine the existence of the KM processes: knowledge capturing; organizing; refining; and transferring involving the academic staff of FIIT, UNISEL. This case study only concentrates on the KM processes among the academician. This is because the academician or lecturers are teachers and they are the designers of learning experiences, processes, and environments. They concerned with identifying and then transmitting intellectual content and more focused on inspiring, motivating, and managing an active learning process by students (Abdullah & Selamat, 2007). For organization that is knowledge-intensive, case study on academician is the most appropriate.

2. Materials And Method

2.1. Survey Questions

A set of questionnaire was developed for the purpose of this study. Questions are constructed to test the hypotheses. There are 25 questions set to cover all the four processes in KM. Data for this study was collected through questionnaires distributed to all academicians at FIIT. There are 2

batches of questionnaires distributed; the first batch was distributed on January 2006 and the second distribution was released on May 2008.

The population of academicians on January 2006 was 26, and 22 questionnaires were returned. 33 questionnaires were collected in the 2008 survey out of 46 that were circulated in May 2008. Respondents in year 2008 have been divided into 2 groups; the first group is marked as Group 1 which consists of those who answered the questionnaires only in year 2008. The other group is known as Group 2 which consists of academicians that had participated in both for the year 2006 and 2008. The purpose of this division is to make it possible to compare test result across the year with consideration of the improved environment influence.

2.2. Hypothesis

The main objective of the study is to explore the existence of KM processes at FIIT that consists of capturing, organizing, refining and transferring. The questions were constructed to reflect the practice of KM processes in FIIT. There were four hypotheses to reflect the study. If the majority of the respondents regard these processes to be of particular importance, then it would confirm their validity. The hypotheses are categorized in terms of hypothesis sets. The following are the sets of hypotheses:

Hypothesis Set 1: The existence of knowledge capturing process among academicians in FIIT.

H1: There is existence of knowledge capturing process among academicians in FIIT.

Hypothesis Set 2: The existence of knowledge organizing process among academicians in FIIT.

H1: There is existence of knowledge organizing process among academicians in FIIT.

Hypothesis Set 3: The existence of knowledge refining process among academicians in FIIT.

H1: There is existence of knowledge refining process among academicians in FIIT.

Hypothesis Set 4: The existence of knowledge transferring process among academicians in FIIT.

H1: There is existence of knowledge transferring process among academicians in FIIT.

For statistical purpose, this is translated into:

H0 is rejected if p-value ≤ 0.05 while H0 is failed to be rejected if p-value > 0.05.

Test value = 1, meaning there is existence if value >1.

These hypotheses are tested using one sample t-test to get the p-value. t-test is used in this study because of the sample size is small and the population standard deviation is unknown (Salim et al., 2003)

3. Results And Discussion

Reliability test shows the Cronbach's Alpha value of 0.82 which is closed to 1 as shown in Table 1. The closer the alpha value to 1 means the data is more reliable. In general, reliabilities less than

0.60 are considered to be poor, those in the 0.70 range, acceptable, and those over 0.80 good (Sekaran, 2003). Therefore we can conclude that the data collected in this research is reliable.

To test the hypotheses sets (Set 1 to Set 4), the one sample t-test was used. It is found that result of significance shows = 0 value for all the variables (refer Table 1 - 4). This means that all the hypotheses sets H1 are accepted for year 2006 and 2008 test. What we can conclude from the t-Test result is that the entire KM processes that include knowledge capturing; knowledge organizing; knowledge refining; and knowledge transferring do exist at FIIT. The following tables show the results derived from the data gathered and analyzed using the SPSS software.

Table 1 Reliability Test: Result

Cronbach's Alpha	N of Items
0.82	21

Table 2: One Sample T-Test For 2006 Batch

KM Processes	Mean	Standard Deviation	Sig
Capture	4.88	0.98	0.00
Organize	4.82	1.07	0.00
Refine	4.06	0.83	0.00
Transfer	3.93	0.89	0.00

Table 3: One Sample T-Test For 2008 Batch (Not Existed In 2006)

KM Processes	Mean	Standard Deviation	Sig
Capture	5.53	0.87	0.00
Organize	4.77	0.80	0.00
Refine	4.20	1.01	0.00
Transfer	3.97	0.73	0.00

Table 4: One Sample T-Test For 2008 Batch (Existed In 2006)

KM Processes	Mean	Standard Deviation	Sig
Capture	4.85	0.88	0.00
Organize	4.59	0.85	0.00
Refine	4.01	0.64	0.00
Transfer	3.63	0.54	0.00

From the data gathered and analyzed it is proved that the following processes do exist at FIIT: knowledge capturing, knowledge organizing, knowledge refining, and knowledge transferring. It is also proved that the KM processes exist among the academicians of Group 2 (those who served FIIT for the year of 2006 and 2008).

4. Conclusions

The results show that there exist Knowledge Management processes among academicians at FIIT, UNISEL. The existence KM processes exist among both academicians who served in 2006 and 2008, and those who only served in 2008. All four processes of KM significantly exist at the significance level of 0.05. For future work, further research is proposed to better understand the culture of knowledge management processes to further determine which process(s) need to be improved (if any) or which process(s) the academicians normally practice. The results of the

finding will be useful to the management of the faculty in order to cultivate the knowledge sharing society among the academicians.

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6. References

Abdullah, R. and Selamat, M. H. (2007), "Facilitating knowledge sharing with groupware among faculty communities in higher learning institution", *IJCSNS International Journal of Computer Science and Network Security,* Vol. 7 No.5, pp. 220-229.

Albers, J. A. (2009), "Practical approach to implementing knowledge management", Journal of Knowledge Management Practice, Vol. 10 No. 1, available at: http://www.tlainc.com/articl174.htm (accessed 4 December 2010).

Awad, E. M. and Ghaziri, H. M. (2004), *Knowledge Management*, Prentice Hall, Upper Saddle River, NJ.

Gupta, B., Iyer, L. S. and Aronson, J. E. (2000), "Knowledge management: Practices and challenges", *Industrial Management & Data System, 100* (1), 17-21.

Salim, A., Salim, F., Kasmin, F., Wei, W.G., Abidin, H., Yen, H. C., Salleh, M. A. M., Hassan, M. D., Neo, N. L., Kim, T. C., Peng, T. C., Lan, T. C., Hassan, W. H. W. and Zaki, W. M. D. W. (2003), *Introduction to Probability & Statistics (Revised Edition)*, Pearson Prentice Hall, Kuala Lumpur.

Laudon, K. C. and Laudon J.P. (2004), *Management Information System*, Prentice Hall, Upper Saddle River, NJ.

Marwick, A. D. (2001), "Knowledge management technology", *IBM Systems Journal,* Vol. 40 No.4, pp. 814-830.

Nonaka, I. and Takeuchi, H. (1995). *The Knowledge Creating Company – How The Japanese Companies Create the Dynamic Innovations*. Oxford Univ. Press, New York, NY.

Ramachandran, S. D., Siong C. C. and Ismail H. (2009). The practice of knowledge management processes: A comparative study of public and private higher education institutions in Malaysia. *VINE*, *39* (3), 203-222.

Sekaran, U. (2003), *Research Methods for Business: A Skill Building Approach* (4th ed), John Wiley & Sons Inc, New York.

Sharma, R. S., Chia, M., Choo, V. and Samuel, E. (2010). Using a taxonomy for knowledge audits: Some field experiences. *Journal of Knowledge Management Practice, 11* (1). Retrieved December 4, 2010, from www.tlainc.com/articl214.htm

Sveiby, K. (1997). *The New Organizational Wealth: Management and Measuring Knowledge-based Assets,* Berrett Koehler Publisher Inc., San Francisco, CA.

Zack, M. H. (1999). Managing codified knowledge. *Sloan Management Review, 40* (4), 45-58.

7. Appendix

Questions Asked To Determine The Existence Of Knowledge Management Processes Among Academicians

1.	I normally discuss with my peers on few areas in the course syllabus.
2.	I normally record my knowledge in written form (e.g through multimedia presentation, module development).
3.	Most of the time I will transfer my knowledge to my students by telling them my experiences and knowledge verbally.
4.	When my peers come to me to seek advice on certain area of my expertise, I normally provide them with well kept documented material.
5.	Most of the time when my peers come to me to seek advice on certain area of my expertise I would share my expertise verbally.
6.	Most of my knowledge acquired through readings (i.e. journal, magazines, books or any other documented material in physical or digital form)
7.	I am willing to share all of my knowledge.
8.	Not all of my knowledge is shareable to my students.
9.	Not all of my knowledge is shareable to my peers.
10.	When a student asks me regarding something that is not in the course syllabus I would choose not to answer as I don't have the answer.
11.	If I can't answer out of context questions, I make an effort to check with printed materials to look for solutions.
12.	If I can't answer out of context questions, I make an effort to check with my peers to look for solutions.
13.	When a student asks me regarding something that is not in the course syllabus I would choose not to answer as it is not relevant.
14.	I only share my knowledge with my students in the classroom or lab sessions.
15.	I have e-groups, personal blogs or such that is well maintained to share my knowledge with my students.
16.	I will be referring to the subject's file as my reference when assigned with a new subject.
17.	I will be referring to the subject's expert as my reference when assigned with a new subject.
18.	I will be referring to other printed materials as my reference when assigned with a new subject.
19.	I maximize the usage of computer technology in doing cooperative work in academic processes that are preparing teaching materials and final examination questions.
20.	I do have problem to gather my knowledge and analyze them.
21.	I can identify patterns or analyze scenario easily based on my knowledge without having to use any tools.
22.	I use computer aided tool such as Clementine, SPSS or SQL Server helps to identify patterns or analyze scenario.
23.	It is easier to analyze scenario and identify pattern of my knowledge by using tools as compared to not having one.
24.	If you are the co-coordinator of a subject, do you produce any guidelines for conducting the class to other lecturers teaching the same subjects?
25.	I do conduct formal or informal session to transfer my knowledge to any new lecturer seeking my expertise.

Contact the Authors:

Haslinda Sutan Ahmad Nawi, Faculty of Computer Science and Information Technology, Universiti Selangor, Jalan Timur Tambahan, Bestari Jaya, 45600 Kuala Selangor, Selangor Darul Ehsan, Malaysia. Email: haslindasan@unisel.edu.my

Nur Syufiza Ahmad Shukor, Faculty of Computer Science and Information Technology, Universiti Selangor, Jalan Timur Tambahan, Bestari Jaya, 45600 Kuala Selangor, Selangor Darul Ehsan, Malaysia. Email: nur_syufiza@unisel.edu.my

Suzana Basaruddin, Faculty of Computer Science and Information Technology, Universiti Selangor, Jalan Timur Tambahan, Bestari Jaya, 45600 Kuala Selangor, Selangor Darul Ehsan, Malaysia. Email: suzana_b@unisel.edu.my

Nasrudin Md Rahim, Faculty of Science and Biotechnology, Universiti Selangor, Jalan Timur Tambahan, Bestari Jaya, 45600 Kuala Selangor, Selangor Darul Ehsan, Malaysia. Email: nasrudin@unisel.edu.my

Rohaya Abu Hassan, Faculty of Computer Science and Information Technology, Universiti Selangor, Jalan Timur Tambahan, Bestari Jaya, 45600 Kuala Selangor. Selangor Darul Ehsan, Malaysia. Email: rohaya@unisel.edu.my

Kamaruzaman Jusoff, Faculty of Forestry, Universiti Putra Malaysia
43400 UPM Serdang, Selangor Darul Ehsan, Malaysia. Email: kamaruz@putra.upm.edu.my