A Pilot Study on Knowledge Sharing using Knowledge Management System in IT Shared Services Companies

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Abstract. A Knowledge Management System (KMS) is able to help a company to better manage organizational knowledge to facilitate collaborative communication and knowledge sharing among employees. This research was conducted on the use of KMS in a IT shared services company. The study examines problems and benefits of the KMS implementation, employees' perception towards KMS and potential KMS improvements in order to achieve the objectives of the company. This research used questionnaire survey in addition to focus study and interviews as the data acquisition instrument to solicit employees' responses on the aspects of the system, organization and people in order to nurture a Community of Practice (CoP) in the company to achieve better knowledge sharing among employees. The company recognizes that in order to stay ahead of other business competitors in the global market, understand consumers' needs, strengths and weaknesses of services offered by the company would allow better services and improved product quality. The data analysis and visual presentations generated from the Statistical Analysis System (SAS) analytical tool, a number of issues were identified. This had led to better understanding of the usage of KMS among employees. These results are sources where improvements can be carried out to the existing system and future new KMS system. In addition, Categorization Matrix of Performance Indicators is used to study the result yielded from the research carried out in order to understand the KMS performance in the company. The outcomes of the research showed that the KMS requires certain areas of improvement in order for the system to be more widely used by the employees to yield the expected company goals. The research outputs could also be used as set of guidelines for future KMS system implementation.

Keywords: Knowledge Management System, knowledge creation, knowledge sharing, shared services, knowledge conversion model

1. Introduction

The need to stay competitive in a globally borderless business world demands companies to manage organizational knowledge effectively. The rapid advancement of distributed computing such as web technologies and pervasive computing have provided an economically viable and efficient platforms to manage knowledge collaboratively with all the stakeholders globally and effortlessly. These conditions have allowed companies to be constantly evolving themselves to be competitive with other global players. It is obvious that almost every company relies heavily on these technologies to run their day-to-day business operations. Advanced pervasive knowledge management software systems have become an important part of the organizational strategy nowadays. However, the key that keeps organizations ahead of their competitors is to transform themselves into knowledge centric organizations. In order to achieve this objective, lessons learned from successful knowledge sharing or failures in knowledge systems implementation have become the key asset for a many modern organizations. The successful KMS implementation model or framework is one of the research areas that been attempted by many knowledge researchers. One of the attempts

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undertaken by many companies is to nurture a new culture in an organization, Community of Practice (CoP), in the organization that encourage creation and sharing of knowledge and make full utilization of knowledge for better productivity and profitability. Therefore, it is important to carry out research on a case study company which has adopted a Knowledge Management System (KMS) to understand factors that succeed or fail the knowledge implementation endeavor in the company. In this research, an IT Shared Services Company was chosen to take part in this exercise. This exercise intends to study difficulties and benefits from the employees in the process of KMS implementation. Documentation study and analysis on the KMS system are also carried out. This information will be used as the basis to formulate the problem statements for the next phase of research work. Based on the interviews conducted with an employee from the case study company, it was found that the KMS utilization has been drastically decreased even tremendous effort has invested into the entire implementation exercise. Since the low usage of the KMS system has not met the objectives of the company, to increase knowledge sharing among employees and to intensify organizational communication among employees riding on the KMS system currently available in the company is the priority of the company.

2. Related Works

Knowledge management framework and methods of implementation to ensure successful implementation is an important task by most knowledge driven companies today. The components that constitute a Knowledge Management System (KMS) and highlight how Knowledge Management System (KMS) performance could be measured has been well studied by many researchers. The research works conducted by Rifat O. Shannak (2009) and Thomas H. Davenport (1997) identified four categories of activities in a knowledge management project that are essential for a successful implementation: creating knowledge repositories, improving knowledge access and transfer, enhancing knowledge environment and managing knowledge assets. A KMS manages knowledge and facilitates knowledge sharing among employees in the companies. For companies that view knowledge as an important asset realizes that the company can take advantage from the benefits when KMS is used effectively among employees. The creation of knowledge repositories allows organization to have storage to capture and store their knowledge, documents and information. The proper storage of this information allows employees in the company to easily access to it. The next activity is to improve knowledge access and transfer. It is about knowledge transfer between employees within a company. This is a complicated process as different people have different areas of knowledge. Instead of finding a perfect knowledge transfer approach, a Community of Practice (CoP) is a platform where people of similar interest can be grouped together for knowledge exchange and transfer. Knowledge environment is another area that constitutes as part of the Knowledge Management System (KMS). An organization should enhance its knowledge environment to nurture a knowledge creation and sharing environment for its employees. Such an environment allows employees to be more creative and innovative in their knowledge sharing activity. To ensure the use of KMS in a knowledge-sharing culture is a long term effort, employees must be receptive towards the culture sharing in a company. The last category that constitutes a KMS System is to manage knowledge as an asset. Organizations should consider knowledge as an intangible asset which could be transformed into innovative ideas that could improve the company's overall performance.

3. Methodology

This research starts by documentations study. This provides background understanding of the company's policy, process and policy. A series of interview sessions was scheduled immediately after the document study. These interviews allow one to understand the opinions and recommendations of the interviewees. Prior to the interview, a set of questions had been given to the employees one week before the interview. Each department recommended at least three (3) candidates where candidates are a mix of junior, mid rank and senior staff member in the department. Content of the interview was recorded and documented. This is followed with a questionnaire survey. The questionnaires design was based on the responses of the document study and interview outcomes. Once the survey questionnaires was ready, a pilot test with a small group of selected employees is carried out to ensure that questions on the survey form are clear, easy to understand

and concise before the actual data collection activity. The focus of this paper is on the outcomes of the questionnaire survey after analysis has completed. The design of the questionnaire survey has been well examined and understood based on several successful instruments as described in works conducted by Chi-Lung LEE et al (2010), Chorng-Shyong Ong and Jung-Yu Lai (2004), Jen-Her Wu and Yu-Min Wang (2006), Rifat O. Shannak (2009), Seonwoo Kim et al. (2006) and Paul van den Brink (2001). The questionnaires are divided into four parts of 102 questions. The first part is simple dichotomy questions. These questions asked about employees' perception and the usage of the system. The next part of the question asks the employees to rate themselves using Likert scale values of one to five. The next set of questions examines different aspects of the KMS such as the KMS quality, KMS content quality, KMS interface and so on. This provides a better understanding of the employees' perception towards the existing KMS system.

4. Empirical Analysis

This section analyzes the findings compiled from the questionnaire survey on the employees' perception on KMS, their willingness to share knowledge, and microblogging perception. The survey will collect responses from a total of 65 employees. Even though 37 out of the 57 employees responded in the survey, the response rate of 65% is considered a good support. The questionnaire survey was completed using web-based online system. It is estimated that the entire exercise will take about one month. The process of collecting responses from the participants is time consuming due to their busy work schedule and commitment. Base on the responses, the employees' understanding and their perception towards the existing KMS in the company is depicted in Fig. 1. From the respondents, 37 out of 57 responded to the survey. It was found that only 32 employees actually use the KMS. Fig. 1 also shows that five respondents do not utilize the KMS at all. It was clear that some employees' job don't use KMS. Fig. 1 shows that 54% of the respondents are moderate users, 24% are light users and 8% are heavy users. More research is needed to understand the reasons where most of the employees are knowledge workers but the biggest bulk of them are 'moderate' knowledge users and heavy knowledge user has only 8%. However, survey found that 56% of the employees use KMS.
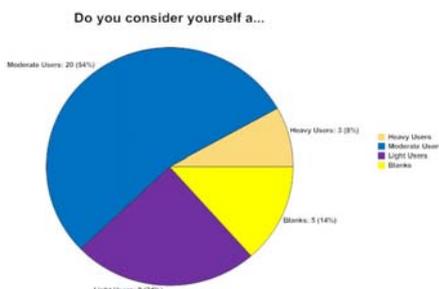

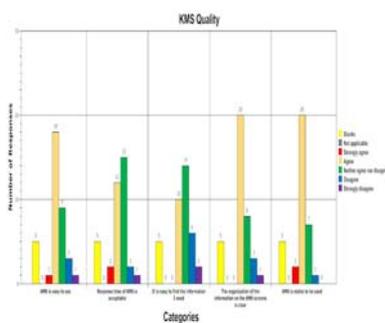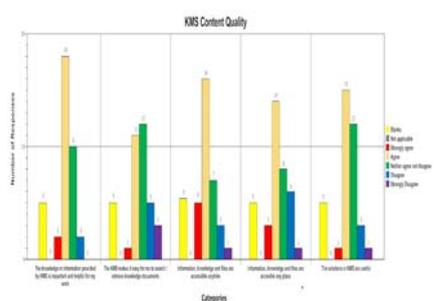Fig. 1: The Types of KMS Users

Fig. 2: KMS Quality

Fig. 3:The KMS Content Quality

In term of KMS quality, a number of questions were asked and analyzed. The outcomes of these questions are shown in Fig. 2. Most of the respondents chose 'Agree' to quality related questions. The numbers of positive responses are more than the negative responses. It is a clear indication that the quality of the KMS is quite good. However, the negative responses from respondents that chose 'disagree' or 'strongly disagree' on the quality of the KMS should not be neglected. Perceived KMS quality is a serious factor that affects adoption and trust toward the use of KMS. Respondents generally agree that the KMS content is useful to them. They agree that the KMS content is helpful to their works; accessibility of the system with the recommended solutions anytime from the KMS is useful. A total of 11 respondents chose 'agree'. However, more responses chose 'disagree' and 'strongly disagree'. It is clear that the KMS's search function needs improvements. In terms of the KMS interface, 14 respondents agree that the KMS interface is pleasant. Only a small number of respondents disagrees and strongly disagrees on the user-friendliness of the interface. This is a strong user-friendly indicator. In term of functions, 10, 8 and 2 respondents chose 'agree', 'disagree' and 'strongly disagree' that the system have all the functions that they want respectively. Hence,

interface improvement is a research area that one can work on. Fig. 5 shows that the KMS functions are generally acceptable by the respondents for knowledge sharing and creation. The three questions in this area received positive feedback as most of the respondents rated 'agree'. In term of user satisfaction, study looked at KMS efficiency, effectiveness, ease of access, ease of download and knowledge reuse. It shows that majority are satisfied with the ease of access and ease of download whereas for the KMS efficiency and effectiveness, most of the respondents choose to remain neutral or silent.
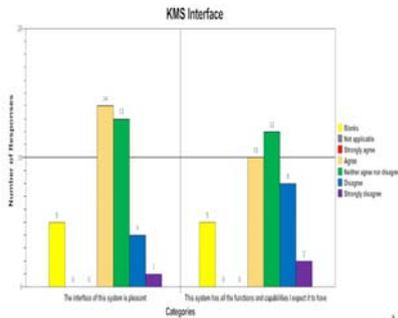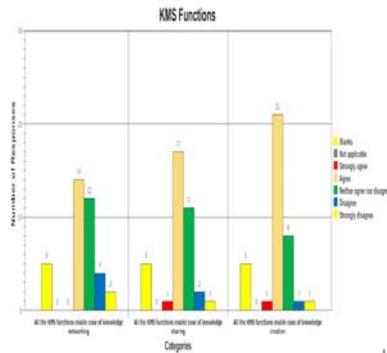

Fig. 4: The KMS Interface
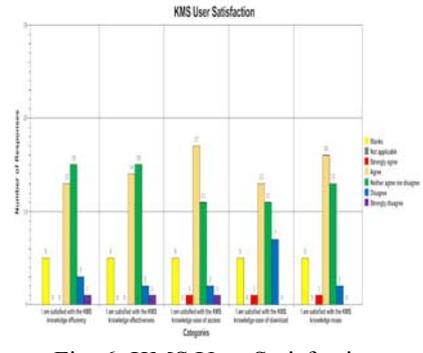

Fig. 5: KMS Functions

Fig. 6: KMS User Satisfaction

Fig. 7 looked into the perceived KMS benefits. It examines types of benefits from the KMS's perspectives. A total of 17 respondents agree that KMS helped them in acquiring new knowledge and innovative ideas. 19 respondents agree that KMS helped them to manage knowledge and 15 respondents agree that KMS has helped them to accomplish task more efficiently. The question on whether there is any tacit conversational knowledge being externalized and transformed is still unanswered. Responses on the usage of the KMS are depicted in Fig. 8. The questions on how the users actually use KMS to make decisions, record knowledge, communicate knowledge and information with colleagues, share general knowledge or sharing specific knowledge were asked. Responses show that very high participants chose 'agree' except on the use of KMS to make decisions. Therefore, most users use the KMS to record and maintain their knowledge. As for question on the future improvement of the KMS, responses show that future improvements and potential new system are required. Fig. 9 shows that 22 respondents 'agree' to have more people actively involved in knowledge contribution would be more fun.
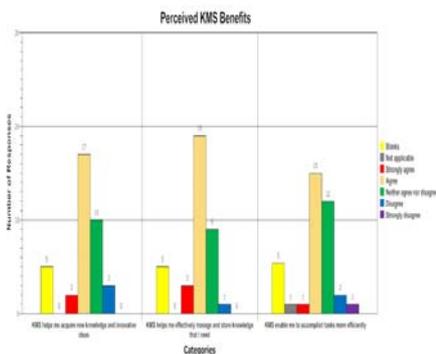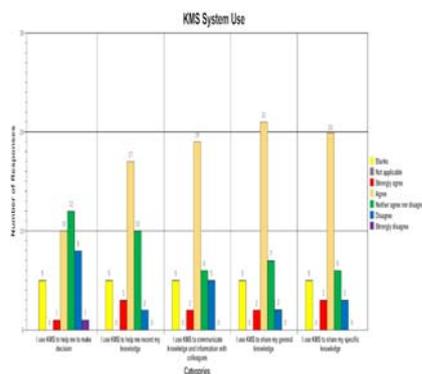

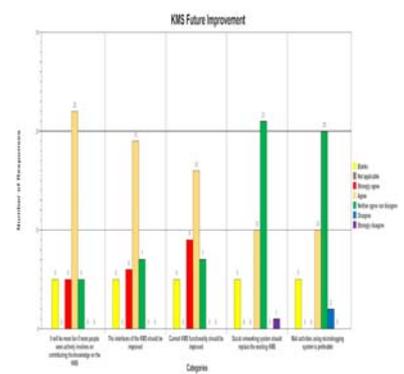Fig. 7: Perceived KMS Benefits

Fig. 8: System Use

Fig. 9: Future Improvements

The second most agreeable improvement would be on the KMS interface. The KMS interface should be improved to attract more users to participant actively. The next most agreeable improvement is on the current KMS functionalities. Most respondents agree that the system should provide more and better functions. In the survey, respondents also provided some comment on poor organization of the information in the system, search feature, the need to spend more time to learn KMS, and poor practice of deposit articles to fulfill their KPI has resulted in the poor content quality that deviate from knowledge sharing objective. These four issues that were raised by the respondents should be taken into consideration to improve on KMS.

5. Analysis and Evaluation

The research outcome shows that the system usage is still poor. The system is only used as a referencing system on policy, transactional document, procedures and other 'new' articles. The entire KMS implementation only fulfills the knowledge 'Internalization' of the knowledge conversion cycle where explicit knowledge is converted to tacit knowledge for individual consumption as described in Ikujiro Nonaka (1997), Gonzalo et al (2010), Manoj Parameswaran et al (2007). The information within the system is now very messy too. Searching for specific information is not easy as employees merely deposit information to fulfill their monthly quota. And the lack of motivation and commitment to use the system had caused the system's content quality to drop drastically over years. In order to understand the current KMS performance well, the Categorization Matrix of Performance Indicators proposed by Rifat O. Shannak (2009) is used. The measurement of the matrix is done either by the log in the database or questionnaire surveys. In this research, survey instrument is used to collect responses from the employees. The categorization matrix is separated into three areas: **process**, **human** and **Information Technology** (IT), where each area has its own domains and performance indicators. In the process area, one of the measurements is on the knowledge quality and the usefulness of knowledge in the KMS is measured. The responses indicated that the KMS content quality is very high. And knowledge provided by the KMS is helpful to their work. The analysis also shows that intrinsic rewards are preferred by the respondents. They value self improvement more than monetary motivation. On the human focus area, knowledge sharing attitude among employees is one of the performance indicators to measure. The respondents of the survey agree that the knowledge in the KMS is reusable. The analysis shows most employees use the KMS to record knowledge. But decision making among employees is poor. The last focus area of the categorization matrix is on the Information Technology (IT) and analysis shows that 32 out of 37 respondents make use of the KMS. For interface, 14 out of the 37 respondents agree the interface is good but need improvement.

6. Conclusion

In conclusion, based on the analysis of the survey findings, it is clear that the current KMS performance is still quite good in terms of process, human and Information Technology (IT). The KMS still fulfill most of the criteria. However, staff perception towards KMS, improvements on the search function to allow better search capabilities and system interface is still poor. In addition, the quality of information sharing still needs to be improved. Motivation from upper management and commitment of employees is needed to ensure information and knowledge shared is useful.

7. Acknowledgements

8. References

[1]   Rifat O. Shannak, 2009. *'Measuring Knowledge Management Performance'*
      Http://Www.Eurojournals.Com/Ejsr_35_2_09.Pdf

[2]   Thomas H. Davenport, 19*97. 'Building Successful Knowledge Management Projects'*
      Http://Www.P^{ro}vidersedge.Com/Docs/Km_Articles/Building_Successful_KM_Projects.Pdf

[3]   Chi-Lung LEE, Hsi-Peng LU, Chyan YANG And Huei-Tse HOU (2010) "A Process-Based Knowledge Management System For Schools: A Case Study In Taiwan" The Turkish Online Journal Of Educational Technology – October 2010, Volume 9 Issue 4 Pp. 10-21

[4]   Chorng-Shyong Ong, Jung-Yu Lai (2004) "Developing An Instrument For Measuring User Satisfaction With Knowledge Management Systems", Proceedings Of The 37th Hawaii International Conference On System Sciences

[5]   Jen-Her Wu And Yu-Min Wang (2006) "Measuring KMS Success: A Respecification Of The Delone And Mclean's Model", Information & Management 43 (2006) Ppg 728-739

[6]   Rifat O. Shannak (2009) "Measuring Knowledge Management Performance" European Journal Of Scientific

Research Vol.35 No.2 (2009), Pp.242-253

[7] Seonwoo Kim, Changyong Lee And Yongtae Park (2006) "The Implementation Framework Of Knowledge Management System For Successful Knowledge Management: A Case Of R&D Supporting KMS", IAMOT 2006

[8] Paul Van Den Brink (2001) "Measurement Of Conditions For Knowledge Sharing" Proceedings 2nd European Conference On Knowledge Management, Bled, November 2001 Pp. 1-16

[9] Ikujiro Nonaka, 1997, Organizational Knowledge Creation, The Knowledge Creating Company

[10] Gonzalo A. Aranda-Corral, Joaqu´ın Borrego-D´ıaz, and Antonio Jim´enez-Mavillard, 2010, Social Ontology Documentation for Knowledge Externalization, CCIS 108, pp. 137–148, 2010

[11] Manoj Parameswaran and Andrew B Whinston (2007), Research Issues in Social Computing, Journal Of the Association for Information Systems, Volume 8, Issue 6, Article 1, pp. 336-350, June 2007

[12] Manoj Parameswaran (2007) Social Computing: An Overview, Communications of the Association for Information Systems (Volume 19, 2007) Pp. 762-780