The Use of Knowledge Management Systems to Support Knowledge Creation and Sharing Activities among Employees – A Survey based Study of IT Shared Services Company

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Abstract

The use of knowledge management systems to support knowledge creation and sharing activities has become organizations' needs in order to stay competitive in the global open market. This is a case study that focus on how IT Shared Services Company adopted knowledge management system as a automated IT tool and the reaction of the employees with respect to the organization when the system is implemented using few strategies to cultivate knowledge creation and sharing environment and culture in the organization. Due to many unknown variables and factors, the research undertaken and presented in this papers is an exploratory study and the objectives are to analyse and investigate the outcomes from the implementation of knowledge management system in the organization. The results revealed that the uses of knowledge management system in the organization depends on the employees “task group” classifications which had been categorized based on their daily job activities, whereas for the types of incentives [6,8] provided to the employees with regards to the organization as a motivating factor to employees varies from staff who have served the organization for a number of years. The findings of this study is able to help both practitioners and researcher to build a fundamental understanding of how knowledge management system are being used by employees from different types of job category who are more likely to use knowledge management system in an IT Shared Services company. Besides organizational and people factors, KM technical features and their effect toward the success of knowledge creation and sharing are also revealed.

Key Words: Task group classifications, task characteristics, job category, incentives scheme, knowledge management system

1. Introduction

In today’s global open market, organizations of different trades use knowledge to stay competitive. Knowledge must be made available freely and accessible easily by employees in the organizations through technology empowerment. The use of IT has helped employees to obtain and reuse the knowledge created to solve their daily job related problems and to increase their productivity and quality of service. This has encouraged many commercial organizations to adopt technology to manage knowledge to stay competitive among competitors [9]. However, lot of research works have been focusing on the aspect of organization and people factors [6] and research endeavours on the use of Knowledge Management System (KMS) and the effect of its technological features have not been examined in great detail. As a result, it is important to study and identify factors that demonstrate the relationship between KMS technology and knowledge creation and reuse among employees that help employees to be more productive in their day-to-day job.

This paper reports and analyses the investigation outcomes using the exploratory approach by conducting focus study and interview sessions with the management and operational personnel of the chosen company, The name of the company will not be revealed in this report due to business reason. The study will also examines issues arise in the implementation of the KMS system. Generally Knowledge management systems are used as knowledge repository that captures, creates, edits, stores documents and information contributed by employees. The company and interviewees detail are chosen to be anonymous. One of the most influencing factors to knowledge creation is creative behaviour [1, 10] because this will determine user behaviour on creating new knowledge and to be shared among the employees.
For many years, many organizations have adopted static approach to knowledge sharing [2]. Static approach is where all the documentation is uploaded into the system for the employees to use it freely and whenever they want to. However, this written online documentation needs to be updated consistently and being maintained by a system administrator. Usually user will not trust this source of information and doubt on the information given through this method. This has brought disadvantages to many organizations for not wanting to trust the information provided by this source.

This paper is structured as follows. In the next section the case organisation’s background on KMS approach is introduced. Then the research approach and research methodology will be presented. This is followed by the research results, analysis and discussion of the result. The proposed future work will be presented at the end of the paper.

2. Background Study of the Knowledge Management in the Case Organization

In this research, the case organization will be used to carry out a full scale study on the knowledge management system and the knowledge creation and sharing activities in the company. The current knowledge management system and its effectiveness and successful rate have been examined in detail through focus group and interview sessions. The case organization first adopted Knowledge Management tools to manage and retain explicit knowledge for better competitive edge in Malaysia since 2006. It used Lotus Notes Domino as the development tool for the creation, sharing and management of explicit knowledge among their staff members. The KMS was used merely to store and share files. The files were all scattered on a conventional client/server with no proper content organization; and there were no administrator assigned to monitor the flow and organization of the information in the system.

The following is the current flow of activities at the case organization:

1) Creator creates team rooms

2) Creator creates files and posts it up on the knowledge system to share among invited team member

3) Invited team member are allowed to post, make changes and comment on the files which was posted by the creator

4) Staff member has the freedom to create any documents that they want to share

5) However changes can be made by anyone but they are not allowed to delete any documents created by the creator or the original owner

In Figure 1, it illustrates the flow of knowledge creation and sharing activities currently implemented at the case organization.

![Figure 1: Interaction in Team Room.](image-url)

The common types of documents being created and shared in the knowledge management system were:

a. Project Scope

b. Timetable Schedule
c. Project Team

However most of the employees in this organization have used this system to store and retrieve documents rather than providing collaborative knowledge creation and sharing. In the year of 2006, the case organization has adopted a new strategy which is called POKM, simply to encourage and change the perception of the employees towards the knowledge management. Before POKM was introduced, the organization’s sharing practices were conducted within an individual’s session where documentations are stored in each individual’s workstation and there is no proper standardisation in terms of document formatting. Most of the employees in the
organization are not aware of the importance of knowledge management which lead to misconception of the exercise when POKM was introduced to them. POKM introduces a learning dimension, an organizational development strategy that the organization has adopted. In the case organization, the definition of is POKM = (P+K+T) where P=People, K=Knowledge, T=Technology, and S=Sharing. The POKM has 8 key focuses:

1. K - Development - to develop the use of knowledge creation and sharing
2. K - Creation - to create knowledge documentation to be share across the network
3. K - Preservation - preservation of knowledge can be retain and reuse in the organization by different party of people.
4. K - Measurement - measuring the quality and quantity of knowledge reuse and creation
5. K - Acquisition - on the practice of importing the knowledge to close the knowledge gap. The knowledge can be obtained either from internal or external knowledge sources.
6. K - Application - reapplying the knowledge acquire from the knowledge creation and sharing
7. K - Sharing - to reuse and reapply knowledge through sharing
8. K - Identification - stressed on identifying the knowledge gap. One need to know the difference between the knowledge required and the existing knowledge to achieve the desired result.

The knowledge management framework that consists of the components was adopted by the selected company. Such framework is designed and developed into the new POKM knowledge management system. At present, the organization only adopted three (3) out of the seven (7) features in POKM. The three main features were K-Sharing, K-Preservation and K-Application. K-Creation was not being emphasized and yet to be implemented in this organization due to the reason of failure in introducing and motivating the staff on using knowledge management system. The organization has nine (9) departments: they are Sales and marketing, Application I, Application II, Research & Development (R&D), Enterprise Performance Management (EPM), Applications Development, Infrastructure, Service Level Management (SLM), IT Resources Management.

The POKM tool has about 70 team rooms being created in the knowledge networks. These knowledge networks are called Team Room. Each knowledge network is designed to handle a specific area of knowledge need which relates to the IT services that the company render to its customers. Each of these knowledge network consists of members who are employees of the company who are interested to contribute and share knowledge in that domain area. To name a few of the team rooms were IT Tips, JDE access right requisition app, planned maintenance schedule, R&D teamroom, security operations and etc.

The knowledge coordinator is appointed to manage and ensure format and quality of the knowledge contributed by member of the POKM is correct and of quality. Member of the POKM are users of POKM. The experts of the specific domain will read and comment on all the new posts. The current practice in the case organization has no knowledge champion. The head of the departments needs to champion the knowledge creation activity. This includes motivate, promote and comment on the knowledge creation and sharing activities in the company.

The management of knowledge activities rest on the knowledge coordinator of the company. The responsibility of validating the correctness of knowledge created from new posts rest on the expert employees in the company. Due to lack of time, many new posts may not be properly commented and validated by the expert employees in the company. Most of the employees in the company may read posts without providing comments and corrections at all. This has greatly reduced the number of new knowledge and knowledge enhancement activities in the company.

In the following section, the research approach applied in the study is presented.

3. Research Approach

We adopt exploratory research approach where focus group and interview sessions were conducted to investigate and understand issues and problems that arise from the case organization on the usage of the POKM tool. The focus group had taken place and informal interview was conducted with
the top management of the organization to obtain preliminary and fundamental information as well as data pertaining to the corporate objectives, historical background and future corporate direction of the need to successfully create and share knowledge as a competitive measure in today’s business horizon.

The management of the organization had subsequently used many strategies from the aspects of organization motivational factors, extrinsic and intrinsic rewarding schemes to encourage the employees of the organization to contribute knowledge and to promote knowledge reuse on the said system. From the literature review e also found that many researchers researched on people factors on the effectiveness of contributing knowledge creation and sharing to the organization [3, 4, 5]. From the organization motivational aspect, the management had to set knowledge creation and sharing as a standard KPI on the annual remuneration scheme as a reward to the employees for their contribution. By setting KPI as part of their annual remuneration scheme, many employees began to use the knowledge sharing tool. However this does not bring benefits to the organization instead it has raised problems like abusing certain topics or content which are available from the Internet or irrelevant to their jobs for the sake of fulfilling their KPI set by the company. Their creation for the sake of creating and fulfilling the requirement of annual remuneration scheme has not helped the ultimate goals of the company: knowledge creation and sharing for higher productivity and better quality of service. The strategy used by the management did not increase the level of knowledge contribution and usage instead it has created a lot of irrelevant and redundant documents in the system. In addition, momentum of practicing KM is getting lower without the encouragement and motivation from the management. Problems like difficulty in knowledge searching have also arise due to the volume of the knowledge base is getting larger to handle by the current technology, slow KMS performance, and lack of effort continuity. Hence knowledge creation is not very successful.

To seek better understanding, the investigation also carries out a series of formal interview sessions to the employees to unveil the factors and reasons of the unsuccessful POKM implementation. In the interview, a total of nine (9) departments was chosen with at least three (3) staff were chosen from each department where one (1) from different level or position with different seniority to take part in the interview activity which last about an hour for each. These staffs are being ranked in the following seniority: one most senior staff in the department; one most junior staff and one staff in between the two categories of staff (Table 1).

Table 1: Staff involvement in KMS

<table>
<thead>
<tr>
<th>Staff Seniority</th>
<th>Involvement in the knowledge management system</th>
<th>Number of Interviews</th>
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<tbody>
<tr>
<td>Senior</td>
<td>Monitoring, communicating, creating, capturing</td>
<td>8</td>
</tr>
<tr>
<td>Junior</td>
<td>Creating, capturing</td>
<td>6</td>
</tr>
<tr>
<td>In Between</td>
<td>Creating, capturing, communicating</td>
<td>8</td>
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The interview questions were divided into 4 sections. They consist of Introduction, People, Technology and Organization factors. The Introduction section is designed to gather some background information of the staff such as job description and daily activities related to the knowledge management system. People section solicits the types of motivational schemes that initiated by the management driven by the top management. The aim of these questions is to understand more in-depth of what went wrong in the initial stage of introducing reward schemes to the staff in order to propose a more effective reward scheme to the staff. As for the Technology section, questions asked like “system usability”, “friendliness” and “technological features” to obtain a better picture of what technological features fit into their daily job activities. The last section of the interview looks at the Organizational factor that intends to understand the factors that contribute to the motivation and cultivation of continuous usage of knowledge management system in the organization.

The interview questions that we used were tabulated in below table:
4. Results and Analysis

Based on the findings of the interview activities, a set of “task group” classifications base on the task characteristics have been identified which categorizes their daily job activities into four (4) different groups: they are creative, detail, mechanical and routine tasks. Software development will be categorized as creative task; documentation of software in terms of user manual is categorized as detail task where it takes a fair amount of detail and careful writing on instructions on how to operate a system that needs to be documented. On the other hand, software pre-sales and after sales services are categorized as mechanical task and administrative works are categorized as routine task. The “task group” classifications are classified in consultation with the managers of the company base on the task’s nature and characteristics.

![Table 2: Common Technological features used in the KMS](image)

<table>
<thead>
<tr>
<th>Seniority of Staff (Level)</th>
<th>Technological features required by the job using knowledge management system</th>
<th>Number of Interview</th>
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<tbody>
<tr>
<td>Senior</td>
<td>Terms, notes, categorization, search, IT tips, authorisation, search term, log in, DB Role, Information, search by category, learning, group, browser, FAQ, consumer, index by user</td>
<td>5</td>
</tr>
<tr>
<td>Middle</td>
<td>Information, search by category, classification, IT tips, cas and peace, response, risk, search term, FAQ, transmission</td>
<td>3</td>
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The result of the interview questions has enabled us to divide their works into several job categories: programming, administration, management, support and training, sales and marketing, IT management, Infrastructure and security and domain analysis. With the proper jobs categorization, we are able to have a better picture of the kinds of activities they perform in their jobs. By identifying the grouping of their jobs, we can also identify and deduce which “task group” they belong to: creative, routine, mechanical and detail. The objectives of formulating these categories are to be able to understand the kind of relationships between “task group” and the used of KMS technological features in the knowledge management system[7]. Table 3 tabulates the job categories from their job descriptions.

![Figure 2: A construct framework that describes the relationships of “job category”, “task group” and usage of KMS](image)
Table 3: Job descriptions and job categories

In the study, the question on the usage of the KM software features in their day-to-day activities was also closely examined. Four (4) respondents out of Twenty Three (23) answered that they used the “Search by Keyword” feature and another Four (4) respondents answered that they used the “Search by Category” feature. Three (3) respondents answered that they treated the knowledge management systems as a knowledge repository most of the time. They just used it for depositing documents and retrieving of documents whenever it is needed. The following is an extract of the reply from one of respondent.

LYY : “I would refer the KMS as a repository of storage storing or knowledge bank for example whenever i need any materials i don’t have to wait for my colleagues to get it sent to me instead i can easily download the materials from the system and with this it has definitely speed up my delivery and improves my work productivity”.

Six (6) out of Twenty Three (23) respondents liked the “Notification” feature simply because it alerted the recipients by giving an email notification of some new posts in the system.

Majority of the respondents commented that the KMS helped them on improving their productivity of their job. A few examples that show how KMS has helped them to improve their jobs are as follow: reference to a new technology, reference to latest tips, reduce 30% customer call-in, well informed decision, work more efficient, cut down meeting time, cut down new staff briefing this is because the staff are able to obtain a lot of latest documentation and SOP from the system, and archive which has helped employees to provide fast service delivery because of ease of search for documents from the archive.

When it comes to the question of whether the incentive scheme introduced to the employees is a motivator to create and share knowledge, eight (8) respondents would like to have an official recognition in the sense of giving them a plaque or a certificate of appreciation over any the monetary rewards. However there are handful of staff would like to have some kind of rewards like shopping voucher or electronic gadget for recognizing their contribution to the KMS. The following extracts are some of their replies to this question:

PC: ” I would prefer to have official recognition instead of monetary rewards”.

TKC: ” thinks monetary of rewards shouldn’t be one of the contribution factors on rewarding their employees”.

MC: ” one can be rewarded by giving a laptop or Jusco voucher for those who are top knowledge contributor”.

5. Discussion

The exploratory outcomes from the previous section have revealed many unknown factors and variables that have never been found before. The interview questions are tabulated as below:

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<tr>
<td>Organizational Area</td>
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Table 4: Preferred incentive based on staff seniority

The table above shows the interview section being segregated into area of findings to obtain the result number of respondent responding to certain questions based on their staff seniority. The researchers had picked the organization sections to study on the incentive scheme provided to the staff. From the results, it is clearly shown that incentive scheme only works for junior and in between staff working in the organization. However most of the senior staff couldn’t be bothered with any incentives simply because they sees the potential and importance of this KMS in the organization.

SS : I personally prefer to gain more knowledge through using KM system than any rewarding token.” said SS who had been working in the organization for 8 years.

One of the senior staff even thinks that by rewarding him on using the KM system through promotion or monetary is not important to him as using the KM system has become part and parcel of his life.

AH :” There is no need to reward me because using the KM system has become part and parcel of my life”. said AH who had been working in the organization for 10 years
A total of 10 respondents would prefer to have some kind of monetary schemes as a motivator for them to contribute on the KMS tool. Three (3) respondents from the junior rank would prefer to have incentive scheme based on gift compare to senior staff in the organization.

We can conclude that the longer service that the staff could have in the organization shows a great value of understanding on the needs and the importance of KMS tool. They are experience enough in the organization to know the degree of importance of having knowledge sharing and creation in the company to help them ease their daily activities task whereas for the junior and middle level staff would prefer monetary reward.

6. Conclusion

In this study, there are some limitations which need to be addressed from KM perspective in order to plan the future research undertakings for a more successful knowledge creation and sharing activities in IT shared services organizations. The study is done by only focusing on a selected organization thus this may not provide us a comprehensive understanding on the links between the usage of knowledge management system and jobs categorization, task group, people and technical factors of a KM system. Another research should be conducted is to look at another organization that fall in the same business domain. Hence this will give the researchers and practitioners a more precise analysis on the relationship between these links that we have discussed in the paper. And this will also allow a research model to be formulated based on the outcomes of the current and future research studies.

7. References