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INVENTORY OF KNOWLEDGE MANAGEMENT AND EFFECTIVE UTILISATION OF ORGANISATIONAL RESOURCES

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ABSTRACT

In the organization, an asset that is enriched inside it is the knowledge. But unfortunately, knowledge is not being well managed and it's like a waste because there is no right channel to share, to find and to be utilized. Knowledge should be categorized into specified domain where it can arrange and be classified systematically. Moreover, knowledge is more important to be shared but at the same time, the privacy and confidentiality should be protected. To overcome the problem of unmanageable knowledge, knowledge inventory system has developed and it contain a repository of knowledge, the taxonomy and also the permission to shared it as a public or as confidential. Two important characteristic that have been identify to attract the user to use this system of knowledge. The two characteristic are usability and ease of use. It is important to deliver a good quality of knowledge inventory and boost its sharing among organization.

KEYWORDS

Knowledge Management, , Knowledge map, Knowledge inventory.

INTRODUCTION

With the rapid and constant changes taking place in information technology and the Internet, traditional business models must continue to meet the changing business environment in order to survive. Only firms participating in the creation and utilization of knowledge can hope to enjoy the rewards of business reform in today's knowledge-based economy. Thus, the issues surrounding knowledge management have attracted more and more concern from both industry and academia. Due to the technological features of the profession, the processing industry has a close relationship with the adoption, creation and warehousing of knowledge, research and marketing being one of its core competencies. Effective knowledge management can help the processing industry to accumulate core knowledge, build corporate intelligence and gain a competitive edge.

A large amount of literature has stressed out the important of having knowledge management and the adaptation in the organization. Some other literatures has separately discussed about their architecture, their concept to having knowledge management, knowledge mapping, knowledge collaboration and issues related with knowledge management. In this respect, knowledge design and inventory mapping are in timely manner is a critical job as it directly affects the success or failure of a knowledge management.

In particular, the idea of having knowledge inventory Unit is to enable the sharing information and knowledge within organization and other agencies. However, in order to enable the knowledge management between organizations, the main part that should be looked upon is taxonomy. This paper shows that taxonomy play an important roles to determine where is knowledge belongs to. This will make knowledge management to be more useful and reliable and directly represent an agreed vocabulary of topics arranged around a particular theme. The focus on this paper is to come out with the prototype of knowledge inventory that content repository of knowledge and directly able to give knowledge deposited into.

SIGNIFICANT OF THE STUDY

This paper is significance to the domain of knowledge management as it extends the knowledge base that currently exists in that field. The concept of knowledge inventory is relatively new to the majority of knowledge organizations. The knowledge as a valuable asset will offer more beneficial to organization if it was utilized by organization. Therefore, this paper explores the knowledge taxonomy, the repository and knowledge architecture which will help to raise awareness among those who are unacquainted with its potential applications and benefits within their organization setting. To illustrate the potential of a knowledge inventory, the paper investigated the existing model of knowledge inventory, and relative work that has been conducted by other researchers. The findings which have resulted from previous and current studies are to be implemented into the prototype application.

PROBLEM STATEMENT

Knowledge inventory is an activity that combined a set of strategies and practices in order to capture, create, store and spread knowledge and experience within the organization. Government organizations worldwide are facing challenges as administrative, executive and judicial bodies continue to evolve into an electronic work environment pushed by paperwork, reduction mandates, and requirements to handle increase workloads. So they need to optimize their knowledge to keep competitive and give public better quality of services.

With the much information that provided by organization, people can't effort to remember everything and quite difficult to find it when it's needed. Organizing of information has no specification categories and keyword. People tend to create it and categorized it by their own perception. Information technology was found to be main source of knowledge initiative in administrative sector, followed by research and development. Collaboration between organization where can extend competition with private sectors is a crucial factor.

THE PROBLEM

1. The main problem that haunted many organizations is the knowledge is not being managed as well. They need to recognized the knowledge that available in the organization either it was in tacit knowledge or explicit knowledge. The knowledge that are not being used optimizing will slowly fade out from organization as its not being recorded, captured into specified way.
2. Creating taxonomy also is a challenge to organization to provide quality knowledge inventory. Taxonomies are the basis of classification schemes and indexing systems in information management such as the Dewey Decimal System. Taxonomies are even more wide spread with applications including post codes (zip codes) used by postal services, and job categories used by tax collection agencies. With the advent of the internet, there has been increased interest in using taxonomies for structuring information for easier management and retrieval.

3. The security of the knowledge is also the crucial thing that leads to the problem. Knowledge is labeled as confidential and only authorized person can handle it. Some of the knowledge contents the private knowledge that should be avoided data leakage. The exposure knowledge to unauthorized person will lead to data leakage and it will be worse if the knowledge is being misused.

RESEARCH METHODOLOGY

RESEARCH OBJECTIVE

Generally, the objective of this paper is to have a better knowledge management component where it enable the information sharing among the staff. It is believed that it is important to effectively and efficiency manage these organizational element in order to have successful knowledge management. This, paper is an attempt to verify the key of elements on knowledge management process. Specifically, these objectives are:

- To develop the repository that content specified attribute to support the knowledge sharing by enabling depositing and sharing.
- Aim to leverage "know-how" across entire organization, for improving decision making, and increase innovation

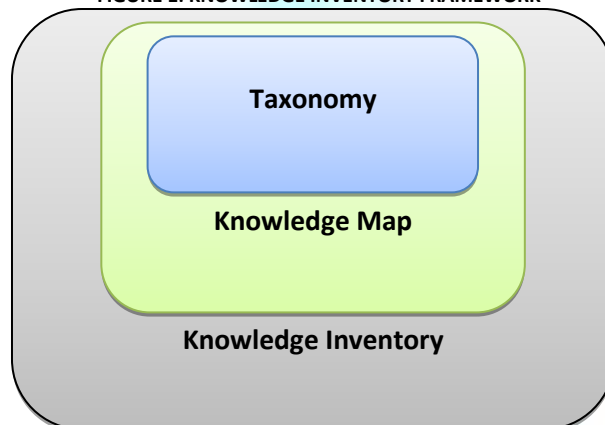
RESEARCH SCOPE

In this paper, knowledge inventory system is designed to enable knowledge sharing and depositing. So the scopes of this paper are listed below:

- To develop repository that can store all the knowledge provided by staff.
- To create the taxonomy to identify the knowledge with the specified category
- To develop the prototype of knowledge inventory

PROPOSED FRAMEWORK

FIGURE 1: KNOWLEDGE INVENTORY FRAMEWORK



This section of the paper describes about the proposed framework that will use to develop knowledge inventory as it's shown in figure 1. One of the most important elements for effective knowledge management is to get a picture of the knowledge in the organization. This amounts to finding answers to the question what uses the knowledge, which knowledge is used, where the knowledge is used, when the knowledge is used, and which organizational role provides the knowledge. While creating k-inventory, the main activity should be considered is database. On this phase, database are creating and focusing to the comprised actors. Based on the proper field and relationship among the table, database are determined into knowledge, ownership, document, type of role, and users. Explicit and tacit knowledge are accepted and recorded into the database.

Knowledge inventory will lead to creating knowledge map where knowledge can be mapped for a routine process such as searching and expertized mapped. Knowledge mapping is a process of surveying, assessing and linking the information, knowledge, competencies and proficiencies held by individuals and groups within an organization. Finally, the heart of knowledge inventory is having taxonomy for the knowledge created by the user. It is constructing a roadmap to locate the information needed to make the best use of resources, independent of source or form.

DESIGN PHASE

The design phase is described on how the system will be built. This system includes the physical construction, hardware, software, operating system, programming, and communication. Next step is to develop the knowledge inventory, based on data analysis. The physical characteristics are specified and detailed design is prepared.

User interface

User interface design is the design of computers, software application, and websites with the focus on the user's experience and interaction. It' also created an effective communication medium between a human and a computer (Pressman, 2001)

The proposed system is a web-based system where users interact with the system for depositing the knowledge, sharing knowledge and search the knowledge. In doing so the following criteria has been followed as a guide in creating user interface design for knowledge inventory system:

- Web page should be understandable and self-explanatory
- Minimal user input
- Strive for simplicity – "keep it simple"
- Organize, economize and communicate

Quality attribute of knowledge management

The important attributes involve in this system is ease of use and usability attributes. This two attributes that are proposed can influence the acceptance of knowledge inventory. In order to deliver a good quality of knowledge inventory, certain attributes are needed to highlight to ensure the best qualities are delivering.

Davis (1989) proposed a Technology Acceptance Model (TAM) that demonstrates similarities to the diffusion of innovations theory, and he proposed two factors that influence the acceptance of technology, which are: Usefulness and Ease of use. Each of the characteristic has its own definition. Table 1 explains in details the definition for each characteristic.

TABLE 1: KNOWLEDGE INVENTORY CHARACTERISTICS WITH DEFINITION

Knowledge inventory characteristic	Definition
1. Usability	Information on products and services online, other information that customer needs (Jun & Cai, 2001).
2. Ease of Use	User friendly, easy login, accessibility of the Web site, functions that customers need, easy navigation (Jun & Cai, 2001).

RESULT AND DISCUSSION

This paper develops the repository for knowledge inventory in Unit the result for this study. The data that were collected from questionnaire for evaluation is analyzed and concluded.

Discussion section exposes research findings which then we further analyzed to meet the objectives of research and answer the research questions. Microsoft Excel software is used to calculate the data gathered from the respondent. The questions asked in the questionnaire are relevant in term of evaluating the ease of use and also usability.

ANALYSIS

There are 30 questionnaires distributed to respondent in two different sections (department) which is at Unit 20 of them are come from Information technology department (ICT) and the rest is from Macroeconomic department. They are being asked to answer the questionnaire after experience the knowledge inventory system. 19 respondents were male and the rest (11) is female. All of them together are coming from different position and field.

The questionnaire contains 12 question and main focus into two perspectives. The first perspective is looking forward to the usability. There are 5 question related to usability. Another perspective is ease of use. In this domain, also 7 questions are given to the user that needs to fill out.

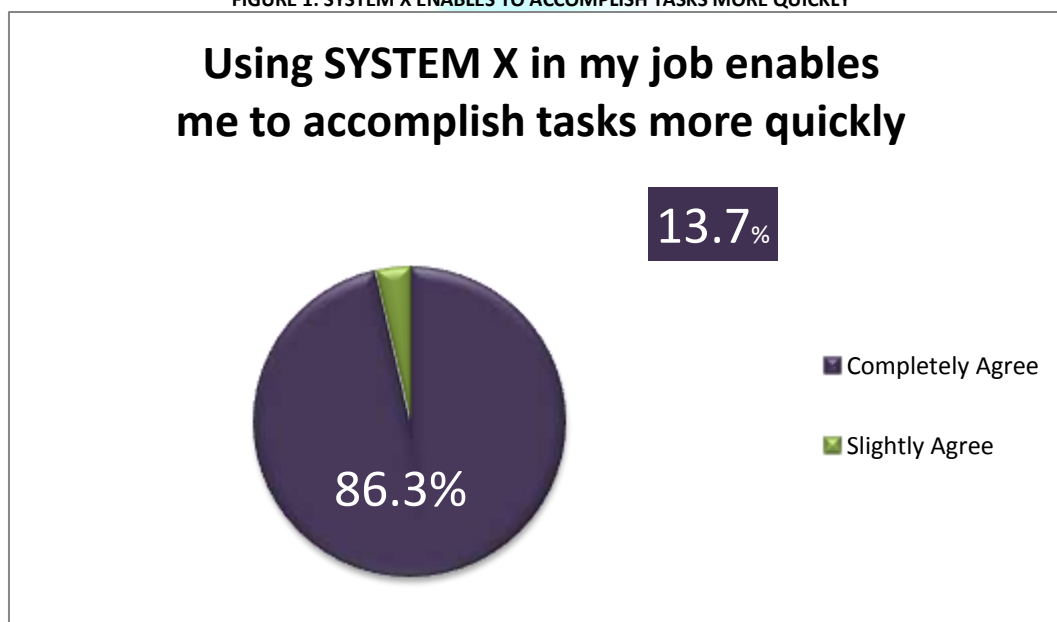
Usability

The usability of a system, as defined by the ISO standard ISO 9241 Part 11, can be measured only by taking into account the context of use of the system. Furthermore, measurements of usability have several different aspects:

- effectiveness (can users successfully achieve their objectives)
- efficiency (how much effort and resource is expended in achieving those objectives)
- satisfaction (was the experience satisfactory)

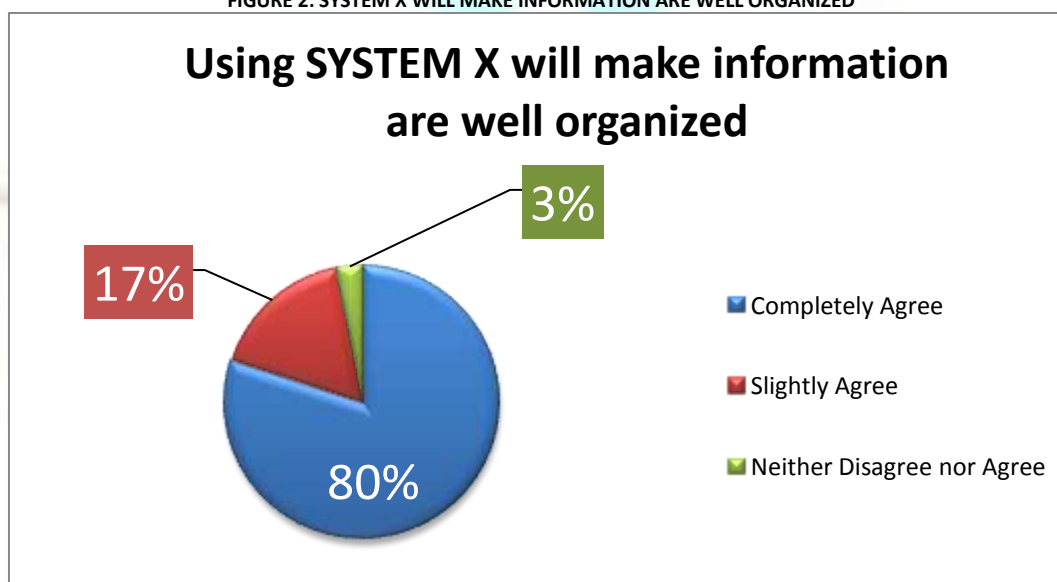
From the analysis of the question given that related to the usability, 86.3% respondent are completely agreed by using knowledge inventory system in their job/task, will enable them to accomplish the job quickly. 13.7% respondent slightly agrees with using the system, their job can be accomplished in shorter time compared to the manual method. Based on figure 18, we can measure that the knowledge inventory are capable giving them more resources and directly lead them to accomplish the task given in the organization with a few of click using the system.

FIGURE 1: SYSTEM X ENABLES TO ACCOMPLISH TASKS MORE QUICKLY



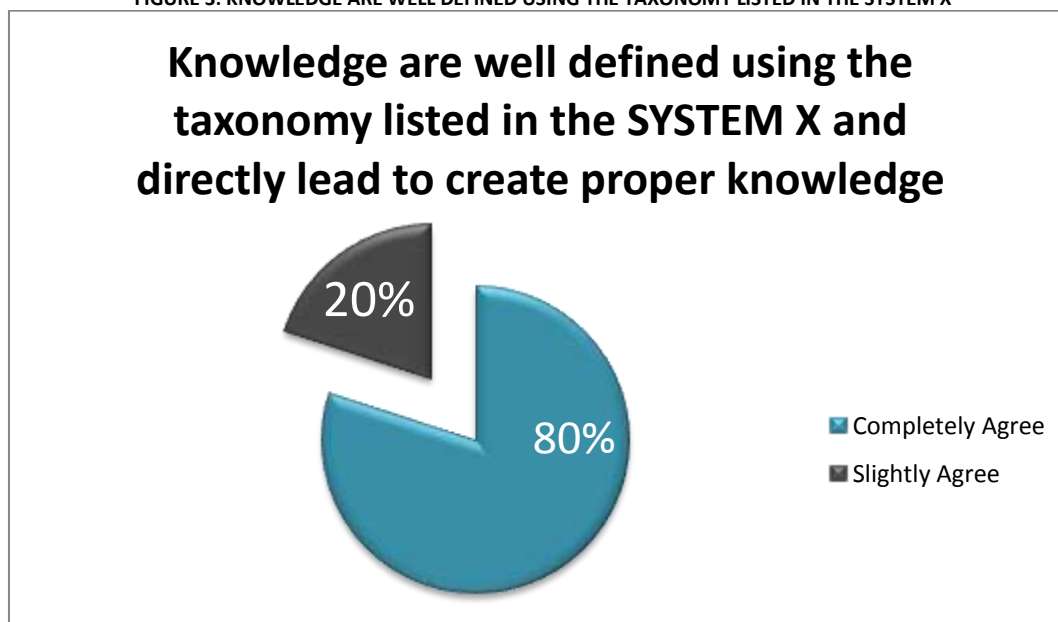
The main objective of this paper is to manage the knowledge that is enriched in the organization. From the survey, we populated that 80% of respondent are completely agreed with using knowledge inventory system that are created, it will able to make information well organized. 17% respondents are slightly agreed and 3% are choose neither disagree nor agree. By this analysis, we can say that the system can organized the knowledge in the organization. See the figure of 2.

FIGURE 2: SYSTEM X WILL MAKE INFORMATION ARE WELL ORGANIZED



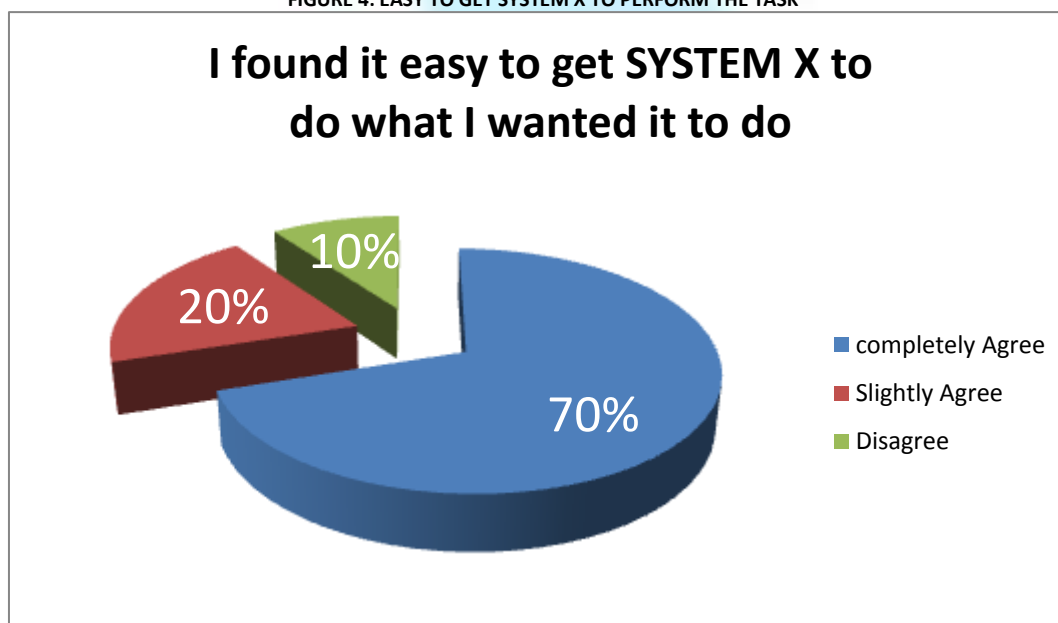
From the questionnaire, the analyze of taxonomy are also is part of usability. These analyses are made from using the question of "Knowledge are well defined using the taxonomy listed in the SYSTEM X and directly lead to create proper knowledge". The result shown that 80% completely agreed with the taxonomy used in the system,, and 20% are slightly agreed with it. The figure of 20 had shown the satisfaction of well-defined of taxonomy in the system.

FIGURE 3: KNOWLEDGE ARE WELL DEFINED USING THE TAXONOMY LISTED IN THE SYSTEM X

**Ease of use**

In analyzing the ease of use of the system, a few questionnaires are chosen to prove the concept of ease of use. The question such as “**I found it easy to get system X to do what I want to do**” is lead us to prove the system have a user friendly interface and make it simple for user to do process provided such as knowledge creating, knowledge sharing and also searching. Figure 3 showed the rating from the user about the ease of use and figure 4 showed the interface of knowledge creating.

FIGURE 4: EASY TO GET SYSTEM X TO PERFORM THE TASK



Interface should be easy to understand as its part of ease of use characteristic. In order to have a good knowledge inventory, we included a few shot screen to show the ease of use that including in the system. Figure 3 are showed the interface of list of knowledge are shared to the user and figure 4 showed knowledge approval

DISCUSSION

After analyzing the problem of knowledge inventory, a few issue are discovered that lead to become a challenge for knowledge inventory. Searching is a most important thing that need to be look at. User concern on how can they get the knowledge with faster, accurate and also from some suggestion like what search engine offer for them. So, to solve the problem, the proposed knowledge inventory provide searching method that can enable user to type whatever word that they are looking for if they don't know the title of the knowledge, the depositor and other common attribute. The searching method used in this proposed system is manipulated with matching knowledge description, knowledge title, knowledge rating and also comment from user. Figure 4 shows the searching methods that are included in proposed knowledge inventory system.

CONCLUSIONS

The aim of this paper is to develop the repository for the knowledge inventory, creating the taxonomy that will be categorized knowledge into specified domain and also develop proposed knowledge inventory. The aim has been satisfied, user are able to create the knowledge using an interface and stored into dedicated repository, leveraging the knowledge into public or confidential security. Finally, this paper might suggest a direction for further studies and research on knowledge inventory in public service, and which might include applicants' perceptions and views on knowledge management.

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