# Implementation and evaluation of Knowledge Management System in RMUTSB

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*Abstract*— **In the changing world, people seeking for new knowledge continuously. One of the important factors to stimulate and achieve the strategic goals of the organization is knowledge management. Even though, the knowledge management concept has been adopted for decades, but the organizations still have not successful in implementation. Especially in higher education, which responsible for create and transfer of knowledge to people as well. The study found that, CopWeb is used as the training tool for sharing of knowledge. It is consist of knowledge acquisition and capture subsystem, knowledge sharing subsystem, knowledge representation subsystem, and management and administration subsystem. The knowledge management system using CopWeb technique in Rajamangala University of Technology Suvarnabhumi has implemented recently can work properly. The proposed system can be extended and distributed the knowledge, also can be searching through the Internet as well. The respondents were satisfied with the knowledge management service. Most of them are support staff followed by 27 faculty members. From distribution of 4 campus. The overall satisfaction is at a high level. Most of them are satisfied in the system usage steps, followed by information service and quality of services. The comparative study of the implementation of knowledge management in different scales of institution, or comparative study of implementation of knowledge management in different industrial sectors will be presented.**

***Keywords- Knowledge Management, Knowledge Management in Higher Education, CopWeb***

## I. INTRODUCTION

In the changing world, people seeking for new knowledge continuously. One of the important factors to stimulate and achieve the strategic goals of the organization is knowledge management. Even though, the knowledge management concept has been adopted for decades, but the organizations still have not successful in implementation. Especially in higher education, which responsible for create and transfer of knowledge to people as well. In a survey of economists 2007, CEOs have stated that the most important investment in realizing corporate strategy goals is knowledge management. However, most knowledge management projects do not deliver what they have promised at the beginning [1].

Knowledge management refers to the process and methods of quality management. Which is focused on the development of people, jobs and organization. By constructing the systems and processes to requisition of knowledge and extraction of tacit knowledge of expertise in organization. Then conduct to value added in working to reach the goals by knowledge sharing. Application and dissemination of knowledge to distribute and share of intellectual properties by knowledge presentation to those who wish to use in time of needed.

Knowledge can be categorized into 2 types. (1) Explicit knowledge which people can access into sources of knowledge, in the form of manuals, textbooks, documents and printed media, or electronics media, etc. (2) Tacit knowledge which comes from people mind and experiences, and the wisdom gained through experience. Knowledge sharing of those 2 types of knowledge lead to the creation of new knowledge or extention of knowledge. If it is used in practice, then conduct to development and continuous of learning [2].

The knowledge management life cycle functionality includes the five functions as the following: 1) Acquisition and Capture; 2) Organization and Storage; 3) Retrieval; 4) Distribution and Presentation; and 5) Maintenance [3]. Technologies play an important role in knowledge management. The information technology infrastructure provides a seamless "pipeline" for the flow of explicit and tacit knowledge through the knowledge conversion processes.

Thus, technologies enable capturing knowledge; defining, storing, categorizing, indexing and linking digital objects corresponding to knowledge units; searching for and subscribing to relevant content; and presenting content with sufficient flexibility to render it meaningful and applicable across multiple contexts of use [4].

The benefits of knowledge management for information technology support can include:

- Decrease in support costs associated with staff "ramp-up" time
- Decrease in costs due to less re-work and duplication of research activity
- Increase customer satisfaction by shortening the time of incident [5].

Users do not feel the concrete benefits of the knowledge management system in its operational activities. Therefore, in designing the solution, initial steps were taken to identify as many as possible opinions, comments, feedback, and expectations of users. With mapped in aspects of socio-technical in the basic design of the enterprise architecture can answer the problems and challenges faced by company [6]. The well known classification of knowledge management critical success factors into four categories: 1) organizational factors, 2) individual factors, 3) knowledge management capability, and 4) organizational performance [7].

Mertins et al (2003) proposed the knowledge-related balance sheets, as well as case debriefings as a knowledge management instruments (KMI). Skill management is a comprehensive instrument that involves both human resource management activities, like providing a structured catalog skills, as well as technical support in the form of skill management system that allows the identification of knowledgeable employees. Weblogs, Wikis, and forums were very popular in recent years and has been proposed by a number of authors as a means to facilitate codification strategies, collaborative content creation, and communication [8].

Most of Thai organizations use information technology as an instrument to achieve the objectives of their communication strategy. There is growing awareness of the role of information technology to maintain a high-tech knowledge management, only high-tech organizations exhibit knowledge sharing practices. Thai organizations are trying to increase their employees' awareness of knowledge management and to motivate them to share, create and use knowledge. They are eager to become part of the knowledge network [9].

## II. Role of Knowledge Management in Modern Higher Education

Ladda (2011) found that, knowledge management is the process to requisition, storage, distribute, sharing of data, information, and knowledge in several forms. So that everyone in the organization can access to the knowledge and self adaptation, and work efficiently. The employees reach to the knowledge in the desired time to hit the expected targets. Knowledge management is one system to develop the capacity of employee to coperation and collaborative of work efficiently. Knowledge management is the art and science of managing organizations to achieve continuous and sustainable development as the ultimate goal of developing employees and organizations.

Knowledge management plays a key role in higher education is aimed at 1) to develop a better quality and effectiveness 2) to the development of human resources at all levels, and 3) to develop "Knowledge base" of the organizations towards the enhanced knowledge investment of the organization [10].

Two considerations led to the decision to use a knowledge management approach to help other teacher education programs improve the way future teachers are prepared to use technology. First, without knowledge, an organization cannot function. Without explicit knowledge, an organization cannot readily communicate how it functions, making it very difficult for individuals to work in or with the organization. The nature of tacit knowledge often blocks opportunities for an organization and its employees to reflect upon and share what they know and do in the organization. The end result could be an organization hindering its own performance. Effective performance in an organization can be enhanced through explicating tacit knowledge so it can be shared and applied, especially outside the originating individual or group. Second, learning plays an important role in knowledge repository development and implementation. The knowledge repository approach sees learning as a continuous conversion of tacit knowledge to explicit knowledge with the conversion happening collectively in a community of practice. By explicating tacit knowledge to explicit knowledge in an accessible knowledge repository, members of the community are able to share and reflect on their understanding of what they know and what they do, and to benchmark against and learn from others [11].

Using knowledge management techniques and technologies in higher education is important as it is in the corporate sector. It is with knowledge management that colleges will be better able to increase student retention and graduation rates; retain a technology workforce in the face of severe staff shortages; expand new web based offerings and compete in an environment where institutions cross state and national borders to meet the needs of students at anytime/anywhere. Knowledge management initiative will help identify expert resources, sift through information about different education strategies, and share their experiences and insights into successful and failed interventions in education systems [12].

As institutions launch knowledge management initiatives, they can learn lessons from their counterparts in the corporate sector. Some key points are:

- Start with strategy. Determine what you want to accomplish with knowledge management
- Organizational infrastructure—human resources, financial measurements of success, and information technology should support knowledge management. Think of technology as an enabler,

and measure the impact of knowledge management in financial terms
- Seek a high-level champion for the initiative
- Select a pilot project for knowledge management
- Develop a detailed action plan for the pilot that defines the process, the IT infrastructure, and the roles and incentives of the pilot project team
- After the pilot, assess the results and refine the action plan [13].

Eftekharzade and mohammadi (2011) found that, in Islamic Azad University the situation of organizational structure and culture is at an average level; and the situation of human resource is appropriate to for the function of knowledge management. Information technology does not have the appropriate situation in the under-study university to apply knowledge management, and also the related literature that all indicate the application of technology in knowledge management strategy. Regarding the influence of components of information technology, organizational structure, human resource, and organizational culture on the development of knowledge management at university, it should be taken into account that changing a university to a learning organization and implementing knowledge management is not an immediate action. However, regarding human mind and thought, primarily the cultural preparations should be made. Then we should make the mind of managers, members of board of education, students, and staff dynamic, in order to consolidate a learning university [14].

## III. KNOWLEDGE MANAGEMENT IN RAJAMANGALA UNİVERSİTY OF TECHNOLOGY SUVARNABHUMİ

The implementation of knowledge management in RMUTSB using CopWeb Technique as shown in Fig 1.

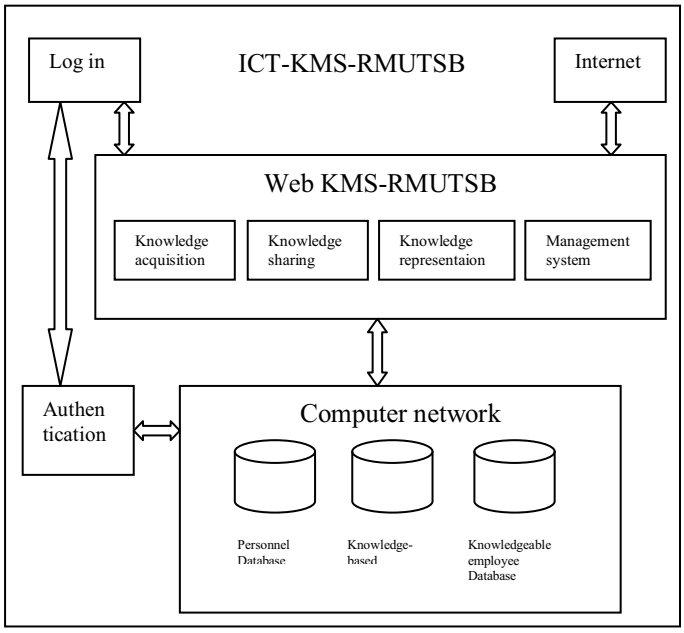


Figure 1. Components of Copweb

Figure 1 shows the components of CopWeb which is used as the training tool for sharing of knowledge. It is consist of knowledge acquisition and capture subsystem, knowledge sharing subsystem, knowledge representation subsystem, and management and administration subsystem. The proposed system composed of (1) Human resources database, for verifying the authorization of knowledge requisition to confirmed his or her account before logging into the system (2) Knowledge-based, to capture and storage of knowledge and expertise by categorized of knowledge sharing during training (3) Knowledgeable employees database, to storage description of knowledgeable employees which referred to those knowledge kept in the knowledge-based. The proposed system can be extended and distributed the knowledge, also can be searching through the Internet as well.

From questionare of 80 respondents of RMUTSB's KMS users. Most of them are support staff of 53 employees (66.25%), followed by 27 faculty members (33.75%). From distribution of 4 campus as following: Huntra headquater there are 28 people (35%), Wasukri campus there are 21 people (26.25%), Supanburii campus there are 27 people (33.75%), and Nonthaburi campus there are 4 people (5.00%). They are work under 6 faculty and other offices. The respondents were satisfied with the knowledge management service. The overall satisfaction is at a high level (mean 3.80). Most of them are satisfied in the system usage steps, is at a high level (mean 3.83), followed by information service and quality of services are at a high level (mean 3.78). The details are as follows: (a) Information service, the information is accurate, entirely and up-to-date, satisfaction is at a high level (56.25%). Information searching is accurate and entirely, satisfaction is at a high level (63.75%). Information service is useful with efficiency; satisfaction is at a high level (55.00%). Classification of information has done correctly; satisfaction is at a high level (48.75%). (b) Design style, the composition of webpage look simple and legible, satisfaction is at a high level (48.75%). Graphic design is legible; satisfaction is at a high level (48.75%). Text size and colours is displays clearly, satisfaction is at a high level (52.50%). (c) Usage steps, the website is easy to use and quick respond, satisfaction is at a high level (53.75%). Webpage is linked appropriately; satisfaction is at a high level (50.00%). Ease of use of the system, satisfaction is at a high level (55.00%). (d) Quality of service, the system manual describes the system usage for users to understand easily, satisfaction is at a high level (45.00%) [16].

## IV. CONCLUSIONS AND RECOMMENDATIONS

Explicating tacit knowledge to explicit knowledge in an accessible knowledge repository, members of the community are able to share their understanding and learn from others. As institutions launch knowledge management initiatives, they can learn lessons by seek a high-level champion for the initiative. The evaluation system should be attached to the knowledge based system.

The CopWeb is used as the training tool for sharing of knowledge. It is consist of knowledge acquisition and capture

subsystem, knowledge sharing subsystem, knowledge representation subsystem, and management and administration subsystem. The knowledge management system using CopWeb technique in Rajamangala University of Technology Suvarnabhumi has implemented recently can work properly. The proposed system can be extended and distributed the knowledge, also can be searching through the Internet as well.

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Further studies will be done to cover key areas of knowledge management in other industrial sectors such as financial-industry and production-industry. The comparative study of the implementation of knowledge management in different scales of institution, or comparative study of implementation of knowledge management in different industrial sectors will be presented.

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