

DESIGNING KNOWLEDGE MANAGEMENT SYSTEM IN A SOCIAL ENTERPRISE

Wasinee Noonpakdee
College of Innovation, Thammasat University, Bangkok, Thailand
wasinee.noo@gmail.com

Acharaphun Phothichai
Thammasat University, Bangkok, Thailand
acharaphun@hotmail.com

Abstract:

Knowledge management systems have been employed in many organizations to manage information and knowledge effectively in order to obtain sustainable competitive advantages. This research aims to design knowledge management system for a social enterprise in Thailand. An in-depth Interview is conducted to understand the characteristics of social enterprise and the critical issues related to knowledge management in the organization. The significant knowledge and user requirements are explored. According to the result, knowledge management application consists of four main features: 1) Knowledge Management Module/ Content Management System 2) Community of Practice system, 3) Learning Management System, and 4) Analytics and Virtualization. The framework for knowledge management system is proposed to be a guideline for implementing a knowledge management system in the social enterprise.

Keywords: knowledge management system, knowledge management, system design, social enterprise

1. INTRODUCTION

Knowledge is considered as one of the most significant assets in the organization since it facilitates the better business decision makings to achieve enterprise performance goals. How to manage knowledge effectively has become an important issue in the past few decades (Han & Park, 2009; Li Feng, 2008). Knowledge management (KM) is a systematic approach to ensure the full utilization of the knowledge base of an organization (Han & Park, 2009). Knowledge Management System (KMS) has developed as an information technology (IT)-enabled tool to support knowledge management activities such as knowledge creation, acquisition, access, dissemination and sharing application (Li Feng, 2008; Ying-liang & Bo, 2008).

A case study social enterprise has major purpose to improve social and economic development. This enterprise creates a lot of knowledge and relies heavily on KM. Therefore, KM and KMS are one of the major concerns in order to increase the performance and competitive advantages in the social enterprise. This paper studies the development process, and then designs KMS in a social enterprise in Thailand. The result will be a guideline for implementing a knowledge management system in the social enterprise.

The rest of this paper is organized as follows. In Section 2, the overview of knowledge management system is provided. Section 3 presents the development process in a social enterprise. The proposed system framework is described in Section 4. Finally, Section 5 concludes the paper.

2. KNOWLEDGE MANAGEMENT SYSTEM

Knowledge Management (KM) has been recognised as a critical factor in business success for organizations (Nonaka & Takeuchi, 1995). KM is a dynamic process of capturing, storing, sharing and creating the knowledge. In this process, KM is a knowledge activity chain composed of four links: acquisition and processing of knowledge, storage and accumulation of knowledge, share and exchange of knowledge, and application and innovation of knowledge (Guodong, Wenshun, Jianping, Zhifang, & Meng, 2010).

Knowledge Management System (KMS) has determined to be one of the most significant information technology (IT) systems to support organizational activities in attaining business needs and objectives (Matayong & Mahmood, 2012). KMS is different from information system in three aspects from a socio-technical perspective. First, KMS extends beyond traditional information systems; in addition to technologies, knowledge workers and knowledge itself are key components in a KMS. Second, it is essential to encourage knowledge sharing in order to ensure the success of KMS. Third, no single information system or tool can support all knowledge management processes and activities (Li Feng, 2008; Tsai & Chen, 2007).

KMS provides a lot of benefits such as reducing loss of intellectual capital form people leaving the company, reducing costs, reducing redundancy of knowledge based activities, increasing productivity, increasing employee satisfaction, and achieving a competitive advantage (Knapp, 1998; Yen-Ching, Jen-Yin, & Te-Chun, 2010).

KMS focuses on process and the organizational culture of staff's learning and innovation abilities. Consequently, KMS architecture should contain several basic conditions: 1) analysis of the enterprise's values and environmental factors, 2) integration and diffusion of knowledge management theory, 3) process management, and 4) information technology (Hua, Cuiqing, & Zhenxing, 2009).

The purpose of this research is to design KMS for a social enterprise focusing on development process in Thailand. The development process is emphasized since this process in one of the most significant processes in the social enterprise. The framework for designing KMS, which are adapted from (Debowski, 2005), consists of 3 phases: 1) justifying the need for a KMS, 2) identifying the KMS requirement, and 3) designing KMS system.

Justifying the need for a KMS

KMS is not essential for all business. The justification for introducing a KMS needs to be carefully investigated. The proposed system should clearly contribute to the corporate strategy. The existing systems and their interaction with the proposed system need to be considered, so that the implementations of change are enthusiastically understood. The main objectives of the new system should be identified. Stakeholder expectations should be properly managed since different stakeholders many have different preferences about how the system should be constructed, or be very hesitant to change existing approaches (Debowski, 2005). Moreover, KMS has to be flexible enough to navigate around various technological platforms. A less sophisticated approach is required to ensure that users with less technological capability can still access the KMS.

Identifying the KMS requirement

User analysis has to be conducted considering users' knowledge and systematic needs. The overall scope of the proposed system and the potential applications need to be explored by key operational managers and representative users.

Designing KMS system

The essential and desirable features of the KMS are considered. This phase follows software development process such as functional specification standard, user interface specification, general design specification, detail design specification, and development report specification (Xu, 2009).

3. DEVELOPMENT PROCESS IN A SOCIAL ENTERPRISE

The mission of a case study social enterprise is to improve social and economic development, preserve the environment, and support local culture. Therefore, the development process is one of the most essential processes to achieve the organization's goal. The focus group and in-depth interview of 10 employees who are related to the development process are conducted. According to the focus group and interview, the social development process consists of 4 main steps:

3.1. General preparation

Initially, general preparation is performed to build a team that will coordinate with relevant parties and stakeholders, and to make sure that the ideas generated will be the fundamental for discussions with the communities. Issues, cause of issues, and status of the communities are analyzed. Questionnaire regarding social and economy is applied as a tool for evaluating the readiness of the communities.

3.2. In-depth preparation

This step is employed to ensure that the community members are ready to get involved in the development by understanding their own problems and needs, knowing how to deal with them, and realizing the benefits of the approach. Quality of life, issues, readiness, community needs, and environment are evaluated using checklist as a tool.

3.3. Development

The development process aims to build confidence and motivate local people by working with them. This process focuses on stakeholder engagement by coordinating with government sector, community leaders, working group, and community volunteers. The development strategy consists of assisting, collaborating, and consulting process.

3.4. Release

This stage focuses on the subsequent processes to make sure that the communities are self-sufficient and can continue with their own development.

The summary of social development process is described in Table1:

Table 1: Social development process

Process	Purpose	Approach
General Preparation	To prepare a team that will coordinate with relevant parties and stakeholders, and to make sure that the ideas generated will be the fundamental for discussions with the communities.	Questionnaire (Social and economy)
In-depth Preparation	To ensure that the community members are ready to get involved in the development by understanding their own problems and needs, knowing how to deal with these issues, and realizing the benefits of the approach.	Checklist
Development	To build confidence and motivate local people for developing the communities.	Development method <ul style="list-style-type: none"> • Assist • Collaborate • Consult
Release	To make sure that the communities are self-sufficient and can continue with their own development.	Follow up

4. SYSTEM FRAMEWORK

As discussed in Section 2, the framework for designing KMS consists of 3 phases: 1) justifying the need for a KMS, 2) identifying the KMS requirement, and 3) designing KMS system. By conducting an in-depth interview, the need for a KMS system is analyzed by considering strategic needs, corporate outcomes, stakeholder expectations, existing systems and existing processes. The results indicate that there is a need for KMS system in the social enterprise. The next step is identifying the KMS requirement. This step is performed by considering the development process as shown in Section 3. The development process is composed of general preparation, in-depth preparation, development, and release. The last step is designing KMS by following software development process. Essential and desirable features of the KMS are analyzed. The framework of KMS for the development process in a social enterprise is illustrated in Figure 1.

From figure 1, knowledge management application consists of four main features: 1) Knowledge Management Module/ Content Management System 2) Community of Practice system, 3) Learning Management System, and 4) Analytics. The home screen is composed of updated news and knowledge. The search tool is provided to support users' searching of their required knowledge.

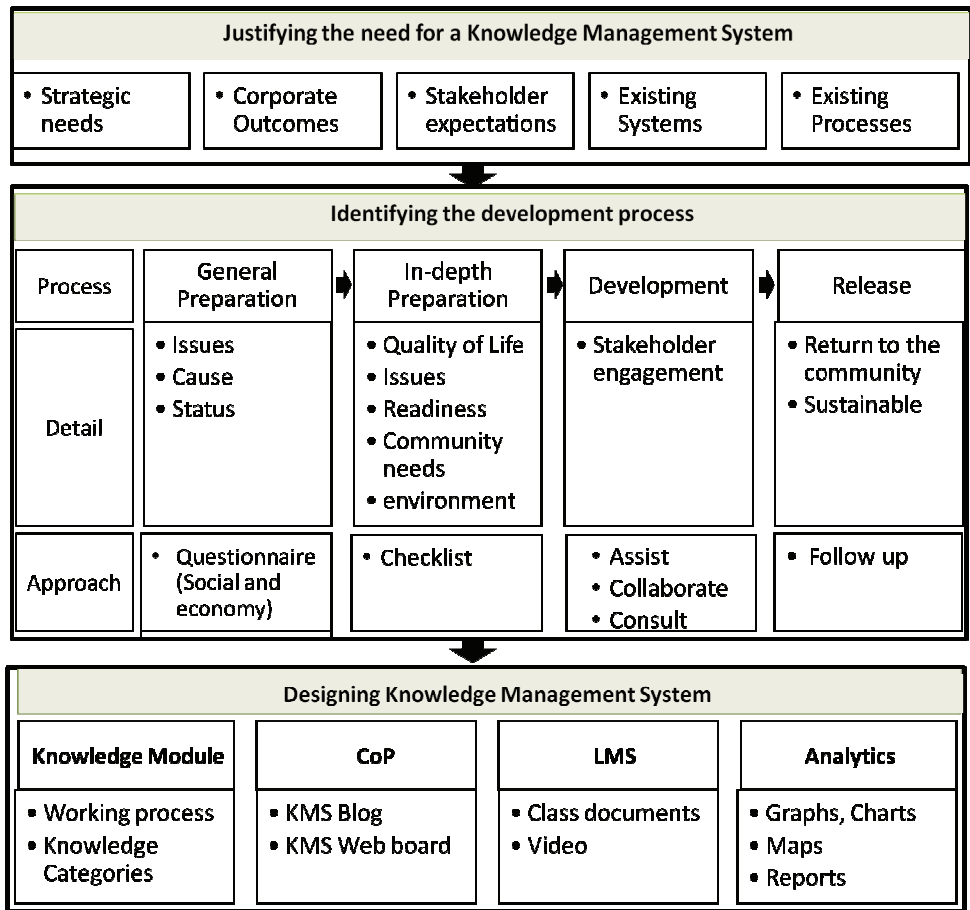
4.1. Knowledge Management Module / Content Management System

This module allows users to add, modify, organize, and delete knowledge or some information which is captured from their work. It provides procedures to manage workflow from each stages of the development process. The knowledge's categories are divided into six groups according to the analysis via an in-depth interview: soil, water, forest, agriculture, livestock, and handicraft.

4.2. Community of Practice (CoP)

This feature is designed to support Community of Practice (CoP) which is groups of people bound together by shared expertise and passion for a joint enterprise (Wenger & Snyder, 2000). In the CoP module, knowledge sharing and discussion are promoted though webboard and blog.

Figure 1: Framework of KMS for the development process in a social enterprise



4.3. Learning Management System (LMS)

Learning Management System (LMS) provides platform for learning environment by facilitating the management, tracking, testing, communication, registration process, and scheduling (Cavus, 2011). In this module, the e-learning topic is categorized according to development process and the knowledge groups. Class documents and video are provided to help users' interactive learning.

4.4. Analytics and Visualization

This part provides analysis on all aspects of development process. It allows users to browse all of metrics and dimensions, and visualize them in charts, graphs, or maps. Users can make interactive reports or perform advanced filtering and sorting to obtain additional details. Key performance indicators (KPIs) of the process can be monitored and alerted to any concerns which are defined. The analytics and visualization module will help users making a decision effectively.

5. CONCLUSION

This research proposed a framework for designing KMS for a social enterprise in Thailand. The characteristics of a social enterprise and the critical issues related to knowledge management are explored using an in-depth interview. The development process is studied and then will be the input for

designing KMS. The proposed KMS consists of four main features: 1) Knowledge Management Module/ Content Management System 2) Community of Practice system, 3) Learning Management System, and 4) Analytics and Virtualization.

The future research is to consider this framework regarding security and privilege of the users. Moreover, the compatibility with the existing system, such as document management system, would be one of the major concerns. The recent technology such as cloud computing could be studied for system implementation. The result of this research can be applied as a guideline for implementing a KMS in the social enterprise.

REFERENCE LIST

1. Cavus, N. (2011). Selecting a learning management system (LMS) in developing countries: instructors' evaluation. *Interactive Learning Environments*, 21(5), 419-437.
2. Debowski, S. (2005). *Knowledge Management*. John Wiley & Sons Ltd.
3. Guodong, N., Wenshun, W., Jianping, W., Zhifang, Z., & Meng, X. (2010, 7-8 Aug. 2010). *Research on the Knowledge Management System of the Vicarious Management Corporation*. Paper presented at the International Conference of Information Science and Management Engineering (ISME), 2010.
4. Han, K. H., & Park, J. W. (2009). Process-centered knowledge model and enterprise ontology for the development of knowledge management system. *Expert Systems with Applications*, 36(4), 7441-7447.
5. Hua, J., Cuiqing, L., & Zhenxing, C. (2009, 11-13 Dec. 2009). *Research on Knowledge Management System in Enterprise*. Paper presented at the International Conference on Computational Intelligence and Software Engineering.
6. Knapp, E. M. (1998). Knowledge management. *Business and Economic Review*, 44(4), 3-6.
7. Li Feng, Y. (2008, 12-14 Oct. 2008). *On Some Issues of Knowledge Management System: A Review*. Paper presented at the Wireless Communications, Networking and Mobile Computing.
8. Matayong, S., & Mahmood, A. K. (2012, 12-14 June 2012). *The studies of Knowledge Management System in organization: A systematic review*. Paper presented at the International Conference on Computer & Information Science (ICCIS).
9. Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company : how Japanese companies create the dynamics of innovation*: Oxford Univ. Press.
10. Tsai, C.-H., & Chen, H.-Y. (2007). Assessing Knowledge Management System Success: An Empirical Study in Taiwan's High-Tech Industry. *Journal of American Academy of Business*, 10(2), 257-262.
11. Wenger, E., & Snyder, W. (2000). Communities of practice. The organizational frontier. *Harvard Business Review*, 78(1), 139-145.
12. Xu, H. (2009, 11-13 Dec. 2009). *Research on Quality Control and Quality Characteristic with Knowledge Management System*. Paper presented at the International Conference on Computational Intelligence and Software Engineering.
13. Yen-Ching, O., Jen-Yin, Y., & Te-Chun, L. (2010, 20-21 Oct. 2010). *The critical success factors for knowledge management adoption - a review study*. Paper presented at the International Symposium on Knowledge Acquisition and Modeling (KAM).
14. Ying-liang, W., & Bo, Z. (2008, 12-14 Oct. 2008). *A Management Object Oriented Solution of Knowledge Management System*. Paper presented at the International Conference on Wireless Communications, Networking and Mobile Computing.