

DEVELOPMENT OF ONLINE KNOWLEDGE MANAGEMENT CYCLE INDICATORS USING SECI APPROACH: CASE STUDY IN AN ENERGY COMPANY

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ABSTRACT

Knowledge has been identified as the most valuable resource in a company. In order to gain benefit from knowledge, it must be well managed. Knowledge management in a company is done through several process called knowledge management cycle. In this research, knowledge management cycle consists of create, storage, transfer, and application. The execution of knowledge management cycle needs to be measured. This research develop online knowledge management cycle indicators specifically for an energy company, using SECI approach. There are twenty seven indicators related to online activities of create, storage, transfer, and application.

Key words: knowledge management cycle, online, SECI.

1. INTRODUCTION

Knowledge is a justified personal belief that increases an individual's capacity to take effective action (Alavi & Leidner, 1999). Knowledge has been identified as the most valuable resource in a company (Zack, 1999). Knowledge is source of innovation and difficult to imitate, so it is the source of sustainable competitive advantage (Zack, 1999 ; Urbancová, 2013). Because of that, knowledge must be explicitly managed, so organization can gain benefit from it (Zack, 1999).

There are various definition of knowledge management. Basically, there are two point of views in defining knowledge management. The first one is related to the timing in providing knowledge, the second one is related to the processes in managing knowledge (Afrazez, 2010). Ergazakis, Metaxiotis, and Psarras (2004) defines knowledge management as strategy to get the right knowledge to the right people at the right time and in the right format. This definition is related to the timing in providing knowledge. The definition related to the processes in managing knowledge is given by Evans, Dalkir, and Bidian (2014). Knowledge management is systematic

processes for acquiring, organizing, sustaining, applying, sharing, and renewing all forms of knowledge in order to improve organizational performance and create value (Evans, Dalkir, and Bidian, 2014).

The systematic processes in managing knowledge involves people, technology, processes, and organizational structure (Dalkir, 2005). Wickramasinghe (2006) stated that knowledge management is incorporating the socio-technical perspective of people, processes, and technologies. These three elements have impact on four key steps of knowledge management, which are creating knowledge, storing knowledge, using knowledge, and transferring knowledge. This steps of knowledge management is known as knowledge management cycle.

According to Parikh (2001) knowledge management cycle can be supported by information technology. Companies implement knowledge management system which is defined as information systems designed specifically to facilitate the codification, collection, integration, and dissemination of organizational knowledge (Alavi & Leidner, 1999). Many organizations build knowledge management system as an

attempt in managing organizational knowledge (Tiwana, 1999).

Application of information and communications technology is the major type of knowledge management practice for managing explicit knowledge. This is concluded based on knowledge management experiences of several oil and gas companies, which are BP Amoco, Royal Dutch Shell, Chevron, ExxonMobil, ConocoPhillips, Schlumberger, Halliburton, Marathon Oil, Murphy Oil, BHP-Billiton, and Paragon Engineering Services Inc. (Grant, 2013). As an energy company, company X, the company discussed in this research, also has a knowledge management system, named ABC.

Company X develops ABC to support the business activities, preserve its intellectual assets such as operational and managerial skills and experience of the human resources. This is done to avoid the loss of company assets in form of knowledge. To make the knowledge management system work more effectively, company X carries out a knowledge management system to ease the process of knowledge sharing and accelerate knowledge innovation by facilitating knowledge workers to gain the knowledge needed at the right time, speeding up the growth of tacit and explicit knowledge, also to facilitate the transformation from tacit to explicit knowledge. Through ABC, all knowledge assets are distributed into several functions / operation unit / business unit. Employee can capture explicit knowledge, share explicit knowledge, involved in community of practice, and connected to experts, via online ABC.

In order to make sure that company X gain benefits from the developed knowledge management system, an evaluation needs to be done. This is supported by Tiwana (1999) that stated that there are four main phases in knowledge management roadmap, which are infrastructure evaluation; knowledge management system analysis, design, and development; system deployment; evaluation.

Evaluation of knowledge management system needs to be done regularly. The evaluation will check how good the knowledge management system support the knowledge management cycle in organization. The purpose of this paper is developing indicators for measuring online knowledge management cycle, which is based on ABC implementation in company X.

2. RESEARCH METHOD

This research develops indicators for measuring online knowledge management cycle. Knowledge management cycle discussed in this research is adapted from Alavi and Leidner (2001), Shin, Holden, and Schmidt (2001), Bose (2003), and Monnavarian and Amini (2009). These four previous researches proposed four main phases in knowledge management cycle, which are create, storage, transfer, and application. The indicators for each phase of online knowledge management cycle are developed using SECI (Socialization, Externalization, Combination, Internalization) method which are proposed by Nonaka and Takeuchi (1995).

Socialization is converting tacit to tacit knowledge. Tacit knowledge discussed here is related to measurement of each phase of online knowledge management cycle. The conversion is done by observing directly the online knowledge management cycle through ABC, and interviewing the key persons in the ABC team. The output of socialization step is the tacit knowledge gained in the researcher's mind related to measurement of online knowledge management cycle.

Externalization is converting tacit to explicit knowledge. In this step, tacit knowledge gained in socialization is documented. So, the ideas of the key persons are not only in the researcher's mind but also available in explicit document. This will make the access to this knowledge wider.

Combination is converting explicit to explicit knowledge. In this step, various ideas from different key persons, which are already in

written format, is analyzed. All of the ideas related to measurement of each phase of online knowledge management cycle are combined to develop a comprehensive set of indicators.

Internalization is converting explicit to tacit knowledge. In this step, the final set of measurement indicators is informed to the key persons and employees which are involved in the measurement. This is done to make those key persons and employees understand the essences of the indicators.

3. RESULT AND DISCUSSION

The result of this research is set of indicators to measure online knowledge management cycle. There are several indicators for each phase, which are create, storage, transfer, and application.

a. Create

- i. Providence of organizational activity technique on the achievement of the uploading process doing sharing knowledge.
- ii. The amount of employees contributing to knowledge centre in the past six months.
- iii. Providence of work system to regulate online usage such as; ask the expert, community of practice, and knowledge centre.
- iv. The amount of the employees participating ask the expert.

b. Storage

- i. Work system that rules the storing and publishing process online.
- ii. Data storing regarding question and answer that has been proposed on ask the expert.
- iii. Time consumed on recapitulating and publishing the knowledge assets.
- iv. Data storing regarding question and answer that has been proposed on community of practice.
- v. Providence of organizational activity technique on the achievement on the storing and publishing the owned knowledge.
- vi. Presence of person in charge on the stored questions and answers.

- vii. Waiting period to obtain the answer on ask the expert.
- viii. Waiting period to obtain the answer on community of practice.
- ix. Waiting period on approved or rejected process for knowledge management.
- x. Stored questions that has been answered to be included to the system to finally published after recapped.
- xi. Notification if expert panel yet to answer certain questions.

c. Transfer

- i. The convenience in accessing the data on the knowledge centre.
- ii. Large amount of the same knowledge downloaded by the employees.
- iii. Providence of organizational activity technique on the achievement on downloading the uploaded knowledge on the knowledge centre.
- iv. Convenient access to knowledge as the outcome of the community of practice to be downloaded by the employees.
- v. Access to answered questions by the employees.
- vi. Information on the amount of employees accessing the knowledge.
- vii. Work system that rules downloading process from the system.

d. Application

- i. Providence of organizational activity technique on the achievement of implementation of the uploaded knowledge to the system.
- ii. Information related on employees implementing and renewing the given knowledge.
- iii. Work system that rules knowledge implementation.
- iv. Potential problems on the knowledge system.
- v. Providence of measuring unit for the informed employees.

All of the indicators above can be used to measure online knowledge management cycle. For further research, the indicators can be used in a model that examines the relationship between online knowledge

management cycle and knowledge management performance. So companies can check whether the investment in knowledge management brings benefits as expected or not.

4. CONCLUSION

This research develop indicators for measuring online knowledge management cycle. There are twenty seven indicators related to online knowledge management cycle phases which are consist of create, storage, transfer, and application.

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