Development of Knowledge Audit Management Framework

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ABSTRACT

Knowledge audit helps organizations to make recommendation of knowledge management initiatives which later can be used to improve on the management of the knowledge sharing activities. This is critically important especially in collaborative efforts between organizations and their intellectual capital. This paper shows how data is analyzed using the TOE framework as a lens based on the interview conducted on 19 respondents from different agencies. TheStraussian approach was used in analyzing the qualitative data. The framework was developed using the generic knowledge audit process found from the literature. This paper presented the proposed knowledge audit management framework that could help in harnessing the intellectual capital of different organizations.

Keywords: framework development, TOE framework, knowledge sharing, Straussian approach.

I INTRODUCTION

In our modern society, collaboration between organizations is very important. Collaboration helps the organizations to play their roles effectively, make better decision and, more importantly, is the ability to achieve their target. This is especially true when fast and reliable access of stored information is needed for decision making process.

Organization’s intellectual capital are made of human intellect, organizational routines and market relationships (Bontis, 1998). This is the knowledge asset that determines the organizational knowledge ‘wealth’. All the three elements mentioned can be in the form of tacit or explicit, or both. It is widely accepted that an organization’s capability to innovate is closely tied to its intellectual capital, or its ability to utilize its knowledge resources (Subramaniam & Youndt, 2005). As stated by Stewart and Ruckdeschel (1998) intellectual capital is an organizational wealth created by the knowledge possessed by the workers. And for the wealth to be generated successfully, effective knowledge sharing needs to be carried out (Pardo, Cresswell, Thompson, & Zhang, 2006). Thus, it is deemed important for the knowledge audit to be designed by considering the elements of knowledge sharing.

This research is based on a definition by Lee who stated knowledge sharing as activities of transferring or disseminating knowledge from one person, group or organization to another which includes both tacit and explicit knowledge (Lee, 2001).

This paper discusses on the development of knowledge audit management framework that could help in knowledge sharing activities among different organizations. The following section will discuss on the theme previously found in the literature in the relation of knowledge audit, intellectual capital and TOE as a lens for framework development. It is then followed by the research methodology in Section 3, and the discussion on the results is in Section 4. The conclusion is presented at the end of the paper.

II LITERATURE REVIEW

A. Knowledge Audit

Knowledge audit is a process that enables the organization to have some reflections of its knowledge inventory ‘state of health’. Cheung, Li, Shek, Lee and Tsang (2007) define knowledge audit as a process that involves a complete analysis and investigation of the company in terms of what knowledge exists in the company, where it is, who owns it and how it is created. For this paper, the following understanding is established for knowledge audit.: knowledge audit is a step-by-step process that enables organization to have an inventory report of its knowledge assets, which will lead them to a better decision making especially in knowledge sharing environment.

The knowledge audit processes vary from expert to expert and there is no unify standard for K-A which limit the development of knowledge audit (Wu & Li, 2008). Many researchers had investigated and proposed steps in conducting knowledge audit (Burnett, Illingworth, & Webster, 2004; Cheung, et al., 2007; Ganasan & Dominic, 2009; E. Gourova, 2010; E. Gourova, Antonova, & Todorova, 2009; Liebowitz, et al., 2000; Perez-Soltero, et al., 2007; Sharma, Chia, Choo, & Samuel, 2010; Sharma & Chowdhury, 2007; Sukiam, Abdul Rahman, & Zainal Abidin, 2009; Wu & Li, 2008). The generic processes can be grouped into the following general
steps which are: identifying of knowledge assets; developing of knowledge inventory; identifying where knowledge reside; identifying the repositories, used and relevancy; analyzing the knowledge flow; and reporting the knowledge gap (Perez-Solerro et al., 2007).

B. TOE Frameworkas Lens

According to Stewart and Ruckdeschel (1998), the intellectual capital need all the three elements mentioned in order for it to be able to create wealth needed by the organization. That includes the talents and skills of individuals and groups; technological and social networks and the software and culture that connect them; which represents the technological, organizational and environmental perspectives. Each of the perspectives is further explained in the following paragraphs.

Technological. The technological perspective concerns on how the use of IT is believed to help in knowledge sharing activities. Researchers believe that knowledge sharing activities can be considered as IT projects involving information systems construction, organizational structure change, and business process reengineering (J. R. Gil-Garcia, Chengalur-Smith, & Duchessi, 2007). According to S. S. Dawes (1996), the technological perspectives will help to address the issues of unorganized data management and unstructured information. This is resolved through streamline data management as well as consistent data definitions and standards. Nevertheless, it is not easy to keep up with the pace of technology change. IT has changed rapidly and radically. To maintain adequate levels of knowledge and expertise alongside with technology updates, especially at the local government level is a very challenging task (Sharon S Dawes, Pardo, Connelly, Green, & McInerney, 1997; Holden, Norris, & Fletcher, 2003).

Evidently, researchers like Zhang and Dawes (2006) believe that the effectiveness and efficiency of the knowledge sharing between organizations can be enhanced with the advancement of information technology. There are many ways technology in terms of IT could be used to make knowledge sharing more effective (A. Bajaj & Ram, 2003; A. Bajaj & Ram, 2007; J. R. Gil-Garcia, Chun, & Janssen, 2009; Su, et al., 2005).

Organizational. Due to the complexity of the relationship between the organizations involved, a typical knowledge sharing between different organizations is highly depending on trust building between them (Akbulut, Kelle, Pawlowski, Schneider, & Dooney, 2009; Canestraro, Pardo, Raup-Kounovsky, & Taratus, 2009; Chau, Atabakhsh, Zeng, & Chen, 2001; S. S. Dawes, 1996; J. Gil-Garcia, Pardo, & Burke, 2010; Landsbergen Jr & Wolken Jr, 2001; Luna-Reyes, Gil-Garcia, & Cruz, 2007; Pardo, Cresswell, Dawes, & Burke, 2004). Another important factor in the organizational perspective is the leadership. Leadership concerns on providing vision, guidance, and resources, by the top management. This leadership will help to initiate and sustain the knowledge sharing activities (Akbulut, et al., 2009; Li & Lin, 2006). According to Gil-Garcia et al.(2007), leadership can be exercised through executive involvement, formal authority, and informal leadership.

As mentioned earlier by Canestraro, et al.(2009) and Pardo, et al.(2004), the complexity of knowledge sharing can increase due to the fact that different organizations possess different operational procedures, control mechanisms, and work flows. Thus, it creates some resistance to change from some individuals (Lazer & Binz-Scharf, 2004). Hence, a strong and sound policy will help to reduce the resistance if it ever exists.

Environment. It is utmost important for the policymakers to support the knowledge sharing among different organizations so that this will become a priority and people are aware of the implication of not having their information shared (S. S. Dawes, 1996; Zhang, Dawes, & Sarkis, 2005). Thus, legal and policy are made important to facilitate the relationship, risk and trust related issues (Bellamy, Raab, Warren, & Heeney, 2007; J. R. Gil-Garcia, et al., 2007; J. R. Gil-Garcia & Pardo, 2005; Lam, 2005). With a policy at hand, related parties will brush off any uncertainty during the knowledge sharing as issues on privacy and confidentiality of the shared information are already taken care of. Other researchers like Atabakhsh, Larson, Petersen, Violette, and Chen, (2004); Landsbergen Jr and Wolken Jr (2001); Zhang and Dawes (2006), also pointed out that policy helps public to trust the government’s knowledge sharing project.

III METHODOLOGY

19 respondents from 5 agencies who are working in a special task or operation have been interviewed. The purposive sampling technique was applied. The respondents for the interview session were selected based on their years of experience involved in various inter-agencies activities. Their working experiences range from 13 to 19 years. These are senior officers who are currently heading or had previously headed a unit at their agencies. During the interview, handwritten notes were taken along with voice-recording. These notes were also analyzed from which initial broad themes were identified. The transcribed interviews were then
interpreted in order to give some meanings to the excerpts. It is necessary to interpret those excerpts as the excerpts were captured verbatim, and might not make any sense without interpretation by the authors. Data gathered from the 19 semi-structured interviews was analyzed using the data analysis technique proposed by Strauss and Corbin (1998).

In exploring and understanding rich data from interview, two analysis methods could be used. The first is the content analysis that uses a descriptive approach in both coding of the data and its interpretation of quantitative counts of the codes (Downe & Wamboldt, 1992; Morgan, 1993). By using content analysis, it is possible to analyse data qualitatively and at the same time quantify the data (Grbich, 2012). On the other hand, thematic analysis provides a more meaningful data. It provides a surely qualitative, detailed, and nuanced account of data, and uncover new theme (Braun & Clarke, 2006). Thematic analysis is widely used, but there is no clear agreement about what thematic analysis is and how researchers should go about conducting it (Vaismoradi, Turunen, & Bondas, 2013). Thematic analysis as an independent qualitative descriptive approach is mainly described as “a method for identifying, analyzing and reporting patterns (themes) within data” (Braun & Clarke, 2006). Clearly, thematic analysis involves the search for and identification of common threads that extend across an entire interview or set of interviews (DeSantis & Ugarriza, 2000). For this research, the thematic analysis is deemed to be more suitable. Based on the definition and characteristic of thematic analysis, it is most appropriate to use it for analytical analysis in this research. As stressed by Bluhm, et al. (2011); Bradley, et al.(2007); and DeSantis and Ugarriza, (2000) any approach can be used in the analytical analysis activity for qualitative research. Thus, the Straussian approach is proposed despite the fact that it is mainly used in grounded theory.

By using this data analysis approach, it enables the researcher to map these perspectives to form the framework. The TOE was used as lens to further analyze both the excerpts and their interpretations. This process helps to identify the appropriate concept for each excerpt. The generic knowledge audit process mentioned in the previous section is used as a base to the development of the new inter-organizations knowledge audit management process. Figure 1 depicts the summary of the process involved in developing the framework.

Figure 1. Framework Development Process

**IV RESULTS AND DISCUSSION**

The analysis of the excerpts helped in identifying other elements that are important in developing the new knowledge audit management framework. This will also help the authors in developing the framework. The discussion on the themes and the excerpts analysis is already discussed in the previous publication (Ahmad Shukor, Abdul Rahman, & Ijahad, 2013b).

As mentioned in the previous section, the excerpts were analyzed using the TOE as a lens. The lens used, helped us to eventually produce a 5-stage of knowledge audit management framework that caters to the inter-organizational concerns. The stages are as below:

- **Stage 1: Strategic Plan**
- **Stage 2: Acquire & Store Data**
- **Stage 3: Data Analysis**
- **Stage 4: Disseminate Report**
- **Stage 5: Re-audit**

The outcome of the process is the framework as depicted in Figure 2.

*Stage 1 Strategic Plan.* The strategic plan is the stage where organizations involved are required to strategically plan their knowledge audit activity. The objective(s) of the activity must be clearly defined. Two major processes involved in this stage are 1) Form inter-organization committee; and 2) Knowledge Asset Identification: Identify process chain to be solved.

In this first stage the regulator must be appointed to monitor and oversee the operations. Inter-organization collaboration involves different agencies with various understanding on the task. Thus, a regulator is needed to monitor and coordinate the agencies. Top management seriousness, support and direction are shown through the formation of the knowledge audit committee. The process chain needs to be identified at this stage in order to avoid redundancy or omitting of crucial and important process that the organizations are required to carry out.
Stage 2 Acquire & Store Data. Knowledge assets identification process has five major activities. These activities span from the first stage up to stage 2 of the framework. This stage contains four out of the five activities of the process. They are namely 1) Knowledge Asset Identification: Identify the task required for each process; 2) Knowledge Asset Identification: Identify key agencies involved; 3) Knowledge Asset Identification: Identify knowledge asset; and 4) Knowledge Asset Identification: Identify expert for the task. At this stage, the identification of knowledge asset of the organizations involved is the main focus. This stage is a continuation from the process of identifying of process chain to be solved in stage 1 of the framework.

In stage 1, after the process chain is identified, they will be listed. Next, each of the processes is then closely examined by listing out all necessary tasks required to be performed in that particular process. This will help to ensure all necessary tasks are included. For each task identified, the agencies involved in that particular task are identified. The next task is to identify the knowledge asset. As discussed in the earlier section, there are two types of knowledge involved in this study. Both, tacit and explicit knowledge would be recorded. The last process of stage 2 is the identification of the experts required in order for the process to be completed (if necessary).

Stage 3 Data Analysis. At this stage, various types of knowledge audit report could be generated with the use of central repository and computer assisted tool. Data kept in the central repository will be accessed for analysis. The use of computer assisted tool will make both analyses and reporting of data faster and more reliable. The results could also be in the form of expert directory, knowledge map and training needs analysis.

Stage 4 Disseminate Report. This is the stage where the results of the analysis done in stage 3 are communicated. Data kept in the central repository will be accessed for analysis to generate the report. The report for the current knowledge audit activity will be kept in the repository for archive. The use of computer assisted tool will make both analyses and reporting of data faster and more reliable.

Stage 5 Re-audit. The report from the previous knowledge audit activities can be kept and can be easily compared against if there is computer assisted tool used. Thus, it is necessary for the knowledge audit process to be redone and report from two different knowledge audit activities could be compared. It is important to make comparison to ensure that the necessary corrective action taken, has some positive impacts to the agencies’ knowledge health.
V CONCLUSION

This paper presents the method used in developing the knowledge audit management framework for inter-organizations. It explains how the Straussian approach was used as analytical tool. Three perspectives gathered from the literature review indicated that technology, organization and environment were used as theoretical framework. Knowledge audit is an important activity for organization to consider on embarking before they start with any KM initiatives. However, the previous studies show that knowledge audit is a process conducted at the organizational level. However, there is a growing need for organizations to be able to work together. This is especially true when they collaborate to achieve competitive advantage. Thus, it is hoped that this framework could help them in conducting the knowledge audit activity.

Interviews were analyzed using the TOE framework as a lens. Together with the reported generic knowledge audit process done in the previous study by Ahmad Shukor, Abdul Rahman, and A Iahad (2013a) they formulate the proposed knowledge audit management framework. The grounded theory analysis by Strauss and Corbin (1998) was employed in analyzing the excerpts. We believe that this is an appropriate approach used in identifying the elements needed for inter-organization knowledge sharing which are mapped with the TOE framework.

The framework presented in this paper is currently being evaluated and verified by the experts. It is hoped that the feedback will further improve this framework and would be reported in the next paper.

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