Knowledge Audit Roles and Contributions towards Continuous Quality Improvement : A Review

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ABSTRACT

Knowledge audit output helps organizations to make recommendation of KM strategy that can be used for better managing the knowledge. However, knowledge audit can only be an effective strategic tool if the process is done cyclically and continuously. This paper reviews literature on knowledge audit process with the aim to understand the various roles and contributions of knowledge audit in knowledge management initiatives. The literature was analyzed by adopting the three-stage method for extracting, analyzing and reporting the literature-based findings. The paper concludes with an understanding on how knowledge audit output could contribute to the organizations' continuous quality improvement.

Keywords: knowledge audit, knowledge audit roles, knowledge inventory.

I INTRODUCTION

Based on the 2011 Global Most Admired Knowledge Enterprises (MAKE) Report, a total of 46 organizations was recognized as 2011 Global MAKE finalists. The organizations are located from all over the world, with mostly global organizations with few local based. The MAKE studies are conducted to identify leading knowledge-driven organizations at the regional/national level in countries including Asia, Europe and North America. The MAKE award was first introduced in 1998 and continues to recognize the knowledge management (KM) initiatives done in organizations. It was also reported that the Return on Revenues (ROR) for the 2011 Global MAKE Winners was 11.9% – 2.1 times that of the Fortune 500 ROR median. Another interesting fact is that the Return on Assets (ROA) for the 2011 Global MAKE Winners was 9.9% – 2.3 times that of the Fortune 500 ROA median. These proved that KM initiatives in organizations are still relevant and have contributed in the organizations' missions and vision.

Knowledge management is a process of creating, storing/retrieving, transferring, and applying knowledge. It consists of a dynamic and continuous set of processes and practices embedded in individuals, as well as in groups and physical structures (Alavi and Leidner, 2001). Knowledge can be categorized into two types: tacit and explicit (Nonaka and Takeuchi, 1995). Both types of knowledge exist in an organization. Tacit knowledge can be defined as knowledge embedded in the human mind through experience and jobs; and explicit knowledge is defined as knowledge that is codified and digitized in books, documents, reports, white papers, spreadsheets, memos, training courses and the like (Awad and Ghaziri, 2004). A well-structured and mature organization will have both types of knowledge in balance. It simply means that the tacit knowledge confined in the staff are actively captured and transformed into explicit knowledge. However for most of the organizations, the tacit knowledge is the main knowledge type as the activity of transforming the knowledge into documented and digitized form are not easily done. This knowledge is an asset in today's modern organizations. Thus it is critical for the organizations to manage their knowledge through various KM initiatives.

Many KM best practices highlighted the knowledge audit activity as an important initial activity that must take place before any KM initiatives started. Researchers (Cheung et al., 2007, Gourova et al., 2009, Hylton, 2002, Liebowitz et al., 2000) agreed that KA is an important activity that organizations should look into, before launching their KM initiatives. The K-A is important as it helps to determine the state of knowledge inventory of an organization, which later could be used to assist organization to achieve their targets.

K-A is a dynamic, cyclic process (Wu and Li, 2008), that fits with the ever changing business processes in organizations. Thus it makes managing the K-A process is even more challenging as it handles the entire K-A processes. Managing the K-A process is equally important to ensure the K-A output contributions towards continuous quality improvement in organizations. Thus this review will discuss the different roles that K-A output holds and how it contributes towards organizations continuous quality improvement.

II KNOWLEDGE AUDIT

A. Introduction to Knowledge Audit

K-A is defined as KM activity which investigates and analyses organizational knowledge states and mechanism, reports the knowledge gap of organization according to the knowledge need of organization. (Wu and Li, 2008). (Cheung et al., 2007) defined K-A 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. (Debenham and Clark, 1994), defined knowledge audit as "well-defined, highly technical, structured report containing an overall, high-level description of a restricted section of an organization's knowledge resource and a description of identified individual 'chunks' of knowledge in that section". (Tsui, 2005) defined K-A as a technique that is often applied by organizations to ascertain what knowledge the organization already has what else is needed to accomplish corporate objectives. K-A helps to determine what it knows, who knows what, what it does not know, what it needs to know, and how it should go about improving the management of its existing knowledge (Hylton, 2002).

B. The importance of Knowledge Audit

K-A is the most important activities and steps of KM strategies of the organization and the basis of KM strategies planning. (Cheung et al., 2007), stated that K-A preceded the KM activities as it helps to find out the status of knowledge inventories and distribution within the organization. It is important stage for any KM initiatives because it can help to provide accurate identification, qualification, measurement and assessment of the tacit and explicit knowledge in the organization.

Researcher, Wu and Li (2008), stated that K-A would support the leaders of organization by providing accurate information, avoiding risks in order to help them to make correct decision; and could guarantee the organization knowledge management activities running on the right track and under the modern management mode. In the case study conducted for Special Communities, (Sukiam et al., 2009) stated that the K-A processes helped to identify the available, required and missing knowledge and the subsequent recommendation of KM strategy that can be used for better managing the knowledge.

(Henczel, 2000) opined that in any knowledge management program, the first step one need to do is to identify where knowledge is being created, where it already exists and where it is needed to support decisions and actions. The whole process of identifying, locating and marking the knowledge consistent with what the knowledge audit is doing. Thus her remark proved that knowledge audit is important and must be done at the early stage of KM initiatives.

C. The Knowledge Audit Process

As mentioned earlier, tacit and explicit knowledge are the two types of knowledge exist in the organizations. However in measuring the knowledge asset, Skandia is considered the first large company to have made a truly coherent effort at measuring knowledge assets (Bontis, 2001). According to the Skandia's model, there are three types of asset owned in organizations known as human capital; structural capital; and intellectual capital (Bontis, 2001). The human capital is defined as the combined knowledge, skill, innovativeness and ability of the company's individual employees to meet the task at hand that includes the company's values, culture and philosophy. Structural capital is the hardware, software, databases, organizational structure, patents, trademarks and everything else of organizational capability that supports those employees' productivity. Human capital cannot be owned by the company, in contrast with the structural capital, that can be owned and thereby traded. The intellectual capital sums both human and structural capital. It can be in the form of the applied experience, organizational technology, customer relationships and professional skills that the organization owns and this is the asset that needed to be audited and served as input of the K-A process.

The K-A processes vary from expert to expert and there is no unify standard for K-A which limit the development of K-A (Wu and Li, 2008). Many researchers had investigated and proposed steps in conducting knowledge audit (Perez-Soltero et al., 2007, Wu and Li, 2008, Gourova, 2010, Gourova et al., 2009, Sharma et al., 2010, Sukiam et al., 2009, Sharma and Chowdhury, 2007, Ganasan and Dominic, 2009, Cheung et al., 2007, Burnett et al., 2004, Liebowitz et al., 2000). Despite of the varieties of the steps involved in the process, those 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-Soltero et al., 2007). As mentioned earlier, the K-A process is indeed a dynamic and cyclic process, thus it is important to have the next step in the process as the re-audit.

Among the essential output of the knowledge audit process is the knowledge map for providing insight for improving business and organizational processes. A knowledge map portrays the sources, flows, constraints, and sinks (losses or stopping points) of knowledge within an organization (Lebowitz, 2005). Wu and Li (2008), opined that K-A would support the leaders of organizations by providing accurate information, avoiding risks in order to help them to make correct decisions; and could guarantee that the organization knowledge management activities are running on the right track and under the modern management mode. In the case study conducted for Special Communities, Sukiam et al., 2009 stated that the K-A processes helped to identify the available, required and missing knowledge and the subsequent recommendation of KM strategy that can be used for better managing the knowledge. Hylton, 2002 emphasized on the K-A as people focused activities that serve to help the audited unit to determine if it 'knows what it knows' and 'knows what it doesn't know' about its existing knowledge state, which later help the company to better leverage knowledge for business and competitive advantage. Abdul Rahman and Ahmad Shukor (2011) supported through their work that, knowledge audit produces organization's expert directory and yellow pages, and enables them to prioritize the knowledge apart from utilizing it for knowledge gap identification and knowledge subscription for their knowledge portal. K-A is also used as a measurement tool to assess their knowledge asset. In addition to that, it is also useful as a training needs analysis, a tool used to identify training required by staff.

III RESEARCH METHOD

This study aims to search and review the literatures on the roles and contributions of K-A output. A three-stage method to extract, analyze and report the literature-based findings by Levy and Ellis (2006), was employed. The first stage of this method was the identifying the articles to be included in this review. The second stage involved designing and executing a detailed protocol that prescribed how to analyze the data. The third stage involved synthesizing the analyzed details and deriving the research findings.

In identifying the articles to be included in this review, reputable literatures were examines based on the keyword search of *knowledge audit*, *knowledge audit process*, and *knowledge audit roles*. The search results then were filtered based on the following criteria:

1. the process should be available in open literature and published
2. the processes are describing the output of the knowledge auditing activities
3. the outputs discussed on their roles and contributions towards achieving organizations goals

Eighteen literatures that fit into the above criteria were found from the searching. Further analysis on the literatures was carried out based on the output, contributions and roles of the K-A processes. The first result of the analysis was done by simply categorizing the roles of K-A based on the authors of the respective literature. In this first protocol, there were ten categories. It was found that, some of the roles and contributions were overlapping with each other. Thus, it is necessary to establish second protocol that would eliminate any redundancies. The second protocol was conducted towards the initial categories which had narrowed down the list from ten to five significant roles and contributions of K-A, namely expert directories; training needs analysis; knowledge asset/ inventory; knowledge exchange path; and diagnostic tool.

IV DATA ANALYSIS AND FINDINGS

The results of the analysis show that the literatures had contributed in categorizing the roles and contributions accordingly. Based on eighteen literatures that dated from 1994 to the most recent in 2010, it was concluded that K-A mainly serves as knowledge asset or inventory list to organizations. Apart from that the output also serves in identification of expert through expert directories; mapping the current and needed skills from the training needs analysis; identification of the knowledge flows by mapping the knowledge exchange path; and finally it also used to assess the KM initiatives through its diagnostic tool function.

Expert directories. Expert directories are directories that contain the list of expertise organizations have. K-A activities produce an expert directory that enables staff to refer to when they need expertise in certain area in solving their day-to-day operation or when having more complex problem to be solved.

Training needs analysis. Having the K-A exercise will also help organizations in planning their expert directories by examining the training needs analysis. This is possible as the K-A will audit the knowledge one possess, and what skill or knowledge that they are still lacking. This resulted into a production of the training needs analysis.

Knowledge asset/inventory. Like any other auditing process, the K-A process is a stock-take activities of knowledge own by the organizations. This inventory list tells the organization the asset they own in terms

of knowledge. It shows how wealth organizations are when it comes to knowledge. This is apparently the main role of K-A activities as all researchers mentioned them in their literature.

Knowledge exchange path. The K-A activities will also help organization in the identification of knowledge user, supplier, broker and also the knowledge flow. This is known as knowledge exchange path as it tells the origin of the knowledge and who use it.

Diagnostic tool. Strategically, the K-A output is also used as diagnostic tool. It helps organizations to strategize as it provides report on the knowledge gap and also act as an assessment tool. Organizations could act upon the report of their knowledge gap to bridge the gap. It could also be used to assess the performance of organizations' KM initiatives. The classification of the roles and contributions of the K-A output are summarized in **Error! Reference source not found.**.

Table 1. K-A Roles and Contributions.

Roles and Contributions	**Authors**
Expert directories	(Dattero *et al.*, 2007), (Hylton, 2002), (Roberts, 2008), (Wu and Li, 2008)
Training Needs Analysis	(Sharma and Chowdhury, 2007), (Tong, 2005)
Knowledge Asset/ Inventory	(Mearns and du Toit, 2008), (Burnet *et al.*, 2004), (Schwikkard and du Toit, 2004), (Choy *et al.*, 2004), (Gourova *et al.*, 2009), (Hylton, 2002), (Levantakis *et al.*, 2008), (Liebowitz, 2005), (Liebowitz *et al.*, 2000), (Perez-Soltero *et al.*, 2007), (Roberts, 2008), (Sharma and Chowdhury, 2007), (Sharma *et al.*, 2010), (Sukiam *et al*., 2009), (Tong, 2005), (Wu and Li, 2008), (Cheung *et al.*, 2007), (Choy *et al.*, 2004), (Debenham and Clark, 1994)
Knowledge Exchange Path	(Burnett *et al.*, 2004), (Cheung *et al.*, 2007), (Schwikkard and du Toit, 2004), (Choy *et al.*, 2004), (Levantakis *et al.*, 2008), (Perez-Soltero *et al.*, 2007), (Liebowitz, 2005), (Roberts, 2008), (Liebowitz *et al.*, 2000), (Mearns and du Toit, 2008), (Sharma and Chowdhury, 2007), (Sharma *et al.*, 2010), (Sukiam *et al*., 2009), (Tong, 2005), (Wu and Li, 2008),
Diagnostic Tool	(Dattero *et al.*, 2007), (Debenham and Clark, 1994), (Gourova *et al.*, 2009), (Liebowitz, 2000), (Mearns and du Toit, 2008), (Sharma and Chowdhury, 2007), (Sharma *et al.*, 2010)

Based on the literature, these are the five most significant roles and contributions of the K-A output. The output is mainly used to produce the knowledge asset or inventory and to identify the knowledge flows through the knowledge exchange path. The role of the K-A output in serving the top management is clearly stated by its role as diagnostic tool. And lastly it is also used to identify the experts in the organization and skills that one possesses. The output helps in ensuring continuous quality improvement in the organization, as they provide accurate identification, qualification, measurement and assessment of the tacit and explicit knowledge of the organization.

V CONCLUSION

The various use of K-A output, are very much depending on the organizations' needs and most importantly, they are mostly aligned with the organizations' goals and objectives. The K-A process explicitly demonstrates that the output would provide the knowledge gap report for the management to consider. The K-A as it is defined, is a process that enable the organization to have some reflections of its knowledge inventory 'state of health'. It is believed that the output will help in continuous improvement at the organizations. Further investigation on how the K-A process could be redesigned to fit a role as tool for continuous quality improvement is in the next to do list.

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