Knowledge Audit for Structured and Unstructured Business Processes

Jessica Y.T.Yip, W.B. Lee and Eric Tsui
Knowledge Management and Innovation Research Centre
Department of Industrial and Systems Engineering
The Hong Kong Polytechnic University
Hung Hom, Hong Kong, China

Keywords: Knowledge Audit, Knowledge Elicitation, Knowledge Representation, Activity Map

Introduction

Knowledge audit is deployed to identify the knowledge assets and needs of an organization, and is indispensible as a first step in the formulation of knowledge management strategy. Various tools have been developed to stock-take explicit and implicit knowledge items. These are usually based on questionnaires and interviews with the staff. It is well known that organizational knowledge in enterprises exists in two forms: explicit and implicit. Explicit knowledge refers to those which has been codified, whereas implicit knowledge represents the part of know-how and skills known to the staff but has not been codified. With regard to the nature of tasks, there are two kinds of business processes in an organization, namely, structured and unstructured. Structured processes can be described by flow charts, which are often linear and sequential. Examples are handling of an insurance claim, shipping of a container, processing of a mortgage loan, evaluation and certification of supplier etc. The knowledge needed for structured processes are often explicit and stored in the enterprises in many forms such as manuals and databases. On the other hand, tasks as management consulting, marketing, client management and planning work are often not structured and documented. In addition, most knowledge needed for unstructured business is implicit. Different methods are required to elicit enterprise knowledge in either structured or unstructured work. In this paper, two cases are presented to illustrate the different methods used in knowledge audit.

Case 1: A Structured Knowledge Audit in a Baggage Handling Process

A structured knowledge audit, named as *S*trategic *TO*ols to *C*apture *K*nowledge and *S*kills (STOCKS), was implemented in a baggage handling process of a public services provider in Hong Kong. The project is composed of five phases. In phase 1, the authors studied the baggage handling process and defined the scope of investigation. In phase 2, questionnaires were distributed and in-depth interviews were conducted to elicit explicit and implicit knowledge items embedded in the business process. In phase 3, explicit and implicit knowledge inventories were constructed for easy retrieval of knowledge items. Based on the data collected in phase 2 and the knowledge inventories (see Figure 1) produced in phase 3, data analysis work was conducted in phase 4. Critical knowledge items as well as critical knowledge customers and sources were identified. Recommendations with regard to knowledge management initiatives in the investigated process were reported in phase 5.

Department	Knowledge Owner	Knowledge Item		Communication Channel	Knowledge Customer	Import ance
		Level 1	Level 2			
Line	I/P's supervisor	Work process conducted competency of injured	Work instruction & procedures Training qualification	Face to Face /Meeting	Arthur	4
Line	Injured person	Proper working method	How to eliminate the hazards?	Face to Face	Philip	3
OS&H	TC	Person /system to approach	Identification of key persons/appropriate system for investigation	Face to Face / Email	Philip Lawrence	5
OS&H	Philip	Interview Technique	How to ask open questions? & Learning the I/P	Face to Face	Lawrence	5
OS&H	Philip	Safety Trainer Experience	Knowledge about confined space, chemicals, Green card, manual lifting, etc	Face to Face	Lawrence	4
OS&H	Philip	Network	Network to find the right persons	Face to Face	Lawrence	5
OS&H	Ban	Any comment on the recommendation	Avoid recommendation that don't cure the cause	Face to Face	Lawrence	5
OS&H	Ban	Source of information	Past experience & organization responsibility	Face to Face	Philip	4

Figure 1 Example of a knowledge inventory list

The STOCKS, as a structured knowledge audit tool, features on the use of questionnaires and in-depth interviews to elicit knowledge items, and the use of knowledge inventories to tabulate knowledge items. In the case implemented in the public services provider, STOCKS has not only helped to produce systematic records for the formulation of knowledge management strategy, it also provides a comprehensive reference on the explicit and implicit knowledge assets in the structured process with regard to baggage handling. However, there are several limitations of STOCKS as a structured knowledge audit tool. Firstly, the use of questionnaires and interviews use direct questions to elicit knowledge items. This results in conformed and camouflage responses from interviewees. Secondly, the knowledge inventories constructed in phase 3 is often highly structured. It does not display the complex interplay between knowledge, stakeholders and work activities. In addition, without a linkage between knowledge items and work activities, it is difficult for organizations to understand the knowledge flow for each work task.

Case 2: An Unstructured Knowledge Audit in an IT Department

Another knowledge audit tool was developed for unstructured business process. It was implemented in an IT Department of a public utility company in Hong Kong. Methodologically, the research was conducted in four phases. In phase 1, project scope and objectives were defined. In phase 2, a knowledge elicitation workshop was conducted. Respondents were invited to tell memorable work-related anecdotes, whereas knowledge items, both implicit and explicit, were elicited. In addition, respondents were invited to construct individual activity maps to illustrate their work activities and stakeholder relationship in the defined project scope. In phase 3, a knowledge representation workshop was conducted. The individual activity maps (collected from phase 2) were consolidated before the workshop. Respondents were invited to map the implicit and explicit knowledge (collected from phase 2) to the consolidated activity map. In phase 4, the knowledge activity map was produced and analyzed (See Figure 2).

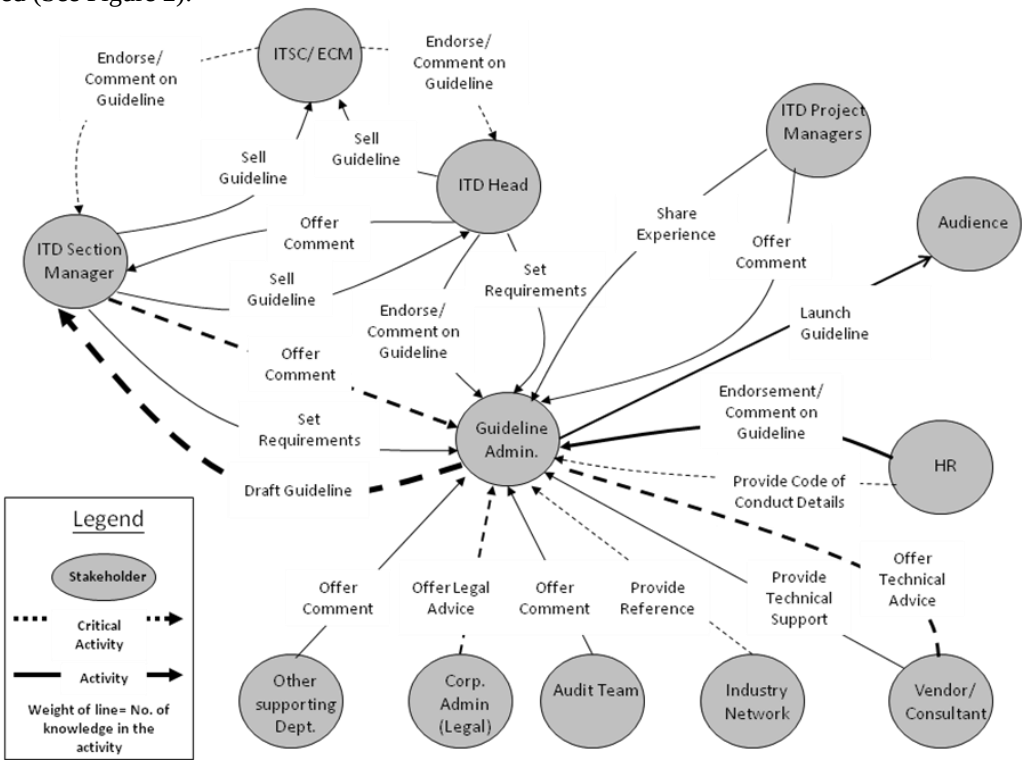

Figure 2 Example of a Knowledge Activity Map

The above methodology was carefully designed to elicit mainly implicit knowledge items with the use of anecdotes. Telling and listening to anecdotes is an easier way for elicitation of implicit knowledge, as it triggers respondents' memories in handling the tasks. In addition, the process in consolidating individual activity maps into knowledge activity map facilitates individual respondents to illustrate their work activities. The knowledge activity map, thus drawn, shows the complex interplay amongst knowledge items, stakeholders and most importantly respondents' daily work activities in a comprehensive picture.

Discussion and Conclusion

This research opens a new gateway in knowledge audit study, exploring the relationship between knowledge audit and knowledge representation in different business processes. The knowledge elicited in the first case and tabulated in the form of a knowledge inventory is a static representation. The inventory lists the documents, and the know-how needed to perform a certain objective. Existing knowledge audit tools are not suitable for the use in auditing unstructured business processes. Traditional elicitation methods based on questionnaire surveys are not able to elicit contextual responses. Knowledge representation outputs of traditional knowledge audit mainly tabulate a list of the explicit knowledge (documents) and a list of implicit knowledge in terms of the skills and experience. These simple forms of recording could not often capture the dynamics of knowledge flow which involves the interactions and activities among the various stakeholders. There are two major deficiencies in knowledge representation methods used in traditional knowledge audit. Firstly, they are not linked with the activity in which the knowledge is embedded. Secondly it does not depict the network and connectivity of the people involved in using that piece of knowledge.

In traditional knowledge audit as shown in Case 1, the process to be audited is often well defined and do not involve bottom up decision-making process. Very often, it is not surprising to find out that the specified flow may be outdated or not even being followed. In Case 2, the investigator did not have to be informed of the business process or tasks in advance. The audit helps to capture the knowledge of staff engaged in unstructured business process where no documentation or workflows are available. The elicitation starts with the daily activities reported by the interviewees to unfold the stories associated with these activities. This changes the role of the investigator from an auditor to that of a facilitator, whose main tasks are to capture organizational stories, and knowledge items through the lessons learnt from the incidence of each story. The knowledge activity map addresses the fluid nature of knowledge assets and complex nature of activities in unstructured processes. The combined knowledge map from individuals also facilitates team learning, nurtured team mindfulness and anticipation in unstructured business processes.

Acknowledgement

The authors express sincere gratitude for the financial support granted to this research project (Project code: TCS141).