

A Model and Methodology to Knowledge Auditing Considering Core Processes

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This paper proposes a model and a knowledge audit methodology, which have been developed by focusing on the core processes approach. Organizational and knowledge management criteria are considered to select the core processes to be audited. The model proposes an organizational knowledge auditing, which additionally allows reusing the audit outcomes when a technological solution is needed to improve knowledge management in organizations. The proposed knowledge audit methodology contains ten stages. The application of this strategy cyclically will be an efficient tactic to audit the key knowledge within an organization and detect some opportunities to make immediate improvements. After implementing this methodology in its entirety, it will be possible to know if the organization has valuable assets, knowledge flow and adequate organizational atmosphere to carry out knowledge management initiatives.

1. Introduction

Many organizations are familiar with managing their operations through marketing, finance, sales, and even supply chain. However, the existing measures have not been able to guarantee them success in the very dynamic and highly competitive markets of today.

Against this environment, those who want to succeed must be innovative. Leveraging on organizational knowledge and learning to create new knowledge and to demonstrate uniqueness in capability for innovations have emerged as the critical strategic issues for organizations which capitalize on innovation. In recent years, many organizations have focused on Knowledge Management (KM) and used it as an enabler for such capabilities. It is found that if knowledge is managed well, organizations can leverage on their knowledge, both internal and external, for the creation of new knowledge and innovation. It thus helps them to create values for the organizations (Cheung *et al.*, 2005).

The aim of this paper is to propose a model and a knowledge audit methodology with emphasis on organizational core processes. The application of this approach in a cycling

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manner will be an efficient strategy to audit the key knowledge within the organization. The structure of this paper is as follows. First, it describes some concepts related to knowledge in organizations, knowledge audit, core processes, ontologies, and some knowledge audit methodologies. Second, a knowledge audit model is described and explained. Third, it introduces the ten stages of the knowledge audit process. Each methodology stage is discussed in terms of its contribution to knowledge audit. Fourth, the scope of the current and future work is discussed. The paper concludes by examining the potential benefits of using this model and methodology as a strategy to find out a suitable place where knowledge audit process should be initiated, and if the organization has valuable assets, knowledge flow and an adequate organizational atmosphere to carry out the KM initiatives.

2. Conceptual Framework

Some of the main topics related to knowledge in organizations, knowledge audit, organizational processes, core processes, ontologies and knowledge audit methodologies are explained in this section.

2.1 Knowledge in Organizations

The distinction between 'tacit knowledge' and 'explicit knowledge' is well known. As Polanyi (1996) puts it, 'We can know more than we can tell'. This phrase was used to describe tacit knowledge. Tacit knowledge is the knowledge that a person possesses and it is described as the knowledge embedded in the individual's experience. It has a personal quality, which makes it hard to formalize and communicate. According to Polanyi, it 'indwells' in a comprehensive cognizance of the human mind and body. This experience can be communicated and exchanged in a direct and effective way in the socialization process (Nonaka and Takeuchi, 1995). Explicit knowledge refers to the knowledge that is transferable in a formal and systematic way, by means of a language, since it can be easily articulated and interchanged, because it is independent of the individual's mind.

Another classification establishes a separation among the declarative, procedural and heuristic knowledge (Vasconcelos *et al.*, 2000). Declarative knowledge is related with the physical aspects of the knowledge and responds to the questions: 'What?', 'Who?', 'Where?', and 'When?'. It is that kind of knowledge which serves to describe specific actions to perform certain tasks. Procedural knowledge describes actions for the following step and responds to the question: How? Finally, Heuristic knowledge describes the implicit reasoning and the individual's experience. This knowledge uses declarative and procedural knowledge to solve problems and there for to answer the question: Why?

2.2 Knowledge Audit

A knowledge audit (an assessment of the way knowledge processes meet an organization's knowledge goals) helps to understand the processes which constitute the activities of a knowledge worker and see how well they address the "knowledge goals" of the organization

(Lauer and Tanniru, 2001). Liebowitz defines a knowledge audit as a tool that assesses the potential stores of knowledge. It is the first part of any KM strategy. By discovering that knowledge is possessed, then it is possible to find the most effective method of storage and dissemination. It can then be used as the basis for evaluating the extent to which change needs to be introduced in an enterprise. A part of the knowledge audit process is capturing “tacit” knowledge (Liebowitz *et al.*, 2000).

Knowledge audit is the most important first phase, stage or step of a KM initiative. It is used to provide a sound investigation into the organization’s knowledge “health”. The knowledge audit is a discovery, verification and validation tool, providing fact-finding, analysis, interpretation, and reports. It includes a study of corporate information and knowledge policies and practices, and the flow of information and knowledge structure. Knowledge audit examines knowledge sources and use: How and why knowledge is acquired, accessed, disseminated, shared and used. The knowledge audit will seek to give qualified insight as to whether the organization is ready, especially socially and politically, to become knowledge-based or knowledge-centered (Hylton, 2002b).

S Capshaw (1999) believes that a knowledge audit should provide the following outputs : an assessment of current levels of knowledge usage and interchange; KM propensity within the enterprise; identification and analysis of KM opportunities; isolation of potential problem areas; and an evaluation of the perceived value in knowledge within the enterprise.

Many of the mistakes of both the earlier and more recent adopters of KM can be traced to the serious oversight of not including the knowledge audit in their overall KM strategies and initiatives. Knowledge audit is the indisputable first major step or stage in a KM initiative (Burnet *et al.*, 2004; Henczel, 2000; Hylton, 2002b), yet it has not been sufficiently recognized as being of supreme importance to every KM undertaking. To effectively design the KM systems, both the organizational knowledge and the KM functions must be individuated by conducting the knowledge audit of the same organization, as these are needed to perform the business processes (Iazzolino and Pietrantonio, 2005).

2.3 Core Processes

A process is a collection of activities that converts inputs into outputs or results. Core processes are a collection of cross-functional activities which are essential for external customer satisfaction and achieving the mission of the organization. These activities integrate people, materials, energy, equipment and information (Gryna, 2001). A limited number of processes in which results, if they are satisfactory, will ensure successful competitive performance for the organization. They are the few key processes where things must go right (Rockart, 1979). Core processes are the fundamental activities or group of activities which are so critical to an organization’s success that failure to perform them will result in deterioration of the organization. These are the typical processes which directly touch the

organization's customers, reflect the major cost drivers in the organization, or are on the critical path in the service chain (ProcessDriven Organization, 2003).

An organization's core processes must be identified. Processes having experienced people and knowledge located in them must be documented and shared with other people within the core processes; this will avoid repetition of past errors. "Re-inventing the wheel", and the best practices should be applied to solve new problems (Perez-Soltero, 1997). Considering the core processes concept defined by Gryna (2001) to select core processes, an evaluation of all processes of the organization must be made and selection should be made of those that better fulfill the following characteristics:

- It has a direct impact with mission and vision.
- It generates revenues or is the most critical to overall success of the organization.
- It has impact and it gives an added value to the organization.
- It allows to satisfy customer requirements.
- It has valuable human, technological and information resources.

2.4 Ontologies

Ontologies interweave human understanding of symbols with their machine processability. Ontologies were developed in artificial intelligence to facilitate knowledge sharing and reuse. Since the early 1990s, ontologies have become a popular research topic. They have been studied by several artificial intelligence research communities, including knowledge engineers, natural-language processors and knowledge representators. More recently, the use of ontologies has also become widespread in fields such as intelligent information integration, cooperative information systems, information retrieval, electronic commerce, and knowledge management. The reason for which ontologies are becoming popular is largely due to what they promise: a shared and common understanding of a domain that can be communicated between people and application systems. As such, the use of ontologies and supporting tools offers an opportunity to significantly improve knowledge management capabilities in large organizations (Davies *et al.*, 2003).

An ontology is a shared and formal conceptualization of a domain (Gruber, 1993; Borst *et al.*, 1997). In general, an ontology describes formally a domain of discourse. Typically, an ontology consists of a finite list of terms and the relationship between these terms. The term denotes important concepts (classes of objects) of the domain, and the relationships typically include hierarchies of classes (Antoniou and Harmelen, 2004). Ontologies are data models with two special characteristics which lead to the notion of shared meaning or semantics: First, ontologies build upon a shared understanding within a community. This understanding represents an agreement of experts over the concepts and relationships that are present in a domain; second, ontologies use machine-processable representations (expressed in formal languages such as RDF (Lassila and Swick, 1999) and OWL (Dean *et al.*, 2004)), which allow computers to manipulate ontologies.

2.5 Knowledge Audit Methodologies

According to Robertson (2002), there are many benefits in applying a KM framework or methodology: It offers legitimacy, provides consistent language, outlines a process, provides a checklist, offers a source of ideas and addresses non-technical aspects.

Gartner Group (2000) contends, for example, that a “knowledge audit” needs to be undertaken during the initial stages of the KM program. They state that the audit should identify the knowledge requirements of all processes which are heavily dependent on intellectual assets and which underlie the targeted business objectives. The audit ought to identify knowledge sources which can fulfill these knowledge requirements and the high-level business process steps where that knowledge must be applied.

Company executives would do better by giving serious consideration to undertaking a knowledge audit—even a small one. It is perfectly acceptable, and highly recommended, that an organization begins a corporate knowledge audit by auditing one small team, unit, department, or a business process (Hylton, 2002a).

A knowledge audit will consist of two major tasks, each of which can be done without the other. The first, often called knowledge mapping, involves locating repositories of knowledge throughout the organization. This effort is primarily technological and usually prepares the way for creating a knowledge database. The knowledge mapping process is relatively straightforward. It takes an inventory of what people in the organization have written down or entered into the information systems, besides identifying the outside sources of information that employees use (such as public or university libraries, websites or subscription services). Finding and organizing all that data may be time-consuming, but it is not conceptually difficult. The second and more intensive category of audit task attempts to capture the patterns of knowledge flow in the organization. This knowledge flow audit examines how people process information that ultimately determines how well an organization uses and shares its knowledge (Stevens, 2000).

While there may be several ways of conducting a knowledge audit (Skyrme, 2002; Hylton, 2002b; Liebowitz *et al.*, 2000; Burnet *et al.*, 2004; Jones, 2005; Jackson, 2005; Cheung *et al.*, 2005), knowledge audits generally consist of the identification of knowledge needs through the use of questionnaires, interviews and focus groups. Knowledge audits also focus on the development of a knowledge inventory with thrust on the types of knowledge available; where this knowledge is located; how it is maintained and stored; what it is used for and how relevant it is; and the analysis of knowledge flows in terms of people, processes and systems. The creation of a knowledge map and an audit detailed report are an integral part of knowledge audits.

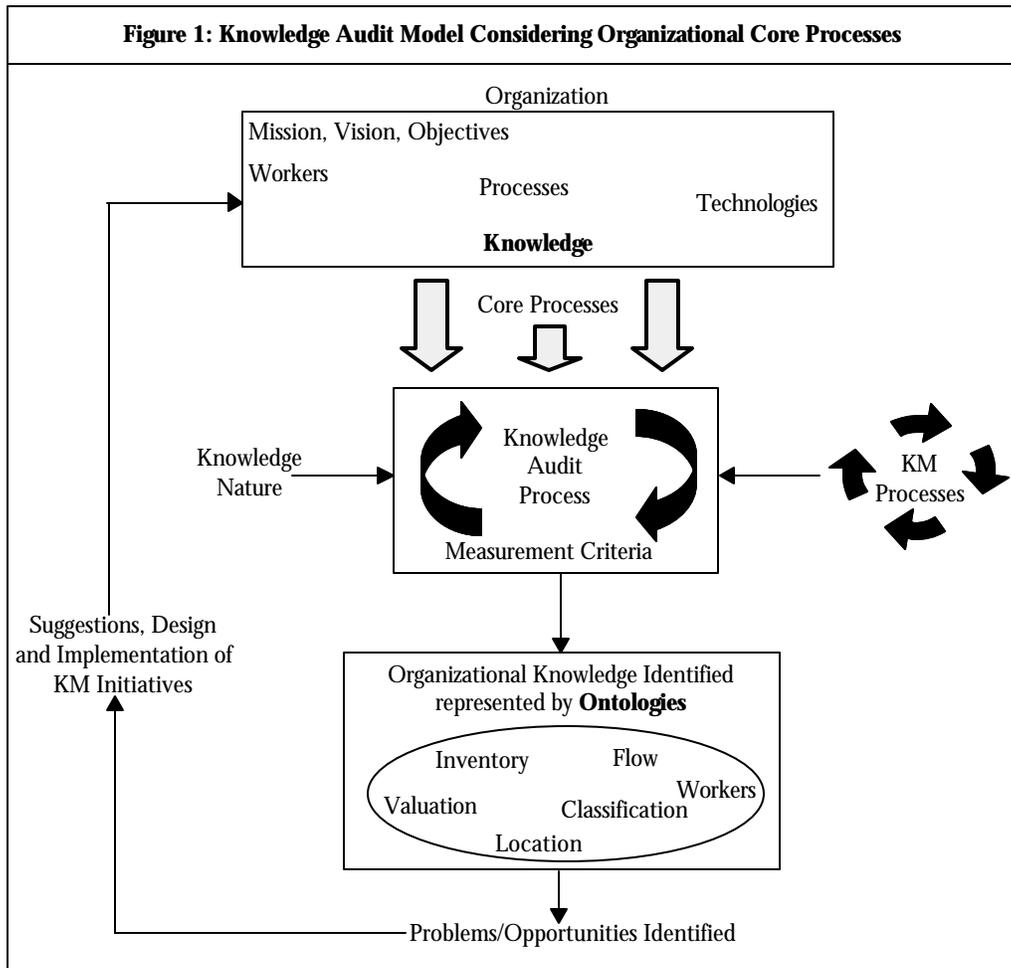
Given the apparent lack of specific methodologies in the scientific literature and business practice (Liebowitz *et al.*, 2000), we can frequently find references to reputable consulting enterprises which own proprietary knowledge audit methodologies. Such methodologies are not publicly available but can be acquired for a fee, if one wishes to implement KM within an

enterprise. This may not always be an economically viable option for an enterprise, nor does it provide any opportunities for the client to compare the suitability of each technique. Despite the lack of published accounts that precisely detail how to execute a standard KM audit methodology, it is possible to extract sufficient insight from the existing literature to develop a basis for the creation of a knowledge audit methodology (Schwikkard and du Toit, 2004).

Although different organizations may hold different types of knowledge and carry out different types of processes, it is hoped that the model and knowledge audit methodology proposed here will essentially provide a basic outline considering core processes approach that may be of potential benefit to organizations.

3. Knowledge Audit Model Considering Core Processes

In Figure 1, the proposed knowledge audit model is shown. This model considers strategic elements, organizational core processes, knowledge nature, KM process and an ontology-based formalism to represent knowledge audit outcomes.



The objective of the model proposed is to audit organizational knowledge, which additionally allows reusing the audit outcomes when a technological solution is needed to improve KM in the organizations.

3.1 Model Description

In this section, the model is described in a detailed form and the relation that exists between their components to achieve the proposed aim is also analyzed.

The first component of the model shows the diverse elements with which an organization counts: they go from the strategic ones up to the structural ones. The first one is the mission, vision and organizational objectives. The structural elements are the workers, processes and technologies (not only computer technologies). Undoubtedly, the workers' knowledge is utilized in diverse organizational processes and supported by diverse technologies, and it contributes to the company's competitiveness and helps in achieving the mission, vision and organizational objectives.

The second component of the model considers the most important processes in a organization: core processes. These are a collection of cross-functional activities which are essential for external customer satisfaction and for achievement of the mission of the organization. These activities integrate people, materials, energy, equipment and information (Gryna, 2001). To accomplish an effective knowledge audit, it is important to determine the organizational core processes since they will give an orientation where the audit will be begun. In the core processes, where valuable knowledge exists, it is important to identify, evaluate, and classify that knowledge. It is equally important to identify those people who possess knowledge and determine the flow efficiency inside the organization.

The third component of the model is formed by the knowledge audit process, considering the knowledge nature and the KM process. The knowledge audit process is constituted by activities related to identifying workers who participate in core processes, determining the knowledge assets that workers, processes and systems possess, obtaining the knowledge inventory, and determining the knowledge flow into the organization. To do this, it is important to consider the KM process (acquisition and learning, storage and maintenance, dissemination and transfer, exploitation and application, and knowledge creation), since part of the knowledge audit outcomes will be to estimate how the knowledge is identified, retained, used, shared and created in the organization. On the other hand, knowing knowledge nature, the organizational knowledge could be classified in tacit, explicit, declarative, procedural, heuristic, individual, collective, and so on, in relation to the measurement criteria for considering the objective and subjective knowledge valuations to assess their importance on core processes and KM processes.

The fourth component of the model—organizational knowledge identified represented by ontologies—proposes that knowledge audit outcomes can be formally represented by ontologies, instead of only using a final report which includes knowledge inventory, knowledge maps, and knowledge flows. The main problems of representing the knowledge audit results by utilizing only a final report are the inefficiency of searching specific information about a knowledge asset and the difficulty of reusing them if a technological solution is needed as a part of a KM initiative. If knowledge audit outcomes are additionally represented applying ontologies, further benefits could be obtained (Perez-Soltero *et al.*, 2006):

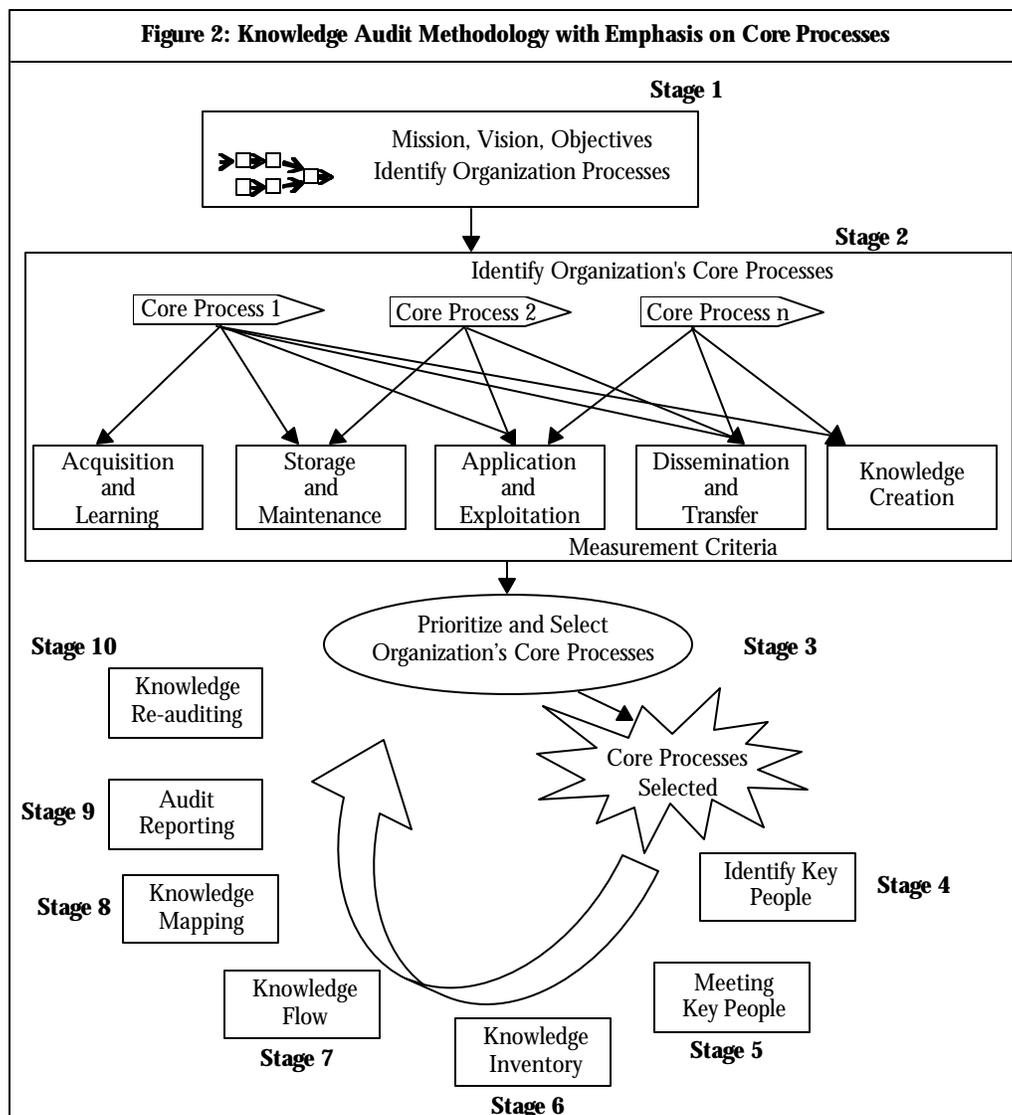
- A support tool to detect problems/opportunities found in the organization to improve KM.
- The results of the audit can be reused if a technological solution is needed.
- As a source of reference to know what, where, characteristics, classification and value of any assets of knowledge.
- As a form to represent the flow and its relation with the rest of assets.
- An efficient way to retrieve information from knowledge inventory and/or knowledge flows and to automatically know the impact and relation with the rest of the knowledge assets.

There are different aspects from the knowledge audit outcomes, which can be represented applying ontologies. Some of them are the knowledge inventory, knowledge flow, knowledge classification and knowledge valuation. Additionally, if the ontology is developed considering these aspects, it will be possible to obtain the inventory, flow, classification and knowledge valuation of the organizational knowledge assets partially or totally. The execution of a query to the ontology can be executed using a specific tool to retrieve all the elements related with a specific concept. For example, a query result can contain people knowing a given concept or systems containing knowledge objects related to some concepts. Further, if the ontology is examined, a KM analysis to detect problems/opportunities and knowledge gaps found in the organization might be obtained to improve KM in the organization. Finally, the ontology would be a good scheme to reuse the results of the knowledge audit if a technological solution is needed. This would allow the management of the tacit and explicit knowledge stored in structured, semi-structured or unstructured machine-readable form (Perez-Soltero *et al.*, 2006).

4. Knowledge Audit Methodology Considering Core Processes

Some organizations are embarking on KM programs without an understanding of the importance of knowledge assets. Rather than being in a position to make informed decisions about what knowledge they need to manage, they attempt to manage everything, whether it is significant or not (Henczel, 2000). After reviewing different knowledge audit methodologies or strategies to audit knowledge (Liebowitz *et al.*, 2000; Henczel, 2000; Hylton, 2002b; Schwikkard and du Toit, 2004; Burnet *et al.*, 2004; Jackson, 2005; Iazzolino and Pietrantonio, 2005; Cheung *et al.*, 2005), we have found that they do not establish a clear strategy explaining

a suitable place where the knowledge audit in an enterprise or area should be initiated to give an order to complete the audit. In other words, they attempt to audit everything, whether significant or not to the organization. The other deficiency found in the great majority of the knowledge audit methodologies examined is that they do not establish measurement criteria to verify the impact related to KM processes. Finally, the methodologies analyzed need to be completely applied to detect problems/opportunities and then propose some improvements to the organization in relation to KM. Focusing on knowledge that exists in core processes not only ensures that those knowledge assets exist, but it also identifies those that are critical to an organization's success. The KM strategy can then focus on the knowledge assets at their various levels of criticality, rather than managing everything regardless of its significance. Just as there is no universally accepted definition of a knowledge audit, there is also no



universally accepted knowledge audit methodology because of the dramatically varying structures, natures and circumstances of the organizations in which they are conducted. The ten-stage knowledge audit methodology proposed, as shown in Figure 2, illustrates how to implement the three initial components of the model proposed, describing stage-by-stage and highlighting those aspects of the process that are critical to its success and the issues that one may face that can impact on the value of outcomes. The aim for the methodology presented here is to propose improvements focusing on core processes approach to solve some disadvantages and problems found in other knowledge audit methodologies previously explained.

Each methodology's stages are explained by describing its objective, how to implement it and the support tools required.

Stage 1: Acquire Organizational Strategic Information and Identify Organizational Processes

Objective: To identify the mission, vision and organizational objectives considering the environment, culture and traditions.

How to Do It: First, an initial meeting with the organizational managers is necessary. Knowledge, KM and knowledge audit concepts must be explained. It is an important emphasis on knowledge audit process that allows the identification of knowledge assets and the flow of the knowledge within the organization. On the other hand, organizational managers must determine on which of their expectations to develop a project of KM. To identify the mission, vision and organizational objectives, the main enterprise's documentary information needs to be evaluated. And to obtain all the information about organizational processes, one has to verify the organizational documentary information and find the information related to its processes, how they are accomplished, the inputs, outputs, and the suppliers of information and direct clients of the process. In case that it is not counted on sufficient and detailed documentation, or the way the processes are carried out is doubted, it is recommended to make visits to the organization. Organizational managers must provide documentary information of the organization that serves as base to know the organization and its processes. In this stage an exploratory questionnaire is applied. This questionnaire will have questions which provide information to support stages one, two and four. To support this stage, the exploratory questionnaire includes a group of questions that will be focused on how to determine the degree of interest from the organization's members on acquiring and sharing knowledge.

Support Tools: Interviews, organization's strategic manual, general documentation of the enterprise, direct inspection, web site of the organization, information of the press, information of other organizations in the same sector and some answers from the exploratory questionnaire will be of immense help in realizing the objective.

Stage 2: Identify Organization's Core Processes and Establish Measurement Criteria

Objective: To identify the organization's core processes that contain useful knowledge to be managed and to measure the performance of the knowledge processes within core processes.

How to Do It: In order to find the organization's core processes, it is important to determine the critical success factors to satisfy clients (i.e., efficiency, service time, reliability, price, quality, and technical support), how they can be reached and the processes of the organizations involved. Also the processes with regard to the profit and the organization's mission must be evaluated. In order to determine the impact of the process and to find whether it gives an added value to the organization, it is important to know the aspects like the impact of the revenues generated, customer attended/customer's satisfaction. These aspects need to be evaluated preferably numerically or by adequate criteria defined by organizational managers. To support this stage, the exploratory questionnaire applied in stage one must contain a group of related questions to determine which are the organization's core processes and other questions to measure each individual's perceptions of their performance and the core processes in carrying out the knowledge activities or processes identified as the KM process: Acquisition and Learning; Storage and Maintenance; Application and Exploitation; Dissemination and Transfer; Knowledge Creation; and Performance Measurement (Burnett *et al.*, 2004).

Support Tools: Some answers from the exploratory questionnaire, general documentation of the enterprise, quantitative documentation (income, sales, and customers' information), and documents which allow valuing the impact of the processes with respect to the organization's mission and clients' satisfaction requirements help in to realize the objective. To measure knowledge processes within the selected core processes, the KM process model proposed by the Center for Knowledge Management could be applied (Burnett *et al.*, 2004).

Stage 3: Prioritize and Select Organization's Core Processes

Objective: To prioritize and select the organization's core processes according to the criteria defined at second stage. In order to achieve substantial improvements, the core processes with the highest impact on organizational performance are selected and targeted as the initial study objects. This, however, does not mean that the remaining processes can be neglected. The argument for selecting a sub-set of processes first follows the Pareto principle, i.e., that a small number of processes account for the largest share of potential improvement.

How to Do It: Review diverse literature about core processes to design a core processes priority table according to the enterprise, including the criteria defined by organizational managers and KM processes established in the previous stage. Once the core processes are prioritized, the managers of the organizations determine which and how many core processes will be taken to obtain the knowledge inventory and knowledge flow.

Support Tools: Information obtained of the previous stage, on core processes priority table will be of immense help.

Stage 4: Identify the Key People

Objective: To identify the key people who participate in the selected core processes.

How to Do It: Reviewing organization's documents, interviewing organization's managers or asking people in charge in areas related to core processes are useful for identifying the key people who work in them. In order to know the profile, studies, preparation and experience of the involved personnel, the curricula of the personnel can be consulted. In case the organization does not have sufficient documentation, the exploratory questionnaire applied in stage one with a group of questions that allow identifying the people who are important in the core processes can be included.

Support Tools: General documentation of the organization, curriculum of the personnel, some answers from the exploratory questionnaire (optional) will be of immense help.

Stage 5: Meeting with Key People

Objective: To give information to key people about knowledge audit and KM processes.

How to Do It: Organize a meeting to explain the importance of the knowledge audit and KM processes. In this meeting organizational managers will be in attendance and the key people previously identified will be present. It is important that organizational managers are involved in informing, orienting and understanding the participants so that they feel supported and know these processes are the initiative of people in charge of the organization.

Support Tools: Material and slides on knowledge audit and KM topics.

Stage 6: Obtaining Knowledge Inventory

Objective: To locate and obtain existing knowledge assets within the organization.

How to Do It: In this stage, the in-depth-questionnaire and/or in-depth-interview is applied. This in-depth-questionnaire and/or in-depth-interview will have questions to provide information to support stages six and seven. To support this stage some questions will be focused on details of knowledge (tacit and explicit) which exists in core processes and where it is located within the organization. Burnet *et al.* (2004) recommend that if interviews are applied, and then it is recommendable recording and later transcribing them, obviously with the interviewed individual's authorization. Because some core processes were selected to initiate the knowledge audit process, the assets identified will correspond in first instance to those core processes, once the rest of the organization's core processes are analyzed, and they will be integrated with the rest of the assets until the general inventory of the organization is obtained.

Support Tools: Some answers from the in-depth-questionnaire and/or in-depth-interview will be very useful.

Stage 7: Analyzing Knowledge Flow

Objective: To analyze how knowledge within the organization flows.

How to Do It: To support this stage, the in-depth-questionnaire and/or in-depth-interview applied in stage six must contain a group of associated questions to determine how the explicit and tacit knowledge within the organization flow. A similar situation will happen here like in the previous stages. Because some core processes were selected to initiate the knowledge audit process, the flows will correspond to the first core processes selected, once it is analyzed the rest of the organization's core processes will be integrated with the rest of the flows until the general knowledge flow of the organization is obtained.

Support Tools: Some answers from the in-depth-questionnaire and/or in-depth-interview will be useful.

Stage 8: Knowledge Mapping

Objective: To visually represent organizational knowledge. This map includes knowledge inventory and knowledge flow within the organization.

How to Do It: Once information about the corporate knowledge sources, ownership, distribution and use has been gathered from the knowledge inventory and knowledge flow, information can now be mapped to visually demonstrate who has knowledge, where these persons are located, the level of accessibility to them, and with who they most often share and exchange knowledge (Hylton, 2002b). Because some core processes were selected to initiate the knowledge audit process, the assets and flows identified will correspond in first instance to that core processes and will be in an initial version of the knowledge map. Once the rest of organization's core processes are analyzed, the rest of assets will be added and integrated until the general inventory and knowledge flows of the organization are obtained. The final product will be a complete organization's knowledge map.

Support Tools: Diagrams, graphs, tables, and software knowledge maps.

Stage 9: Knowledge Audit Reporting

Objective: To give the organizational managers the outcome of knowledge audit. The results of knowledge auditing reports form valuable information for strategic planning. This report gives the final validation and justification for the short, medium and long term KM strategy and investment.

How to Do It: Having analyzed the information obtained from the knowledge map, some innovative recommendations deemed beneficially to the KM initiative can be made. A preliminary knowledge audit report based on the first core process examined should be elaborated including some problems/opportunities detected and should suggest for improvement. Some enhancements could be applied immediately and others will be part of a complete KM initiative. The final knowledge audit report is produced based on the findings from the previous stages when all core processes have been analyzed. The report outlines the

existing status of knowledge assets, the knowledge maps, the effectiveness of the enterprise in accomplishing the business processes, the knowledge gaps as well as the recommendations for the organization to drive continuous improvement. The final knowledge audit will be analyzed by organizational managers and they will take the decision for a KM initiative.

Support Tool: Knowledge map.

Stage 10: Continuous Knowledge Re-auditing

Objective: There are two main objectives at this stage: first, to analyze and select the rest of the core processes to complete the knowledge audit; second, to update any changes of the knowledge inventory, knowledge flow, knowledge map, and the knowledge processes.

How to Do It: Once the first group of core processes selected was audited, one has to continue with the rest of the core processes to complete the knowledge audit considering priorities defined in the third stage. Knowledge re-auditing is usually conducted periodically in order to allow an organization to update any changes of the knowledge inventory, knowledge map, knowledge flow and the knowledge processes. It is also required to measure success, analyze the performance of the KM strategy and KM implementation in order to monitor and drive continuous improvement.

5. Current and Future Work

There are different activities to be carried out in the future. Considering this model, the fourth component needs to be developed. Some aspects of the ontology structure in terms of classes, attributes and relations need to be detailed to support the outcomes of knowledge audit. Later, it will be validated in a test case. Perhaps applying a software tool to model the ontology to facilitate the validation process could be a good strategy.

In relation to the methodology, nowadays the exploratory questionnaire, in-depth-questionnaire, in-depth-interview and core process priority table are being developed. This methodology is being tested in a high level education institution in its international relations office. When implementing the methodology proposed, the organizational benefits will provide a formalized evidence based on accounting knowledge that exists, embedded or that moves through the organization; via inventory details 'what and where knowledge exist in the organization'; facilitates the identification of inefficiencies reflected in duplication of efforts, knowledge gaps and knowledge-bottlenecks; helps the organization to identify and chart the knowledge that is required to support its goals and the individual tasks and activities. These benefits are expected to be accomplished since the methodology proposed details where knowledge audit should be launched, establishes measurement criteria to verify the impact related to KM processes, and finally detects problems/opportunities shortly to propose some improvements to the organization in relation to KM. To evaluate and validate its functionality it is necessary to compare the obtained outputs against the expected in each stage; at least one KM initiative should be in progress

before the knowledge audit has been completed. Managers need to inquire to evaluate the anticipated organizational benefits and its expectations against the knowledge audit outputs. Small changes will be required to improve the phases after the whole methodology has been tested. We expect to have the first results shortly, bearing in mind the advantages that the proposed methodology offers.

6. Conclusion

The proposed model and knowledge audit methodology have been developed by focusing on the core processes approach. Organizational and KM criteria are considered to select core processes to be audited. The model proposes an organizational knowledge auditing, which additionally allows reusing the audit outcomes when a technological solution is needed to improve knowledge management in the organizations. The methodology illustrates how to implement the three initial components of the model proposed and suggests improvements of some absences found in other knowledge audit methodologies in the literature. Applying this strategy in a cycling manner, it will be an efficient tactic to audit the key knowledge within an organization and detect some opportunities to implement the improvements immediately. The model and knowledge audit methodology recommend a suitable place where the knowledge audit in an organization or area should be initiated. They suggest the measurement criteria to verify the impact of core processes related to KM processes, and cyclically analyze all the core processes until the finished auditing permits the detection of problems/opportunities early and then propose some improvements to the organization related to KM. By applying this methodology entirely, it is possible to know if the organization has valuable assets, knowledge flow and an adequate organizational environment to carry out a KM initiative. ■

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