K-Audit – A Necessary Step for Successful KM Initiatives

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In the 21st century knowledge became the most meaningful resource of economy. It is knowledge that determines the health of all business in manufacturing, service or information sectors. It stands to reason that knowledge is the most important asset that organizations own. Globalization offered organizations the opportunity to bring new products and services to wider markets. To succeed in such an environment they need to better utilize their knowledge resources to build and sustain their competitive advantage. Companies are realizing that managing their knowledge is the definite answer to almost all of their problems, but they do little to discover where exactly the problem lies. It is crucial for companies to take a look at how they can define the exact problem and its roots. As Peter Drucker said: "We cannot manage what we do not know how to measure!" The knowledge audit and analysis is the key.
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Introduction

A knowledge audit (K-Audit) is a systematic and scientific examination and evaluation of organizational knowledge health, which looks at whether knowledge is exploited when needed. More specifically, it is an analysis of the organization's knowledge needs, existing knowledge assets or resources, knowledge flows, future knowledge needs, knowledge gaps, and finally, the behavior of people in sharing and creating knowledge. A knowledge audit can reveal an organization's knowledge strengths, weaknesses, opportunities, threats and risks (Cheung et al. 2007; [Hylt02]; [Libw00]; [Swdt04]).These benefits imply that the knowledge audit process cannot be a simple process or a quick fix solution.

Typically, a K-Audit, which is sometimes very appropriately called a knowledge management audit or KM-Audit, includes an examination of organization's strategy, leadership, collaborative, learning culture, technology infrastructure in its various knowledge processes. A knowledge audit will help the audited organization to determine what knowledge is being managed and how well it is being managed. The audit helps to make the knowledge in the company visible. The organizations have regularly a limited amount of money to spend on knowledge management, thus usually audit is conducted only in areas that hold the most potential for future growth and strategic advantage. So, the knowledge audit is usually limited at identifying, evaluating and rating critical knowledge within the area specified. In an ideal world the audit would be a continuous process. However, in the real world, even if the process is continuous, it will be continuous in discrete steps or clumps.

The ease, respectively difficulty in gathering and collating the information needed as part of the knowledge audit process is itself an indicator of the KM capabilities that organizations possess.

Generally executed via some kind of survey instrument, the knowledge audit is often performed by consultants and like professionals from outside the organization, but there is little reason why an organization should not be able to audit himself. The KM team is formed comprising the internal knowledge audit team members and the external experts. The internal knowledge audit team must be cross-functional, including people truly representative in organization at least from the following functional areas: corporate strategist (brings the big picture perspective into goal setting), senior management (aligns long-term KM with business strategy), human resource manager (brings an understanding of employee skills and skill distribution within the organization), marketer(provides

a fair picture of the actual market performance of the firm and the possible implications of its k-assets on the marketability of the firm's products and services at a new price service function), information technologist (brings in knowledge, skills and expertise for KM technology implementation), knowledge manager / knowledge analyst (the central role that integrates inputs from all other participants of the KM audit team in an unbiased manner; he contributes to a reasonably accurate market valuation of proprietary technology and process studied).

Models for auditing KM

A search of public domain literature will find frequent mention of the requirement for what is referred to as a "knowledge audit" at the launch of any KM initiative. However, upon closer inspection, very little of the literature investigated the topic beyond the most superficial discussion of what such an audit might entail. According to Robertson [Rbrts02] there are many benefits in applying a KM framework or methodology: offers legitimacy, provides consistent language, outlines a process, provides a checklist, offers a source of ideas and addresses non-technical aspects. He also observes that "may different 'KM frameworks' have been produced [however] only a few of these have reached prominence and a broad audience". Researchers on the topic will frequently encounter references to reputable consulting enterprises that own proprietary knowledge audit methodologies (Allweyer [Allw07]). Such methodologies are not publicly available but can be acquired for a fee, should one wish to implement KM within an organization. This may not always be an economically viable option for an organization, not 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 audit methodology, it is possible to extract sufficient insight from existing literature to develop a basis for the creation of a customized KM audit methodology for a specific enterprise [Swdt04]. This approach is compatible with that proffered by Kirrane ([Kirr99]) who asserts that: "No template exists for making KM easy, because it ultimately requires complex interrelated changes in organizational culture and systems. However, by investigating KM more deeply – perhaps with KM team- you'll be able to choose which characteristics best fit your [enterprise]."

Brief overview of some existing K–Audit models

There has been a tendency in earlier attempts at mapping knowledge assets to concentrate on the explicit knowledge and produce long inventories that are difficult to use. An important characteristic of any knowledge audit is that it needs to capture the explicit as well as the more dynamic tacit knowledge within organizations. From consultancy experience in knowledge management, **Truch** [Trch01] has proposed a value – based KM approach to auditing a firm's intellectual capital based primarily on an information-processing perspective. He suggests that the evaluation of knowledge assets is most effective when linked to a firm's key processes and aligned to its strategic development.

The knowledge audit designed by **Liebowitz et al**. ([Libw00]) is based on the notion that knowledge has to be seen as part of a company's inventory. The audit serves to take stock of the existing knowledge, and identify what knowledge is lacking. The knowledge audit comprises, on the one hand, the knowledge already existing within a company and, on the other hand, the current need for knowledge. A catalogue of questions is drawn up for every relevant content of knowledge. The knowledge audit process according to **Liebowitz et al**. should contain the following six steps [Niss06]:

1) Determine existing and potential knowledge sinks, sources, flows and constraints.

2) Identify and locate explicit and tacit knowledge

3) Build a map of the stocks and flows of organizational knowledge

4) Perform a gap analysis to determine what knowledge is missing

5) Determine who needs the missing know-

ledge

6) Provides recommendations about necessary improvements

This procedure requires great commitment, since much time is needed for answering the questions. If problems occur knowledge audit can provide an evaluation, looking at the following aspects: what knowledge is needed; what knowledge exists and what knowledge is lacking; and who needs this knowledge and how can it be made available. It will thus derive recommendations for actions capable of solving this specific problem.

The **Knowledge Management Assessment Tool** (KMAT) was developed by Arthur Andersen Consulting in cooperation with the American Productivity and Quality Center. Based on an "Organizational Knowledge Management Model" which assumes the core activities of the process of KM "share, create, identify, collect, adapt, organize and apply" are supported by four factors, so-called enablers, "leadership, culture, technology and measurement", KMAT's aims are oriented upon ascertaining the position of one's own company with regard to KM in comparison to other companies and onto evaluation the efficiency of the realization of the KM process. Basically it consists of questionnaires that have a section for each of the four enablers. Within each of these segments four or six statements have to be judged on two aspects: performance (scaling from bad, poorer, fair, and good to excellent) and importance (not at all important, slightly important, fairly important, important, and essential). From the result, it is derived which fields of design need to be developed further and how this should take place.

The **Knowledge Management Diagnostic** (KMD), developed by Bukowitz & Williams ([Bkwi99]), is based on a model of KM called "Knowledge management process Framework" which consists of seven KM activities: get, use, learn, contribute, assess, build/sustain, divest. The four activities "get, use, lean and contribute" designate the daily routine in dealing with knowledge. By enhancing these activities the company's reaction to the demands of the market is improved. The other three KM activities "assess, build/sustain and divest" are attributed to the strategic planning of the company by evaluating which kind of knowledge will be relevant in the future. The KMD was designed as a tool for self-evaluation and collects subjective, qualitative data. It thus serves to enable users to determine how well the different aspects of the KM process have been realized in the company.

The interview takes place in a written form, the choice of the sample being left to the company. The questionnaire is divided into seven categories according to the KM process. In every category, 20 statements are given describing possible actions for KM (e.g. "We build models of our decision-making systems to better understand why things happen the way they do"). The agreement to the statements is measured by a scale ("The statement is strongly/ moderately / weakly descriptive of my organization"). Points given for the attributes are summed up for each of the seven categories and compared with the highest possible score.

The knowledge audit, according to **Pfeifer** et al. [Pfei00], focuses on an evaluation of required knowledge at a certain point in time, the carriers of this knowledge, the connections between the knowledge carriers and the need for additional connections. This concept is associated exclusively to qualitative procedures. "For an exact determination of the individual demands, it is mandatory to talk to those involved in the process and especially important to get a description of the problems and inadequacies of the process" [Pfeif00]. In order to extend the existing connections between knowledge carriers by those additionally needed it is also important to consider whether single persons are capable of promoting an exchange of knowledge.

The **Knowledge Management Maturity Model** (KMMM) developed by Siemens AG in the Competence Center KM, is based on a model of analysis which consists of eight fields activities: strategy and knowledge aims; a company's surroundings and partnerships; employees and competencies; corporate culture and cooperation;

leadership and support; forms of knowledge and structures of knowledge; technology and infrastructure as well as processes; roles and organization. The demands of each of above mentioned fields of activities should be described. Depending on how the organization meets these demands a maturity model is assigned (initial, repeated, defined, managed or optimizing). These maturity levels describe the organization degree of maturity regarding knowledge management. Based on the level ranked to organization, are made recommendations with respects to how the organization can improve its dealing with knowledge. The results are obtained after workshops and interviews with the members selected within organization (they must be representative). The evaluation is performed qualitatively, thus this approach is very useful in identifying aspects of KM specific to one company.

The **Fraunhofer Knowledge Management Audit** (FHM –Audit) is a result of best practices for K-Audit developed by Competence Center KM at Fraunhofer IPK, Germany. This method aims to uncovering strengths and weaknesses within the actual management of corporate knowledge analyzing framework conditions, barriers and enablers for KM, increasing attentiveness for KM within company, designing a roadmap for future KM measures, collecting measurable data for KM controlling.

The FHM-Audit method integrates the level of business processes with the level of the design fields for KM. On the level of business processes are identified the relevant types of knowledge, then, for each of the types identified are determined the demand and availability. The activities that can be attributed to the core processes of KM (generate, store, distribute, apply) are analyzed also. On the level of design fields for KM are identified the general conditions, enablers and respectively, barriers for KM (e.g. for "process organization - the roles and knowledge demand; for "information technology" - the benefit, satisfaction; for "leadership"- the feedback, leading by example; for "corporate culture" - the values and social behavior; for "human resources management" -

the aspects of motivation, capabilities; for "controlling" - the assessment systems, indicators).

FHM-Audit method can be structured in seven phases [Mert03]:

1) Initial state (preparation) - analysis of the relevant documents about processes, procedures and structures (e.g. process model, organigram, job specification, product specification).

2) Focus setting – both the processes to be analyzed in an exemplary way and the target group (key stakeholders) to be interviewed are identified.

3) Adjustment of Inventory – customization of the audit according to the company's requirements.

4) Survey – creating questionnaires for the selected target group and realizing face-to-face interviews. Central topics of discussions are the core activities and the concrete suggestions in improvement of co-ordination and comprehensiveness of core processes associated

5) Analysis and evaluation - the core activities and the types of knowledge are analyzed and evaluated according to the assessment criteria, such as the actuality, availability, transparency and reliability of sources.

6) Feedback workshop – recommendations for further actions in order to implement successfully KM into an organization are summarized and prioritized in a roadmap.

7) Project start - the necessary measures described in roadmap which need to be taken for the further development of organization are planned and realized.

According to **Wiig** several knowledge analysis methods may be used in a K-Audit process [Wiig93]:

• *Questionnaire-based knowledge surveys*: used to obtain broad overviews of an operation's knowledge status

• *Middle management target group sessions*: used to identify knowledge-related conditions that warrant management attention

• *Task environment analysis*: used to understand, often in great detail, which knowledge

is present and its role
- *Verbal protocol analysis*: used to identify knowledge elements, fragments and atoms
- *Knowledge mapping*: used to develop concept maps as hierarchies or nets
- *Knowledge use and requirement analysis*: used to identify how knowledge is used for business purposes and determine how situations can be improved
- *Knowledge scripting and profiling*: used to identify details of knowledge intensive work and the role the knowledge has in delivering quality products
- *Knowledge flow analysis*: used to gain an overview of knowledge exchanges, losses or inputs of the business processes or the whole enterprise
- *Critical knowledge function analysis*: used to locate knowledge-sensitive areas

Dataware, one of the leaders in the KM fields, considers that a productive knowledge audit needs only to concentrate on answering to the following question: "In order to solve the targeted problem, what knowledge do I have, what knowledge is missing, who needs this knowledge, and how will they use the knowledge?". According to Dataware, the audit process comprises the following steps:

1) Identify what knowledge exists in the area that makes the object of analysis:
- determine existing and potential sinks, sources, flows and constraints in the targeted area. There are also included the environmental factors that might influence the area analyses.
- identify and locate explicit and tacit knowledge in the targeted area
- build a knowledge map of the taxonomy and flow of knowledge in the organization in the targeted area. The role of knowledge map is to define a link between topics, people, documents, ideas and external resources, in ways that allow individuals to locate quickly the knowledge they need.

2) Identify what knowledge is missing from the area that makes the object of analysis:
- perform a gap analysis to determine what knowledge is missing to achieve business goals
- determine who needs the missing knowledge

3) Provide recommendations from the knowledge audit to management regarding the status quo and possible improvements to the KM activities in the targeted area

Conclusions
There is no universally accepted model for conducting a knowledge audit. The knowledge audit process it is a complex and multidimensional fact-finding and analytical process, which aims to record all the quantitative and qualitative variables related to knowledge and to the ability to use it effectively in order to create business value.
A number of models encompassing a broad range of issues, methods and theories that differ in scope and focus have been developed. Regardless of the model used, in general knowledge audits consist of:
- the identification of knowledge needs through the use of questionnaires, interviews and focus groups;
- the development of a knowledge inventory mainly focusing 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;
- analysis of knowledge flows in terms of people, processes and systems
- the creation of a knowledge map. There are two recommended approaches to knowledge mapping: map knowledge resources and assets showing what knowledge exists in organization and where can be found or include knowledge flows, showing how the knowledge moves around the organization from source to target.
- finally an audit detail report

The choice of model should be determined by the business needs and objectives of the context. If the organization goals are to replace one system with another in order to gain efficiencies and the system is fairly structured, the audit procedure may view the system as a "black box" focusing on comparing the resources consumed and the reliability of the old and the new system viewing it from outside. If the system is complex,

goals are somewhat undefined, and reliability comparisons are difficult to make. In this case auditing might be performed by focusing on understanding the key processes and their reasonableness in meeting defined goals.

The KM audit must focus on all the intangible assets and knowledge assets that exist in company/organization that is audited: its rituals, processes, structure, communities and people. Their existence must be documented, and their current state must also be explicated. Very helpful for taking future decisions might be their value in money, thus it's better to record what their value might be. When a K-Audit involves an assessment of how the sum of explicit as well as tacit knowledge within an organization is exploited through the knowledge-cycle, people and business processed adding to such knowledge is called *exhaustive K-Audit* [Hylt02]. When a K-Audit is more results-oriented and entails determining the organization's effectiveness and efficiency of knowledge capture, codification and transfer in the key business processes [Libw00] is called a *material K-Audit*. Both exhaustive as well as material K-Audits check the health status of knowledge asset and its utilization within organization and provide a framework in order to facilitate the audited unit to gain measured knowledge of its existing and potential knowledge value. Whereas an exhaustive audit involves considerable amounts of time and resources in order to obtain a definitive outcome, a material audit looks only at the key business processes that lead to an identifiable impact of interest.

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