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KNOWLEDGE AUDIT AS A SUCCESS FACTOR FOR KM IMPLEMENTATION

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ABSTRACT

In today's knowledge-driven economy, organizations are increasingly dealing with intangible assets and intellectual properties like human capital, customer capital, patents and brands. Accounting these issues has become a daunting task for organizations and must be properly included in the corporate financial accounts. Accordingly, these intangible, knowledge assets are dominating the corporate balance sheets and revealing their value of knowledge by demonstrating how it is, or how it can be converted into purchasable goods and services. Against this backdrop, knowledge is recognized as the most important strategic asset in any organization across the globe. These developments offer a strong base for Knowledge Audit or K-Audit. With the help of knowledge audit, organizational knowledge can be quantified, measured and assessed. Therefore, knowledge audit is so vital, because it gives an organization a comprehensive picture of its strengths and weakness, allowing it to focus its efforts in the right direction. Certainly, a proper business needs assessment and cultural assessment also needs to be performed as part of the knowledge audit. The choice of approach depends on business needs and objectives. There is no doubt that K-Audit is unquestionably the first step in any kind of KM initiative and has been considerably recognized as a must for any kind of organizational efforts towards effective knowledge management. To achieve successful KM, a knowledge audit is vital to investigate an organization's knowledge 'health'. The knowledge audit provides an evidence based assessment of where the organization needs to focus its KM effort.

KEYWORDS

Knowledge, Knowledge Management, Knowledge Asset, K-Audit, Knowledge Inventory, Knowledge Health.

INTRODUCTION

In today's knowledge-driven economy, organizations are increasingly dealing with intangible assets and intellectual properties like human capital, customer capital, patents and brands. Accounting these issues has become a daunting task for organizations and must be properly included in the corporate financial accounts. Unlike in the past, these intangibles are now contributing maximum to a firm's bottom line. Innovation and knowledge have become the key imperatives from automobiles to aircraft, from mobile phones to office equipment and computers to sports equipment. Accordingly, these intangible, knowledge assets are dominating the corporate balance sheets and revealing their value of knowledge by demonstrating how it is, or how it can be converted into purchasable goods and services. Against this backdrop, knowledge is recognized as the most important strategic asset in any organization across the globe. However, in many organizations knowledge is invisibly created, captured, distributed and shared throughout the organization. And most importantly, intangible assets are not easy to quantify, measure and value. Organizations are universally acknowledging the difficulties they encountered in attempting to quantify and measure these intangibles. These developments offer a strong base for Knowledge Audit or K-Audit. It is the first major stage in effective knowledge management and corporate knowledge valuation. Moreover, with the help of knowledge audit, organizational knowledge can be quantified, measured and assessed. Therefore, knowledge audit is so vital, because it gives an organization a comprehensive picture of its strengths and weakness, allowing it to focus its efforts in the right direction.

KNOWLEDGE MANAGEMENT

Knowledge Management (KM) is the collection of processes that govern the creation, dissemination, and utilization of knowledge. In one form or another, knowledge management has been around for a very long time. Practitioners have included philosophers, priests, teachers, politicians, scribes, Librarians, etc. Knowledge Management comprises a range of practices used by organisations to identify, create, represent, and distribute knowledge. Knowledge management has become an important area of focus for many organizations in order to be successful in today's business environment. There are many documented cases of successful KM efforts that have greatly aided firms in virtually every area of business. However, even with these documented achievements, many companies are still reluctant to undertake KM initiatives.

A knowledge audit can offer an evidence-based assessment of an organisation's knowledge status. It can help to frame knowledge strategy, assess progress, and facilitate strategic and operational buy-in. It can throw a spotlight on knowledge and information, infrastructure, processes and culture. Many organisations accept that knowledge is the basis of innovation and that organisations need to innovate in order to get ahead of competitors. Whether or not your organisation has begun a knowledge-management programme, it is important to be aware of its knowledge-related requirements. It is also important that organisations find a way of assessing the impact of their knowledge initiatives. Conducting knowledge audits is a key process not only for KM purposes but also for the strategic planning phase, both on the enterprise and business-unit levels, for forging competitive strategies and tactics. Therefore, Knowledge audit is one of the successful factors to achieve the Knowledge Management implementation.

KNOWLEDGE AUDIT – AN OVERVIEW

A critical part of a knowledge management methodology is performing a knowledge audit (Liebowitz, 1999). A knowledge audit may identify the following (Wiig, 1993):

- Information glut or lack of information
- Lack of awareness of information elsewhere in the organization
- Inability to keep abreast of relevant information
- Significant "reinventing the wheel"

- Common use of out-of-date information, and
- Not knowing where to go for expertise in a specific area.

A knowledge audit assesses potential stores of knowledge. It is the **first part of any knowledge management strategy**. By discovering what knowledge is possessed, it is then 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 to the organization. Part of the knowledge audit is capturing "tacit" knowledge. To do this, some organizations use communication technologies and virtual teams, including groupware, discussion databases, video conferencing, data conferencing, and team-ware. In a knowledge audit, one should try to identify the knowledge of: people who know the contents of libraries, including feedback from lead customers with product innovations and adaptations; rules of thumb; shortcuts; and cheat sheets. For the audit, look at: flows, sinks, sources, and constrictions in addition to the stores. Look for opportunities and assess the form and nature, relevance, usefulness, costs, timeliness, and the accuracy of the data collected. Pay close attention to the context, the transformations, and the assumptions along the way.

According to **Debenham and Clark (1994)**, a knowledge audit is a planning document which provides a structural overview of a designated section of an organization's knowledge as well as details of the qualitative and quantitative characteristics of the individual chunks of knowledge within that designated section. The document also identifies the knowledge repositories in which those chunks reside. They feel that the knowledge audit is a scientific measurement of the state of affairs of specified sections of corporate knowledge.

Debenham and Clark (1994) further explain the detailed objectives of a knowledge audit as:

- to give a high-level view of the extent, nature, and structure of the knowledge in a specified section;
- to provide meaningful hard data input to the strategic plan for knowledge processing;
- to identify the relevant knowledge repositories within the organization;
- to provide a statement of the qualitative characteristics of the chunks of knowledge within
- a particular knowledge repository; and
- to provide scientific estimates for the quantitative characteristics of the chunks of knowledge within a particular knowledge repository.

In their view (**Debenham and Clark, 1994**), the knowledge audit report includes:

- two page executive summary highlighting the major findings of the knowledge audit
- a clear statement of the reason for conducting the knowledge audit.
- a description of the audit process
- an analysis of the accuracy and sensitivity of the findings
- the conclusions, which should summarize the detailed findings of the knowledge

K-audit in an easily digestible form, and should relate these findings to the reasons why the audit was conducted.

- a "block map" a diagram displaying the various knowledge blocks audited, their relationships to one another and the knowledge repositories in which they reside.
- a section containing "block proformas"--the means used to record information about the qualitative characteristics of a block, as well as to record the values for the quantitative characteristics of a block--in a knowledge audit report, there is usually one proforma per page and one proforma per block.
- An index providing the page numbers of the various blocks and corresponding repositories.

According to **Shah et al. (1998)**, some questions for a knowledge audit include:

1. BUSINESS CONCEPT

1. How do you conceptualize the business?
2. What is the mission or objectives of your team or unit?

2. ENTERPRISE KNOW-HOW

1. How dependent are you on knowledge and expertise?
2. How do you generate knowledge?
3. Please describe various methods in which you codify knowledge (e.g., knowledge maps of who knows what, printed sources (rule books), experience databases (repository of customer problems and actions)
4. Do you codify knowledge related to both successful and failure experiences?
5. What mechanisms exist to transfer knowledge from expert people/teams to other people/teams (e.g., training, informal talks, etc.)?

3. KNOWLEDGE WORKERS

1. Are they focused on what they are best at?
2. What kind of partnership exists between management and knowledge workers?
3. How do you use training and team processes to enhance knowledge/skills?
4. How is compensation linked with knowledge/skill levels?

4. KNOWLEDGE MEDIATED THROUGH IT

1. Is IT used just to process data or also to manage knowledge?
2. How do you implement your IS projects related to knowledge management?

5. ORGANIZATIONAL DESIGN

1. Does the flow of information in your unit foster or hinder innovation?
2. How close are you to being a modern networked, flat, and adaptable organization?

Wiig (1993) points out several knowledge analysis methods that could be used in the knowledge audit:

- 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 atom
- Basic knowledge analysis: used to identify aggregated or more detailed knowledge
- Knowledge mapping: used to develop concept maps as hierarchies or nets
- Critical knowledge function analysis: used to locate knowledge-sensitive areas
- Knowledge use and requirements 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 which role knowledge plays to deliver quality products
- Knowledge flow analysis: used to gain overview of knowledge exchanges, losses, or inputs of the task business processes or the whole enterprise

Certainly, a "knowledge map" showing the taxonomy and flow of knowledge is a critical part of the knowledge audit. Some people (e.g., **Snowden, 1999**) believe that the best representations for knowledge maps are stories--they convey the context, the values, and the message. The most productive audit activities may be: identification of knowledge opportunities for connecting to customers, capturing the corporate memory (helping learning and preventing repeated errors), and compiling a directory of true experts and their interests.

According to **Dataware (1998)**, one of the leaders in the knowledge management field, a productive knowledge audit need only concentrate on answering the following question: "In order to solve the targeted problem, what knowledge does one have, what knowledge is missing, who needs this knowledge and how will they use the knowledge?" The audit begins by breaking that information into two categories: what knowledge currently exists and what knowledge is missing.

Once the location or source of the missing information is identified, they can begin to structure the relevant information so that it can be easily found. At the conclusion of the knowledge audit, the knowledge management team has the information necessary to design its knowledge management system on paper.

- A knowledge audit is a qualitative appraisal and examination of the enterprise's knowledge 'health'. It is about determining the knowledge (and actionable information) required to enable competitive success of the business within its targeted markets.
- A Knowledge Inventory (sometimes called an information audit) is a practical way of getting to grips with "knowing what you know". Applying the principles of information resources management (IRM) it identifies owners, users, uses and key attributes of core knowledge assets. It is often carried out in conjunction with a Knowledge Management Assessment as a baseline on which to develop a knowledge management strategy.
- Indicators that a knowledge inventory would be worthwhile include: managers and professionals feel the symptoms of 'information overload'. It is difficult to find quickly key information and knowledge needed to make key decisions useful sources of information and knowledge are frequently stumbled across by accident duplication of information gathering activities is taking place across different departments.
- Questions are raised about the value of information systems or information management (library) investments in organizations and industries with a strong R&D function.

KNOWLEDGE AUDIT: DIFFERENCES

In the corporate world, auditing is an accepted management technique. Currently, there are different types of audits exist such as financial audits, communication audits, technical audits, employment audits, and also more recently, information audits along with K-Audit.

AUDIT: FINANCIAL VS KNOWLEDGE

"The most general definition of an audit is an evaluation of a person, organization, system, process, project or product. Audits are performed to ascertain the validity and reliability of information, and also provide an assessment of a system's internal control. The goal of an audit is to express an opinion on the person/organization/system etc. under evaluation based on work done on a test basis. Due to practical constraints, an audit seeks to provide only reasonable assurance that the statements are free from material error. Hence, statistical sampling is often adopted in audits. In the case of financial audits, a set of financial statements are said to be true and fair when they are free of material misstatements – a concept influenced by both quantitative and qualitative factors."

However a knowledge audit works a little differently, its more of a qualitative evaluation. Its essentially an investigation of an organizations knowledge "health". It's used to provide a sound investigation into the company or organization's knowledge 'health'. (Arjun Thomas, 2003)

AUDIT: CONTENT VS KNOWLEDGE

For those of you who are confused between a content audit and a knowledge audit: a content audit is focused primarily on the content in the organization. It just identifies what content exists and what doesn't. Details like what the content is used for isn't really looked into. A knowledge audit on the other hand looks at problems and puts the information in the context of the problem.

AUDIT: INFORMATION VS KNOWLEDGE

Information audit focuses on the identification of users' information needs as well as how well these needs are met by the information services. While both information audit and K-Audit focuses on documented knowledge. More importantly, K-Audit focuses on non-documented (tacit) knowledge which people carry along with them.

Unlike the information audit, the required information for K-Audit cannot be found in the corporate system and is totally depend on people. Information knowledge can be found within the corporate systems whereas a knowledge audit has a wider scope to include both corporate documents and people-based knowledge. For the effective utilization of expertise in the organizations, K-Audit identifies where it can find the expertise and how this expertise is accessed.

KEY BENEFITS OF A KNOWLEDGE AUDIT

- It helps the organization clearly identify what knowledge is needed to support overall organizational goals and individual and team activities.
- It provides evidence of the extent to which knowledge is being effectively managed and indicates where improvements are required.
- It provides an evidence-based account of the knowledge that exists in an organisation, how that knowledge moves around in, and is used by, that organisation.
- It provides a map of what knowledge exists in the organisation and where it exists, as well as revealing gaps.
- It reveals pockets of untapped knowledge.
- It provides a map of knowledge and communication flows and networks.
- It provides an inventory of knowledge assets, giving a clearer understanding of the contribution of knowledge to organizational performance.
- It provides vital information for the development of effective knowledge management programmes and initiatives that are directly relevant to the organization's specific knowledge needs and current situation.

IMPORTANCE OF KNOWLEDGE AUDIT

Reason for KM Program Failure – Lack of understanding of KM needs – K Audit can reveal KM needs, SWOTS Results with risks for implementation of KM. Although knowledge audit has been identified as an important activity in the knowledge management, there is lack of a systematic approach in its conduction and the audit practice varies with different industries and companies. (Cheung Chi Fai et.al. 2005) Ko Kam Chin2, Chu Ka Fu1, Lee Wing Bun1, The Hong Kong Polytechnic University1, Johnson Electric Group2] "Systematic Knowledge Auditing With Applications" in Journal of Knowledge Management Practice, August 2005

The definition of knowledge audit is defined by **National Electronic Library for Health (2005)** as a qualitative evaluation into an organization's knowledge 'health'. It provides an evidence based assessment of where the organization needs to focus its KM effort. Hence, the organization's KM needs, strengths, weaknesses, opportunities, threats and risks are revealed for the implementation of KM. **Liebowitz et al. (2002)** stated that the objectives of knowledge audit is to know what knowledge does the company has, what knowledge is missing, who needs this knowledge and how will they use the knowledge so as to solve the targeted business problem. Although a wide variety of approaches have been proposed in conducting knowledge audit with varying levels of coverage and details (**Debenham and Clark, 1994; Wiig, 1995; Frappaolo and Koupoulos, 2000; Hylton, 2002a and 2002b; Liebowitz et al, 2002; Tiwana, 2002**), there is lack of systematic approach for knowledge audit and the practice varies with different industries and companies.

NEED FOR KNOWLEDGE AUDIT

Often referred to as a knowledge inventory, a knowledge audit assesses and lists an organization's knowledge resources, assets and flows. Knowledge Audit is a critical component of any KM strategy, and often the first step in designing one. If we do not know what knowledge we already have, what our knowledge gaps are and how that knowledge flows within our organization, how can we devise an effective KM strategy? Knowledge audits "reveal the organization's knowledge management needs, strengths, weaknesses, opportunities, threats and risks." These indicate what steps are needed to improve current practices. What do we have, what do we need, and what are the gaps?

Knowledge audits can help to identify a number of things, including:

- Information glut or scarcity;

- Lack of awareness of information elsewhere in the organization;
- Inability to keep abreast of relevant information;
- Continual "reinvention" of the wheel;
- Quality and quantity of in-house knowledge and information;
- Common use of out-of-date information;
- Not knowing where to go for expertise in a specific area.

CHARACTERISTICS OF KNOWLEDGE AUDIT

Knowledge audits enable the assessment and prevention of organizational memory loss and brain drain, problems that result in undercapitalization and waste of knowledge resources,

- Knowledge audit should be the first step in any Knowledge Management initiative. Properly done, it would provide accurate identification, quantification, measurement and assessment of the sum total of tacit and explicit knowledge in the organization (**Ann Hylton, 2002**).
- K-Audit focuses on the core information and knowledge needs in an organization by identifying the gaps, duplications, flows and their contribution to business goals. With sound investigation, it provides an organization knowledge health. In short, it provides an evidence-based assessment of where the organization is required to focus on in its Knowledge Management (KM) efforts.
- K-Audit may refer to identifying specific knowledge assets such as patents and the degree to which these assets are based, enforced and safeguarded. **Dr. Ann Hylton**, a leading knowledge auditor defines, "The K-Audit is a systematic and scientific examination and evaluation of the explicit and tacit knowledge resources in the company. It investigates the current knowledge-environment and culminates, in a diagnostic and prognostic report on the current corporate 'knowledge health'."
- The report provides evidence as to whether corporate knowledge value potential is being maximized. In this respect, the K-Audit measures the risk and opportunities faced by the organization with respect to corporate knowledge."

OBJECTIVES OF KNOWLEDGE AUDIT

- K-audit helps an organization to clearly identify what knowledge is needed to support overall organizational goals and individual and team activities.
- It gives tangible evidence of the extent to which knowledge is being effectively managed and indicates where improvements are needed.
- It explains how knowledge moves around in, and is used by, that organization.
- It provides a map of what knowledge exists in the organization and where it exists, revealing both gaps and duplication.
- It provides an inventory of knowledge assets, allowing them to become more visible and therefore more measurable and accountable.
- It provides vital information for the development of effective knowledge management programmes and initiatives that are directly relevant to the organization's specific knowledge needs and current situation.
- It helps in leveraging customer knowledge.

COMPONENTS OF A KNOWLEDGE AUDIT

A Knowledge audit can have the following components (not necessarily need to be in order): as stated in Fig. 1. are

1. Knowledge need analysis
2. Knowledge inventory analysis
3. Knowledge Flow analysis
4. Knowledge mapping

FIG. 1: COMPONENTS OF KNOWLEDGE AUDIT



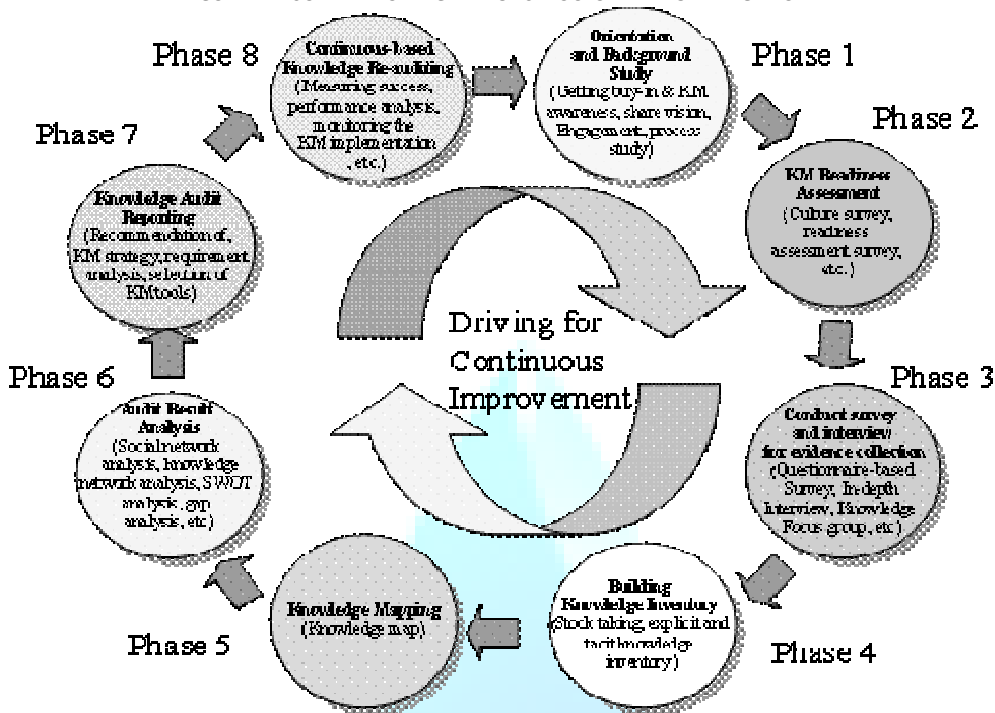
A **successful knowledge audit** focuses the following questions:

- How is knowledge defined in the organization?
- What knowledge is needed to support the business?
- Is a glut or lack of knowledge / information impacting effective and efficient decision-making?
- Where are the knowledge assets?
- What is the format and media of the knowledge assets?
- How does that knowledge flow within and outside the enterprise?
- How is knowledge captured, stored, enriched and exchanged?
- How is knowledge secured against potential loss?
- How is knowledge created in the organization?
- How do workers keep their knowledge from becoming obsolete?

SYSTEMATIC APPROACH IN KNOWLEDGE AUDIT

Figure 2 shows the framework of systematic knowledge audit. Basically, it is composed of eight phases which include orientation and background study, KM readiness assessment, conduct survey and interview for evidence collection, building knowledge inventory, knowledge mapping, audit result analysis, knowledge audit reporting and continuous-based knowledge re-auditing, respectively.

FIGURE 2: A SCHEMATIC DIAGRAM OF STRUCTURED KNOWLEDGE AUDIT



ESSENTIAL PHASES OF KNOWLEDGE AUDIT

- Orientation And Background Study
- KM Readiness Assessment
- Conduct Survey and Interview for Evidence Collection
 - Pilot Interview
 - Detailed Face-to-face Interview
 - Follow Up Interview (only carry out if necessary)
- Building Knowledge Inventory
- Knowledge Mapping
- Audit Result Analysis
- Knowledge Audit Reporting
- Continuous Knowledge Re-auditing

DELIVERABLES OF A KNOWLEDGE AUDIT

In particular, Knowledge Audit process is designed to discover:

- Available knowledge resources (know what we know):
- Stores and sinks of explicit knowledge resources
- Expertise and tacit knowledge resources
- Hidden and undercapitalized resources (we don't know that we know):
- Key leverage points in the learning process
- Practices perfected by certain departments (best practices).
- Knowledge resources required to meet strategic objectives (we don't know that we don't know):
- Blocks in knowledge flows and networks
- Gaps and unmet needs for knowledge and information

Common approaches and tools that can be applied to conduct a knowledge audit are: Site observation, questionnaire-based surveys, face to face Interviews, focus group discussion, forums. A knowledge audit could be divided into four parts: background study, data collection, data analysis and data evaluation. So the deliverables of a knowledge audit could be:

- A list of knowledge items (K-needs & current K-assets) in the form of spreadsheets
- A knowledge network map which shows the flow of knowledge items
- A social network map that reveals the interaction among staff on knowledge sharing

These deliverables will help an organization in identifying the gap between “what is” at present and “what should be” in the future from a KM perspective.

CONCLUSION

The knowledge audit process plays a key role in identifying a knowledge management strategy for the organization. Certainly, a proper business needs assessment and cultural assessment also needs to be performed as part of the knowledge audit. The choice of approach depends on business needs and objectives. There is no doubt that K-Audit is unquestionably the first step in any kind of KM initiative and has been considerably recognized as a must for any kind of organizational efforts towards effective knowledge management. To achieve successful KM, a knowledge audit is vital to investigate an organization’s knowledge ‘health’. The knowledge audit provides an evidence based assessment of where the organization needs to focus its KM effort.

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