Knowledge Audit Portal For Higher Learning Institution

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ABSTRACT

Knowledge Audit is one of the activities that should be conducted prior to development of a Knowledge Management System in an organization. Knowledge audit facilitates identification of the various forms of knowledge that are required by stakeholders of a Knowledge Management System. However, despite its importance, few KMS developers perform knowledge audit. Thus, the main objective of this study is to develop a portal prototype that serves as a KMS as well as a knowledge auditor. The portal is developed specifically for academic staff and students in a public institute of higher learning. This study is initiated with a questionnaire that is used to identify explicit knowledge required by an academic community. The responses are used to develop the prototype Knowledge Audit Portal. This prototype was designed using Rational Rose 2000, Macromedia Dreamweaver MX(for interface development) and Active Server Pages (ASP) technology(used for prototype coding). The portal demonstrates how knowledge required by a community of academic staff and student can be identified as the community uses a basic portal.

Keywords

Knowledge Audit, Knowledge Management System, Knowledge Portal

1.0 INTRODUCTION

Knowledge management has been identified as one of the mechanisms that can assist Institutions of Higher Learning in managing vast and extensive knowledge resources. Efforts must be done to ensure that knowledge is continuously created, identified, collected and disseminated amon the communities in an IHL. Cultivation of a knowledge sharing culture where knowledge is continuously created and recreated is critical as a source of competitive advantage.

Knowlege Management is one of the strategies to manage intellectual assets in an organization. Intellectual assets exist in many forms, from knowledge notes to expertise that can be used for improving quality and productivity. Knowledge management is thus a valuable mechanism to identify expertise that abounds in an IHL. Much of these expertise exist in the form of tacit knowledge.

Thus, it is important for IHLs to place more emphasis on knowledge management systems compared to other systems. However, while systems development of other types of information systems is usually initiated with identification of systems requirement, development of knowledge management systems should begin with a knowledge audit.

2.0 KNOWLEDGE AUDIT

Knowledge about knowledge assets in an organization is critical in implementing an effective knowledge management system. The strengths of an organization can be identified through identification of its knowledge assets. A Knowledge Audit is a systematic and scientific examination, verification and evaluation of knowledge assets [Hylthon, 2003].

A Knowledge Audit is a review of the knowledge required by a company, department or group in order to carry out its objectives effectively. Activities conducted within the knowledge audit process include needs analysis, information analysis, competencies and communication audit, and a review of interactions and knowledge flow.

The knowledge audit is the all important first major phase or step of a knowledge management initiative, and is used to provide a sound investigation into the company or organisation's knowledge 'health'. The audit is a fact-finding, analysis, interpretation and reporting activity that includes a study of the company's information and knowledge policies, its knowledge structure and knowledge flow.

The knowledge audit serves to help the audited unit to determine its existing knowledge state. It will also help it to discover how to better leverage knowledge for business and competitive advantage. This discovery sets the agenda for the knowledge management implementation in the organization.

A complete knowledge audit will evaluate the company's knowledge environment, its knowledge ecology, its knowledge use and sharing. It identifies the knowledge that is enhancing social and behavioural culture of the people within the organization. In organizations that already have knowledge management systems, the knowledge audit investigates stakeholders' perception of its effectiveness.

Knowledge audit offers a detailed examination, review, assessment and evaluation of a company's knowledge abilities, its existing knowledge assets and resources, and its knowledge management activities. A knowledge audit will help the audited company to determine what knowledge is being managed and how well it is being managed.

At the most detailed level, the knowledge audit investigates and evaluates the company's information systems, its processes and its knowledge enabling technology. Knowledge audit examines how well current processes support knowledge capture, dissemination, use and sharing.

Knowledge audit reveals strengths, weaknesses, opportunities and threats and risks of current systems. Knowledge audit involves the use of methods and tools such as knowledge inventory, knowledge mapping, knowledge flow and gap analysis.

2.1 KNOWLEDGE AUDIT METHOD

Ann Hylthon (2003) is one of the leading proponents of knowledge audit. She has introduced the KeKma Audit Model, where there are three main stages in knowledge audit, as shown in Figure 1.

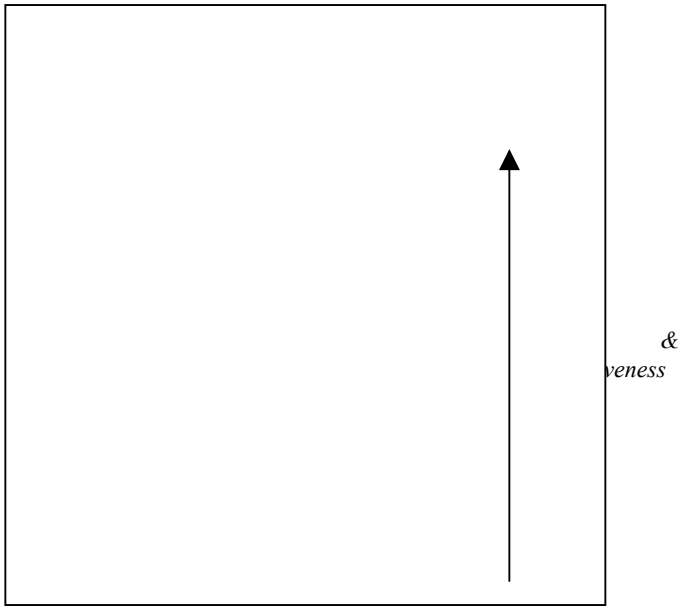

Figure 1: Kekma Audit Model

2.1.1 Knowledge Survey

Knowledge survey can also be defined as the process of collection, comparison, analysis and measurement of corporate knowledge through perspective of the knowledge people. The knowledge survey is conducted via face-to-face interviews to clarify and validate questions and responses of the survey. Other methods that can be used are observation and ad-hoc interviews.

The knowledge survey is a comprehensive measurement of eight (8) dimensions, as shown in Table 1. The dimensions cover human capital, knowledge capital, knowledge culture, knowledge sharing/collaboration, knowledge value, and knowledge acquisition. Each dimension has a set of key indicators as a basis of measurement. Table 2 is an example of a questionaire that can be used to measure knowledge value.

Table 1: Key Indicators of Knowledge Survey

Measure	*Key Indicators*
1-Demographics of human capital potential	*Age,gender,formal education,technical training and job position*
2-How well human capital is managed and nurtured	*Job satisfaction, career development oppurtunities*
3-Corporate knowledge sharing / Collaboration	*Opportunity for and frequency of exchange of knowledge, knowledge incentive/ reward policies*
4-K Culture /Environment	*Work culture and attitudes, team spirits and practice*
5-Knowledge value of explicit and codified knowledge	*Information and documents volume,type and usefulness, patents, trademarks and license*
6-Management of Structural Knowledge Capital	*Storage and access technologies, processess to facilitate efficient dissemination, flow of information*
7-Customer Knowledge Value	*Customer interaction and feedback oppurtunities, customer satisfaction/ retention*
8-Acquisition of outside Knowledge	*Information searches, competitive intelligence, sales force feedback*

Table.2: Table example knowledge survey for knowledge audit

01. What do you think is the main concern of KM?	
02. Do most people in your Team/Department know what KM is	
03. Which KM concern is given priority in your company?	
04. Do you think that better KM is needed in your company:	
05. Do you consider yourself to be a knowledge worker:	
06. . Is information & knowledge shared readily in your team/department	
08 Do you feel that you are an expert at your job?	
09. Are staffs rewarded for team spirit?	

2.1.2 Knowledge Inventory

Knowledge Inventory is the recording and cataloguing of the knowledge that exists in the company. This includes the type of knowledge, explicit or tacit, where the different elements of corporate knowledge are stored and what knowledge is used when, where and by whom.

2.1.3 Knowledge Mapping

The knowledge map is a navigation aid to codify information and tacit knowledge, showing the importance and the relationships between knowledge stores and dynamics. The knowledge map portrays the sources, flows, constraints and sinks of knowledge within an organization.

3.0 KNOWLEDGE AUDIT PORTAL PROTOTYPE

The Knowledge Audit Portal prototype enables identification of the knowledge assets in an organization. A knowledge survey is used to achieve this. The electronic knowledge survey module contains a questionnaire that requires the academic community in an IHL to identify both explicit and tacit knowledge that it requires.

Apart from the online knowledge survey module, the portal also contains standard knowledge portal modules. These modules include discussion forum, links, articles and My-Inbox . The discussion forum facilitates discussion about a particular topic. The links provides information about knowledge audit. The My Inbox allows users to personalise the information in the portal for his own use. The content allows the administrator to manage general information, announcements as well as frequently asked questions (FAQs).

The most critical module is the ANALYSIS and the SUMMARY modules. The analysis module analyzes and

presents the results of the knowledge audit survey. The summary module presents a report of the knowledge used by the community in the other modules in the portal, in the order of frequency of usage.

3.1 BENEFITS OF THE KNOWLEDGE AUDIT PORTAL

i. Assessment Repository Knowledge

This portal could provide quick assessment for document in the portal through a keyword search. These documents are collection of explicit knowledge which have ben kept in database system, and acts as a knowledge repository. These documents are organised based on categories such as authors, titles for easy searching and assessing of that document. With this repository, this portal can be a resource and a form of guidance to the academic community.

ii. Desktop Interface

Web application also enables the management of a variety of resources in a single desktop. It includes service for keyword search, latest news, web links and also organising the contents.

iii. Web-based application

i. Place

Web-based application system makes it easier for user and administrartor from a variety of location to access the system. This can solve issues of concern for the mobile user who is always on the move from location to location. Meanwhile, the experience and knowledge that they have is very important for contribution in the discussion board. This web based application makes it easier for user to have an online discussion via the discussion forum.

ii. Time
This factor influences the effectiveness of a discussion, especially when members in different locations have to make decisions. Through knowledge management application system, members are free to answer the questionaire without the need to be at the same time with other members. This means thats discussion and sharing document can be impelment effective and fast without time and place limits.

iv. Knowledge Sharing

Group discussion activity actually make involved two important elements that are collaborative and indirectly communication and can be viewed as human group which impelmented groupwork These are the criterias for groupwork:

i. Have task that have to impelmented by the group such as make decision

ii. User in different location

iii. User have different work time

iv. User might been work in the same or different organization.

v. Group can be temporary or permanent.

vi. Task that have to impelmented in group neede fast and quick solution

vii. Data, information and needed knowledge in work discussion might be from variety of sources, outside the organization.

viii. Expertise from non-user might be needed in certain situation.

All in all, this portal try to fulfill the stated criteria especially space preparation for discussion, receive and send related articles. Through on that, user can change minds, ideas and related documents. Indirectly, it can be encouragement knowledge sharing between users. Views and idea have been raised by users actually tacit knowledge that have been translated to explicit knowledge. It can be easy to understand by members in discussion boards. This process called exchange between tacit knowledge to explicit knowledge. For send and receive articles service that have been provided by this system can make quicker the process in knowledge sharing.

3.2 WEAKNESSES OF KNOWLEDGE AUDIT PORTAL

i. This impelmentation system needed high commitment between manager as monitor system

and also users. No motivation and high demands in give responds in questionaire will affected the decision.

ii. Lack of security aspect. For example, this system not included with the function such as encryption data login and password in web-based environment.

iii. Non-friendly questionaire interface.If can be seen details, questionnaire is only applicable for factor list or slightly statement. If not, it make users have to take time to think for select choices.

Perhaps, with the weaknesses as listed above, can be solve or enhance in the next time.

3.3 CONSTRAINTS OF KNOWLEDGE AUDIT PORTAL

i. One of the criteria knowledge management system is web-based system. Nowadays, a lots of webmaster develope system based on portal concept using technology Hypertext PreProcessor (PHP). Due on no experience and shortage of time makes researcher using Active Server Pages(ASP).

ii. Limitation of time to finish the projects.Although knowledge management is not the new concept, but in knowledge based challengeable era, it makes knowledge management concept getting popular. Mostly impelmentation more focusing in bussiness rather than higher learning institution, which teaching is their core bussiness. That's why a lots of time needed to study details about applicable or not knowledge management impelmentation. In addition, limitation of times also, cause that have been provided one siri of questionnaire.

iii. More subjective study. Based on study and reading, cannot be deny that knowledge is subjective because it contains in human memory. The knowledge become knowledgeable when it can give implication and effects to the individuals.For example, able to solve problems and make decision.

iv. No adaption related with knowledge inventory and knowledge mapping. In addition, it can be widen the scope.

3.4 SUGGESTIONS

i. For next development, suggested that have to focused about data security for web-based application system, which more reveals to hackers.

ii. Adaption in knowledge inventory and knowledge mapping in knowledge audit context. For example, in Knowledge Management System should have knowledge inventory in the system. The same thing with the knowledge mapping,which site mapping in the system makes easier to user for surfing the system with convenience.

iv. Besides than discussion group activity, actually Institutes Of Higher Learning should have variety of activities that can be generate new knowledge. For example, research and development activities.Through on that, knowledge audit study also can be impelmented with identifiy how new knowledge can be generate and how the knowledge can be keep in knowledge repository that can be access by others.

4.0 REFERENCES

Bahtiar Shukor (2001). "Pengurusan Pengetahuan:Amalan Di Peringkat Sekolah." Bestari 5, Jabatan Pendidikan Johor.98-105.

http://userpages.umbc.edu/~buchwalt/papers/KMaudit.htm

Hylthon,A (2003)."Knowledge Audit Masterclass".Tidak diterbitkan

Hylton, A. (2002)" A KM Initiative is Unlikely to Succeed Without a Knowledge Audit".(Available Online), http://www.annhylton.com/writings/publications/publicatins-20022003/KMInitiativeisUnlikelytoSucceedwithoutKA.pdf

Hylton, A. (2002)" A Knowledge Audit Must be People-Centred & People Focused". (Available Online), http://www.HyltonAssociates.com

Leornard, D. (1998)."The Role of Tacit Knowledge in Group Innovation." California Management /Review, Spring

Mohd Amin dan Mazlan(2000). " Pengurusan Pengetahuan(M): Satu Tinjauan Awal Tentang Keperluan Dalam Pengurusan Pendidikan Negara."

Kertas Kerja dibentangkan dalam Seminar Nasional Pengurusan dan Kepimpinan Pendidikan ke-9. IAB 1-3 Ogos 2000.

Noraziah Shaharuddin(2002).”Kertas Kerja Knowledge Management di Universiti Teknologi Malaysia’. Tidak diterbitkan

Tiwana, A.(2000).”The Knowledge Management Toolkit”. Prentice Hall PTR”