Generic Model for Knowledge Audit to Enhance Process-based Knowledge

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Abstract— **Knowledge auditing considered as one of the main areas in Knowledge Management (KM) which needs to focus on due valuable assets can the knowledge hold. In fact, different researches have designed various knowledge audit techniques which can be interpreted as confusing due to variety of criteria. The primary focus of this research in selection of three models (recent, different models) of audit knowledge. Then we can determine the weakness points in each model by making comparison among them in order to enhance process based knowledge by developing a new unified model that integrates the effective and powerful attributes of each model in one model.**

Index Terms— **Knowledge audit; generic model; knowledge audit processes.**

I. INTRODUCTION

Today, knowledge is considered as a vital resource for many organizations which must inspect its value continuously to insure that they obtain benefit from it. Thus the development in the processes of knowledge sharing culture is a highly demand issue due to the knowledge involvement nowadays in many domains.

Implementing an effective and accurate knowledge in organizations require enhancements precede by observations on knowledge processes in order to assure "the right knowledge at the right time", hence an investigation of the knowledge needs of an organization and the interconnectivity among leadership, organization, technology, and learning is always has been required.

The most important phase step of a knowledge management which it means 'doing the right thing' rather than 'doing things right.' Also we can consider it as a framework in an organization views all its processes as knowledge processes. Which includes the processes of capturing, organizing, refining, transfer, and using the knowledge as a staple source of competitive advantage of organizational survival [1].

So as obvious from all mentioned above, organizations are required to move forward reviewing their knowledge assets and associated with their knowledge management system, and this could led to describe the necessity of development into "knowledge audit".

II. BACKGROUND

According to [5], "A knowledge audit process identifies and scrutinizes the skills and knowledge required to perform a task" it considered one of diagnosis measurements and

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investigation tools to reveal the life cycle of knowledge in any particular domain. It enables us to see all knowledge processes as visual assets.

Knowledge audit is a "systematic examination and evaluation of organizational knowledge   health, which examines organization's knowledge needs, existing knowledge assets/resources, knowledge flows, future knowledge needs, knowledge gap analysis as well as the behavior of people in sharing and creating knowledge". In one way, a knowledge audit can reveal an organization's knowledge strengths, weaknesses, opportunities, threats and risks. A knowledge audit should also include an examination of organization's strategy, leadership, collaborative, learning culture, technology infrastructure in its various knowledge processes [2].

In order to transform an organization into a learning organization and ensure an effective knowledge management strategy, a knowledge audit should be conducted, which will provide a current state of knowledge capability of the organization and a direction of where and how to improve that capability in order to be competitive in this fast changing knowledge era.

For many organizations the concept of knowledge audit works differently, in some is aimed to eliminate the ambiguity while for others it is perceived as an investigation for them. It is by and large granted differing objects, breadth of coverage, and levels of sophistication qualitative review (or inventory, survey, check, evaluate) of an organization's knowledge health at both the macro and micro levels. The traditional concept of an audit is an evaluation of a person, business, system,   process, project, or product performed by an independent third party which is could individual or group. [3].

Knowing feature of a knowledge audit makes people to find out what they know, and what they do with their knowledge. It can be helped in investigation of the knowledge needs of an organization and the cooperation among leadership, organization, technology, and learning in meeting them [4].

III. PROBLEM STATEMENT

According to [11] who addressed some indicators concerning the need for knowledge audit which 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 audit would be worthwhile include:

- Managers and professionals feel the symptoms of 'information overload'.

- 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.

Therefore there are some discussions among knowledge management's researchers are placed to find solution for one of main problems existing in current knowledge audit field is that KA methods (models) vary from expert to expert and there are no unified standards for KA.

There is no exists of master reference model or independent guide to the methodological stages of an knowledge audit, this would restrict the development of the knowledge audit [6],[7],[8],[9]. For this reason, the developing and conducting model for each organization will require along of time and highly costs for development in what resources we need for developing. General model considered as a standard model offers a valuable solution for this problem, therefore this research will try to develop a generic model for knowledge audit.

IV. OBJECTIVES

The objectives of this research are:
- To provide an improved generic model of knowledge audit for identifying process – based knowledge in an organization.
- To enhance the performance of using the process – based knowledge.
- To reduce overall knowledge life-cycle costs, getting fewer staff resources, and shorter development timelines.

V. RELATED WORK

The current challenge of knowledge audit nowadays represented by inability the unified standard for knowledge audit method due to the variation of techniques among experts [6]. Hence the methodology for implementing knowledge audit should be adapted to the specific situation in the organization. It should reflect not only the company status and profile, but also some constraints like cost, time, and staff. At the same time, it should produce and guarantee the desired Knowledge Audit outcomes.

According to [10] defines three main components of knowledge management infrastructure: Knowledge related culture, knowledge processes and Information Technology.

Many researches discussed the knowledge related culture as [10] who explained the relationships between the culture of organization and knowledge management success. At the same time there is a wide of researches discussed the learning culture methodology that helped to increase organizational learning ability.

Regarding to organizational knowledge processes, there is wide of researches discussed the analysis of knowledge processes such as (HRM) identified the spiral view of creating, sharing and integrating organizational knowledge through the concepts of collective mind, personalizing, collective assignments, and collective problem solving and

then extended this view for identifying the subsequent facilitators of human resource management process.

The last knowledge management infrastructure component is Information Technology which support the implementation of tasks that knowledge workers are required to perform. The knowledge based systems is considered one of the Information Technology examples in knowledge management, they considered as a good tool for knowledge workers in order to improve knowledge management life cycle to meet organization objectives.

Overall, it is worth to notice there are a number of techniques. According to [12] provides a comprehensive list of techniques supporting the analysis before launching KM initiative as shown in the Table 1.

Table 1. Comprehensive list of techniques supporting the analysis in an organization

Techniques	Purpose
Knowledge surveys and Knowledge audits	To 'Provide tangible evidence of the enterprise's knowledge-related strengths, weaknesses, opportunities, threats, and risks'.
Knowledge Assets mapping and Intellectual Capital (IC) Inventorying	To identify, locate, and assess knowledge and IC assets, and on this base set priorities and identify action needs.
Knowledge Landscape Mapping	Aimed at determining initially KM practices, programs, projects, infrastructure elements, policies and procedures, etc., and on a later stage monitoring them.
Creating Knowledge Maps(K-maps)	To indicate locations, sources, representation and nature of knowledge assets, flows of knowledge and its application in business processes
Competitive Knowledge Analysis	To identify areas of expertise and important IC assets providing competitors strengths and opportunities
Knowledge Flowcharting and Analysis (KFA)	To improve knowledge flows on bases of identification of existing paths, means of knowledge flows between individuals, groups and in the organization as a whole.
Knowledge Diagnostics	To understand knowledge related mechanisms and processes in order to analyze situations and to conceptualize KM interventions and actions, both at individual, group and organizational levels.
Critical Knowledge Function Analysis (CKFA)	To identify critical operational, professional or managerial functions, and determine the potential value of their knowledge-related improvements.
KM Benefit Assessment	Focus on potential effects of KM initiatives as a base for planning, action, and monitoring of KM implementation.
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VI. RESEARCH METHOD

The research method is to select and study the three more recent and comprehensive models in knowledge audit in order to compare them in result we can derive the most common attributes from existing models that can help us to develop the generic model and enhance the process-based knowledge in

an organization. The methodology of this research conducted as following:

Phase 1: Establishing problem statement from literature:
This phase include investigations some knowledge audit techniques and focus on variations among the knowledge audit methods as well as this research highlighted the gaps that exist in the previous studies to support the proposed generic model of knowledge audit.

Phase 2: Setting research objectives:

Based on the gap that defined in the literature, this research set the key steps that should be carried out during knowledge audit to achieve the research's goal of developing generic model and enhance the performance of process-based knowledge.

Phase 3: Conducting general comparisons of knowledge audit models:

We proposed new model by combination and based on three main methodologies which are Levy et al. (2009) method, Elissaveta et al. (2009) method and Ying & Yi (2008) method in one model because all these methods are more recent and more generic than other models in the literature.
This paper suggests new attributes that are absences in other papers in literature. For this reason this paper added new improvements for knowledge auditing methods.

Phase 4: Determining the common parameters in three selected models that need to involve our contribution.

As shown in Table 2 we noticed there are some common attributes that are found in the three selected models for example Prioritize areas and select one to audit, also we add new attributes (Identify the trends of growing knowledge, ranking the results of auditing and codify the knowledge assets) .
The first new attribute (Identify the trends of growing knowledge), we added this attribute because that help us to identify and analyze the future issues and trends that are expected to affect workforce productivity and provides member consumers with tools and technology to execute new and developed strategies and what are the "next" practices on these issues and trends[13].
The second new attribute (ranking the results of auditing), helps us to show loyalty of an auditors and the analyzer about supporting the processes of knowledge in the organization for example sharing knowledge in the organization a low ranking may not mean there is no sharing of knowledge, but could be a negative response resulting from an unhappy experience of the employee [14].
The third new attribute is codifying the knowledge assets which help us to know the capability of KM process. Also codification helps to make explicit knowledge transfer unlimited. The areas of codification in organizations could be best implemented on organization's procedures such as workflow as well as the drawings, specifications and references all can be codified in an electronic database and knowledgebase which can enhance the process of capturing and using knowledge [15].

The following method are used to compare:

1- Levy et al. (2009) method.
2-Elissaveta et al. (2009) method.
3- Ying & Yi (2008) method.
4- Proposed method.
 Table 2: General comparison of knowledge audit methods

Phase 5: Designing proposed model.

Methodology in different areas was conducted in order to obtain the advantage and new attributes of this suggested model which is shown below.

| Previous work / The processes	1	2	3	4
a-Organizational analysis				
Diagnose of knowledge status for organization			√	√
Identify the opportunities and challenges with knowledge in organization	√		√	√
Prioritize areas and select one to audit.	√	√	√	√
Identify key people involved in the selected area	√	√		√
Identify core business processes in the selected area	√	√		√
Prioritize core processes and select specific process to audit	√	√		√
b-Define Audit Project Properties.	√			√
c. Knowledge inventory of processes				
Identify pivot employees involved in the selected business process	√			√
Identify process environment	√			√
Define process flow chart diagram	√	√		√
Analyze formal knowledge inventories within process	√			√
Analyze informal knowledge interactions that occur within process	√	√		√
Analyze knowledge related culture	√			√
Analyze knowledge processes	√			√
Analyze knowledge related IT	√	√		√
d- Data collection				
Questionnaires		√	√	√
Interviews				√
e- Identify trends of knowledge				√
f. Ranking the results of auditing				√
g. Codify the knowledge assets				√
h. Result approval				
Write knowledge audit report	√	√	√	√
Receive comments from decision makers		√		√
Carry out results validation		√		√
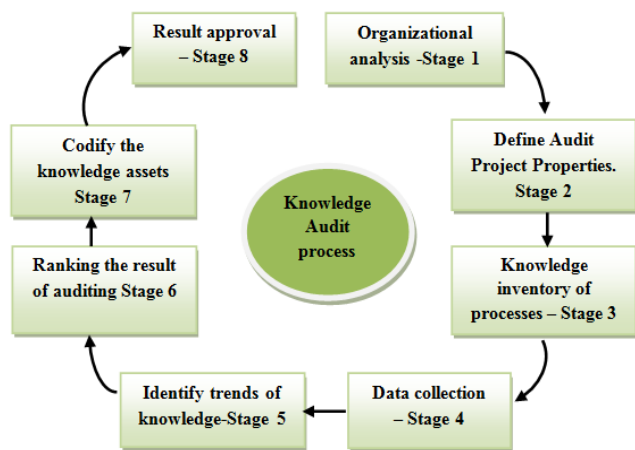
Figure 1. The proposed generic knowledge auditing model.

VII. CONCLUSION

The main aim of this research is to provide an improved generic model of knowledge audit for identifying process – based knowledge in an organization. In this paper we suggest a generic model for analyzing and diagnosing knowledge audit processes towards enhance the performance of using the process – based knowledge by selecting three most recent models implemented in several areas, in order to compare and to combine them in a broader model. In addition we suggested inserting new attributes that support the auditors to observe the knowledge audit.

Overall, the other aim of this research is to shorten the knowledge life-cycle costs and getting fewer staff resources. Future work will focus on applying this methodology in different areas to obtain the advantage and new attributes of this suggested model.

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