Business Patterns for Knowledge audit implementation within SMEs

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Abstract

In the last decades, Knowledge Management has gained momentum as an important tool for competitiveness of organizations. A number of Knowledge Management approaches are described in the literature. Some authors focus in particular on the importance of Knowledge Audit, first, as a start point for any Knowledge Management initiative, and second, as a regular base for the measurement of Knowledge Management progress and effectiveness. Knowledge Audit aims to investigate the company status at a given moment regarding the knowledge availability and needs, its flow and usage in processes, by employees, etc.

The present paper aims to introduce business patterns for the implementation of Knowledge Audit. These patterns describe the process of taking decisions for Knowledge Management implementation and the first step toward it – auditing knowledge. After an overview of the concept, objectives and results of Knowledge Audit, some practical recommendations for successful Knowledge Audit practice are suggested and a systematized approach for the Knowledge Audit process is presented.

Keywords: *Knowledge Audit, Knowledge Management, Patterns*

1 Introduction

Today, the information overload raises new challenges to individuals and organizations. Global networks provide access to an enormous quantity of information and knowledge coming from a great variety of sources. At the same time, the mobility of knowledge workers, and the increased value of information and knowledge have significantly raised the importance of knowledge assets and their proper usage for higher competitiveness and growth. Subsequently, Knowledge Management has gained momentum as an important tool for competitiveness of organizations. Its successful implementation, however, depends on a number of interrelated factors, including technology, human beings, organizational culture and leadership, etc. The Knowledge Audit if properly carried out contributes to building a Knowledge Management strategy based on extended knowledge of the company status, its internal and external environment, and thus, enables the organization to take appropriate decisions to overcome existing gaps and possible drawbacks.

Linking organizational strategy with the Knowledge Management strategy is the first step towards Knowledge Management in organizations [6]. Here, a clear understanding is necessary of the existing knowledge gaps coming out of the recognized strategic gaps. Therefore, a need emerges to make an analysis of the available knowledge assets, their usage, the knowledge processes and flows in the organization, etc. The Knowledge Audit is

the appropriate tool for answering all these issues, and at the same time, it is an important tool for monitoring of Knowledge Management effectiveness [1, 2]. Knowledge Audit, like other audit processes and methodologies, aims to investigate the company status at a given moment regarding the knowledge availability and needs, its flow and usage in processes, by employees, etc. In fact, Knowledge Audit is a repetitive process aiming to clarify whether knowledge resources are properly managed and what Knowledge Management strategy, tools and solutions could contribute to gaining maximum benefits [1].

The concept of patterns is widely described in literature [12, 13, 14, 15]. The authors were involved in a project for developing business cases and studied the eXperience methodology for case studies development [16]. Application of case studies was considered very suitable for the teaching process for Knowledge Management at University of Sofia. At the same time, after studying several Knowledge Management cases, as well as getting to know the patterns approach, the authors came to the idea to capture and apply patterns for Knowledge Management purposes. Subsequently, the aim of this paper is to introduce business patterns for Knowledge Audit implementation. These patterns describe the process of taking decisions for Knowledge Management implementation and the first step toward it – auditing knowledge. The paper captures the following patterns:

1. Knowledge Audit Plan
2. Knowledge Audit Team
3. Knowledge Audit Methodology
4. Knowledge Audit Questionnaire
5. Knowledge Audit Report

Audience

These patterns are intended to codify business practices in the area of Knowledge Audit implementation in a pattern language so that they may be better understood, communicated, applied and studied.

The patterns are intended for Knowledge Management practitioners and Knowledge Management enthusiasts, for Small and Medium Enterprises (SMEs) managers and entrepreneurs, for students, experts and consultants. The patterns may be applied in the context of SMEs or knowledge-intensive public or private organizations.

2 The Patterns

This paper considers the main phases and processes of Knowledge Audit implementation (Fig. 1) and each process links to a pattern to be followed by practitioners. From the Knowledge Audit road-map will be presented the patterns 1, 2, 3, 4 and 7:

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1. Knowledge Audit Plan:	Planning of Knowledge Audit scope, activities and time schedule
2. Knowledge Audit Team:	Selecting the right Knowledge Audit Team plays an important role for the Knowledge Audit outcomes
3. Knowledge Audit Methodology:	Methodology how to perform and implement successfully specific Knowledge Audit tasks and activities.
4. Knowledge Audit Questionnaire:	How to select, compose or adapt Knowledge Audit Questionnaire according to specific company needs
5. Knowledge Audit Questionnaire Distribution:	Methodology for Knowledge Audit distribution (via e-mail, paper-based questionnaires, conducting inteviews, on-line questionnaire, mixed approach), and notification of the target audience.
6. Knowledge Audit Analyses of Results and Feedback:	Analyses of the Knowledge Audit results, testing and verifying hypothesis based on the collected quantitative and qualitative data. First feedback of the results.
7. Knowledge Audit Reporting:	Preparation and presentation of meaningful Knowledge Audit Report as major outcome of the Knowledge Audit process
8. Knowledge Management Roadmap Definition:	Knowledge Management Roadmap consideration
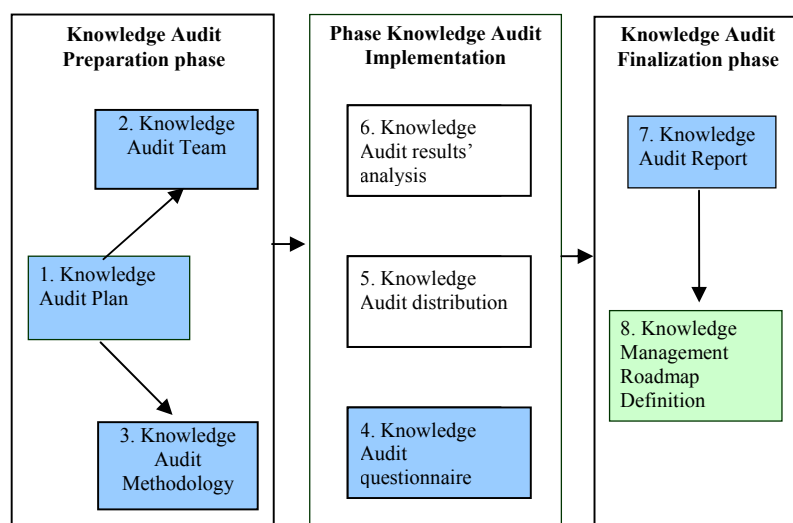
Figure 1 Knowledge Audit phases and processes

2.1 SUCCESSFUL KNOWLEDGE AUDIT PLAN

2.1.1 Context

An organization wants to implement Knowledge Management or needs to monitor Knowledge Management effectiveness and improve it by taking new knowledge-related initiatives. It needs to prepare a detailed Knowledge Audit plan, and report it to the company management as a preliminary step for approval of the Knowledge Audit implementation. The organization delegates the Knowledge Audit Plan preparation to external consultants or to internal staff such as the Chief Knowledge Officer, the Knowledge Management team, or experts from the Human Resources and/or the Information Technology (IT) department.

2.1.2 Problem

How do you prepare a successful Knowledge Audit Plan for an organization?

2.1.3 Forces

The Knowledge Audit plan needs to identify and clarify the principle hypothesis expected to be justified in the audit process. The forces influencing the Knowledge Audit Plan can be grouped around 4 main areas:

Force 1: Companies are aware of the importance of measuring innovation and knowledge creation results, but often they do not measure the right things, do not measure enough, and, in some cases, do not measure at all. The measurement of intellectual capital, and in particular knowledge assets, creates large difficulties and there is a lack of a generally accepted methodology for valuing intangible assets. However, the increasingly complex environment, the fast changing technologies and increasing customers' expectations, as well as the evolving new complex relationships with employees (part-time, free-lancers), contractors, external experts etc., force companies to rethink the overall Knowledge Management strategy (what in fact they know and how they can use it), and thus, regularly undertaking Knowledge Audit.

Force 2: Knowledge exists in explicit and tacit form in organizations, but it is hard to identify and measure it. Knowledge can be embedded in various forms: documents, procedures, methodologies, routines, organizational culture, group practices, IT systems, databases, people heads, lessons learned, best practices, social networks and social interactions and many others.

Force 3: Knowledge Audit is a time- and resources-consuming process, but companies are not eager to invest much in such initiatives. It is essential to properly clarify the scope of Knowledge Audit, its main objectives and expected deliverables, to prepare a time schedule and allocate resources for its implementation.

Force 4: Knowledge Audit implementation needs a team of experts with in-dept knowledge of its processes, but also aware of the business processes, strategic goals and assets of the organization. The knowledge gaps can be discovered only after sophisticated analyzes of the existing knowledge resources and assets, so experts involved need to have access to them and to understand the strategic goals of the company, as well discovering the driving forces in the environment.

Be clear for the purpose of Knowledge Audit and balance organizations' needs with available resources

The Knowledge Audit Planning should be performed like a company project aimed at identifying, analyzing and tracing knowledge assets in the company. It is essential to identify first the basic requirements for the Knowledge Audit, and the purpose of doing it – if it is initial auditing process or will be a repetitive process in a Knowledge Management initiative, or exceptional audit aimed at supporting decision making in the organization.

Second, determine what will be measured, e.g. internal or external knowledge resources, knowledge gaps in a specific area, tacit and/or explicit knowledge, IT Systems and applications used for knowledge management, social network analyses and knowledge sharing, or organizational culture, etc.

Third, ensure management support by setting clear, measurable and achievable objectives for Knowledge Audit, and showing the expected impact on company management and the benefits of investing time and efforts in this process. The planning document should state which results are expected, which will be the project size – a pilot audit or involving the whole staff and departments, or if it will focus on permanent staff and/or part-time staff, etc. There is a need to balance the competing demands for quality, scope, time and cost of the Knowledge Audit. Thus, set scope, expected time framework and cost for the Knowledge Audit in efforts (working hours) and show how will be guaranteed the quality of the results by management supervision and active participators feedback.

Finally, clarify who will be in charge of the project, choosing between available internal resources or external consultants or a mix of both. For the Knowledge Audit team should be determined the main expertise needed, the responsibilities and tasks to be accomplished. Leadership is essential, and senior staff should be involved in the overall Knowledge Audit process. This will ensure the Knowledge Audit visibility, and that no important knowledge assets, processes and skills forming company competitive advantage are missed.

The organization can choose between two main approaches for Knowledge Audit implementation – outsourcing the Knowledge Audit activity to a consulting company or designating a team within the company to carry out the Knowledge Audit. It is possible to combine both approaches, involving external experts in the Knowledge Audit team or to elaborate the own Knowledge Audit methodology collaborating with external consultants. Some stages of the Knowledge Audit can be implemented internally and others – externally. At the time of planning should be considered the advantages and disadvantages for both methods:

- **Choosing a Consulting company:** Consultants can provide unbiased assessment of organizational knowledge assets, not taking into account personal experience, prejudges gossip, etc. However, consultants can miss some important sources of knowledge, not getting deeply into details of operations or ignoring corporate culture, competitive advantage etc. Besides, they usually follow their own methodology for Knowledge Audit that is more general and not company-specific.

- **Internal team:** Company team knows very well the operational activity of the organization; knows employees and principle knowledge flows. Often the Knowledge Audit team members become the most serious Knowledge Management champions. However, employees often have a narrow view of the company activity, so they can overestimate or underestimate important knowledge opportunities and strengths.

Assessment can be biased by personal attitude and emotions of the team members. They normally have less expertise in the methodology of Knowledge Audit.

2.1.5 Consequences

You have laid the foundation for a clear and meaningful Knowledge Audit that can be easily performed and reproduced. You are now ready to perform the Knowledge Audit. The Knowledge Audit planning provided you the Knowledge Audit requirements and context, the knowledge assets to be measured, the goals and tasks to be performed, the organization of the Knowledge Audit process and its main risks, the resources needed and the project time framework, and last, but not leased determined how the Knowledge Audit team will be composed in order to overcome the limitations.

2.1.6 Rationale

Knowledge Audit Planning is crucial step towards better Knowledge Management implementation. Better understanding of organizational knowledge processes and assets and the knowledge life-cycle is substantial for its better exploitation. The Knowledge Audit Plan ensures a well performed Knowledge Audit process and guarantees clear standards and procedures.

2.1.7 Example

The planning of Knowledge Audit processes is discussed in a number of case studies and research projects. Detailed planning was performed during the project TRAINMORE-KNOWMORE [11], as the overall requirements and objectives of the Knowledge Audit process were set up. As a project outcome, a Knowledge Audit self-evaluation tool with detailed instructions for further use was designed. Overall 14 pilot Knowledge Audits were performed following the proposed methodology and comparable results are reported. The Knowledge Audit Planning guarantees the Knowledge Audit process and results and improves the Knowledge Audit implementation in practice.

2.2 KNOWLEDGE AUDIT TEAM

2.2.1 Context

The company decided to implement Knowledge Audit and approved a plan for implementing it using internal resources and expertise. As the Knowledge Audit is a complex instrument to identify the knowledge assets' state-of-the-art and future trends, it has to be performed carefully by knowledgeable and experienced staff. The company should select a well-balanced team of experts to carry out all Knowledge Audit processes and analyses. It is important to identify the necessary expertise and choose among company experts.

2.2.2 Problem

How to form a good Knowledge Audit Team?

2.2.3 Forces

The proper composition of the Knowledge Audit Team determines how successful will be the Knowledge Audit and the Knowledge Management processes.

Force 1: The team has an important role to identify and analyze the knowledge within the company and to perform the Knowledge Audit process. Having motivated, open-minded and educated team members will guarantee well performed Knowledge Audit processes and outcomes. The selected team should identify knowledge assets and perceive the important knowledge and communication flows, taking into account that a big part of the knowledge is informal, tacit, personal and fuzzy. However, it is not easy to find a proper mix of skills, both personal and expert in only one company unit.

Force 2: Team members need to understand the strategic vision and the global business processes of the organization and its environment, but they should also know in details the business processes and core knowledge assets of the company, as well as how technology is used to support organizational performance.

Force 3: Team members should understand the Knowledge Management and Knowledge Audit principles, Knowledge Audit goals and processes, specific Knowledge Management tools and techniques, but also have leadership skills and be able to motivate people and involve them in the Knowledge Audit processes.

2.2.4 Solution

Make a mixed team of experts from different functional areas of the organization

The Knowledge Audit Team should be composed of experts coming from several departments within the company in order to ensure the necessary mix of expertise and skills. Ideally, the team should include people from different levels of the organization in order to ensure the knowledge of strategy and company mission, as well as the awareness of company customers and suppliers and operational daily tasks (knowing well the product, technology, service). In order to equip the team with knowledge of technology, human resources, research methodology or accounting, the team should include also representatives of different functional areas within the company. It will be wise to invite persons with substantial vision about the tacit knowledge within company and people with good social (informal) networks.

Ideally, the Knowledge Audit team is composed of:
- **Corporate strategist:** Sets goals, determines optimal performance levels, brings the big picture perspective into the analysis.
- **Senior management, company visionary, or long-term planner:** Brings long-term KM vision, aligned with the business strategy of the corporate strategists.
- **Financier:** Brings the ability to value and attach a fair-dollar figure to knowledge assets.
- **Human resource manager:** Brings good understanding of employee skills and skills distribution within the organization.
- **Marketing specialist:** Provides a fair picture of actual market performance of the firm and the possible implications of its knowledge assets on the marketability of the company products and services at new price-service function points.
- **IT expert:** Brings in knowledge, skills, and expertise for mobilizing the technology implementation aspects of your knowledge management strategy. Also has intimate knowledge of existing infrastructure.
- **Knowledge manager, CKO, or knowledge analyst:** The middle role that integrates inputs from all other participants on the knowledge audit team in a consensual, and fair manner. The analyst contributes a reasonably accurate market valuation of proprietary technology and processes based on perspectives elicited from other team members.

2.2.5 Consequences

The successful Knowledge Audit Team identifies the main Knowledge Audit forces and takes principle considerations about knowledge assets in organization. The Knowledge Audit Team has to overcome the basic limitations of the Knowledge Audit approach, preventing it from focusing only on people (tacit knowledge) or only on documented and codified knowledge and IT. The Knowledge Audit Team determines the main hypothesis of the knowledge within company and it organizes and implements the Knowledge Audit processes. The heterogeneous team will overcome successfully the personal (biased) look and understanding for organizational knowledge, and will build complex and dynamic model of organizational Knowledge Management.

After appointing the Knowledge Audit Team, you should train it and motivate it how important is Knowledge Audit and Knowledge Management for the company. In principle you are now ready to perform the Knowledge Audit processes. The Team has the necessary set of expert knowledge to accomplish successfully the Knowledge Audit.

2.3 KNOWLEDGE AUDIT METHODOLOGY

2.3.1 Context

An organization decided to conduct Knowledge Audit, elaborated a Knowledge Audit Plan and appointed the Knowledge Audit Team. It scoped the Knowledge Audit project and took general decisions about the Knowledge Audit implementation resources and schedule. It needs to decide how to carry out its tasks in order to achieve the results considered in the Knowledge Audit Plan.

2.3.2 Problem

How to choose the right sequence of Knowledge Audit actions in order to accomplish successful Knowledge Audit within the specific organization?

2.3.3 Forces

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. The Knowledge Audit team has to discover the most convenient among the existing Knowledge Audit methodologies, depending on the desired outputs and management practice.

Force 1: The Knowledge Audit Team needs a proper methodology and sequence of tasks and activities in order to perform successfully the Knowledge Audit, but there is a big choice of Knowledge Audit approaches in research and practice [5, 6, 7, 8]. It is important to make a good choice out of available methodologies or develop its own approach. Normally, consultant companies and Knowledge Audit experts come with their own methodology for Knowledge Audit. Thus, this could be an optional step if the Knowledge Audit project is outsourced.

Force 2: The Knowledge Audit Plan has provided the scope and objectives of the project, but there is a need to elaborate more working details and choose the proper tools for measurement of knowledge assets and flows. In order to plan and allocate properly the necessary efforts and time, some further details should be taken into consideration:
- The company staff status profile /number, education, age, experience, expertise, turnover rate/
- The level of knowledge codification, IT infrastructure and knowledge available in electronic form (in data warehouses)
- The way of the processing knowledge coming from clients/suppliers, third parties
- The value of tacit knowledge (and know-how), value of social networks, informal/formal knowledge sharing in the company value-creation process
- How knowledge-intensive is the industry/sector and what are the general trends among main competitors
- How will look the expected Knowledge Audit outcomes.

Force 3: A large variety of knowledge audit tools are proposed in research and practice, but it is important to choose those of them which are easy to implement and will help to gain the needed results and meet the objectives. The Knowledge Audit team should choose if it needs to make a full Knowledge Assets map and Intellectual Capital Inventory, Knowledge Flowchart and Analysis, carry out a Competitive Knowledge Analysis, Critical Knowledge Function Analysis or Knowledge Management Benefit Assessment, etc., and if it should focus the measurement on qualitative or just quantitative approaches.

Find the right balance between activities to be performed and tools to be used, and the necessary resources for achieving the best results
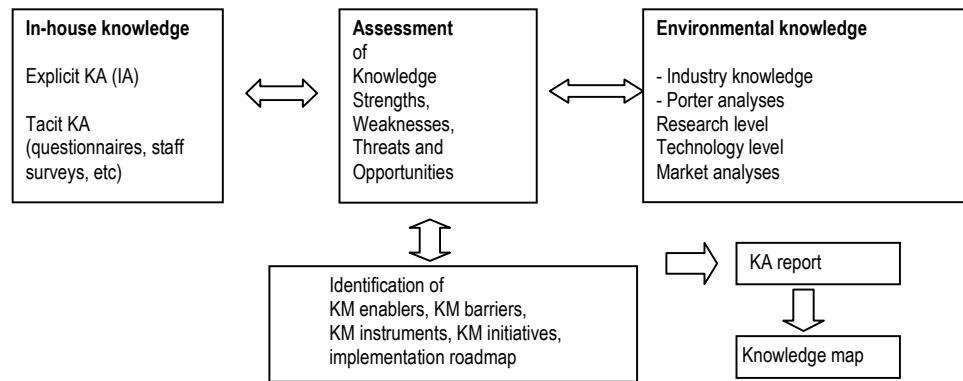

Figure 2: Knowledge audit processes details

In practice, companies adapt the methodology for Knowledge Audit to their specific needs after studying the well-known approaches and tools. In order to better guide the Knowledge Audit processes (Fig. 2), assess and evaluate the company knowledge status, and produce the expected Knowledge Audit outcomes, the following approach could be followed:

1.   **Identifying state-of-the-art** – making an overview of documents (explicit knowledge) about organizational knowledge assets, processes, workflow procedures and internal structures. This is an important step for Knowledge Audit Team to acquire an overview of operations and workflow, and to get a strategic vision for Knowledge Management roadmap development. The Knowledge Audit Team has to estimate the value of tacit knowledge, tacit knowledge sharing practices, organizational culture and motivation.
2.   **Focus setting** – choosing the target group for Knowledge Audit – the overall company, specific department/s or teams and work groups
3.   **Adjustment of inventory** – customizing the audit tools (questionnaires, interview scope) to the company/audit objectives and requirements
4.   **Conducting survey** – gathering data (sending questionnaires to the selected target group and/or conducting face-to-face interviews with the process owners). Sometimes it can be useful to organize a workshop to explain the Knowledge Audit goals and objectives encouraging employees to participate, and thus, increasing the feedback rate.
5.   **Analyzing the results** – evaluate data, verify Knowledge Audit consistency (response rate, level of participation) and draw general Knowledge Audit conclusions;
6.   **Preparing a Knowledge Audit report**, presenting the Knowledge Audit conclusions and suggesting list of suitable actions facilitating Knowledge Management implementation – as modeling of business processes, improvement of existing Knowledge Management policies and procedures (for example review of HRM policy, adapting remuneration policy, improve motivation culture for knowledge sharing), creating a roadmap with recommendation for further actions;
7.   **Organizing feedback workshop** – by means of workshop, the results are reported back to the management and public and the suggested measures are prioritized – establishing a detailed Knowledge Management roadmap and Knowledge Management action plan;

8. **Preparing a Knowledge Management implementation project**, based on the approved Knowledge Management roadmap and action plan

The Knowledge Audit process needs strong support from organizational leadership and commitment and engagement of all employees. Therefore, it is recommended that before initiating any Knowledge Audit activities to inform all employees about their objectives using suitable form and tools (workshop, presentation, public discussions and debates, company newsletter, or organizing information kiosk). In order to achieve successful Knowledge Audit results, all employees should understand and support it (and thus minimizing internal opposition and misunderstanding).

2.3.5 Consequences

The Knowledge Audit Team is now equipped with a methodology and has better understanding of all tasks to be performed and tools to be applied, as well as how to implement in practice all Knowledge Audit processes. The company is well prepared for the next steps, and will achieve better Knowledge Audit performance.

The specification of Knowledge Audit details will ensure clear implementation procedure and guarantee better performance. Thus, the company will be able [5]:

- to uncover strengths and weaknesses within the actual corporate management of knowledge assets and business processes;
- to analyze circumstances, barriers and enablers of the Knowledge Management as corporate culture, leadership, human resources management (HRM), information technology (IT), process organization and control;
- to increase awareness of Knowledge Management within the company;
- to design a roadmap for Knowledge Management implementation and measure;
- to collect measurable data for controlling purposes.

2.3.6 Rationale

All Knowledge Audit approaches have a common feature – their focus on the current status of the company knowledge – locating it throughout the organization, and examining knowledge flows and processes. The real Knowledge Audit should, however, go beyond the company internal status and deliver a broader picture of the global processes and stakeholders, and the knowledge position of the company against its competitors. It should include, in addition to the competition or industry branch analysis, an analysis of the level of technology development, current research state, available resources and macroeconomic perspectives, customer demands and requirements, industry growth trends, leading industry experts and human factors. This analysis will guarantee more successful level of Knowledge Management implementation and better action plans, while designing Knowledge Management tools, IT systems or HRM techniques.

2.4 KNOWLEDGE AUDIT QUESTIONNAIRE

2.4.1 Context

The Knowledge Audit Plan, Team and Methodology are in place. The company decided to use a questionnaire as a reliable tool to carry out the analysis and investigate the state-of-the-art of knowledge assets, knowledge exploitation and knowledge flows.

2.4.2 Problem

How to prepare the questionnaire in order to ensure detailed inputs on organizational knowledge assets? How to compose, customize, adapt, or select it?

2.4.3 Forces

When composing and using questionnaires in Knowledge Audit process it should be taken into account form, content and methodology of the Questionnaire process:

- **Obtained Knowledge Audit Results:** The main problem of composing and using questionnaires is that they reflect not the real facts, but personal opinion about these facts. If formulated not properly, questions could mislead the respondent and provide biased results. On the other hand, tacit knowledge could not be easily recognized, and thus, cannot be easily reported by employees. Questionnaire has to be adapted to the Knowledge Audit purposes, focusing on specific objectives and goals stipulated in the Knowledge Audit Plan.
- **Questionnaire Form:** The Knowledge Audit aims at gathering more information and knowledge from the employees. However, the sequence of the questions and the length of the questionnaire can influence the responses and the return rate.
- **Limitations and Constraints:** It is important to obtain personal data for gaining maximum information and tracing it to the source for further clarifications, if needed, but the legal limitations and privacy should be respected. At the same time, often people will avoid responding frankly if anonymity is not guaranteed.
- **Questionnaire Content:** It is important to consider what type of questions to include in the Knowledge Audit Questionnaire and how to balance the content using both open-ended and closed questions. Open-ended questions could provide more information and insights from employees, but their processing is more difficult and time-consuming.

`2.4.4 Solution

Ensure balance between the objectives of the questionnaire and its length and content while respecting legal and personal constraints

The Knowledge Audit Questionnaire should respond to the purpose and objectives of Knowledge Audit. It should be composed carefully, taking into account the best practices, available in literature [11]. The derived solution should be considered from some general points of view:

- **Knowledge Audit Results**: The Knowledge Audit Questions should mainly focus on facts, while some sections can ask for personal opinion ("what do you think will/should…"). It is important to determine in advance the quantitative and qualitative output data needed for further analyzes, and to optimize the number of questions. It is advisable to have a short overview of the questions and make revision of style, terminology and language of the Questionnaire in order to be clear and unbiased.
- **Questionnaire Form:** The Knowledge Audit Questionnaire should differ depending from the media and delivery method used – face-to-face interviews, online questionnaires or paper-based form. The questionnaire length should reflect the way of distribution. It is advisable to make a concise questionnaire that could be filled within 5 - 10 minutes while it is sent by e-mail, post or electronic form. More detailed

questionnaires could be used in face-to-face interviews and group discussions. Inform people in advance about the time needed to fill in the questionnaire or to conduct the interview.

- **Questionnaire Limitations:** Avoid questions that could be treated as unethical or are asking for sensitive personal information. Select appropriate scale for response (yes/not, scale of 3/5 positions, open response). Always give an option for answering "I don't know" and "other". Clearly identify that responses will be treated anonymously, but personal information is needed for further clarifications and details.
- **Questionnaire Content:** Begin by determining the basic sections of the questionnaire. The questions within the sections can be formulated later depending on how deep and a detailed analysis is needed.

2.4.5 Consequences

The Knowledge Audit Questionnaire has identified and provided first-hand raw data about:
- Core knowledge assets and knowledge flows – who create knowledge and who use it
- Gaps in information and knowledge needed to manage the business effectively
- Areas of information policy and ownership that need improvement
- Opportunities to reduce information-handling costs and to improve coordination and access to commonly needed information
- A clear understanding of the contribution of knowledge to business results
- IT use and application for Knowledge Management in business
- Measurable outcomes for the company culture
- Understanding of social relationships and network analyzes
- Motivation techniques that could best fit to the organization

2.4.6 Rationale

The Knowledge Audit Questionnaire is a critical instrument for collecting first-hand raw data, adapted to the focus of the Knowledge Audit. It should complete the other sources of data, available in the company, as company records, data bases, documents, workflow analyses, etc. The best picture of the overall knowledge combines both – the explicit knowledge overview with documents and procedures and the Knowledge Audit results covering tacit knowledge and company culture.

2.4.7 Example

A detailed questionnaire was developed during the Leonardo da Vinci project TRAINMOR-KNOWMORE [11]. It is adapted especially for SMEs and public organizations. The questionnaire was tested in organizations in partners' countries. It included several sections which could be adapted to the organizations' specific needs, and the questions could be deepened according to the goals of the analyses:
- Demographic analyses
- Knowledge Profile Analysis
- Work Nature Analysis
- Strategy and management style
- Knowledge and Information Sources
- Information Technologies use
- Social Network Analyses
- Corporate Culture and Staff fit
- Motives and salaries

2.5 KNOWLEDGE AUDIT REPORT

2.5.1 Context

The organization implemented successfully the Knowledge Audit methodology using the most appropriate tools for gaining maximum inputs. The process should be finalized with a document describing the results and providing inputs to a further decision-making process linked to Knowledge Management strategy, systems, tools and instruments, improvements, etc. The research and analysis outcomes are needed for Knowledge Management evaluation and progress measurement, as well as for determining a Knowledge Management roadmap and further steps to take use of Knowledge Management enablers and overcome potential barriers [1].

2.4.2 Problem

How do you compose a good Knowledge Audit Report?

2.4.3 Forces

The Knowledge Audit Report role is to present the final outputs of the Knowledge Audit process and to address the next steps for Knowledge Management implementation. The main challenge of preparing this report is that it is a complex document, proposing a roadmap and Knowledge Management action plan.

The Knowledge Audit Report preparation – The Knowledge Audit Report should overview the main outcomes of the Knowledge Audit process. A complete, useful and focused on the company needs Knowledge Audit Report should include multiple sources of information about the organization and its knowledge assets, analyzed in a proper and detailed manner. It must examine, analyze, assess, verify, validate, review and report the findings about the current state, but also provide recommendations for future steps for developing new knowledge assets in the organization [9].

The Knowledge Audit Report presentation – The Knowledge Audit Report should be properly presented, discussed and accepted in the organization. Its real value is not the written document, but the process of creating it, discussing it and gaining deeper understanding about the existing knowledge in the company and necessary for its survival.

`2.4.4 Solution

The good Knowledge Audit Report should put emphasis on explicit and tacit dimensions of knowledge, including internal and external factors for knowledge development.

The Knowledge Audit Report starts with in-house knowledge overview and general information audit, including knowledge resources, people, key organizational knowledge assets – patents, trademarks, experts; then business processes (innovations, learning, sharing) and knowledge flows, IT systems, social aspects and culture. The second part comprises tacit dimensions of company knowledge or assessment of individual and group knowledge. Finally, analyses of the company environment provides a short description of the industry knowledge (global aspects, demand and supply curves, fluctuations, main players), Porter analyses (for knowledge possessed and acquired from customers, partners, suppliers, competitors and substitutes), research achievements (university and research centers, key achievements, key researchers working in the area, recent inventions and publications, conferences), technology level (technologies in the sector, trade fairs and events, publications, PR).

The Knowledge Audit Report finally identifies the organization's readiness to adopt a Knowledge Management initiative – pointing out the Knowledge Management enabling

factors and persons, what are potential barriers, suitable Knowledge Management instruments and initiatives to start with, and finally – implementation roadmap.

The Knowledge Audit is presented usually as:

–   **Printed hand-out Report.** It can be used as a reference document and for internal communication. It is advisable the Knowledge Audit Report to be concise, well balancing the content, including multiple charts, figures and images, while applying user-oriented terminology and design.

–   **Electronic version of the Knowledge Audit Report.** It could be published on the company website, where a public discussion could be organized, reflecting the major issues and outcomes of the Knowledge Audit process.

–   **Knowledge Audit Workshop** – Usually, the Knowledge Audit team prepares a short workshop, where it reports the Knowledge Audit outcomes. The resulting discussions and feedback could be taken into consideration when Knowledge Management roadmap and Knowledge Management Plan are assessed.

2.3.5 Consequences

The Knowledge Audit Report outlines the state-of-the-art and the Knowledge Management needs and gaps and on basis of the information collected, identifies and assesses the knowledge strengths and weaknesses and knowledge opportunities and threats. The Knowledge Audit Report provides sound recommendations for further Knowledge Management initiatives assessing the current state-of-the-art and scenarios for future development. It ensures better understanding of Knowledge Management strategy and investments needs. The Knowledge Audit Report plays a role for achieving a better success rate of any Knowledge Management program, saving unnecessary efforts, resources and time and customizing the Knowledge Management approach to the concrete needs of the organization.

3. Examples

A knowledge Audit was carried out in 14 organisations in Europe within the Leonardo da Vinci project TRAINMOR KNOWMORE. One of the pilot studies was a knowledge audit carried out in the Centre of Information Society Technology (CIST) – a dynamic research unit of Sofia University [2].

In the Knowledge Audit survey of TRAINMOR-KNOWMORE took part 15 persons from CIST permanent staff (almost 90% of the permanent employees). Multiple relationships and attitudes of the employees, relevant to Knowledge Management were identified.

Some of the main findings are related to time spending of the employees for knowledge gathering, information flows in CIST, organizational climate, knowledge-related problems (Fig. 3) and Knowledge Management activities needs (Fig. 4).
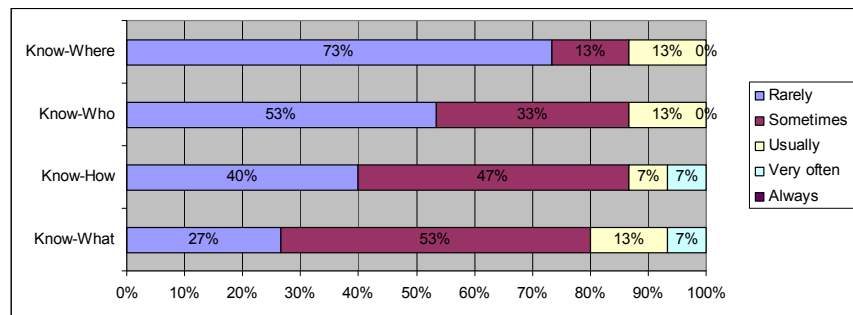

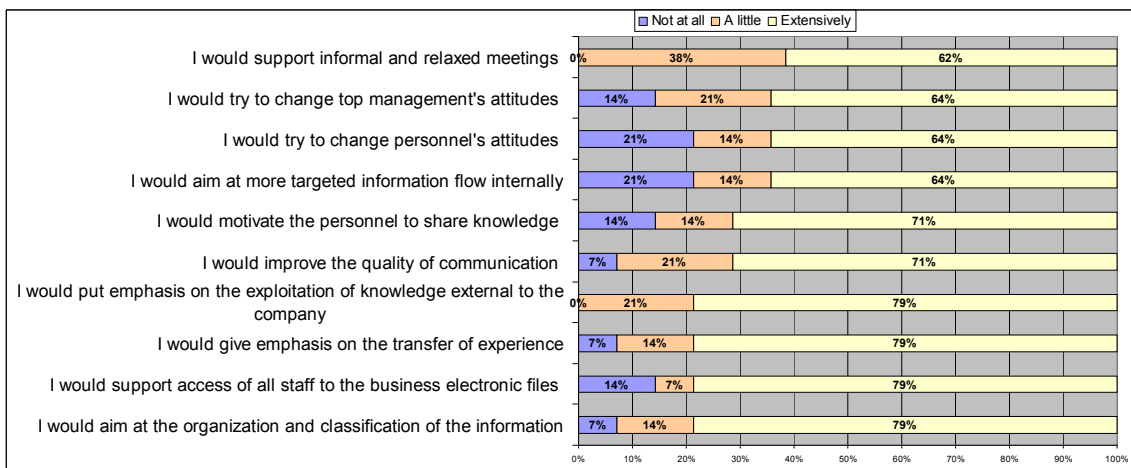**Figure 3**: Frequency of knowledge-related problems

Figure 4: Knowledge Management activities that have to be performed in CIST, according to staff

Following the Knowledge Audit of CIST was proposed an action plan, and on this base the main characteristics of a Knowledge Management System that will enhance Knowledge Management processes in CIST were identified. Subsequently, a prototype of the Knowledge Management system is designed and developed, responding to the identified problem areas (Fig. 5). The Knowledge Management system is designed as a single entry-point to the knowledge assets and resources of CIST, accessible anywhere and anytime via an Internet – based Knowledge Management portal. The main functionalities of the

knowledge portal include the following principles – all information is uploaded in standardized templates, which include information about the context, purpose and metadata for any document are created. All information uploaded on the portal can include personal comments (tacit knowledge); can be linked to other files or templates, can be described by keywords, etc.
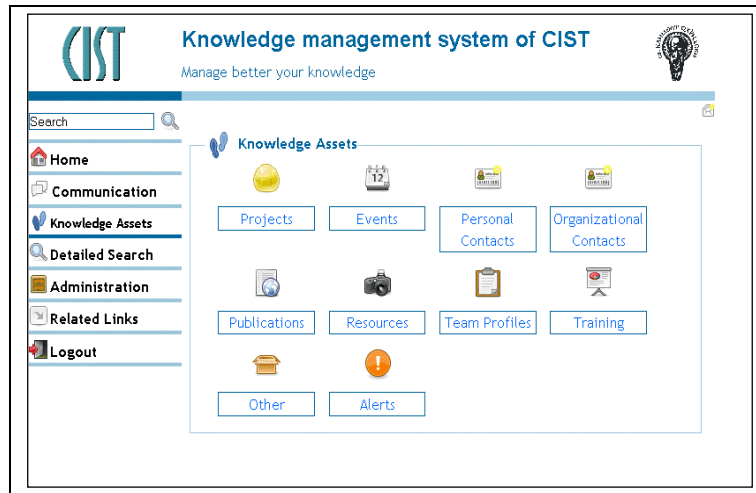

Figure 5: Knowledge Management system of CIST – Section knowledge assets

Related work and sources

TRAINMOR KNOWMORE Consortium, http://www.trainmor-knowmore.eu/

4. Conclusion

The Knowledge Audit is a critical step for Knowledge Management in organizations, as it supports the initial Knowledge Management implementation, the evaluation of its results, and thus the decision making process in the organizations for making greater use of knowledge strengths and the competitive advantages of the organization [1]. In fact, a wider understanding of company interests, global situation and processes could facilitate all employees to contribute better to the competitive position of the company and the management of its knowledge. This means not only better acquiring (learning) and generating (innovating and experimenting) knowledge, sharing it (communicating) and storing it (codifying) but also better anticipating the future, and finally, better preparing for it [1].

As the Knowledge Audit represents a process which could be applied in all knowledge-based organizations, it is important to create guidelines for its proper implementation based on study of real cases. In order not to reinvent the wheel, business patterns for Knowledge Audit could be applied in organizations. The paper presents five different patterns corresponding to the main steps needed in the Knowledge Audit-implementation chain - Knowledge Audit Plan, Knowledge Audit Team, Knowledge Audit Process, Knowledge Audit Questionnaire and Knowledge Audit Report.

History

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