Knowledge Management Strategy for SME

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1 Introduction

The knowledge-intensiveness of economy today is one of the reasons for researchers to consider that the foundation of organizational competitiveness has shifted from physical and material resources to intangible resources, and knowledge in particular [1]. The adoption of Knowledge Management (KM) as company practice was driven by large organizations and consulting companies world-wide. The company practice has shown that knowledge, when properly used and leveraged, could drive companies to become more innovative and thus, more competitive [2].

The concepts, tools and methods of KM are recognized to be important as well for small and medium enterprises (SMEs) in the knowledge-driven economy [3]. Improving decision making and knowledge sharing, faster innovation, reducing duplication of work and improving business processes, and managing effectively knowledge resources could constitute important reasons for SMEs to undertake a KM initiative. Nevertheless, KM is making very slowly its way to SMEs.

The aim of this paper is to provide guidance for preparing a KM strategy in SMEs. It follows the Balanced Scorecard (BSC) approach of Kaplan and Norton for business strategy development [10], and presents the logical steps to be followed by practitioners. Normally, before starting the strategy elaboration an analysis should be carried out of the organizational environment (both internal and external) in order to provide the basis for decision making. Thus, the paper logically follows the results of the Knowledge Audit (KA), carried out following another set of patterns presented at workshops of EuroPLoP 2009, 2010, 2011 and 2012 [4, 5, 6, 7]. This paper takes advantage of the KA patterns and proposes a set of patterns for KM strategy development.

Audience

These patterns are intended to codify business practices in the area of Knowledge Management in a pattern language so that they may be better understood, communicated, applied and studied. The previous work of the authors focused on Knowledge Audit processes and tools used (Table 1), whereas this paper provides the next set of patterns linked to the elaboration of a Knowledge Management strategy.

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

Table 1 Knowledge Audit patterns

PATTERN NAME	PATTERN PURPOSE
KNOWLEDGE AUDIT PLAN, [EuroPLoP'2009]	Planning of Knowledge Audit scope, activities and resources
KNOWLEDGE AUDIT TEAM, [EuroPLoP'2009]	Selecting the right Knowledge Audit Team, with the desired mix of skills and knowledge
KNOWLEDGE AUDIT METHODOLOGY, [EuroPLoP'2009]	Develop methodology for successfully performing specific Knowledge Audit tasks and activities
KNOWLEDGE AUDIT QUESTIONNAIRE, [EuroPLoP'2009]	Select, compose or adapt Knowledge Audit Questionnaire according to specific company needs
KNOWLEDGE ASSETS MAPPING [EuroPLoP'2011]	Identify, locate, and assess knowledge assets, and on this base set priorities and identify action needs
KNOWLEDGE LANDSCAPE MAPPING [EuroPLoP'2011]	Assess available KM practices, programs, projects, infrastructure elements, policies and procedures, etc., and determine actions for improvement
KNOWLEDGE FLOWCHARTS [EuroPLoP'2012]	Identify existing paths, means of knowledge flows between individuals, groups and in the organization as a whole, aimed at improving knowledge flows
COMPETITIVE KNOWLEDGE ANALYSIS [EuroPLoP'2011]	Identify areas of expertise and important knowledge assets providing competitors strengths and opportunities
KNOWLEDGE DIAGNOSTICS [EuroPLoP'2012]	Understand knowledge-related mechanisms and processes, both at individual, group and organizational levels
CRITICAL KNOWLEDGE FUNCTION ANALYSIS [EuroPLoP'2012]	Identify critical operational, professional or managerial functions, and determine the potential value of their knowledge-related improvements
KNOWLEDGE MANAGEMENT BENEFITS ASSESSMENT [EuroPLoP'2011]	Focus on potential effects of KM initiatives as a base for planning, action, and monitoring of KM implementation
KNOWLEDGE AUDIT DATA GATHERING [EuroPLoP'2010]	Ensure high-quality data gathering and involvement of staff in the KA process
KNOWLEDGE AUDIT ANALYSES OF RESULTS [EuroPLoP'2010]	Analyse the Knowledge Audit results, test and verify hypothesis based on the collected quantitative and qualitative data
KNOWLEDGE AUDIT REPORTING, [EuroPLoP'2009]	Prepare a meaningful Knowledge Audit Report as a major outcome of the Knowledge Audit process
Knowledge Management Roadmap Definition	How to implement Knowledge Management – a set of patterns to be developed on KM strategy

2 The Patterns
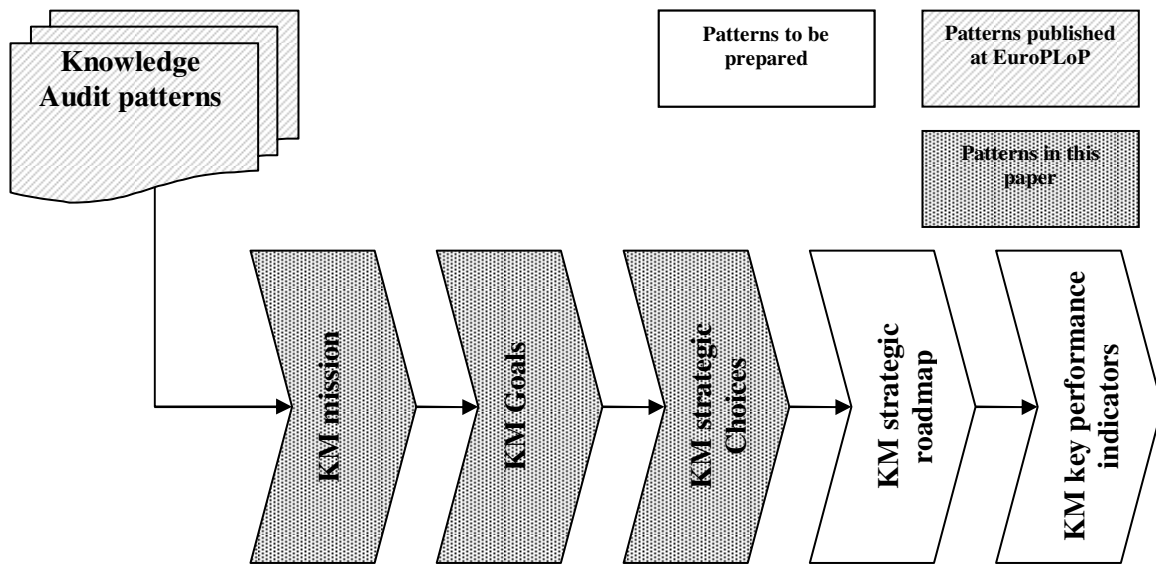
Figure 1 Knowledge Management strategy processes

The KM strategy development is based on the results of a Knowledge Audit carried out in the organization. The outcomes of the KA provide the necessary information for all processes in the strategy development, and each process is linked to a pattern to be followed by practitioners (Figure 1). This paper proposes the following patterns each linked to a step in the strategy development process:

– KNOWLEDGE MANAGEMENT MISSION **–** Defining the scope of KM to ensure business mission (why you need KM);

– KNOWLEDGE MANAGEMENT GOALS **–** Defining KM goals to achieve the KM mission (what KM should achieve);

– KNOWLEDGE MANAGEMENT STRATEGIC CHOICES – Choosing the most suitable for the organization strategic alternative (how to implement KM).

Generally, the mission clarifies the reasons for strategy development, and provides a sound base for determining the strategic goals and priorities. Once this is clarified, it should be decided how to implement the goals and which actions would be more suitable. The next logical step is to prepare a plan linking goals with the consequent activities, resources and timeframe. At the same time, a crucial issue is the monitoring and control of the implementation, measuring the progress with predefined key performance indicators (KPI). The last two steps of the strategy development process will be considered in an additional paper. As the KM STRATEGIC ROADMAP could include different perspectives to which the organization should pay attention by developing its KM strategy, some sub-patterns will be also considered linked to specific KM KEY PERFORMANCE INDICATORS.

2.1 KNOWLEDGE MANAGAMENT MISSION

2.1.1 Context

Your business strategy set the mission and vision of your organization, its strategic goals and related actions. You would like to strengthen your competitiveness, ensure higher financial revenues and overall growth by taking full advantage of your knowledge resources. You decided to implement knowledge management, and made a comprehensive Knowledge Audit. Next step is to take advantage of the KNOWLEDGE AUDIT REPORT and develop a KM strategy.

2.1.2 Problem

How to define the scope of KM in order to gain the highest possible benefits?

2.1.3 Forces

Knowledge management could help organizations to implement their strategic mission and vision. The KM mission generally sets the reasons (purpose) for undertaking KM, and is linked to the vision 'how organizational KM should be in the future'.

- KM could include comprehensive measures covering the whole organization, however, the expected benefits could not ensure the return of the investments made. It should be decided if it will be focused at strategic, managerial or operational level. A choice is needed also regarding the KM scope – to support only critical knowledge functions or all business operations.

- KM could support the organizational growth by focusing on customers' value creation or ensuring competitive advantages through development of different competences then those of competitors.

- KM could ensure better performance of the organization by efficiently managing its organizational and individual knowledge resources. However, it should be decided whether to support tacit or explicit knowledge flows, or both, in order to ensure the required knowledge resources for implementing the respective tasks and activities.

2.1.4 Solution

Start with the Knowledge Audit results, and decide which the target of KM is

Analyze first the business strategy and the knowledge gaps identified in the KNOWLEDGE AUDIT REPORT. Consider that KM should help the organization achieving its mission and vision, and the related business strategy. Link the knowledge gaps with the business strategy gaps in order to clarify which knowledge gaps are most important for achieving your business goals.

Based on the knowledge gaps identified for most essential, decide upon KM purpose and at which organizational level to focus.

Analyze the results of the CRITICAL KNOWLEDGE FUNCTION ANALYSIS, and the KNOWLEDGE DIAGNOSTICS in order to determine the KM scope, as well as to decide upon its focus on tacit or explicit knowledge resources.

Before taking a final decision on KM mission take into account the results of the KM BENEFITS ASSESSMENT, and evaluate the expected KM investments and the possible return of investments (ROI).

Describe the expected future KM state in the organization (your KM vision) as a base for awareness raising among employees in the implementation phase.

2.1.5 Consequences

Defining the mission of KM is a first step for strategy elaboration, and helps creating a vision for the expected future state of KM in the organization, as well as convincing the top management for the expected KM benefits.

Having identified a clear scope of KM in the organization, you will be able to decide upon KM priorities and the consequent actions for achieving them, as well as set key performance indicators for monitoring.

Your KM vision describing the future picture will help motivating the staff of your organization for implementing the required actions.

Targeting the KM strategy at specific knowledge needed in business processes and everyday task will help employees to better perform.

Determining the customers focus would help defining concrete goals and actions for better using the customers-related knowledge.

Without clear KM mission setting the scope of KM activities, you might miss achieving the expected KM benefits and ensure higher efficiency of business processes, and thus, return of the investments made.

2.1.6 Example

A team at the Faculty of Mathematics and Informatics (FMI) at Sofia University (SU) prepared a strategic framework for FMI future development and outlined where to make strategic investments. Initially, some strategic questions were taken into account [11]:

- Where is the university now, not where do we hope that it is?
- If no changes are made, where will the university be in three years time?
- If the answers of first two questions are unacceptable, what specific actions should be taken?
- What risks and payoffs are involved?

The strategy development activities were carried out in three phases using a foresight methodology:

- Analysis of the technology trends and research needs in ICT in Europe and Bulgaria, and identification of FMI potential;
- Preparation and validation of the research, technology development and innovation (RTDI) strategy for FMI;
- Development of scenarios and elaboration of a detailed action plan for research and training in ICT.

The foresight tools used helped the team for strategic thinking (exploring options), strategic decision making (making choices) and strategic planning (taking actions), as shown on Figure 2.

Formal strategic planning is a relatively new phenomenon at Sofia University. Therefore, the FMI team followed the best practice and benchmarking of the university leaders. In particular, the strategy plan was defined following BSC methodology [10]: More specifically, the team determined first the mission and vision for FMI as follows [11]:

- **FMI Mission:** Provision of a flexible, multi-disciplinary environment for high quality informatics research and education using latest technologies and world

expertise, and achieving excellence in research and teaching within the university, country and international ICT communities.

- **FMI Vision:** Creating a Faculty community that becomes locally and internationally recognized in research, teaching and service, and recognized nationally for student excellence. This will establish a reputation of being more valuable to all stakeholders.

- **FMI Strategic Objectives:** The Faculty mission and vision require more stakeholders-oriented decisions. The FMI strategic plan focuses on specific goal and objectives to advance the mission and to attain the vision.
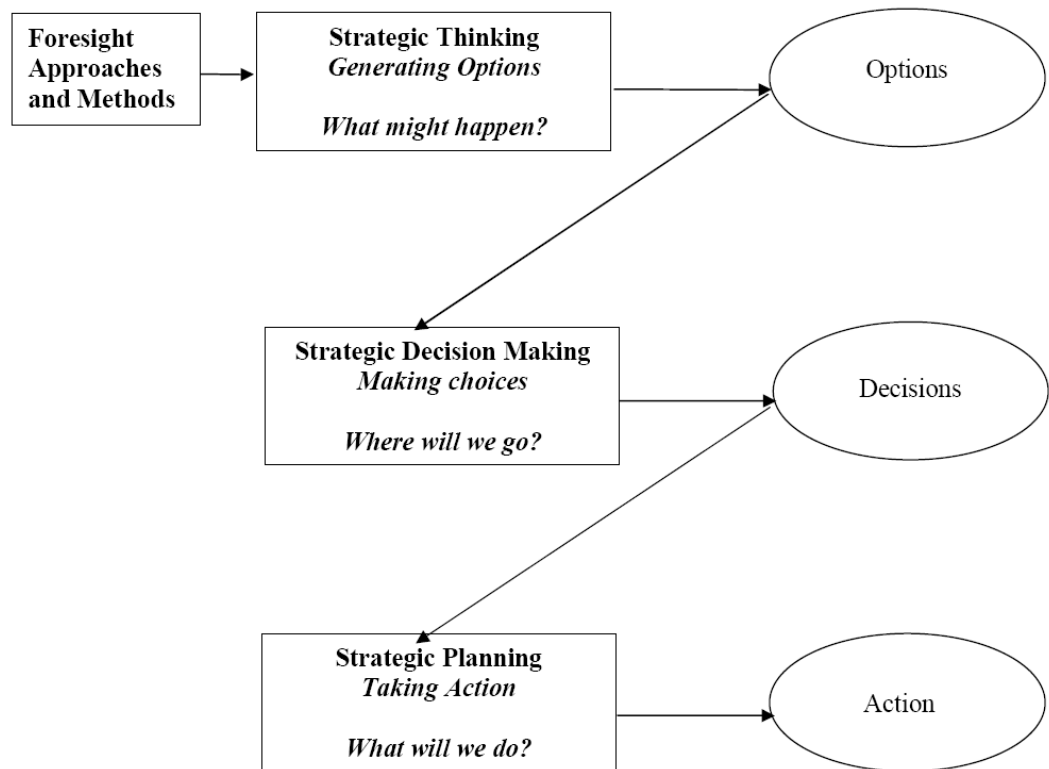
Figure 2 Framework for implementing strategic foresight [9]

2.2 KNOWLEDGE MANAGEMENT GOALS

2.2.1 Context

Your business strategy set the mission and vision of your organization, its strategic goals and related actions. You would like to strengthen your competitiveness, ensure higher financial revenues and overall growth by taking full advantage of your knowledge resources. You decided to implement knowledge management, and made a comprehensive Knowledge Audit, and on this base decided which should be the KM mission for your organization. Having clear scope and targets of KM, the next step is to determine specific, measurable, achievable, realistic and timely (SMART) goals of the KM strategy.

2.2.2 Problem

How to define KM goals helping to achieve the KM mission and the future vision for the organization?

2.2.3 Forces

The business strategy determines the long-term goals for competitive development of the organization. According to Kaplan and Norton [10], it sets goals in four main perspectives – financial, customers, internal processes, and learning and growth. Its implementation depends on overcoming the strategic gaps in each perspective and the related knowledge gaps. Thus, the KM strategy should be aligned with the business strategy and ensure appropriate knowledge supply to the business processes in place.

- The financial goals could be ensured by better using the available knowledge resources, and thus, improving performance. Another option for the KM strategy is to focus on innovation and knowledge creation activities aimed at customers' value creation and/or product diversification.

- Improving internal processes could be targeted at better access to knowledge and expertise, facilitating knowledge sharing or knowledge reuse, avoiding duplication of work or loss of knowledge. Subsequently, an emphasis could be made on changes in employees' motivation, technology support or organizational structure.

- The information technology support could vary according to the knowledge processes needs (e.g. knowledge capturing, knowledge codification and organization, knowledge transfer or knowledge re-use), and the emphasis on tacit or explicit knowledge resources.

- Strengthening customers' perspective could focus on better using knowledge about customers or utilizing customers' knowledge for joint value creation.

- The growth perspective is linked to learning of organizations and of individuals. Both could acquire new knowledge from external and/or internal sources, as well as on the way of learning-by-doing or learning from the others.

2.2.4 Solution

Critically assess your business strategy gaps and determine what will help overcoming them

Take into account the KNOWLEDGE MANAGEMENT MISSION and use the Balanced Scorecards of Kaplan and Norton [10] as a framework to set KM strategy goals.

For the financial perspective, take into account the business strategy choice and the KM BENEFIT ASSESSMENT results, and on this base decide where the proper KM is linked to real support to the organization, its processes and employees and will bring benefits.

Consider the KNOWLEDGE MANAGEMENT MISSION in order to set goals within the defined scope for the KM project to support the business processes and the organizational levels chosen, as well as to ensure the type of knowledge needed in them.

The KM goals related to internal processes should facilitate knowledge flows according to the respective needs of business processes. Take into account the KNOWLEDGE AUDIT REPORT. Then, decide which are the strategic gaps in internal processes and how to be bridged by KM. More specifically:

- On bases of KNOWLEDGE DIAGNOSTICS decide which are the knowledge needs and the knowledge processes to be strengthened in order to support the critical business functions of the organization;

- On bases of KNOWLEDGE FLOWCHARTS decide how to use existing knowledge flows in order employees to be provided timely with the knowledge they need;

- On bases of KNOWLEDGE LANDSCAPE MAPPING consider what should be changed in internal practice, procedures and organization in order to facilitate KM.

Take into account your business strategy, the results of KNOWLEDGE ASSETS MAPPING and the financial perspective goals for determining the KM customers-related goals (providing them greater choice with high quality, better functionality and services). Identify the existing knowledge about customers, and the further knowledge needs to meet the business strategy goals.

Focus the learning and growth perspective on facilitating business processes and customers relations. Take into account the results of COMPETITIVE KNOWLEDGE ANALYSIS and KNOWLEDGE ASSETS MAPPING. On this base set learning goals for ensuring the necessary knowledge for being a capable competitor, as well as better meeting customers demands.

By setting goals, consider that they should be specific, measurable, achievable, realistic and timely. Do not forget to check the cohesion and complementarity of the goals set:

- Learning and growth goals should support the business processes and customers relations with the necessary knowledge and competencies.

- Internal processes goals should ensure more efficient business processes, better customers relations and innovation processes, as well as facilitate internal social and organizational processes.

- Customers related goals based on proper internal processes, knowledge and competencies, should reflect on the financial results

2.2.5 Consequences

By ensuring cohesion and complementarity of the goals set for each of the four perspectives of the BSC, the following consequences are expected:

- Learning and growth goals strengthen the business processes and customers relations with the necessary knowledge and competencies.

- Internal processes goals ensure more efficient business processes, better customers relations and innovation processes, as well as facilitate internal social and organizational processes.

- Customers related goals based on proper internal processes, knowledge and competencies, reflect on better financial results (higher productivity and growth) by better using the available knowledge assets and providing added-value for the clients.

Linking the KM goals to the knowledge gaps identified during the KA, you will better target the KM strategy and the related actions.

Having SMART goals you will easily determine the necessary KM actions and the KPI for monitoring the KM strategy implementation.

If you do not consider properly all perspectives and the correlation between them, you could miss the expected KM benefits.

2.2.6 Example

The strategy modeling process at the English Language Faculty of Engineering (ELFE) of the Technical University – Sofia (TU) used business process management tools and created a BSC system as a value-added chain process (Figure 3). The most important reason for using the BSC approach was that it easily <u>links the objectives set with related measures, targets and key performance indicators</u> for monitoring of the implementation results.
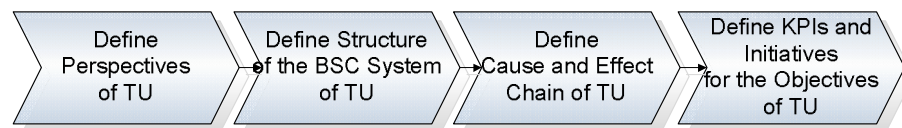
Figure 3. BSC Value-added chain diagram [11]

For the purposes of the ELFE KM strategy was developed a strategy map consisting of three perspectives (Table 2), and a specific number of strategic goals, that were related to each other in a hierarchy and the main goal was, thus, broken down into sub-goals. As ELFE is a knowledge-based publicly funded organization, the financial perspective was not elaborated.

The **internal processes perspective** focused on improving the research environment, facilitating knowledge gathering, sharing and reuse, intellectual property (IP) and quality management:

- Improving research environment
- Improving knowledge management processes
- Improving quality of research
- Improving IP and knowledge management

The **stakeholders perspective** focused on collaboration and knowledge exchange, and attractiveness of ELFE for young people:

- Enhancing international networking in research
- Enhancing networking with industry
- Increasing the ELFE visibility

▪ Increasing the image of researchers in the society

The **learning and growth perspective** focused on enhancing knowledge and capabilities at individual (by learning) and organizational (through innovation) levels, and included the following goals:

▪ Developing a vision for future research
▪ Strengthening human resources
▪ Enhancing knowledge in the research field
▪ Enhancing capacity for IP protection, innovation and management

Table 2 ELFE strategy map

Goals	Activities	Expected results & impact	Targets/KPI
1. LEARNING AND GROWTH PERSPECTIVE			
1.1. Developing a vision for future research	• desk research in the area • users' needs assessment • identification of interested Bulgarian stakeholders • exchange of knowledge with partners • setting collaborative research roadmaps	• improving knowledge on the research state-of-the-art • targeting research on country needs • enhancing research scope • developing stable research partnerships	• 3 reports on the state-of-the-art in research and innovation • list of identified Bulgarian stakeholders • 3 research roadmaps • 9 new early-stage researchers (ESR) topics with industrial focus
1.2. Strengthening human resources	• reintegration of researchers • hiring young researchers • career plan development • research supervision/ mentoring	• reversing brain-drain • overcoming ageing of researchers • career stability of researchers • quality and sustainability of research	• 4 researchers reintegrated • 9 new young researchers • 10 researchers promoted • 9 PhD students attracted
1.3. Enhancing knowledge in the research field	• targeted research workshops • learning-through-research • mobility visits to partners • internship in industry • grants for participation at external events	• awareness on recent research • improved individual research results • gaining intercultural experience • gaining intersectoral experience • inspiration of new ideas	• at least 6 research workshops • at least 50 staff exchanges with EU partners • at least 10 staff exchanges with industrial partners • 9 individual research projects with partners • grants for presentations at least at 30 conferences
1.4. Enhancing IPR, innovation and management capacity	• training on IP and technology transfer (TT) • training on innovation management • training on research communication and industry collaboration	• increasing knowledge in IP and TT • development as T-shaped professionals • better IPR protection and technology transfer activities • better research communication to different audiences	• 50 researchers trained on IP, innovation management and TT • 50 researchers with better communication skills and industrial contacts

2. INTERNAL PROCESSES PERSPECTIVE			
2.1. Improving research environment	• new computer places for researchers • update of specialized labs • access to engineering scientific books and journals	• attractive research environment • higher research experimentation results • well informed researchers	• 13 new computer places for young researchers • 5 labs modernized • At least 50 new research books
2.2. Improving knowledge management processes	• development of collaborative platform • development of on-line research databases and open library • development of TU yellow pages • development of stakeholders database • integrating Web 2.0 tools	• better sharing of research results • increased team work across TU • better knowledge creation • higher visibility of TU research results • better identification of research expertise (knowing who is doing what) • better awareness on stakeholders • visibility of TU networking	• 1000 own research papers published • At least 500 external sources included in the open library • 50 CVs of researchers published • 30 stakeholders profiles published • 100 TU alumnus linked
2.3. Improving quality of research	• Joint supervision/mentoring by experienced researchers • Monitoring of the quality of research results and publications	• increased level of core research skills and technically specific competences • increasing research publications • increased acceptance of research papers in peer-reviewed journals and outstanding scientific conferences	• 25 young researchers obtained scientific guidance • 50 papers undergo internal review • at least 10 publications in peer-reviewed journals
2.4. Improving IP and knowledge management	• preparation of IP and knowledge transfer (KT) Plan • inventory of ELFE knowledge assets • valorization of research results • Seminar on IPR protection and practice	• sound IP management at ELFE • adequate university policies towards commercialization of research ideas and contracted results • better awareness on ELFE research assets and their value • best practice transfer	• IP and KT Plan used • Knowledge assets classified and visible • research results with high economic value identified • 1 IPR seminar
3. STAKEHOLDERS PERSPECTIVE			
3.1. Enhancing international networking in research	• twinning with EU research partners • organizing brokerage events • launching joint projects • organizing joint events	• deeper research collaboration • increasing number of EU partners • higher integration in ERA • improved knowledge transfer in EU	• at least 2 new institutional partnerships launched • 3 brokerage events • 6 joint projects prepared • 6 joint research workshops
3.2. Enhancing networking with industry	• building national research clusters • launching joint projects • improving knowledge and technology transfer • organizing joint events	• more efficient use of national human resources and achievements in research • better responding to industrial needs • better utilization of funding opportunities for research and innovation • improving KT and TT	• 2 new national clusters established • 3 projects under the national Operational programmes prepared • 6 joint events industry-academia
3.3. Increasing the TU visibility	• Organizing highly visible events • Improving web presence • Dissemination of ELFE materials	• ELFE conference gains international recognition • ELFE research papers accessible • increased awareness on TU research achievements	• 20% increase of international participants at ELFE conferences • research data base with more than 1000 publications • 3 leaflets disseminated
3.4. Increasing the image of researchers in the society	• Organizing open TU days • Undertaking outreach activities • Targeted communications over printed and electronic media • Dissemination of leaflets	• Increased image of TU researchers • Increased attractiveness of TU for career	• 3 TU open days • 3 scientific café • 600 young people participated • 3 leaflets disseminated

2.3 KNOWLEDGE MANAGEMENT STRATEGIC CHOICES

2.3.1 Context

The organization determined the mission and goals of its KM strategy. The next step is to decide how to achieve the goals and which are the necessary actions to be followed up, and the related resources to be ensured.

2.3.2 Problem

Which strategic alternative is most suitable for my organisation?

2.3.3 Forces

The Knowledge Management strategy is linked to the business strategy and supports its implementation by filling in the knowledge gaps in order to reach the business goals of the organization. They are various alternatives for organizations in the four BSC perspectives:

- Having proactive or protective KM strategy. The main issue is to decide if the organization is going to develop new knowledge assets and different competencies (be proactive) or will focus only on ensuring efficient use of the available knowledge resources.

- Supporting developing or acquiring knowledge resources. A choice should be made between investing in internal research and development activities or obtaining the needed knowledge from external sources.

- The strategic choice is between focusing on knowledge codification (explicit KM) and reusing the knowledge stored in organizational knowledge bases or undertaking approach for personalization (tacit KM) and supporting the knowledge sharing among staff and with external experts.

- The organization chould decide to use intensively technologies for building organizational knowledge bases and ensuring technology support for business processes or foster creativity and knowledge sharing, and thus, enhancing individuals knowledge for taking advantage of it.

2.3.4 Solution

Critically assess the core business processes of the organization and decide which strategic choice is the most adequate for meeting the KM goals.

Do not forget that each organization has its specificity, and a specific KM strategy could bring high benefits in one organization, but might not work in another one. Therefore:

- Consider first your organizational environment by using the results of KNOWLEDGE LANDSCAPE MAPPING and KNOWLEDGE DIAGNOSTICS.

- Take into account the CRITICAL KNOWLEDGE FUNCTION ANALYSIS, the type of business activities and the KNOWLEDGE MANAGEMENT GOALS.

These two steps will help you to decide if you need to invest into technology infrastructure and knowledge codification, or to facilitate knowledge sharing among employees (personalization strategy) with specific measures for changing organizational culture and human resources policy.

Consider KNOWLEDGE MANAGEMENT GOALS, COMPETITIVE KNOWLEDGE ANALYSIS, KNOWLEDGE ASSETS MAPPING and KNOWLEDGE MANAGEMENT

BENEFITS ASSESSMENT. On this base, you could decide which KM actions will have highest RoI.

Take into account that organizations aimed at innovation and developing unique or customized products have better results using the personalization strategy, while organizations dealing with similar problems, and developing more standardized mature products build their success on codification strategy [8].

2.3.5 Consequences

The informed strategic choice made will ensure a better strategy implementation results and higher benefits.

Practical implementation shows that the mix of KM strategies gives worse results then the focus on one of them [8], [12].

Developing a comprehensive KM strategy with heavy technology investments often does not bring the expected benefits and RoI, especially if you do not ensure commitment of employees and do not link technologies with the business processes in place.

2.3.6 Example

Some of the dilemmas of organizations by defining and implementing a KM strategy are linked to the decision how to better support knowledge creation and sharing needs within different organizational groups. Hansen et. al. [8] suggests that companies concentrate their efforts on either a codification strategy (e.g. storing codified knowledge in databases or other repositories) or a personalization strategy (e.g. based on knowledge sharing among employees and better using their personal networks). The decision should be made according to the characteristics of the organization, its products, the nature of the employees' problem solving activities, as well as the needs for knowledge reuse.

The strategic choice made by ELFE (Table 2) clearly shows that in university environment a personalization strategy is more appropriate. For a knowledge-based organization like TU it is quite natural to choose a proactive strategy and develop new knowledge inside. At the same time, the technology should support all internal processes and external communications. As shown in Table 2, a special emphasis is given on:

- personal knowledge management – with measures for training, mentoring and supervision, staff exchange, access to research databases and scientific infrastructure;

- facilitating knowledge sharing – via various internal and external events (seminars, workshops, conferences, brokerage events) and using technology support;

- enhancing networking with external stakeholders – industry, other research organizations and universities, as well as potential students.

3. Conclusion

The paper presents three different patterns corresponding to different processes for developing a KM strategy. This ensures that the Knowledge Management strategy and the related roadmap will be better focused and will facilitate organizational performance and competitiveness. The patterns can be applied in knowledge-intensive organizations as they propose guidelines for solving specific problems of linking knowledge and business processes, better usage and provision of knowledge when and where it is needed and taking advantage of existing knowledge flows.

History

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