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ABSTRACT

In the last decades, learning and knowledge have become key success factors for international competitiveness with the result that intangible and immaterial resources have overtaken physical and tangible assets in order of importance. The introduction of knowledge management (KM) practices and initiatives has provided companies with new opportunities to maximize the value of the knowledge they possess. It has helped as well to increase their capacity to learn and adapt quicker to the environment and to react pro-actively to the changes, performing better than competitors. Learning easier and faster has become one of the key challenges in this new context, putting a special accent on knowledge acquisition, on the speed of reaction and the application of the newly acquired competences and skills. The process of learning now is centered on acquiring new practical oriented skills. Knowledge workers are expected to devote efforts to continuously up-date their qualification, skills and knowledge, manifesting new and better ideas, resulting in better decision making. The only limited resource now is the time – time for learning and for adaptation to the constant changes.

The present paper focuses on KM and learning in organizations. It introduces the concepts of tacit and explicit knowledge, considers organizational learning and knowledge workers specifics. In the centre of the paper are the issues of complementarity between KM and learning. The integrity between KM and e-learning is highlighted on the bases of case-study research of KM technologies usage in companies.

Keywords

Knowledge management, learning, organizational learning

1. THE KNOWLEDGE DIMENSIONS

The concepts and nature of knowledge are in the center of interest

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for both theories - learning and knowledge management. [6] relates knowledge with learning. Knowledge is defined as 'a state or potential for action and decision in a person, organization or a group'. Subsequently, learning is the process which causes changes in this state - change in understanding, decision or action.

Most authors distinguish two main categories of knowledge: explicit and tacit knowledge. For example, [11] points out that explicit knowledge can be articulated in formal language and transmitted among individuals, and tacit knowledge can be described as personal knowledge embedded in individual experience and involving such intangible factors as personal belief, perspective, and values. [13] specifies that tacit knowledge is personal, context-specific knowledge that is difficult to formalize, record, or articulate; it is stored in the heads of people. The tacit component is mainly developed through a process of trial and error encountered in practice, while the explicit knowledge is that component of knowledge that can be codified and transmitted in a systematic and formal language: documents, databases, webs, emails, charts, etc.

As pointed out by [10], creating new knowledge in the knowledge organization requires the participation of knowledge practitioners, knowledge engineers, and knowledge officers which form together the 'knowledge creating crew', and are characterized that they work mainly with their minds. The latter is the main characteristic of 'knowledge worker' as considered by [4]. Now, the knowledge workers are recognized as a major part of the workforce. Their work efforts are centered around creating, using, and sharing knowledge. They are well educated and experienced, and are hired for their knowledge and ability for continuous learning. Important for knowledge workers is to continuously expand their knowledge, capabilities, capacity, perceptions and networks. Subsequently, important characteristics of the knowledge worker are [1]:

- learning ability – challenged by the increasing situations providing learning opportunities.
- integrative competencies – the increase in available and accessible data and information requires capabilities to identify, assimilate, understand and act upon them.
- critical thinking – ability to make sense of data and information, evaluate them, judge their accuracy and reliability.
- information literacy – recognize when information is needed, and how to locate, evaluate, integrate, use and effectively communicate information.

- learning how to learn – challenge to learn rapidly, continuously, flexibility to fulfill work responsibilities and maintain their employability.

2. KNOWLEDGE MANAGEMENT AND LEARNING

As suggested by [2], knowledge management should begin with a focus on organizational learning as learning provides the opportunity to create and recreate, change one's external perception of the world and relationship with it, and extends individual ability to be creative. [4] considers that organizations should manage in the knowledge society the self-transformation, and to be prepared to abandon knowledge that has become obsolete and learn to create new things through continuing improvement of every activity, development of new applications from its own successes, and continuous innovation as an organized process. This is actually the central concern of organizational learning theorists. It is widely agreed that learning consists of two kinds of activity – obtaining know-how in order to solve specific problems, and establishing new paradigms, models or perspectives to override the existing ones. These kinds of learning are referred to as single-loop learning and double-loop learning (Figure 1). In addition, there is a widespread agreement that 'organizational learning is an adaptive change process that is influenced by past experience, focused on developing or modifying routines, and supported by organizational memory' [10].

information systems. It is used as a base for producing of new knowledge in the single- and double-loop-learning.

Knowledge and learning go hand by hand in the knowledge-based organization. [1] consider that the structure of the New organization (e.g. the Intelligent Complex Adaptive Systems - ICAS), in addition to the different action teams, should have four main centers:

- Operational centre
- Knowledge centre
- Learning centre
- Career management centre

The Knowledge centre implements the KM of the ICAS, and it is a focal point for locating the information, knowledge and experience of the organization, which includes data bases, yellow pages, knowledge audits, subject matter experts, communities, knowledge portals, relevant technology, lessons learned, good practices, resumes, and resource libraries. The Knowledge centre is a critical integration resource of ICAS and helps all employees find information and individuals with the needed knowledge. On the other side, the goals of the Learning centre are to ensure that ICAS core competencies are kept at the forefront and the capabilities that stem from group experience and past collaboration are maintained as people flow in and out of the organization. It supports mentoring virtual learning networks, identifies next-generation knowledge that ICAS may need in order to keep its competitive advantages, etc.

As shown on the Figure 2, the creation and utilization of knowledge in the organizational core processes is the engine of

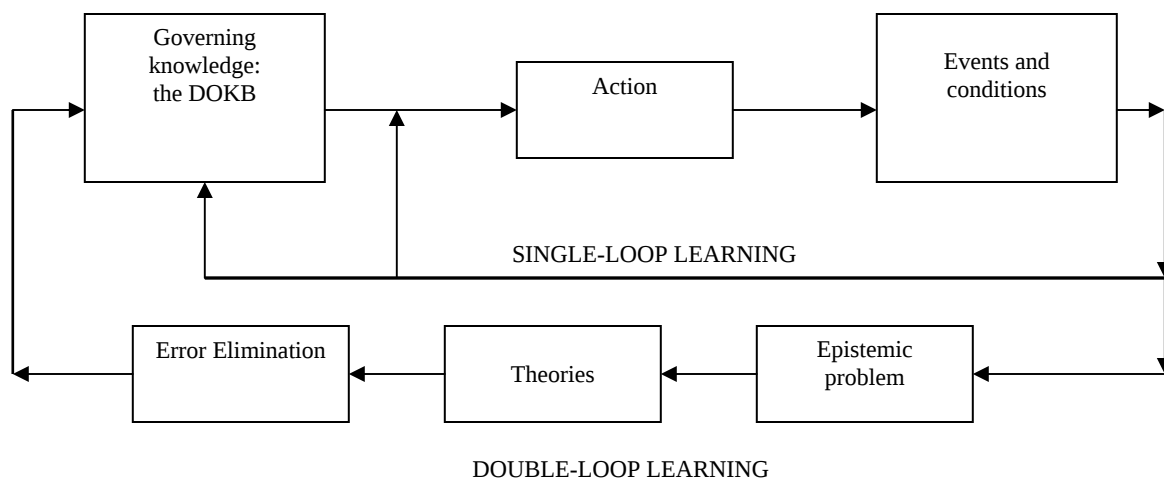
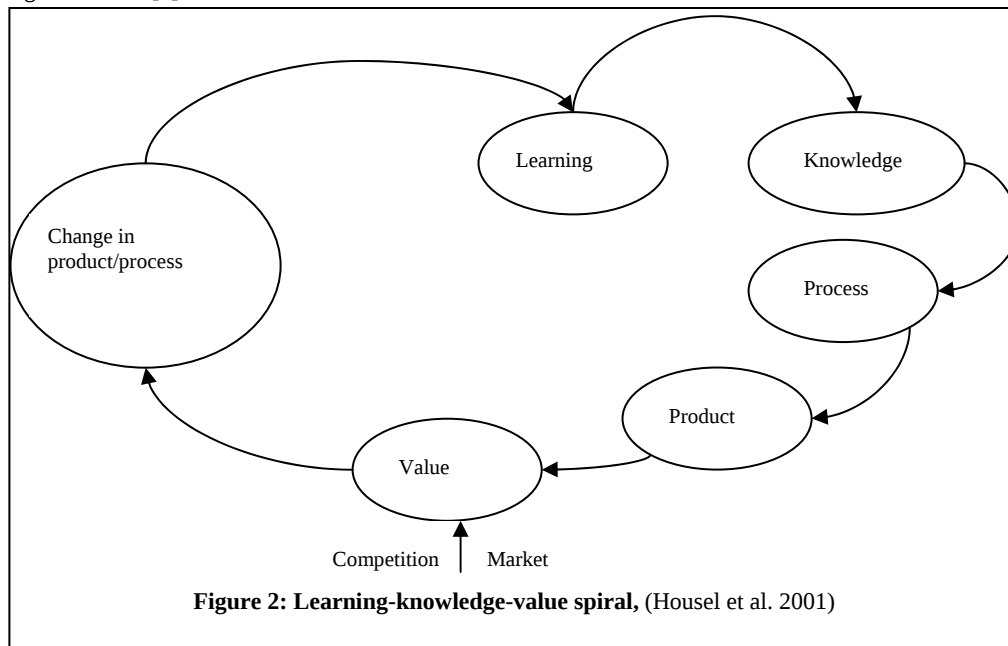


Figure 1: Double and single-loop learning

[5] point out that the organizational learning literature provides a number of examples of frameworks that depict a cyclic behavioral process of decision making, action, experiential feedback, and adjustment followed by a new action. In the decision making process is used the previous knowledge as governing knowledge – the Distributed Organizational Knowledge Base (DOKB). DOKB actually comprises all structures of organizational knowledge – normative business processes, plans, organizational cultural expressions, organizational strategy, policies, procedures and

wealth. The learning-knowledge-value spiral assumes that the marketplace is the final arbiter of the value of knowledge. Customer purchasing decisions change the environment, and knowledge based companies must respond by producing more highly valued products based on a market feedback. This market feedback highlights needs for product changes and stimulates learning to acquire new knowledge to embed in processes that produce new products. The cycle then repeats itself with every market reaction, and the transformation of learning into

knowledge demonstrates a fundamental connection between learning, knowledge and value [7].



According to [5] the knowledge life-cycle underpins the KM strategy, and the latter should include the social and technology dimensions, as well as the demand-side and supply-side issues. The authors provide some examples of KM initiatives classified by the social versus technology, and demand-side (knowledge production) versus supply-side (knowledge integration) dimensions. It should be stressed, however, that learning and training constitute important elements of the KM implementation (Table 1).

Table 1: Knowledge management initiatives

	Demand-side KM	Supply-side KM
Social dimension (people and process)	▪ Individual learning ▪ Group learning ▪ Innovation and IC management ▪ Communities of inquiry ▪ Think thanks ▪ Management planning	▪ Training programs ▪ Communities of practice ▪ Knowledge capture ▪ Storytelling ▪ KM cultural initiatives ▪ Operations management
Technology dimension (IT)	▪ Knowledge portals ▪ Innovation management tools ▪ Groupware - o collaborative applications - o virtual teaming tools - o e-mail ▪ Listserv Discuss'n groups	▪ Information portals ▪ Intranets ▪ Information management ▪ Work product management ▪ Content management ▪ Imaging ▪ Groupware

3. KNOWLEDGE MANAGEMENT AND E-LEARNING – COMMON FEATURES

The conversion between knowledge management and e-learning and training proposes the solution to the question 'how can the organization learn faster'. Subsequently, "e-learning and KM are symptoms of new management style" [3]. The main focus on e-learning and knowledge management is how to allow organizations and people to optimize the knowledge acquisition process. KM and learning management are two complementary disciplines that are continuously growing closer and support an innovative and agile enterprise [12]. Both e-learning and KM strategies depend mainly on soft issues in organizations - people, motivation, trust, sharing, organizational culture and interpersonal networks and relationships.

In fact, as stated in [8], the overlap between e-learning and Knowledge Management is now widely recognized and smart enterprises are already in the process of integrating them to better leverage resources and eliminate duplicate activities. Morrison further explains that e-learning and knowledge management do the same thing in different ways. E-learning delivers processed knowledge—it takes subject matter expertise, puts it through an instructional design process and presents the result in an obvious framework, while KM delivers raw or less processed knowledge.

[12] actually explains the concepts of KM with the goals of e-learning to create the larger ideal of a learning organization – via blended learning, skills directories, integrated with course delivery. E-learning and knowledge management issues converge to cope with new paradigms, promoting "doing while learning and learning while doing". Further, are presented the e-learning systems as part of the corporate portals proposing the ability to bring electronic training, mentoring, performance improvement, wizards, communities of practice (CoPs) and help assistance for the content and work processes available in the enterprise portal.

As [1] suppose, KM has to provide many of the conditions desired by knowledge workers as for example building culture of knowledge sharing, and open communications, both leading to an environment conducive to adult learning, CoPs, teams, knowledge repositories, intermediaries, yellow pages etc., supporting knowledge workers to meet their learning needs. KM is not seen as a stand-alone solution, training departments shall introduce not only e-learning but also knowledge sharing solutions. Introducing new ways of learning through e-learning or CoPs, is a new learning culture [3]. Learning from other knowledge workers and sharing with them is an essential component of the knowledge creation processes considered in [10]. It is important to get out of the old mode of thinking that knowledge can be acquired taught and trained through manuals, books or lectures. Instead it should be paid attention to the less formal and systematic side of knowledge and start focusing on highly subjective insights intuitions, and hunches that are gained through the use of metaphors, pictures or experiences.

As it was pointed out above, it is important for the organizations to learn faster as the time is the only resource that can not be extended. For many learners, one of the overriding negative aspects of participation in, and completion of, e-learning is the perceived lack of approval, allocated time during work hours in which to complete the learning. In many modern organizations, e-learning is readily available as part of the work environment, and requires limited, or no approval from superiors. The challenge for many is that they have to schedule their e-learning during working hours, where it can be construed as being unproductive, and where they can also be distracted by everyday working activities, such as telephone calls and e-mail. These individuals may then choose to consider to, or be forced to, complete e-learning at home after working hours.

In this respect it should be noted that CoPs accelerate learning. [14] discovers that the group is important to both what people learn and how they learn. Communities encourage the exchange of ideas, assumptions, and theories that open their members to new ways of seeing situations. The continuous rapid feedback system of CoPs provides the opportunity to tie the discussions and dialogues to decision results, generating new ways of understanding the system. The CoPs enable the tacit knowledge transformation and sharing through open and interested dialogue and discussion. The human networks propose the fastest access to new knowledge, wisdom and knowledge resources. Learning communities have the main goal to promote the transfer of know-how between novices and experts.

4. PRACTICAL IMPLEMENTATION OF TECHNOLOGIES FOR KNOWLEDGE MANAGEMENT

The authors have undertaken a study on KM technologies used by companies with the objective to outline which are the main tools, instruments and technology solutions described in the number of case studies, found in the academic and practitioners' literature. In the research were taken into account 77 case studies of companies, mainly international holding structures, employing between 2000 and 320 000 persons, some of them operating on highly dispersed international markets. The sectors of operation of the companies are distributed among IT (about 30%), pharmaceuticals (14%), engineering services (10%), chemistry and oil (10%) and

consultant companies (9%), airlines, auto-producers, banks, research organizations.

It is interesting to note that most of the case study authors approach mainly human and organizational practices rather than technologies. Therefore, the accent in a big number of cases is put on technologies enabling social and human collaboration and communication. The emphasis of all considered case studies is put mainly on technologies for knowledge sharing and knowledge transfer. In 75% of the cases there are discussed KM technologies, tools and systems enabling knowledge transfer, collaboration technologies, groupware, knowledge retrieval. Some of the most discussed issues are communities of practice, e-learning solutions, corporate Intranet and KM portals or enterprise information portal (EIP). As shown on Figure 3, the e-learning technologies are the second popular solution. Among the most used e-learning solutions can be pointed out the corporate universities matching internal organizational knowledge with external academia or consultants networks, online courses and learning environment, online learning centers, learning networks and CoPs, global learning system, knowledge café and others. In all cases, KM and e-learning systems overlap to propose and integrate solution within wider KM framework.

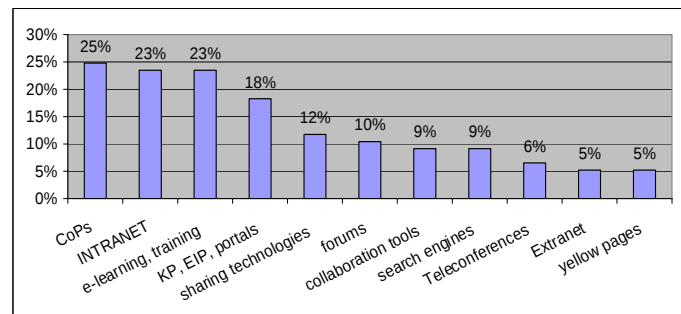


Figure 3: Technologies for knowledge sharing

5. CONCLUSIONS

Learning and knowledge management theories complement in order to enhance people to be more flexible and quick adapting to the changes of the environment, allowing them to acquire rich and valuable experience and collaborate closely with other experts in order to enable greater transfer of "tacit" knowledge. Learning and change are the primary forces for success because they are absolutely essential for adaptation, experimentation and innovation. In today's world every year there are invented new technologies, new rules and new environments that demand new perspectives, new insights, new behaviors and new actions.

Sharing of knowledge is becoming one of the most important topics, discussed in a number of case studies and articles. It is not surprising that most developed KM tools and technologies focus mainly on knowledge sharing, knowledge transfer and e-learning solutions. But still the main questions concern "why" and not "how" to share knowledge, implying the role of personal motivation and organizational culture rather than technology issues.

E-learning technologies, while expanding within organizational context have to cope with the complex requirements imposed by management and knowledge workers. It is admitted that the content plays a primordial role and the fast changes in concepts, in

available knowledge sources and the limited time pose new questions to design and conception of e-learning materials. The learners need to be convinced why they should use e-learning training instead of other sources of knowledge. Some possible reasons are better performance, saving time, personalization and adaptation to personal needs, greater feed-back, providing valuable experience and enriching the capacities of knowledge and problem-solving competences. The knowledge management approach can provide additional features to the e-learning experiences, as example relevant new content alert, group discussions, expert's directories and knowledge repositories with many additional resources available. However, the most important focus for enabling the knowledge transfer is the tacit knowledge.

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