

KNOWLEDGE MANAGEMENT IMPLICATIONS

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Abstract. *Knowledge management is a general concept applied to almost any project that an organization undertakes, which is meant to transfer, share and exploit knowledge from one part of the organization to another. Most of the companies are already involved in knowledge management, even if, often, it is done informally and implicitly. The goal of a formal knowledge management program is just to make knowledge marketplaces to become more efficient. Many organizations are recognizing that the ownership of knowledge creates an important competitive advantage. Quite simply, the lack of a knowledge management program means that they are losing money or opportunities. The easiest kind of knowledge management project to justify is the 'knowledge base'. A knowledge base is something that attempts to make the knowledge marketplace more efficient by making explicit knowledge easier to access. Projects that aim to facilitate the transfer of knowledge work best when organizations recognize how the existing knowledge marketplace operates, so that they can work within it.*

Key words: innovation, knowledge flow system, knowledge transfer, knowledge utilization process, tacit and explicit knowledge

1. Introduction

As an approach, knowledge management is difficult to be defined and implemented. It may prove to be expensive in terms of human resources and time, but it is an essential basis for effective competition in a modern knowledge economy. The immediate reaction of all managers to the idea of knowledge management is that they are managing knowledge already. It seems that the organizations themselves spread this perception. They either recruit expert people who are qualified to do a job or they train inexpert people to do their jobs in a better way. Then, they set the processes and the procedures to capture and record their knowledge in the form of reports and documents.

In 1950, Peter Drucker, one of the earliest contributors to the theory of knowledge management, remarked that the organizations' documents, reports and memos contained more knowledge than all the libraries in the world. All organizations are full with knowledge, but much of that knowledge cannot be accessed or used. Indeed, in some cases, much of that knowledge is not even visible since other members of the organization or customers are not even aware of its existence.

Transforming knowledge into action first requires commitment to change based on continuous learning and innovation that creates competitive advantage. Thus, it depends on:

- Recognizing that knowledge exists both socially and contextually
- Understanding who holds the knowledge and in what form

- Making the knowledge available at the right point in time
- Making it available to the relevant people

Innovation plays a central role in describing and presenting the knowledge-based economy. Innovation – an idea, method, and invention used to improve the current activity or the introduction of a new idea or method is a concept close to the concept of creativity. If most of the times creativity is identified with idea generation, innovation implies the transformation of ideas into new products and services, implementing creativity results. Innovation is associated with purposeful change, an attitude of reflecting the capacity to imagine what it does not exist or a process that starts from idea and ends with the implementation. Actually, the two concepts are overlapping. Innovation has become more important to organizations during the past decade given the changes in business, such as: the increase in the technological capacities and their diffusion speed, hyper competition, connectivity etc.

2. Difficulties in defining knowledge

Defining knowledge is not easy. Knowledge is neither data nor information, although it is related to both and the difference between these terms should be clearly highlighted. Confusion about data, information and knowledge has resulted in the organizations spending a lot of money. However basic this may sound, it is very important to emphasize that the three concepts are not interchangeable. Success and failure can often depend on knowing which one of them the organization needs, which the organization has and what the organization can or cannot do with each.

Data is a set of discrete, objective facts about events and becomes information when its creator adds meaning. Data is transformed into information by adding value in various ways. Most people have an intuitive sense that knowledge is broader and deeper than data or information. Knowledge is a fluid mix of framed experiences, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knower. In organizations, it often becomes embedded not only in documents but also in organizational routines, processes, practices and norms (Davenport & Prusak, 1998: 5).

The idea behind knowledge management goes back 50 years and many management theorists have written about them. In 1999, Druker stressed the importance of information and knowledge as an organizational resource. In 1994, Senge focused on the learning organization that is a cultural dimension of managing knowledge. In 1970, Carnegie Mellon emphasized the growing importance of organizational knowledge through increasing the artificial intelligence. In the early 1990s, several management consulting firms began to implement knowledge management programs. One of the most widely read works around the middle of the

decade was Nonaka and Takeuchi's book, explaining the way in which the Japanese companies were creating knowledge and innovation (Gamble & Blackwell, 2001: 4)

Knowledge management is a general term applied to almost any project that an organization undertakes which is designed to acquire, transfer or exploit knowledge from one part of the organization to another. All organizations are already involved in knowledge management, but often this is done informally and implicitly. The reason for undertaking the knowledge management is very clear. The traditional economy is being replaced by the new economy and the organizations are recognizing that ownership of knowledge is the key for obtaining the competitive advantage. The transition to the knowledge-based economy and society implies a major dematerialization of value-added activities as well as the replacement of product uniformity and homogeneity, consumption and mass governance with creative diversity and responsibility decentralization.

3. Knowledge management features

Min Basadur and Garry A. Gelade focus on the role of knowledge management in the innovation process (Basadur and Gelade, 2003: 46). They distinguish between the *apprehension* and the *utilization* of knowledge and treat them as a single framework that allows the organization to:

- detect errors and implement changes to restore or improve routines;
- be aware of unexpected events and crises and turn them into opportunities for innovation;
- anticipate and seek out new information and emerging opportunities to develop new products, services and routines.

Knowledge management draws from a wide range of disciplines and technologies:

- *Information science*. This is very important in knowledge management since the way in which the contents of knowledge bases are managed is fundamental to their usefulness.
- *Artificial intelligence*. These technologies are used to support automated learning.
- *Cognitive science*. It provides insights into how we learn and know, which are used for improving the techniques and tools employed for gathering and sharing knowledge.

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- *Semantic networks*. These are formed from ideas and relationships. They are often used in fields such as text analysis.
- *Organizational science*. Karl Sveiby, an expert in knowledge management, identifies two tracks for knowledge management. The first concerns the management of the information and the second concerns the management of people. Over these two broad areas three distinct themes can be identified:
 - *Mechanistic approaches*
 - *Cultural approaches*
 - *Systems approaches*
- *Network technology*. The Internet and Intranet provide a communication background through which communities are formed and reformed.

Many organizations believe that managing knowledge is about heavily investing in information technology and that they need to have specialists in the organization to create and transfer knowledge. However, this is not necessarily true. Good leadership in any type and size of organization can manage knowledge without spending heavily on IT. Some feel that knowledge is not for business. It is intangible, so it cannot be measured. They claim that if it is not measurable, it cannot be managed.

Moreover, the concepts of *knowledge push* (the increase in education and scientific research outputs coming from public and private investments; the ways in which ICT speed up the production, collection and dissemination of the research results) and *market pull* (globalisation, competition, consumer demand diversification, increase in the intangible assets role) refer to the entire economy, not only to highly technological or elitist sectors.

The consultancy firm McKinsey considers that the traditional ways of creating value added are no longer source of competitive advantage – it refers to *transformational* activities (raw materials extraction and transformation into finished goods) and *transactional* activities (retail sales and transportation). By contrast, tacit interactivity has to prevail under the form of expertise in solving problems and communicating complex ideas.

As the modern economic system is increasingly based on knowledge, organizations have to innovate and improve their performance and to compete effectively. To do this is to take advantage of the wealth of experience, talent and skills of one's organization, since these issues represent organizational knowledge. Knowledge embedded in products and processes can be protected by law through patents and copyright and these can be managed and measured. The extent to which employees create and transfer knowledge can be managed and measured as well (Kermally, 2002: 50).

Knowledge management implications

Knowledge management involves seven major aspects that can be identified:

- *Generating new knowledge.* Creating new knowledge provides process competence and a difficult to attain competitive advantage.
- *Actually using knowledge for decision-making.*
- *Embedding knowledge in products, services and processes.* This should result in higher quality outcomes at lower costs than those of the competitors, but above all, it must deliver value to the customer which is not available.
- *Facilitating knowledge growth.*
- *Transferring existing knowledge.* This means recognizing the different types of knowledge that are needed and the kinds of people who might be good at capturing and sharing them.
- *Integrating competitive advantage.*
- *Aligning knowledge management process with key business drivers.*

Knowledge comes in two formats. One is located in employees' heads and it is known as a tacit knowledge and the other one is presented in written form or embedded in products and it is called explicit knowledge. Some organizations have knowledge embedded in their processes and the knowledge that is in a format between passive and explicit. The challenge for every organization is to transform passive knowledge into active knowledge and to transform individual, tacit knowledge into group, organizational knowledge. Organizations have to put processes in place and think of knowledge initiatives to bring about this transformation. Managing knowledge is about creating an environment to encourage knowledge creation and transfer.

Tacit knowledge is transferred from one individual to another and from individuals to groups and teams through conversations, dialogues and meetings. Many times, this transfer takes place informally. A transfer from tacit to explicit knowledge takes place through the creation of documents, e-mails, reports, memos. Knowledge creation and transfer are achieved by interaction among individuals and in these kinds of interactions, four modes of knowledge conversion take place:

- *Socialization:* informal meetings, discussions, brainstorming, customer interaction, mentoring, learning groups
- *Externalization:* cartoons to communicate, meetings, workshops, master classes, assignment databases
- *Combination:* publications, conferences
- *Internalization:* knowledge zone, customer feedback, development counseling, facilitation skills.

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It is important to stress that the success of each mode of transformation will depend on the leadership and culture of the organization. After all, managing knowledge is all about creating a culture that will institutionalize trust and facilitate knowledge transfer and creation. Most of these initiatives already exist in many organizations under the domain of management development. Using these initiatives or putting the process of knowledge creation in practice is not going to involve an organization in massive investments. One of the key success factors for this process is communication within the organization. Without effective communication, tacit knowledge remains tacit and organizations lose.

In the knowledge – based economy, market valuation seems to be based much more closely on intellectual assets than on physical assets. These knowledge-based assets reflect new areas, such as: intellectual property, customer loyalty, leadership, brand recognition, industry vision, innovation and even the dream evaluation, meaning a belief by investors in the value of the anticipated future, products and services. Knowledge management looks across the entire business and it provides the tools to examine how the value of the business is actually shaped and what the drivers are for shaping the value of the business (Gamble & Blackwell, 2001: 49).

For the organizations of the knowledge age, two elements become opportunities: the Internet, which transforms business into business, and knowledge as resource and factor generating welfare. While the Internet represents an effective tool for marketing and knowledge distribution, knowledge can take the shape of goods or services based on knowledge. There is also a *knowledge marketplace*, where the knowledge assets are distributed and traded. On this market, there are buyers, sellers, brokers, prices and exchange mechanisms.

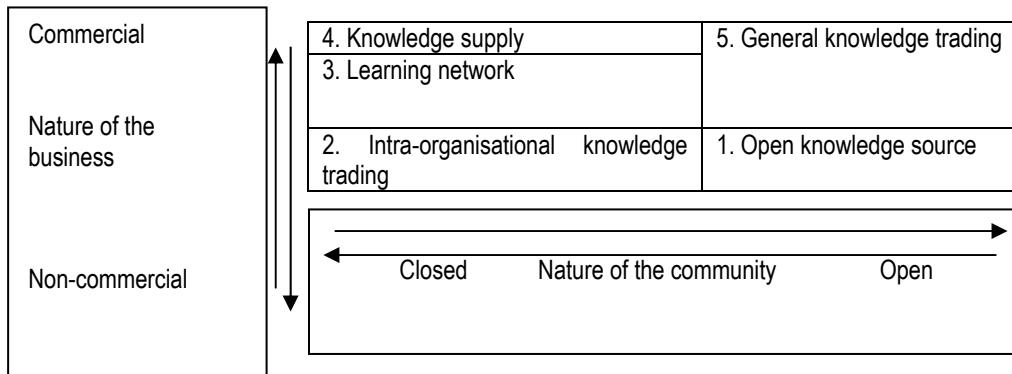
Building a knowledge system is like undertaking a journey; you need a map to plan out your path and to identify possible alternative routes to go along. In 1979, Crosby identified the following stages:

- *Knowledge chaotic.* The organization is unaware of the importance of knowledge to the achievement of its objectives. Therefore, knowledge is stored and managed randomly across the organization. Accessing and using the information is difficult and takes a lot of time because nobody knows where knowledge may be held. Systems may be incompatible, processes for collecting the information may be ineffectual, and people may be reluctant to share information or just, lack the time or incentive to do so.
- *Knowledge aware.* At this stage, the organization recognizes the need to manage knowledge and some attempt is made to do so. The most attractive and the easiest first stage in this process is identifying the knowledge sources, which involves documenting the sources of knowledge and establishing a system that can be related to the system. Still, awareness and implementation across the organization are not uniform and there may be issues of sharing the knowledge.

Knowledge management implications

- *Knowledge enabled.* The actions taken in step two are slowly beginning to pay off and the knowledge management is beginning to benefit the organization. Standard tools and procedures are used across the enterprise. Knowledge resources have been inventoried, evaluated and classified and formal procedures are well established to maintain these. However, some technological and cultural barriers remain to be addressed. At this stage, management begins to support the quality of knowledge management more actively; knowledge management personnel report to top management and their leader is more actively involved in the management of the company. Knowledge management is beginning to pay off and the value of knowledge management approaches is becoming more widespread.
- *Knowledge managed.* The framework of tools and procedures to discover, create, maintain and create knowledge has become more integrated. There is an over recognition of the importance of the need to use the technology to facilitate and enable cultural process. The knowledge strategy is reviewed and there is a shift away from hard to soft measures. The balance between the need for formal processes and the need for informal facilitating processes is recognized so time for reflection and introspection are built into workflows. At the stage of wisdom, managers are participating personally and provide leadership in knowledge management. The knowledge made available to the corporation is proactively, so the company seems to be a step ahead of its competitors most of the time.
- *Knowledge – centric.* The organization redefines itself in terms of a knowledge based organization. It is able to demonstrate sustainable competitive advantage through the application of its knowledge base which competitors find hard to replicate. Knowledge management procedures are an integral part of the organization and members of the organization accept them as part of their daily work. The improvement and the assessment of the knowledge environment is a core activity. The value of the knowledge to the organization is being measured and reported to stakeholders and is reflected in the organization's worth. It is also being valued as the organization's intellectual capital. The importance of knowledge is recognized as necessary for the organization's survival and growth. (Gamble & Blackwell, 2001: 48).

The authors of the article *Inter-organisational Knowledge Sharing and Trading –* Mentzas, Apostolou and Kafentzis – outline the knowledge market typology by the function of the nature of the community and by the nature of the business as follows:



Source: Mentzas,G., Apostolou, D. et al., *Inter-organisational Knowledge Sharing and Trading*, 2003, <http://citeseer.ist.psu.edu/>

Figure 1. Knowledge market typology

Briefly, the first type refers to the nature that made it possible to access contents at no cost, as well as to the reunion of communities and networks having the same fields of interest. The second type suggests that the knowledge track in organizations is led by market forces similar to those acting on traditional markets of tangible goods. The third type refers to the interaction among various organizations that have similar needs, to inter-organizational networks formally founded to enhance the participants' knowledge and innovative capacities. The fourth type of knowledge market offers expertise in professional services. The last type of knowledge market refers to open, commercial markets. In its turn, knowledge may be scientific, technological or entrepreneurial.

4. Conclusions

We have gone through various stages of economic development, from agricultural economy to industry economy and recently, to new economy. Many organizations are paying attention to managing knowledge because of the complexity of business and the convergence of technology. Knowledge management is about creating an exciting environment within the organization that will promote the creation and transfer of knowledge. It is about changing the organizational culture and about visionary leadership, motivated staff, loyal customers and the systems and processes that facilitate these things (Kermally, 2002: 50).

Knowledge is an appreciated asset. The more it is used, the more effective its application. In a modern context, organizations have to come up with innovative structures and thinking in order to gain superior performance. Technology represents

an enabler, but the winning organizations are those who learn to use knowledge and become best practice leaders.

The new economy is starting to change the dynamics of all organizations. This new reconfiguration of the economy mostly depends on the ability of organizations to develop new skills or use previously acquired skills in completely new ways. It has been concluded that those organizations working in such a manner are innovative create on a continuous basis and reshape those teams whose members possess very well developed skills. Their knowledge is employed to different purposes such as multitasking and used in new situations in a context in which new technologies are rapidly assimilated and developed.

Among the structural changes from a traditional economy to a knowledge-based economy, several elements could be mentioned:

- the development of *knowledge-intensive* and *design-intensive* sectors (especially those based on information and communication technologies);
- investment in intangibles (R&D, information and communication technologies, organizational restructuring and organizational systems, design, brand, human capital); investment in intangibles strengthens the firms' capacity to create, manage and exploit knowledge;
- *upskilling*;
- the increase in exports of highly-technological products.

Knowledge is increasing at such a rate that no one can learn all there is to know about a particular area. Organizations focus themselves on lifelong learning in an entrepreneurial sense, updating their knowledge on a continuous basis as and when they need to. Their portfolio of knowledge allows them to take advantage of opportunities and thus, they want to control what they learn and how they learn. In order to reach a high-level performance, an organization has to use the knowledge to compete effectively and, in order to do this the old classic management style should be replaced by a new knowledge management.

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