

Knowledge Management – the Key Resource in the Knowledge Economy

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Abstract. *The influence of global information and communication technology changes and globalization have transformed our society by favoring the economy and innovation as key driver of global competition. Creation and exploitation of knowledge has become key resource in the new economy. All advanced economies are technologically knowledge-based economy. Many of today's managers and their employees, still guided by the definition given by Francis Bacon (1597) “Knowledge is power” instead of “sharing and managing knowledge is power”. Knowing taken alone may not bring value if not shared before and then managed in an efficient manner. This article seeks to demonstrate what knowledge, what the knowledge management is and what are its main implications in the new economy, a knowledge-based economy.*

Keywords: knowledge; knowledge management; knowledge worker age; knowledge economy; MERITUM project.

JEL Codes: M12, M54.

REL Codes: 12C, 18D.

1. Introduction

The appearance of the new economy has been observed since 1969 when Peter Drucker has provided arrival “knowledge worker age” (1969, p. 264) in his book “The Age of Discontinuity”. He had to wait another 30 years until the new economy for the term to be recognized. Expressions as knowledge, knowledge society, new economy or knowledge economy show that the importance of knowledge gained in our time are the main propellant of competitiveness and creating wealth in the company. The evolution from the agricultural age to the industrial one is now very easy to understand. Instead, what is now happening in the new economy has an incredible impact in the process of evolution. New economy – the knowledge economy – changes everything.

In the new economic context, knowledge management is a new discipline but that is the key resource for competitive devein. There is no clear consensus on how this discipline can be defined, but generally can be understood as responsible for designing and implementing a system that aims to identify, capture and share knowledge in a systematic way within an enterprise as that it can be converted into value for it. Broadly speaking, knowledge becomes an enterprise value when it contributes positively to the objectives pursued by the company itself.

It is not hard to see that knowledge management presents special importance in business. Since the nineties, a significant number of businesses throughout the world, especially multinationals, have been involved in this field considering knowledge management as a measure to improve performance.

2. Knowledge

Knowledge was originally recognized in the sixteenth century by the philosopher Francis Bacon (1597), who said “knowledge is power”. Today there are being rewriting the rules of business is forcing a reorganization of corporate models of value. It became a very important factor in current economic life, an essential asset that adds value in the future through good management and cannot be left aside.

The first concept is necessary to clarify what is meant by knowledge. Notwithstanding the philosophical depths, which would give rise to yet another article, knowledge in an organization occurs when a person makes use of what he knows and the information it has available to solve a problem or to develop a project. Knowledge is all that people know and can exist also in organizational processes, products, services, facilities and systems but can only obtain value

through people. Most important property of knowledge is one that is renewable - not deplete the use and value along with results from transmission and management.

A traditional point of view is the knowledge power in a hierarchical structure: data, information, knowledge and wisdom.

Data represents the first form of information and have no significance. It may exist in any form and may be useful or not. Data could be converted into information using five main processes (Davenport et al., 1998):

- Condensation – items of data are summarized into a more concise form and unnecessary depth is eliminated;
- Contextualization – the purpose or reason for collecting the data in the first place is known or understood;
- Calculation – data is processed and aggregated in order to provide useful information;
- Categorization – a process for assigning a type or category to data;
- Correction – a process for removal of errors.

The information represents grouped data, sorted and classified which were given a meaning through relational connections. This significance may be useful or not. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms (Davenport et al., 1998).

Information becomes individual knowledge when it is accepted and detained as a closed compression to the truth and a valid interpretation of reality. Organization knowledge or social knowledge exists when it is accepted by consensus of a group of people. Common knowledge should not necessarily be shared by all members to there being sufficient acceptance among a group of people informed.

If we use this knowledge in the most optimal manner, we will find the wisdom (science).

For Nonaka (Nonaka et al., 2000, p. 12), knowledge creation is related to the use of language and communication. Thus, under this, there are two types of knowledge: tacit knowledge and explicit knowledge. Explicit knowledge is objective and relational knowledge that can be expressed through a formal and systematic language with words, numbers, formulas, etc. Tacit knowledge is personal and difficult to formalize and refers to knowledge that an individual, community, organization or country has incorporated it in his mind, in culture and is very difficult to explain.

SECI Process

	Tacit	to	Explicit
Tacit	Socialization		Externalization
to Explicit	Internalization		Combination/mixing

Source: Nonaka, 2000, p.12

SECI process, as named by Nonaka, is composed of four modes of knowledge conversion: socialization, externalization, combination and internalization.

Socialization is the process shares experiences and creating thus tacit knowledge (knowledge of individuals consisting of discernment, belief, understanding and intuition, implicit knowledge, deeply personalized and diffused present in the organizational context). An individual may acquire tacit knowledge of another individual without using language. Imitation is the means of socialization training.

Externalization is the process of converting tacit knowledge into explicit knowledge (formal knowledge, accessible, relatively easily transmitted between individuals and groups) by using metaphors, analogies and models. Externalization of tacit knowledge is the most important activity related to the creation of knowledge, but also the most difficult.

Combination/mixing is the process of creating explicit knowledge by merging knowledge from different sources. Thus, individuals change and combine their explicit knowledge by converting telephone meetings. Information which exists in the databases can be processed to produce new explicit knowledge.

Internalization is the process of inclusion of the explicit knowledge in tacit knowledge. This is facilitated if individuals can re-experience the experience of others, indirectly.

In the knowledge creation company, these four models of knowledge conversion work in a dynamic interaction, in a species of knowledge spiral.

3. Knowledge management

Knowledge has always been managed, but not how it is done today, and probably its management will improve in the near future but should not be made at the individual but at the corporate level. Neither knowledge nor management are new concepts, but this joining “knowledge management” (Barreiro, et al., 2000, p. 617) or as Barreiro said “Corporate knowledge

management” may be considered a new concept. Adding the term “corporate” is, in Barreiro’s views, fundamental – it is personal knowledge management, but it tends to turn into collective knowledge.

To be effective, businesses need to effectively manage the knowledge that can be found in “workers and its management, in its suppliers, relations with other companies in the sector, in its own information systems, the customers, etc.” (Sánchez et al., 1999, p.188).

Even if there have been made many studies concerning knowledge management, until now there is no definition generally accepted. Knowledge management “is not something else than the information fluxes management, bringing the correct information to the persons that need it” (Gates, 2000) or it can be seen as “the art to create value from intangible assets” (Sveiby, 1996).

Knowledge management can be defined as an approach, targeted strategic, of motivation and facilitation of the employment of members in the development and using their cognitive capacities, through valorization, subordinated to its overall objectives, sources of information, experience and abilities of each of them (Uit, 1999, p. 94).

Knowledge management as sub-discipline of the new concept of knowledge economy is a method, a new concept of management that seeks transformation of the intellectual qualities of the staff of an organization with competitive power and new value (Shanhong, 2000, p. 1). Concentrating on the use of professional intellect in activities which use individual and external knowledge, knowledge management provides value to organizations, and customize them.

Going beyond simple assembly and manipulation of data to obtain information, process knowledge management refers to the acquisition, creation, preservation and application or reuse of knowledge, its primary objective is harnessing the resources of knowledge and understanding the capacity of the organization to give it the opportunities to learn and adapt to its changing environment (Auster, 1999, p. 75).

4. Methods for measuring knowledge

In the management literature there have been proposed and used many methods to identify structure and measure knowledge. In the management literature there have been proposed and used many methods to identify, structure and measure knowledge, but most important to remember the classification of the assessment methods proposed by Sveiby (2001):

1. *Methods of exchange capitalization (Market Capitalization Methods – MCM)* are those methods that calculate the difference between the stock

exchange capitalization of the company and the book value of equity as the value of intangible assets of the firm.

2. *Assessment methods based on the profitability of assets (Return on Assets Methods - ROA)* are those that determine the value of the intangible assets on the basis of average profitability of the feature. Thus, the average profit of the company before tax is related to the value of the tangible assets, determining the ROA (assets profitability) which is compared to the average of the sector. The profit of the company obtained from intangible assets possession is estimated by multiplying the difference between the two rates with average value of the tangible assets of the enterprise. The present value of all future profits represents the intangible assets value held by it.

3. *Methods for estimating Scorecard (SC) and direct methods to estimate the intellectual capital (Direct Intellectual Capital Methods - DIC)*. Given that both groups of methods are involving the evaluation of the intangible assets by identifying each component, making a classification of them, we will deal with them at the same time because several times the limits between the two are not clearly defined. First are most often used to identify the qualitative performance factors and the calculation of its indicators. These indicators are more used in order to manage on medium and long-term not for estimating intangible assets value owned by it. Direct methods assess directly intangible assets, individually or as an aggregated coefficient. Among them we remember: Balanced ScoreCard (Kaplan and Norton), Skandia Navigator (Edvinsson), Intellect (Euroforum), Intangible Assets Monitor (Sveiby), Technology Broker (Brooking), Meritum Project. In the following we will make a brief description of the model Meritum Project and its objectives.

MERITUM Project

Meritum project (Measuring Intangibles to Understand and Improve Innovation Management) is the result of a research project funded by the EU under the “Targeted Socio-Economic Research (TSER)” and has the objective of enhancing skills for political decisions in EU European field of science, technology and innovation constitute a substantial basis for reliable. The project objectives were (Meritum, 2002):

- Development of a classification of intangible assets;
- Identify and analyze patterns in European firms applied for measuring intangible assets;
- Analysis the effect of not used – intangible assets to determine the market value of firms and potential benefits of information on intangible assets.

Develop general guidance for the measurement of intangible assets and presentation of information about them;

- Contrast of the validity of such general guidance to those who develop and make use of this information;
- Make conclusions and suggestions for developing accounting policies.

The model propose classification of intellectual capital in:

- Human Capital, which is that part of intangible assets departing at the end of working day from the organization.
- Structural capital means that part of intangible assets remaining after the workers leave after a working day.
- Relational capital, which is the value of the relationship between business and various economic and social agents with which it is interacting.

The information provided by this model can be used both internally and externally. Publication of information on intellectual capital is, in this case, the result of intellectual capital management which consists of three defined phases:

- Intangible assets identification;
- Measurement;
- Monitoring and control.

The first phase is to identify intangible assets to achieve strategic objectives of the enterprise.

In the second phase, once identified critical assets and fixed assets and causal relations between them, it is passed to each intangible asset measurement by means of specific indicators to be relevant, reliable and comparable.

In monitoring and control phase it is being evaluating the intangible assets state, the intellectual capital management system is being consolidated and integrated into the overall business management.

In January 2002 it was published the final document entitled “Guidelines for Managing and Reporting On Intangibles (Intellectual Capital Report)” which contains the main conclusions after three years of research.

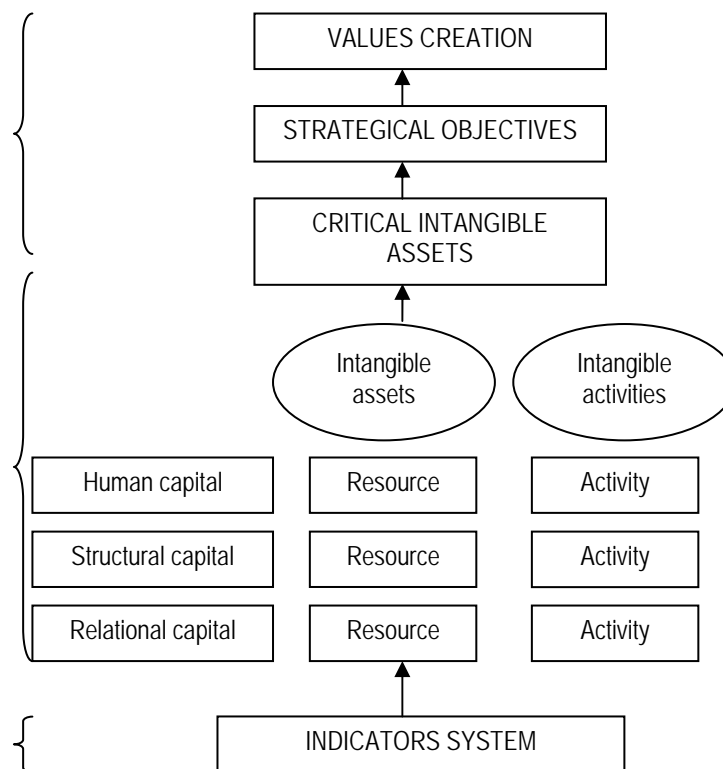
The project proposes a Knowledge Resources Report through which are published company relevant information on its intangible assets. The general scheme for this presentation is shown in the following figure.

The scheme includes the three parts that the report must include:

- Company’s vision: there are presented the main objectives and strategies and also the critical intangible assets which must be made, developed or maintained in order to accomplished the proposed objectives.

- A resume of intangible resources and activities: there are described the intangible resources of the company and the different finalized activities and also the ones that will be finalized in the future in order to rise the value of the resources.

A system of indicators of intangible resources and activities to enable providers of goods, services, capital of the company to develop a firm estimate of future benefits and possible risks.



Source: Viedma, 2003, p. 122.

Figure 1. The scheme presentation of Knowledge resources report

Although it is a statement on intellectual capital in an organization, it is often used the term of knowledge resources, the concept of intellectual capital and intangible resources appearing very rarely in all document content. These knowledge resources are classified into four categories:

- Employees - this component includes the skills of employees, their experience, their motivation, commitment to the company, willingness to adapt.

- Customers - this component refers to relationships that an organization is developing with users and customers, satisfaction and loyalty, recommendations they make about the organization, ability to understand their needs and the level of cooperation between organization and client in order to develop products and processes.
- Processes - refers to knowledge that is explicit in the form of organizational procedures and routines.
- Technology - refers to technology support to other elements. Usually involve IT systems (software and hardware) and intranet, the degree of IT complexity, IT skills and utilization grade.

The report on the resources of knowledge proposed by Meritum refers to the same period as the current financial statements and may be presented together at the same time with them.

Conclusions

The new economy – knowledge economy – requires new forms of measuring a company's assets, taking into account that future benefits will be derived primarily from capitalization of intangible assets such as knowledge, and not the tangible ones. Knowledge management was always an important part of management in general, although he has not been taken into account under this name. In fact, knowledge management is a very difficult area to study. There is no consensus and even less certain generally accepted standards.

The creators of Meritum method have realized that the importance of knowledge management is very high and that there is no accepted method to measure these assets. The method focuses its development in getting answers to business issues to achieve its strategic objectives, and through them to create value for shareholders in the company.

Knowledge management is, ultimately, management of intangible assets that generate value for the organization. Most of these intangible assets are related to a form of abstraction, structure and knowledge transfer. Organizational learning is the main instrument of knowledge management. Organizational learning, knowledge management and intellectual capital measurement are related and complementary concepts. In short, organizational learning is the base of knowledge management and knowledge management is the basis which generate intellectual capital.

Recommendations

- Introduction of a generally accepted model for measuring and managing knowledge resources in the world and create the necessary accounting frame in order to make comparisons.
- Promote the development of new complementary information systems for knowledge management – alternative accounting.

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