

Future Insights into Knowledge management

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"If you want to understand how a lion hunts, don't go to the zoo. Go to the jungle."

Kevin Roberts, Saatchi&Saatchi

In the second part of the 1990s development in the perception of management lost its impetus. Some of the visionaries such as Karl-Erik Sveiby or Leif Edvinsson were not able to attract the attention of a wider group of thinkers to their ideas. Knowledge management too quickly became the area of commercialization of visionary thoughts. Cryptology, before being used in telecommunications, had a chance to get more distant from "tradesmen" who perceive every invention as a source of profit. Development of knowledge management was hindered by the fast commercialization of ideas whose authors were the forerunners of the discipline. Computer companies almost automatically changed the names of their products by replacing "information management" with "knowledge management".

It is possible, however, that the disappointment which arose in some circles due to knowledge management programs being implemented in companies without much success may leave the discipline at rest. It is worth then to refer to theoretical foundations of knowledge management and explore it to find inspiration for intellectual development of the discipline. These are the pillars of the theory of knowledge management:

- 1) Knowledge-worker – a person who has expert knowledge (*tacit knowledge*); who is creative, intelligent, talented, highly motivated.
- 2) Knowledge codification as a process of partial verbalization/manifestation of expert knowledge.
- 3) Organizational culture which facilitates the creation of knowledge and its transfer
- 4) Knowledge measurement – a set of rules and measurement models which are used in valuation of intangible assets.

Pillars of knowledge management are described below:

- 1) Valuation of *tacit knowledge* is an important aspect of knowledge management. Frederic Hayek (Nobel Prize Laureate) used to say that "*almost every person possesses unique knowledge which may be used only while cooperating with other people*". Peter Senge, author of the second best-selling

book on business in the 1990s (the first was “Reengineering the Corporation”) – “The fifth discipline”, is of the opinion that “*knowledge is the ability to act efficiently*”. Knowledge is an organized system of statements, facts and ideas which represent opinions and results of experiments transmitted to others via medium in some systematized form. In 1945 Hayek noticed that knowledge possessed by each of us is a result of the process of collective learning. For instance, technological knowledge is a typical example of knowledge which is possessed by “everyone”. Nobody has the exclusive right to have knowledge on Newton’s laws of motion. This is our common knowledge. Many studies show that knowledge is usually located in precisely specified places in space. We call them industrial regions or clusters. Therefore, **in global economy we would still prefer the expert “from the immediate environment” rather than the one who works in New York or Hong-Kong.**

David S. Landes noticed that even in the time of dissemination and openness of science, when people have product samples, exemplary devices, documentation and detailed instructions at their disposal, a certain part of know-how can only be learned through practice. In 1916, in the middle of the First World War, the French lost part of their main military centers and desperately tried to look for additional suppliers of 75 mm caliber field guns. It was the basis of their artillery, centerpiece of their arsenal. It was such a perfectly designed weapon that if one put a glass of water on the bed, not even a drop would be spilled during the salvo. They broke their official secrets and sent documentation to the United States – in vain. Only when a group of practitioners was sent to the U.S. which showed how to make it, the construction of a gun with similar firepower and stability was completed successfully.

Knowledge is created when the “old” knowledge is enriched with the mix of new knowledge. Owing to this, constant development of clusters and regions is based on repetitive questioning of the previous schemas, flow of new ideas etc.

Car industry in India was protected by barrage duties for many decades. As a result, the poorest quality cars were produced there till the end of the 20th century (we know them, for instance, from Kit-Kat commercials thanks to a friendly Indian taxi driver). Creation of knowledge is more of a social process than a technological one, therefore, **in the upcoming years specialists in sociology and anthropology will be most needed, not IT experts.**

In order to understand the dynamics of knowledge, we have to forget about the laws of physics. The principle of mass conservation is not in force here. New knowledge which is introduced into the closed system will make the “mass” of knowledge in the system grow. Every technological innovation leads to social changes. Internet communicators, mobile phones, game consoles, Web 2.3. etc. bring a lot of implications for the society.

A new generation of young people is growing, people who are neither able to talk to one another (because they are able to communicate only via text messages or *gadu-gadu*) nor read an article in press understanding its content (as the longest information they are able to absorb should not be longer than a short text message). Technology and society are more inter-related nowadays than in the past when high-tech (letters and books in the Middle Ages, phones

and automobiles in the 19th century, television in the 1950s) were reserved only for the upper classes. Today high-tech is massive and popular which means that the influence of technology on the society is also massive and popular.

Tacit knowledge is the subset of all the knowledge possessed by a man. Michael Polanyi, a Hungarian scientist working in the U.S., developed the theory of tacit knowledge in the 1940s and 1950s. At the age of 55 his scientific interests turned towards philosophy. Although his views became very popular in the world of science, he was never perceived as a “real” philosopher.

2) Explicit knowledge is used for two purposes (picture 1): in order to describe the reality (descriptive knowledge) and to change the reality (prescriptive knowledge). The second type of knowledge includes plans of action. It is likely that the plans are not 100% perfect or checked. They may even include bad knowledge. Nevertheless, it is the prescriptive knowledge which is used in action. If we link this type of knowledge with tacit knowledge (expert knowledge) we will obtain procedural knowledge. It is then apparent that tacit knowledge is some kind of value added to prescriptive knowledge. Action which says “cut the vein” can be treated as prescriptive knowledge. Only the doctor who has tacit knowledge is able to perform his action correctly (procedural knowledge). If we take into account two abovementioned types of knowledge (i.e. way of coding (tacit knowledge + explicit knowledge) and place of occurrence (personal knowledge + personal knowledge/collective knowledge) we receive four types of knowledge:

Personal knowledge:

- 1) Worker’s individual knowledge in the embrained form – we can check it through tests, presentations, seminars, negotiations with clients etc.
- 2) Worker’s individual knowledge in the embodied form – action-related, practical, know-how knowledge which reveals itself only when there is a problem in the company.

Collective knowledge

Knowledge may „reveal itself” in individual or collective action, e.g. musician-virtuoso possesses individual knowledge, but may be unsuitable to perform with the orchestra. Similarly, a football player may possess great motor skills, but may be bad at playing in a football team. And finally, a tradesman may be a good negotiator, make good impression on the clients, but at the same time he may get poor sales results when he works in a team. Sometimes there are contrary situations. Not really brilliant or intelligent people are able to achieve astonishing results while working in a team.

- 3) Collective knowledge in the encoded form – sometimes it’s called information. This knowledge is commonly accessible and is stored in the form of symbols, databases;
- 4) Collective knowledge in the embedded form – this is a collective knowledge of the entire group. It appears in organizational structure

of a company, convictions, cultural norms, types of interpersonal communication etc.

Tacit knowledge is usually not subject to description which causes some inconvenience related to:

- Verbalization – language is not a sufficiently precise tool to describe situations. If needed (e.g. in business), a package of solutions in the form of presentations is used: verbal description enriched with schemes, video presentations, computer simulations. Only then there is a possibility to transfer the entire knowledge. In school education it is difficult to expect from a student, apart from a written test, to attach exhibits, pictures, diplomas and other attributes which may enrich the content of the transferred knowledge.
- Transfer capability – those areas of knowledge are preferred which are easier to control (codify), but not really more useful to those who benefit from educational services. This often causes justifiable complaints on the adjustment of study curriculum to needs. While trying to introduce education reforms it is worthwhile to think if the criticism is directly related to avoidance of domains of knowledge which are located in the tacit knowledge of individuals or not.
- Lack of objective standards – aiming for standardization and unification of the system of education imposes the necessity to determine “objective standards”. Standards are probably the biggest enemy of knowledge – matter which is difficult to measure. In reality standards measure the amount of possessed information. In the information society, access to information is getting easier which devalues the worth of those possessing the information and favors those who can use the information. Owing to this, small countries, directed towards development of the economy based on knowledge, such as Estonia, invest in scientific research and development of intellectual capital instead of being focused on import of knowledge e.g. from the United States.

3) Organizational culture is conducive to creation and transfer of knowledge.

One of the most frequent operational aspects of knowledge management which appear in literature are the so called **knowledge sharing** or **knowledge dissemination/ diffusion**. *Knowledge dissemination* means “spreading”, “propagation”, “diffusion” of knowledge. Knowledge sharing requires skills: “*people should learn to talk to others about what they know in an attractive way*”.¹ Knowledge dissemination/diffusion is an interactive process through which the participants create and deliver information to one another related to the subject of innovation in order to come to mutual understanding. Knowledge dissemination, which is completed successfully, creates a change in the way people think and act. Dissemination of knowledge comprises of: innovation, knowledge dissemination networks, time, people and communities.²

¹ Riitta Suurla, Markku Markkula, Olli Mustajärvi, *Developing and Implementing Knowledge Management in the Parliament of Finland*, Oy Edita Ab Helsinki, Finland, 2002, s.79-80.

² E. Rogers, *Diffusion of Innovations*. Wyd. III, The Free Press, New York 1983 w: Riitta Suurla, Markku Markkula, Olli Mustajärvi, *Developing and Implementing Knowledge Management in the Parliament of Finland*, Oy Edita Ab Helsinki, Finland, 2002, s.80.

Peter Sammons pointed out that probably the most effective method of knowledge transfer is school education which is characterized by study curriculum, keeping students in one building, different subjects etc.³ Unfortunately this method cannot be commonly used in companies. The first reason is the lack of time for several years of break from everyday responsibilities of the workers. The second reason is the fact that transfer of knowledge is not the only task set forth in companies (as opposed to educational institutions).

Among the most important aspects of organizational culture which influence knowledge management are:

- workers' attitudes to learning,
- system of values which influences moral aspects of work and unifies workers in achievement of goals,
- attitudes to knowledge codification (willingness to use knowledge in the codified form, ability to codify one's own knowledge etc.);
- ability to work in a team,
- ability to share knowledge with other workers.

Sharing knowledge is inseparably related to knowledge management to the extent that some organizations perceive "knowledge sharing" as an autonomous direction of organization's development (e.g. the World Bank). Knowledge sharing is nothing but "interpersonal communication" which has been present in the literature on management. *Novum*, contrary to "interpersonal communication", is based on the assumption that the main target of knowledge management is not making the transfer of information faster, but intensifying the process of mutual learning among the workers. Apart from the notion of "knowledge sharing" there is the notion of "knowledge transfer" or "best practices transfer". The process of knowledge sharing may involve information technology. The literature on this subject also includes the notion of "knowledge dissemination". This notion is particularly popular in the literature related to industrial regions. Knowledge is treated as "substance" which spills over. From the point of view of a researcher who deals with processes appearing in organizations, the term "knowledge sharing" did not bring any revelations. Knowledge sharing means communication among people which is supported by a given organizational culture and aims at the process of learning. On the other hand, the verb "to share" introduces a new quality as, firstly, it relates to positive humanistic values – e.g. solidarity, and secondly, it reflects the idea of a source, which is understood as knowledge i.e. transfer of knowledge to a new recipient doesn't deprive the person who shares the knowledge of the transferred information. Thomas Davenport and Laurence Prusak introduced the idea of "knowledge markets" in order to describe the phenomenon of "knowledge sharing"⁴. The quality of functioning of knowledge market in an organizational depends on cultural and political factors.

- 4) Knowledge measurement – a set of principles and measurement models which are used in valuation of intangible assets. In the literature we can find a few dozens of knowledge measurement models. None of them gives the answer on how to measure knowledge, but it results from the nature of the subject of measurement. Knowledge can be measured

³ P. Sammons, *Buying Knowledge. Effective Acquisition of External Knowledge*, Gower, Burlington 2005, s. 80.

⁴ Za: E. Orna, *Making Knowledge Visible*, Gower, Aldershot 2005, s. 44.

on the basis of physical artifacts. Nevertheless, there is a broad field of possibilities in the creation of measuring tools.

Summary

While describing the meaning of an effective leadership, Malcolm Gladwell pointed out that: *“a leader doesn’t have to know atmospheric pressure, force of the wind or temperature. He has to know the forecast. If we focus too much on the acquisition of information, we may start to drown”*. Knowledge management should be directed towards the creation of a new discipline in organization management which departs from material resources in the same extent to which the 19th century balance departed from non-material resources. The starting points in the creation of such theory of enterprise based on knowledge should be as follows:

- a. Knowledge-worker with his/her unique expert knowledge.
- b. Resources of codified knowledge.
- c. Organizational culture
- d. Measuring and controlling tools.

On the basis of these pillars, one could start creating the theory of enterprise **based on knowledge**. Among the features of this enterprise we could differentiate:

- creating products or services with a high added value,
- high percentage of export in sales (beyond 30%),
- involving workers in publication of research results in scientific periodicals,
- high percentage of expenses for Research and Development (when compared to income),
- high percentage of expenses for trainings and other forms of professional training for workers,
- high level of use and investment in internet technologies (ICT),
- high percentage of workers with higher education, including workers holding doctoral titles,
- active involvement in networking (e.g. presence in industrial cluster, participation in international scientific programs such as Seventh Framework Program, a network of clients all over the world, cooperation with scientific institutions),
- workers’ involvement in publishing research results in scientific periodicals,
- high reputation in the environment resulting from uniqueness and innovativeness of the offered services or products,
- large number of patents filed by organization workers in the European, American and Japanese Patent Offices,
- workers and international interns,

Such enterprises will dominate the economy of well-developed countries in the 21st century.

Resources:

1. www.virtualanthropology.com
2. *Detergent can be so much more*, Businessweek, May 1, 2006.
3. W.L.P. Wong, *The Tacit Nature of Design knowledge*, Technology Analysis & Strategic Management, Abington, 12/2000, Vol.12, Issue 4
4. K.Parsaye, M.Chignell, *Intelligent Databases*, John Wiley&Sons, Inc, New York, 1989.
5. A. Niedek, *Antropologia bez znaczenia*, Wprost weekly, 23 July 2007.
6. Malcolm Gladwell, *Błysk*, Zysk i s-ka, Warsaw 2007.
7. David S. Landes, *BOGACTWO I NĘDZA NARODÓW. Dlaczego jedni są tak bogaci, a inni tak ubodzy*, Warszawskie Wydawnictwo Literackie MUZA SA