KNOWLEDGE MANAGEMENT AS CRITICAL ISSUE FOR SUCCESSFUL PERFORMANCE IN DIGITAL ENVIRONMENT

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Abstract. Knowledge management emerged as a scientific discipline in the early 1990s, but in spite of the fact that it represent a distinct contribution especially of the private sector where the concept of knowledge as a "competitive advantage of the company" and "knowledge capital" hold the sway. One of the reasons for this development has been the emergence of information and communication technologies (ICTs). This paper discusses the importance of knowledge management in companies, the possibility of management and leaders to recognize it and the key issues related to operational aspects of people in knowledge management between members of staff and members of staff and customers. Networked organization and virtual organization, as its product, create the preconditions that knowledge as a resource is continually produced and used. The essence of successful business is the distribution and increase of the amount of knowledge among employees in the organization on all levels. The knowledge that employees possess and an adequate management process are prerequisites for achieving competitive advantage.

Key Words: information, knowledge, knowledge management, information technology, digital environment.

INTRODUCTION

Access to information is one of the most important prerequisite for survival in the modern world that is characterised by global economic and political dynamics. Making adequate use of information, transforming it and creating knowledge out of it requires competence and opportunity.

Information and knowledge are crucial assets of the global society. The losers are those that do not meet market needs. The promotion of those new values of a global soci-
ety is at the wake of a global knowledge society, where knowledge contributes to advancement of quality of people's life in general.

From the standpoint of concrete business management, new understanding of the economy in particular emphasizes the importance of intangible resources and networking, as a new organizational structure. Using new resources affects the changes in the sphere of work, ownership and management.

New resources are knowledge of employees, knowledge and skills of managers to manage and exploit knowledge at all levels of an organization. Resources are becoming more spiritual (information and knowledge), not the principle of material (land, labour, capital).

Today, almost nothing can be imagined without the application of advanced information technology that is just a consequence of the proper use of knowledge in process research and development. Information technology is a tool that allows us to better locate and use existing or create new knowledge. If an individual or organization possess the right information at the right time, it gives them the possibility to react proactively and respond to change in a timely manner. However, knowledge does not reside in books, software programmes, technological solutions; they contain only information as their great values. People create knowledge, increase it, promote, implement, teach others, use it or abuse it. It is necessary to know how to use or apply knowledge properly (productive knowledge), which requires organized and systematic work on the application of knowledge to new opportunities. In order for employees to be able to use information correctly, the company needs to develop methods and ways to manage knowledge. This requires a methodology, discipline and process to convert this potential into practical operation. Failing at that, most of the available knowledge does not become productive, but will remain at the level of information.

What makes the market preponderate is just the fact that the market economic activity is organized around information and knowledge as centers of all activities. In today's market more successful economic sectors or industries are the ones which deal with the production and distribution of knowledge and information as their main object rather than those which produce and distribute goods in their material manifestation. Traditional industries, which are now synonymous with success in the international market, have restructured their operations and focused on the knowledge and good use of information as basic resources.

Drucker (Drucker, P., 2002, 76) called this new period of economic development, the new digital economy, the management revolution – whereas the period of application of knowledge on tools, processes and products known as the Industrial Revolution, the application of knowledge to work is called a revolution of productivity.

1. **Knowledge Management as an Imperative in Digital Environment**

Changes in the way of doing things, by reversing the effect of adjustment challenges companies in the region, enabled the creation of new knowledge as the only adequate resource to achieve a better competitive position relative to other market participants. These changes can be grouped into several trends that characterized the modern business in a turbulent environment:
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- Knowledge as a critical success factor for a company - linking the use of specific skills and knowledge of individuals and organizations in order to achieve a better competitive position in the market has become imperative to contemporary managers;
- The time for decision making is getting shorter - decisions that are made in real time have far-reaching consequences, so it is often necessary to react proactively. The focus is on the analytic attitude and conceptual knowledge;
- Relationships between employees are becoming more complex - using networked form of communication on the one hand allows the dissemination of knowledge, and the other reduces the physical contact and the ability to control and measure productivity of employees. The focus is on individuality, creativity, independence, a possibility of encouraging new ideas;
- Information technology literacy is a requirement - with new pre-conditions of work and life and the so-far known pattern of consumer behavior is changing. More demanding and more aware of consumer demand, changing its philosophy, its requirements are more sophisticated, and the company in a position to have to respond to individual customer requirements and anticipate a strategy that will respond to their needs in the future.

The organization and individuals often collect more information than they need to make a decision, and some information that may be of great benefit to the organization (such as the number and cause of lost consumer who are dissatisfied with poor service or poor quality) is usually not collected because it is difficult to obtain. Knowledge management (KM) allows this kind of data collection that will make it possible to reach high-quality information. It is, in fact, the most effective use of intellectual capital in the process of a business. Quality use of corporate knowledge, its location and systematization, may be a critical issue to generating new ideas and thus the complicated process of turning knowledge into better sales, higher profits and better marketing.

The most important sharing of knowledge at the corporate level, in terms of management strategy is the **implicit and explicit knowledge**. Explicit knowledge is that which is clearly identifiable and formally codified, while implicit knowledge is knowledge that employees possess and nowhere formalized. From the aspect of KM, it is more difficult to manage implicit knowledge because it is by its nature in an indefinable way (not written anywhere and formalized) and its codification and transfer require the will of the employees in order for it to be shared.

The broadest approach to this concept is a reflection on KM as a process that represents the union of three components (Macintosh, A., 1995, 29): **people, process and technology**. The goal of a modern organization is that all business processes are a process of knowledge. This starting point includes creation of knowledge, capture of knowledge, storing of knowledge, sharing knowledge with others and application of knowledge in a way that will contribute to creating added value to the organization. Value creation as the primary determinants of successful companies is the interaction effects of financial, physical and intellectual capital, according to type of activity that the company is undertaking. In companies that are fully converted to electronic business intellectual capital makes 98% of the value creation process (Srića V., 2001, 93).

Whereas in its first generation KM concentrated on the organisations and analysis of data and information, storing documents and making them available through search and retrieval,
the second generation KM focuses on people. The skills of using information purposefully, storing information as knowledge in human brains and making knowledge available in human interactions are key aspects of the largely shared present-day view of KM.

Learning is the essence of KM, changing and adapting the way of doing things to new challenges is its result. A learning organisation is aware of its assets in terms of experiences, organises its work around its experiences – bringing together the right people with the right knowledge at the right time – to make good use of good practices, and cares about developing its competence through looking for innovations. In this way a flexible, modern company becomes a learning organisation with an accepted culture of innovation, and knowledge becomes a resource that is involved in all processes of the organization that creates value for customers.

2. NETWORKED ORGANIZATION – SOURCE OF KNOWLEDGE

Social structure, competence, once stable, and now, in accordance with all visible and invisible social reconfiguration, starts work in far more diffuse, more fluid and dynamic terms. Instead of the traditional, vertically-hierarchical and homogeneous-system concept of social structure, what is now more and more discussed is the horizontal, plural-hierarchical or network understanding of the structure of society. The whole world is becoming a network thanks to the Internet, and such a network configuration of relations among actors in the economic and social activities leads to increasing flexibility, dynamism and efficiency of the whole system. The particularity of the new social order is reflected in its complexity and dynamics of organisation development.

Networked organization, as an open system and the characteristics of the digital economy, in interaction with the development of new ways of doing business creates the pre-conditions that knowledge as a resource continually produced and used. The new, networked organization, or a new way of shaping the company's business (as the company is now a term that can not be excluded and separated from the network) in the global network is developing and transforming the new features, necessary for modern ways of doing business. Organizations that base their strategy on knowledge can create competitive advantage by developing skills, abilities, competencies, products and processes that competitors can not imitate and thus create the basis for the development of new competitive advantages.

The essence of successful business is the distribution and increase in the amount of knowledge among employees in the organization at all levels. Instead of narrow specialization, a broad education (which is expanding and adapting to the needs) is increasingly being sought. This is one more reason that companies in the 21st century must become learning organizations or organizations of knowledge, and new society, a society of knowledge. Different attitude and conception of knowledge as a resource opens up many horizons to management and employees, all in order to improve customer satisfaction, and therefore increase business efficiency performance of the company. Organization development in the future will depend on whether they have enough money to invest in training and development of their employees as their greatest value. Human capital, intellectual capital, is becoming a strategic resource and taking an important place in the long-term planning in an organization.
3. FROM THE INFORMATION VALUE CHAIN TO VALUE CHAIN OF KNOWLEDGE

Knowledge Management (KM) aims to increase efficiency and effectiveness of an organization, allowing employees at all levels to use their knowledge, experience and skills, get the real information that will enable the achievement of company's objectives. KM has a very complex character, but it is the imperative of modern management.

KM aims: to improve the effectiveness of organizations by increasing intellectual specialization and ability to do the right things, to increase the effectiveness (doing the right things in the right way), to reduce rework, improve concentration and eliminate work that can be automated. The aim of the organization based on knowledge includes conegenitive learning, regeneration and sustainability.

KM provides the way of organizational adaptation, survival and increases the expertise of employees in the turbulent business conditions, despite the increasing and unpredictable changes in the environment. Essentially, it is the realization of organizational processes which requires the synergetic combination of features of information technology (data collection, information processing and knowledge creation) and the creative and innovative capacity of people.

Thanks to the dual nature of KM organization and management is being developed in two directions. The Internet and complementary technologies such as group support systems, applications to access the timing of projects, databases, audio and video conferencing primarily enable the improvement of automation, workflow and process management in the organization. On the other hand, KM uses all these technologies and their results in the creation of new and renewal of existing knowledge - a process that represents a new way of managing innovation. In this regard all business processes involve creation, dissemination, reproduction and application of knowledge in order to better organize and achieve strong synergies. This concept makes the transition from the concept of ‘information value chain’ to ‘value chain of knowledge’. It assumes connecting employees, managers and professionals across organizational boundaries in order to improve knowledge sharing, joint action and project management as part of the way everyday business processes.

Drucker believes that it is a theory that places knowledge at the center of the production process that can explain the new, information economy, the new structure of market share and value of these companies, economic growth and innovation. New knowledge is the key to success and competitive advantage of the company and the management is to identify, properly distribute and use it in business. In the business process it is recognized through three phenomenal forms (Drucker P., 2002, 135):

- improving processes, products, services;
- exploitation – continual use of existing knowledge for the development and elaboration of new and different products, processes and services;
- genuine innovation (that proactively affect the needs and customer satisfaction through new product and service, with features that previously did not exist).

All three forms or methods of application of knowledge should not be separated because each is equally indispensable, and their synergistic effect it is a qualitative difference that defines success as opposed to the failed company! It is very important to note that the amount of knowledge (quantitative aspect) is not nearly as important as the productivity of knowledge (its qualitative impact).
4. INTERNET AND INFORMATION TECHNOLOGY IN KM FUNCTION

KM is a strategic use of collective knowledge of the company in the aim of making profits and increasing market share. The value of knowledge (ideas, concepts and know-how) is produced by electronically collecting, storing, distributing and directing corporate knowledge.

The concept of e-business, Internet-based platform enables real-time personalization. It actually means managing relationships with customers in real time, or more precisely personalizing - focusing the company's needs, behaviors and intentions of individual customers and meeting customer needs, as they want when they want.

The holistic approach to KM presupposes integration of many applications, software, and platforms into a unique model that brings multiple benefits to the company.

Customer Relationship Management (CRM) aims at managing the interactions between an organization and its existing and potential customers as a relationship, instead of individual unrelated transactions. CRM software enables the organization and its employees to "know" its customers via their profile (pattern of past transactions), and to provide them with the most fitting services. Leading CRM systems embed analytical solutions, that facilitate performance tracking of customer-facing processes across the enterprise.

Content management (and workflow) systems are designed to make users more knowledgeable (or at least more informed) by offering on-line access to many of the organizations' documents. Intelligent content management systems are developed to overcome the difficulty of finding the right information, by supporting document categorization, by tracking document use, and by considering context.

Greater use of expert systems based on the Web, such as artificial intelligence impact the change of organizational structure, staff reductions (technical staff), decentralization and increasing the powers and responsibilities of each employee. The application of new technology and business process reengineering realized impact on the knowledge and skills of employees. Hence there may be a need for training, retraining, relocation or even dismissal of a certain number of employees. While this is the price of change, the benefits that e-business brings are still much higher at the global level. One of the main benefits is to increase the knowledge of the individual and his independence on one hand, and the company's ability to use the knowledge and expertise of its employees in order to achieve better business results. In this way, knowledge which remains in the company is created, and it will be adopted, shared and influence taking a concrete action and value creation.

5. RISE OF KNOWLEDGE WORKER AND KNOWLEDGE LEADER

The process of adopting KM and construction plan and strategy for the implementation of KM is very complex. For its implementation, it is a key requirement to create the organizational culture that will support and sustain the cooperation and confidence of all employees. Primarily it is important to change the approach to work that employees have, influence the reduction of fear and resistance of change, creating a positive climate that is the condition for spreading and sharing knowledge within the organization, and thus enable the measurement of the value that is created in the organization. What is essential for this complex process is the manager, the leader, who, thanks to his/her special characteristics and skills, helps to provide a smooth process of KM in the organization and its
transformation into a usable resource. All this requires new leadership skills, which are increasingly changing from the classic command and control to coordination, networking and routing. Specifically, the success in the implementation of the knowledge program required the so-called knowledge leader, who (with his characteristics, skills, knowledge and energy) directs the organization towards a successful KM. Such a leader bases his/her management on strengthening trust between employees and their constant improvement and development, teamwork, creating and sharing knowledge, encouraging innovative solutions and creativity.

What is characteristic for KM is the problem of measuring knowledge worker productivity. Probably the biggest contribution of management in the 20th century is fifty times increase in the productivity of production workers, or 3.5% per year. It is believed that the greatest economic and social achievements of the 20th century are mainly based on this increase. The biggest challenge for management in the 21st century is how to measure the productivity of knowledge workers. The manager is, as opposed to production workers (who were not the owners of the means of production) the owner of his knowledge and his job is specific and creative, so it is very difficult to control, monitor and manage it (Sriča V., Muller J., 47). For these reasons, motivation and teamwork becomes the tool of the future of modern managers, as well as their ability to coordinate, share responsibilities and involve employees in decision-making. The facts which confirm the importance of management skills and teamwork daily are the increasing growth in market value of high tech companies (such as Microsoft, Google, or Cisco Systems), whose market value are 20 times greater than the book.

Numerous studies suggest that competitive companies in the West annually invest between 3 and 5% of their income on the education of their employees. In the case of a critical situation, such as changes in strategy, process re-engineering, implementation of quality improvement and so these investments are much higher. At the same time companies expect their employees to spend more time on their approach to education. For example, the company Motorola expects each employee to spend at least 5% of their work time on education, because knowledge acquired in the formal education system is not permanent and is relatively fast becoming obsolete. It offers its employees 40 hours of education per year with a tendency of further increase. Of course the level and amount of new knowledge is different from employee to employee, and so the engineers think they should spend 10% of working time expanding their knowledge in order to keep up with innovations. Managers, unlike all others, have to spend 20% of working hours per year on their own education, to prevent obsolescence. There is a rough estimate that American companies are investing in the education and development of their employees as much money and effort as all the universities and colleges put together, so for example IBM spent more than $ 750 million on the education of its employees in 1987, which was more than the total revenue of Harvard that year.

The situation is similar in other developed countries, where education is becoming the most important investment in their future development, a place where the company is constantly learning, educating and developing.

Leadership skills (as an individual, conceptual skills and knowledge) hold the primary position in the secondary activities of KM as a fundamental characteristic of organizational culture focused on coordination, control and performance measurement and qualification of each of the primary activities.
Successful companies - 3M, Best Buy, BMW, BP Amoco, Canon, Fuji Xerox, Hewlett Packard, Intel, Nokia, Siemens, Royal Dutch Shell, Sony, Toyota, Unilever and Xerox, have over time turned into so-called corporate leaders, with the expressive characteristics of leadership skills (Cavaleri, S., Seivert, S., Lee, W.L., 2005, 31). Some of these companies such as 3M, Toyota and Xerox, have become little more than companies that use KM, they transform themselves into KBO - Knowledge Based Organizations. What is important (and as the above authors emphasize in particular) is that the leaders in this knowledge-based companies do not strive to manage knowledge within their companies, but look for a way, which is based on the experience and how knowledge-based methods (knowledgeably manage) are managed, to achieve competitive advantage. This is the basic characteristic of a leader of knowledge - transforming their organizations into knowledge-based organizations that will use the knowledge to achieve results which are not easily applicable or which the competition can easily reach.

Leaders of knowledge need to integrate KM with the knowledge development and have to be sure that knowledge is embedded in the activities, management systems and infrastructure of the organization. Leaders of knowledge as a major asset and resource of organizations recognize the skills and initiate and support the processes of conquest, creating, storing, sharing and applying knowledge, clearly stimulate innovation and learning and using a clear, open, efficient and effective communication.

The leader in a changing and complex business environment must be able to see the extraordinary potential of an employee in his staff, to promote radically different people, not be afraid of threats and provide opportunity for each employee. In an environment where the skills of the individual are valued and rewarded, it is important to establish a culture that recognizes the implicit knowledge and encourages employees to share it.

This model of leadership in literature is increasingly called leadership background - leadership that creates the organizational culture in which different employees in different situations, depending on the demands and needs of the environment, their aspirations, abilities and skills, impose themselves as the leaders on the rest of the company and lead in the direction needed. This is the most radical, but the best benefit of the KM process, from the aspect of the company, as it allows knowledgeable workers to come fully to the foreground, to use management processes to become visible, and make knowledge available to everyone in the organization. All this also contributes to the added value to the organization, effective and efficient decision-making in the extreme form of added value for consumers, which in turn differentiates the company from the competition in the market.

The ability of managers and leaders of knowledge particularly come into focus in the process of managing the implicit knowledge. The biggest problem in modern business conditions is the possibility of fluctuation of employees from one organization to another (especially when it comes to competing companies) and the transfer of implicit knowledge which is part of the value of the organization in which the employee was. This in a way once again brought the very essence of the duality of the new, digital economy.

Networking as a primary form of business may be the answer to this question and the solution is more efficient codification of tacit knowledge into explicit and at the same time its division within the organization, and then the outside (external). In this case, the benefits of information technology are just used in the further expansion of knowledge and its transformation into external knowledge. Separate forms of acquisition of knowledge that have emerged thanks to the Internet and virtual organizations as a result of this
kind of business is the process of creation and acquisition of knowledge in so-called strategic alliances. Although they are formed on a project basis and for a limited time frame, they have a great potential for gaining new knowledge. The experience of companies about who to cooperate with and which have already done similar businesses and their intention to knowledge is almost a free source of information and knowledge to other companies that further the limits of knowledge. This of course can have a negative connotation, especially for large conglomerates and organizations because some participants in the chain, and some partners may use the association for business espionage.

Actually, an online community of companies involved in complementary activities enabled the systematization and faster and better utilization and greater availability of necessary knowledge. It is worth it for this kind of cooperation and exchange of knowledge is an organized system of trust, loyalty and credibility of the participants. Basic characteristics of leaders who successfully manage knowledge processes of knowledge sharing are based on ability and skills of coordination, motivation, with emphasis on cooperation, trust and reliability.

The focus of a company is increasingly transferred from products and services to resources - knowledge and innovation as the specific possibilities offered by networked system operations. Knowledge is constantly networking, expanding, creating, creating new value for consumers, and companies are increasingly focused on its success and differentiation from the competition based on greater expertise, management and marketing. Creative approach to the process of KM always results in increased efficiency, higher productivity and increased revenues in each business function.

In the above context, the following tabulation (Figure 1) considers the importance of KM in terms of efficiency, effectiveness and innovation:

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Impact on organizational processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficiency</td>
<td>Improving the quality of services and products (for consumers)</td>
</tr>
<tr>
<td></td>
<td>Better project management</td>
</tr>
<tr>
<td></td>
<td>Better preparedness response to external events</td>
</tr>
<tr>
<td></td>
<td>Increase of customer satisfaction</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>Reducing production costs relative to sales volume</td>
</tr>
<tr>
<td></td>
<td>Shorter preparation of operations</td>
</tr>
<tr>
<td></td>
<td>Faster decision making</td>
</tr>
<tr>
<td></td>
<td>Faster delivery of products</td>
</tr>
<tr>
<td>Innovation</td>
<td>Increase in the percentage of new products and services</td>
</tr>
<tr>
<td></td>
<td>Larger number of patents per employee</td>
</tr>
<tr>
<td></td>
<td>Encouraging innovation and change rather than passive tracking competitors</td>
</tr>
<tr>
<td></td>
<td>A number of ideas in a knowledge management</td>
</tr>
</tbody>
</table>

Fig. 1 Knowledge management in terms of efficiency, effectiveness and innovation
Consequently, a successful KM process allows companies the following benefits:

- The use of innovation by encouraging the free flow of ideas;
- Reduce timeframes required for the reaction to changes in the environment - rapid adaptation;
- Multiple use of existing knowledge influences the elimination of redundant and unnecessary processes - reducing costs;
- Increased revenue faster and adequate placement of products and services in the market;
- Reduce employee turnover by recognizing the value of employee's knowledge and adequate remuneration;
- Creating a database of collective, organizational knowledge of the company - control knowledge in all areas of action and use in practical applications, problem solving, response to changes in the environment, the needs of users;
- Increasing quality of services and reducing the time needed to diagnose problems and company's reactions (of finding an appropriate solution) using the 'deep knowledge' of employees, business partners and customers.
- Increase the value and usefulness of the total knowledge that the company has.

The success of the whole process of KM requires the orientation of the entire company in the process and involvement of all levels. This imposes the need to increase their knowledge and competence management at all levels.

**CONCLUSION**

As the global aspect of the overall flexibility and efficiency of economic system is reflected through the success of individual companies in the world market, it is therefore necessary to be continually investing in scientific development and education on one hand and technological progress on the other.

The affirmation of creative and original individuals and whole systems can be independent of the states in the process of involving and use of all the advantages of the new economy. That is the specificity of networked, new information economy that provides opportunities for all participants. In the EX-YU market, a wide business practice confirmed the first signs of 'awakening', with more and more clear orientation to innovation and knowledge as the factors of future competitiveness.

In these conditions, which require adjustment to the new situation and change the paradigm of modern management, the manager learns and transforms his/her activities into new forms of leadership with an emphasis on cooperation, the use of resources and willingness to constantly change the management process. The first step of being included in the process of KM is obvious as most companies are presented on the Internet, with dynamic web pages, and individual companies, such as those in telecommunications, banking and tourism use a variety of applications, software and integrated platforms. In large part this process is taking place due to the fact that most of the companies were privatized and are now part of large international companies. In that process, the transfer of information, knowledge and use of e-business models are becoming ever greater. All this significantly affects the development of new ways of managing the entire process of conducting business.
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UPRAVLJANJE ZNANJEM – KLJUČNI FAKTOR USPJEŠNOG POSLOVANJA U DIGITALNOM OKRUŽENJU

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Iako je koncept 'upravljanje znanjem' poznat samo poslednjih 16 godina, on predstavlja poseban doprinos privatnog sektora razvoju ekonomije jer znanje predstavlja "konkurentna prednost i kapital preduzeća". Jedan od razloga za ovakav razvoj bila je pojava informacionih i komunikacionih tehnologija u posljednjoj deceniji. Ovaj rad ukazuje na značaj upravljanja znanjem u preduzećima, mogućnost menadžera i lidera da ga prepoznaju i istražuju ključne činjenice koja se odnose na operativnost ljudi u razmjeni znanja među zaposlenim, i od zaposlenog ka krajnjem korisniku. Umrežena organizacija stvara preduslove konstantnog stvaranja i korišćenja znanja kao resursa. Suština uspješnog poslovanja postaje distribucija i povećavanje znanja među zaposlenima u organizaciji, na svim nivoima. Znanje zaposlenih i adekvatan proces upravljanja su preduslov postizanja konkurentne prednosti.

Ključne reči: informacije, znanje, menadžment znanja, informacione tehnologije, digitano okruženje.