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Review paper

THE ROLE OF KNOWLEDGE MANAGEMENT IN INCREASING ENTERPRISE'S INNOVATIVENESS

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Abstract. *In the contemporary business world, characterized by dynamic and continuous changes, the competitiveness of enterprises depends on the speed by which they introduce new, superior products/services and innovate various business processes in comparison with rivals in the market. The competitiveness of enterprises is determined by their flexibility and innovation ability. Knowledge, as a resource, and knowledge management, as the so-called meta-resource, are the factors that determine innovation capacity of an enterprise. The aim of this paper is to point out the importance of developing and implementing an effective system of knowledge management in the modern enterprises for innovativeness. This is because knowledge management affects better utilization of enterprises' resources for creating innovations and increasing their absorptive capacity, i.e. increasing the ability to use external knowledge in the function of improving the level of previously acquired knowledge.*

Key Words: *knowledge, knowledge management, innovativeness, competitiveness, enterprise.*

INTRODUCTION

Innovations are key drivers of growth and development of modern enterprises. They help organizations develop in accordance with the changes and requirements of their environment in order to increase business efficiency and maintain business activities in the market arena. In order to provide resources that will be based on competitive advantages, enterprises need to formulate and implement new business strategies, that are adapted to environment requirements and strategies of innovation products and processes. Innovation involves the use of new knowledge (internally created and/or acquired externally) in order to improve the performance of products, services, processes, system of work, and creating opportunities for growth. In other words, innovation is a process focused on creating new

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knowledge for the development of commercial solutions (Herkema S., 2003). The process in which knowledge is acquired, adopted, and shared with the aim to create new knowledge (which improves products/services) is considered the innovation process. The sources of this knowledge are new technologies, the results of experiments, the outputs of creative research and information from competitors (Dess G., Lumpkin G. T., Eisner A. B., 2007, p. 435). Innovation is, in fact, a combination of ideas and knowledge that brings positive changes in organization of work, competing in the market and meeting the demands of key stakeholders. If we want to achieve successful innovation, it is necessary to provide new combinations of basic production factors (Chen J., Zhaouhui Z., Xie H Y., 2004), as well as development of innovation knowledge-based abilities and application of an effective knowledge management system. Thus, the realization of the innovation process involves knowledge-based activities which are essential in creating capabilities for product development (Cardinal L. B., Allesandri T. M., Turner S. F., 2001). Innovativeness of an enterprise and creating innovations depend primarily on its tangible and intangible resources, as well as its capabilities and competences. Competences of an enterprise, together with the intellectual potential of its managers and employees are its intellectual resource. Different enterprise's competences determine its innovation activity and, generally, its innovativeness. However, due to dynamic changes in consumers' needs, the increasing pressure of competition and rapid technological development, innovation process and innovation as a result of this process is becoming increasingly complex and an enterprise's innovativeness is more difficult to achieve. The complexity of innovations also requires organizations to increase the volume of knowledge/information which is the basis of their creation. Adequate knowledge management may contribute to the enterprise's innovativeness as a vital business performance for long-term business success.

KNOWLEDGE AS A KEY RESOURCE FOR CREATING INNOVATION

In the literature in the field of knowledge management (Steward A. T., 1997, p. 139; Dalkir K., 2005, p. 8) and intellectual capital management (Brooking A., 1998, p. 144) we can find different classifications of knowledge. It is mostly viewed as explicit and tacit knowledge (Nermien A.A., 2003, p. 84) and as market knowledge and technological knowledge (McKelvie A., 2007).

Explicit knowledge is articulated in formal and systematic language. It can easily be transferred, and shared to other entities in the form of data, specification, manuals, etc. It can be found in plans, projects, patents and databases in an enterprise. It is stated that it is formal and documented (Nonaka I., Toyama R., Konno N., 2000). It can easily be downloaded and applied, but it has also been incorporated into products, technical specifications, drawings or designs. An enterprise, which can quickly transfer explicit knowledge through the organization, creates competitive advantage over the rivals that have a slower transfer.

In the context of enterprise knowledge or organizational knowledge, *explicit knowledge* is viewed as information that is collected in the easiest way and transmitted by information technology (IT). Because explicit knowledge is coded, i.e. recorded by symbols and numbers, the management of this knowledge is often realized by using IT. Access to information through information systems accelerates the flow of information and, in that

way, it can increase operation efficiency. Therefore, the primary interest of an enterprise, which is successful in the market, is to invest in the development of information technologies and systems. Effective and high-quality IT infrastructure can reduce the risk of unwanted "losing" of knowledge from an enterprise. On the other hand, if you want to support cooperation strategies with the help of IT, explicit knowledge can easily cross "borders" of an enterprise. By imitating, explicit knowledge can quickly be moved to competitors, and therefore, it is important to protect it in the form of intellectual property (Krstić B., 2009, p. 101).

Tacit knowledge is personal knowledge (Slavković, 2008). It includes knowledge of employees and managers in an enterprise, i.e. their experiences, intuitions, ideas, visions, skills, abilities, values, etc. Tacit knowledge is an inherent part of personality of each member of organization and is not recorded anywhere in the enterprise. In fact, it has not been formal and documented. Therefore, it is very difficult to articulate, express and transfer it to others. A much greater problem for organizations is to manage the tacit knowledge in relation to explicit knowledge and because of that, it is often unused. Tacit knowledge is transmitted by communication and interaction among individuals or organizational groups. For its transfer to others, the willingness of the person who has it is necessary. Tacit knowledge that an individual previously acquired and improved by practice and education "leaves" a business system when that person goes away from an enterprise. This may have significant consequences on the functioning of an enterprise. The solution to this problem is, to some extent, in the codification of tacit knowledge. In other words, tacit knowledge becomes explicit knowledge by activities of codifying. Tacit knowledge, which an individual takes from an enterprise can be protected by know-how (trade secret) or by a contract between the employee and the employer. This contract prohibits working in competitive firms, establishing business in the same industry and the like. Because knowledge of employees is the result of their experience and practice in an enterprise, it is not easily collected, shared and used by the enterprise (Krogh G., Nonaka I., Aben M., 2001).

Market knowledge implies knowledge (information) about wishes and demands of customers, their needs and their business processes. The more you know about customers and markets, the greater the opportunities for invention and innovation. In addition, active monitoring of market signals is very important because it provides opportunities for creating innovation. Market knowledge is useful because: a) it provides information about the problems and requirements of customers; b) it facilitates estimation of the value of new product/services and of other changes in the market; c) it facilitates and improves future communication among an enterprise and its buyers (customers).

Technological knowledge refers to knowledge of manufacturing or production methods and tools. It includes the education level of employees, their work and technological experience. It also includes the adopted technological knowledge which can be acquired through research and development (R&D), engineering, implementation of scientific projects and similar activities. This type of knowledge is more difficult to copy or find in competitive firms. This is because technological knowledge is harder to transfer; and it is developed by certain investments rather than on the basis of collection of generally available knowledge. Possession of technological knowledge is important for identifying opportunities and creating innovation for several reasons: a) increasing capabilities of an enterprise to assess reliability of new technologies and to assess the opportunities by expertise in creating an optimal product range; expertise in realizing the production process

and; b) achieving more competitive i.e. lower prices of final products or services; c) understanding the competitors' actions faster and better, and g) creating inventions which actually represent new opportunities and chances for success in the market.

Development and application of new knowledge is the basis for innovation, which confirms the strong link between knowledge and innovation. Enterprises may possess knowledge, as an intangible resource, and transfer it from one organization unit to another, or even to other enterprises. In addition, enterprises can combine knowledge resources and, in that way, add new knowledge to the existing knowledge. Therefore, knowledge is considered a transferable and supplemental resource that is essential for creating innovations.

In markets that are rapidly changing, knowledge as a resource has the added value or benefit, because in such conditions it has a higher level of general applicability compared to other resources. Frequent changes in the market provide many opportunities for innovation. In dynamic markets, increased knowledge is associated with superior business performance. However, enterprises that operate in these markets, cope with the problem of rapid outdating of knowledge "stock". Namely, organizational knowledge can be important for a certain period and under certain circumstances of competing in the market, and after that, the enterprise necessarily acquires new knowledge. This means that the enterprise constantly has to create and acquire information about market and technology, if it wants to create the preconditions for creation and implementation of innovations. In dynamic markets, created and realized innovations become outdated faster. These innovations are current for a short-term period only, because life cycles of products and technologies are shorter, and there is greater uncertainty regarding their sustainability in conditions of severe competition.

KNOWLEDGE MANAGEMENT AS FACTOR OF CREATING INNOVATION

Innovation builds on the activities of knowledge sharing. Here the emphasis is on tacit knowledge. Dialogue and frequent interaction between individuals or groups in organization form the basis for new combination of knowledge and creation of innovations. Due to this interaction, opinions are shared and the atmosphere of cooperation is created, which is very useful for transfer of tacit knowledge. Acquiring knowledge from consumers, suppliers and strategic partners also represents a valuable source for innovation programs and strategies. Cooperation among organizations plays an important role in sharing tacit knowledge, which positively affects innovation capability (Plessis M., 2007).

Because tacit knowledge is very important for innovation, it is also in the focus of knowledge management. In particular, routine work processes often contain tacit knowledge and they are often a challenge for managers of knowledge resources and knowledge management system in enterprise. Tacit knowledge is current if, for example, creativity techniques (brainstorming, for example) are institutionalized in the enterprise, i.e. if ideas are shared in working meetings (working groups). Also, the common practice of various organization units within the enterprise can help in sharing tacit knowledge among them. However, the problem is that tacit knowledge is always changing and growing with the adopted new skills and experience of individual, so it is difficult to capture and record it. However, this kind of knowledge has a great value if properly used, because, as a rule, it

adds value to the enterprise. Therefore, key individuals (experts) in the enterprise are an important factor for its competitive advantages. In this sense, the *ability of an enterprise to increase tacit knowledge and to create preconditions for sharing among employees, within an organizational unit, and among organizational units, is the main task of a knowledge management system* (Garry L., Adams G. L., Bruce T., Lamont T. B., 2003).

A special challenge for management is balanced management of explicit and tacit knowledge. This is in terms of the need to create larger organizational knowledge, by codifying tacit knowledge into explicit knowledge (Zack, H. M., 1999) on the one hand, and leaving knowledge in "the heads of employees", on the other. In addition, the goal of knowledge management (with the help of IT and systems) is to prevent the loss of skills and core competences of enterprise, because they are also essential in representing knowledge. However, when the IT infrastructure is only installed, there is a danger that social interaction between organizational units of the enterprise (which share the knowledge) is left to a certain situation and individual preference. Knowledge management system that is supported by IT, together with appropriate management of human resources and other intellectual resources helps solve these problems and supports the creation of social networks in the enterprise, as well as outside the enterprise with external stakeholder in business environment. Skilled and competent employees are generally more willing to contribute with only one part of their knowledge that can be codified and that they are ready to transfer. If the employee is not encouraged, motivated, or even rewarded to allow access to his knowledge, the enterprise cannot use it and incorporate it into future organizational knowledge base. In this context, knowledge management as a system in an enterprise becomes more important. Knowledge management is considered as a valuable tool and its adequate implementation can be in the function of improving the processes of creating and sharing knowledge that are, in fact, a key for innovation (Swan J., Newell S., Scarborough H., Hislop D., 1999).

In enterprises which create knowledge, each employee is responsible for creating knowledge, and then his personal knowledge is transformed into organizational knowledge, which then becomes useful for the organization. It is essential that personal knowledge becomes available to others, and that availability constantly exists at all levels in the organization. The enterprise or its organizational segment is not only the user, but also the knowledge creator. Knowledge creation takes place at three levels: individual, group, and organizational. Creating knowledge includes the ability of an enterprise to "make" new knowledge and expand it across various levels in the organization. This new knowledge is materialized in new products, services and business processes. The creation of organizational knowledge is important for a variety of innovations in enterprises in the future. However, the uncertainty in the business environment requires creating knowledge in enterprises and its external acquisition. A modern, flexible enterprise should exploit knowledge that is created externally from suppliers, costumers, competitors and external experts, but also successfully create information and knowledge, whereas the members of organization are carriers of innovation. The process of organizational creation of knowledge should be continuously improved. In this regard, it is essential that the enterprise has the ability to recognize the required type and kinds of knowledge which should be developed in the future in order to be successfully competitive in the market.

Knowledge sharing among individuals in an enterprise is a very important part of the learning process and creating a basis for realizing innovation. Modern communication

technologies (the Internet) led to the so-called knowledge networking. It is a process of sharing and distribution of knowledge among employees, teems, groups, where intensive communication not only expands present knowledge, but also creates new ideas. Knowledge can be improved by organized communication and joining together individuals with different competences and professional interests. Their common engagement on a project can generate many high-quality ideas that otherwise would not have been reached. In this process, employees who are ready to change and accept new insights and experiences are essential. Emphasizing the development of capabilities of members of organization for knowledge sharing is essential for its success in realizing operational activities and achieving strategic goals.

Enterprises that succeed in developing the ability of knowledge sharing, as a rule, have developed a knowledge management system that positively contributes to achieving their business goals. Sharing knowledge is the most challenging segment of knowledge management, because the knowledge that individuals in organization have is often used as a mechanism of supremacy in competing for work position, greater compensations (wages and bonuses), better status and great power in the organization. Therefore, the development of knowledge sharing capabilities among individuals, and among organizational units (departments and divisions), is a challenge for the management of an enterprise. In order to address this challenge the knowledge of an individual cannot be ignored or considered less important. In particular, the management must develop a mechanism of motivation and point out a clear business reason for knowledge sharing. Absorption and sharing of knowledge are more successful if the members of the organization (teams) are close and respect and understand each other. Some theoretical approaches related to the implementation of strategies for knowledge management, mostly focus on the implementation of informational technologies. Knowledge sharing activities cannot only be improved by IT. Knowledge management is primarily an organizational tool for problem solving which can increase the success of an organization in analyzing, mapping, examining and exploiting knowledge. It is therefore necessary to focus on both individual and organization issues of knowledge management.

In the aim of determining the impact of knowledge management on innovation activity of an enterprise, there is a need for a closer look at the instruments for achieving innovation processes related to transformation and combination of knowledge as its key input. In this regard, it is considered that there is a positive influence of knowledge management on successful usage of resources (physical, financial, human and other intellectual resources) for the creation and implementation of innovations in an enterprise. More precisely, knowledge management should improve the use of intangible resources (knowledge, primarily) that will further contribute to a better use of tangible (or material) resources in order to create innovation in an enterprise. Knowledge management is therefore treated as a specific "meta-resource" of the enterprise, which allows management to create potential for increasing effectiveness and efficiency of using other, available resources in the enterprise (Krstić B., Vukadinović D., 2008).

Accumulation of different resources does not contribute only to market success, but also to their effective and efficient usage. The resources are basis for building competitive advantages only when used across business processes (Ray G., Barney J. B., Muhanna W., 2004). Therefore, knowledge management can be treated as a specific process for improving opportunities and capabilities of enterprises. Knowledge management as a

"meta-resource" should affect improving the ability of evaluation and exploitation of external knowledge. The absorption of this knowledge is in the function of increasing the level of the existing knowledge in organization. In addition, knowledge management is in the function of creating new resources for innovation implementation and establishing cooperation among individuals and organizational (or business) units for their realization. Knowledge management is, therefore, contained in the internal system of creating and applying innovations in enterprise (Bergeron B., 2003). Because of that, it is relevant to emphasize the roles of knowledge management in developing innovation capacity of enterprise.

ROLE OF KNOWLEDGE MANAGEMENT IN DEVELOPING THE INNOVATION CAPABILITY OF ENTERPRISE

Innovation rarely includes knowledge from one area only. It mainly involves the creation of new opportunities through combining different sets or knowledge areas. Therefore, innovation is said to be a process of considering and elaborating knowledge and ideas in the aim of creating successful products, business processes, activities and services. Combined knowledge can be incorporated in the experience of various members of the organization or it may be a common result of market, technology, and competition research. In addition, as already highlighted above, knowledge may be in an explicit form or encoded, and in that way, others can have access to it, use it, enhance it, transfer it to others, etc. It may also be in the form of tacit knowledge, so that it is known, but it is not recorded and expressed in words, symbols, formulas, or otherwise. However, the process of joining these different sets of knowledge into successful new products, business processes or business activities, occurs very often under the influence of unpredictable factors and with an uncertain outcome. In fact, sometimes one cannot assume what the result of combining knowledge will be, and how one can exactly get to that desired result. In such a situation, the function of knowledge management is to reduce uncertainty (Tidd J., Bessant J., 2005, p. 552), regarding the final effect.

The most important roles that knowledge management plays in improving innovation capability of an enterprise are: a) Codifying and sharing tacit knowledge; b) Acquiring and sharing explicit knowledge; c) Enabling cooperation within and outside the enterprise; d) Integrating of knowledge; e) Providing availability of knowledge, and f) Creating organizational culture based on knowledge and innovation.

The first important *role of knowledge management in building innovation capability is in codification and sharing of tacit knowledge*. Tacit knowledge is critical for the innovation ability of enterprise, because it involves specific practices that are difficult to copy from competitors. The complexity of enterprise (as a business and social system) and a unique past of an enterprise make this knowledge difficult to copy. Sharing tacit knowledge as an input for innovations is especially important in the development of areas of business activities, i.e. products /markets or industries in which explicit knowledge is not dominant, such as, for example, biotechnology. Innovators in this field combine explicit knowledge with complementary resources, such as multi-functional teams and capability of learning from practice. In situations where a lot of tacit knowledge is used in innovation process, cooperation among teams is essential. These interactions generate skills and

routines that create novelty, inventions and innovations. However, knowledge in these "recipes" is not always codified, but often stays within the skills and competences of team members. Knowledge management helps in availability of tacit knowledge, and then, in its codification.

Knowledge that is not in explicit form is difficult to disseminate and apply in the innovation process. Initially, organizations are not aware of the volume of tacit knowledge, which is available to them and they do not have developed mechanisms to access it. Knowledge management can make tacit knowledge available, through understanding of which tacit knowledge is available, for instance, through using the knowledge base that contains the expertise of employees. Also, it helps codification and conversion of tacit knowledge into explicit knowledge which is necessary for future innovation processes. Knowledge management can play a key role in facilitating cooperation, which, in turn, can help in sharing of tacit knowledge.

Another key role of *knowledge management in development of innovation capability of enterprise is in collection and sharing of explicit knowledge*. Although explicit knowledge does not play a dominant role in innovation process as tacit knowledge does, because it is easier to access, it is, nevertheless, an important component of innovation. In technologically advanced enterprises, explicit knowledge is dominant in the process of research and development, where it combines with existing tacit knowledge. These processes require the ability of converting tacit knowledge into its explicit form.

Innovation is a process that combines existing knowledge in new ways. Knowledge management can play an important role in facilitating access of explicit knowledge, which will be used for re-combination in new ideas (for example, clearly structuring the knowledge base). Knowledge management, in fact, can ensure that the explicit knowledge (that is used as input in innovation process) is collected internally and externally. Finally, knowledge management ensures effective use of knowledge, because it determines defects and gaps in the base of explicit knowledge that can negatively affect the innovation process in an enterprise.

The third crucial *role of knowledge management is reflected in providing cooperation within and outside the enterprise*. Business cooperation can be seen as the ability of customers, suppliers and employees to share knowledge within and across organizational boundaries. This practice contributes to the achievement of a common business goal that will bring benefits to all parties. Both internal and external cooperation among organizations has a particularly important role in transfer of tacit knowledge and creation of know-how in enterprises. The stronger relationship among the cooperating partners, the greater the transfer of tacit knowledge is (Plessis M., 2007). Collecting tacit knowledge from partners can reduce risks and costs of innovation process. In that way, cycle of innovation development can be shortened and, in that way, ensure effective innovation.

In business cooperation, formal relations among partners give way to informal relationships and building their mutual trust, so that effective flows of knowledge are created. Innovators need to find the necessary information and knowledge from professionals through informal networks, because valuable knowledge is often available only in implicit form, and cooperation is an efficient way to reach the required knowledge. Experience from business cooperation positively affects the enterprise's ability to recognize and understand the mechanisms of collection, interpretation and diffusion of knowledge, which increases the efficiency of its transfer.

Knowledge management can facilitate the cooperation through technological platforms and tools. In this way, cooperation allows sharing knowledge within communities, such as internet forums. In addition, knowledge management uses other mechanisms for cooperation, such as competent groups. Tacit knowledge is undoubtedly an important element in the innovation process. Therefore, knowledge management plays a key role in ensuring tacit knowledge sharing through business cooperation, as well as coding tacit knowledge into its explicit form and enabling reuse of knowledge in different contexts and purposes. Finally, knowledge management provides processes for collecting, sharing and exploiting knowledge, which are gained from arrangement of business cooperation.

The fourth *important role of knowledge management systems is integration of knowledge* in an enterprise, which allows its future sharing and exploiting. The integration of knowledge implies that knowledge can be shared, developed, and made available at the particular time and at different levels of organizational structure of enterprise (Chen J., Zhaohui Z., Xie H. Y., 2004). Without effective knowledge management to support the integration of knowledge, the organization runs the risks of under-using knowledge as a resource of innovation. The potential benefits of knowledge cannot be achieved without integration of knowledge, because knowledge then rarely subjects to the insight and adequate understanding (Baddi A., Sharif A., 2003). Mentioned authors find that potential contribution of knowledge to innovation cannot be fully realized without prior connectedness and adaptation of knowledge, i.e. its integration, which provides availability of important business information at the right time. Integrating knowledge may be relatively easy, but difficulties may arise while using this connected, permeated knowledge. However, new, valuable knowledge for future creation of innovation comes from the process of knowledge integration. Enterprises that integrate different areas of knowledge make assumptions about innovations.

The fifth *role of knowledge management is reflected in providing availability of knowledge that is required in the innovation process*, i.e. knowledge that is necessary for innovation teams (Cavusgil S. T., Calantone R. J. Zhao Y., 2003). This is important for reducing the risk and cost of innovation. Organizations use activities and knowledge management tools, such as scanning the business environment, benchmarking, internal network, and databases across enterprise, in order to gain knowledge and make it available (Adams G. L. Lamont B. T., 2003).

Finally, the sixth identified *role of knowledge management that is relevant for the development of innovation capability is creating the innovative culture based on knowledge*. Regardless of how efficiently knowledge management system is used, organizations need a culture that promotes creativity, in order to actually succeed in generating ideas, which stimulate innovation. Two barriers of organizational culture may often prevent or hinder creativity. The first barrier is risk aversion, because constant fear of failure leads to a high level of caution. Other cultural barriers in an organization are prejudices of employees about novelties that need to be introduced or realized. These prejudices are often related to ideas based on existing know-how. In cultures where innovation and creativity are appreciated, using other people's ideas or their previous work can be considered unfair and unprincipled even. Reuse of knowledge should not be supported only by values of organizational culture in an enterprise, but also by adequate procedures and practices. Reuse of knowledge has a very significant impact on innovation.

Knowledge management on the basis of implementation of values of innovation culture can encourage creating and sharing knowledge, as well as various forms of coopera-

tion. Knowledge management, also, creates a culture in which the importance and values of knowledge and its exploitation are identified and transferred across organization. Such a culture encourages the processes and programs based on knowledge, such as innovation. Building up an innovative culture contributes to the innovation management and continuous increase of number of innovations and contributes to their successful realization. Innovative culture can be defined as "motivational milieu, which stimulates innovative and creative thinking" (Krstić B., 2009, p. 128). It creates a sense that every idea that brings innovative change is extremely valuable. The wealth of an enterprise includes its ideas that are transformed into innovations that build up its competitive advantage.

IMPORTANCE OF KNOWLEDGE MANAGEMENT FOR INNOVATION CAPABILITY OF ENTERPRISE

Knowledge management is very important for the innovation capability of enterprise, which is a precondition for its strengthening and endurance of competitors' pressures. Increasing the speed of realizing innovations, enterprises become more efficient. Therefore, strategic management and particularly operational management in an enterprise are increasingly using tools and techniques of knowledge management. It this sense, the importance of knowledge management for the innovation capability of enterprise (Plessis M., 2007) is discussed in the further elaboration.

First, *knowledge management promotes and encourages knowledge-driven culture in which innovations are stimulated.* Knowledge management emphasizes the importance of innovative organizational culture, where innovation, creativity and learning from mistakes and appreciated. Knowledge management helps creating tools, platforms and processes for creating, sharing and transferring of tacit knowledge in organization. Tacit knowledge is very important for the development of innovation capability. Knowledge management may help identifying "stock" of tacit knowledge in an organization.

Knowledge management also helps encoding tacit knowledge into explicit knowledge. Examples of platforms for codification are database about discussions among organization members and their cooperation. Identifying and sharing tacit knowledge is a process which codifies tacit into explicit knowledge (for instance, morning online meetings), where knowledge and information may be organized, exploited and reused. This significantly adds value to the organization, because it identifies which knowledge is available, as well as possibilities for its reuse.

Knowledge management improves innovation capability of enterprise by enabling cooperation among various organizational units within organization, and cooperation outside the organization, through an online cooperation forum and organizational tool and platforms, such as intranets and extranets. These cooperation forums are very important, because they allow the acquisition and codification of knowledge that is used as input for innovation, but also knowledge, which is a result of a specific innovation process. Knowledge management enables access to knowledge and identifies potential collaborators and participants in activities of knowledge sharing and innovation process.

Knowledge management improves the "absorptive capacity" of enterprise (Zahra S. A., George G., 2003; Todorova G., Durisin B., 2007), which positively affects its innovation capability. Namely, knowledge management improves the capabilities of enterprise which are related to assimilating, transforming and exploiting externally gained knowl-

edge. This knowledge can be used as a resource for creating innovations. Knowledge management provides availability and understanding of tacit and explicit knowledge that is relevant for improving the innovation capability of an enterprise. A knowledge management system attains this by organizing and documented knowledge, and using skill and tools for finding proper knowledge. Knowledge management allows organizing and reusing knowledge in a structured way. Knowledge management provides a unique structure of knowledge base. In addition, it provides tools for research, in order to enable individuals to explore knowledge necessary for innovations. Besides, knowledge management can make tacit knowledge more available through easier identification of different areas of expertise of key individuals in organization.

Because knowledge management provides platforms, tools and processes that enable the integration of knowledge base, members of organization get a possibility of having an integrated insight about which knowledge is available to an enterprise. Integration of knowledge base is extremely important because it ensures maximum use of knowledge and thus enhances the innovation capability. *Knowledge management helps in identifying gaps in the knowledge base and provides processes for the fulfillment in order to enhance innovation capability*. By providing a structured approach to knowledge, knowledge management allows an organization to identify in which areas it lacks knowledge and to systematically fill the knowledge base in these areas. The organization can do that through the innovation if there are gaps in so-called strategic areas of knowledge or can to that through operational activities in knowledge management.

Knowledge management helps steady growth of knowledge base, and in that way, improves innovation capability through continuous collection and storage of explicit and tacit knowledge. Besides, knowledge management provides an undisturbed knowledge flow. Through providing a forum for collaboration and knowledge management systems, knowledge that is necessary for innovation can easily flow through organizational units within and outside organization, in order to facilitate internal and external cooperation. Creating a culture of knowledge sharing also stimulates knowledge flows.

Knowledge management helps creating competencies required for creation and implementation of innovation. By available knowledge flows, members of organization are able to increase their level of knowledge and skills, and it can improve quality of innovations. These knowledge flows through organizational units provide more knowledge for all employees compared to the level of knowledge which is available to them in everyday operating activities. In that way, employees have a greater volume of knowledge about everyday operations and are able to be more innovative. Knowledge management through the culture of knowledge sharing, affects strengthening competences and skills for their innovation activities.

Knowledge management improves growth willingness, which has a positive influence on innovation capability of an enterprise. The choice of the kind of innovation depends on many factors. Innovation involves investments and risks. Profit is not the most significant for establishing the direction of growth. Actually, in the sense of determination of enterprise growth direction, sometimes the benefits for employees and overcoming the crisis are more important. In other words, if risk of investment is considered overwhelming, enterprises will not make a decision to realize the innovation.

KNOWLEDGE MANAGEMENT AS SUPPORT FOR INNOVATION PROCESS

Many organizations generate more ideas then they can support in the sense of implementing them. It is possible to have more ideas for solving a problem, so we need to make a choice of an idea that will be further developed. By development of the ideas (inventions) and its materialization into product or process, innovation is being realized. Without practical usage of idea in commercial purposes, there is no innovation. Implementation of an idea is achieved through one or more innovation projects related to products or processes. These projects often differ in the levels of innovativeness of product/process, compatibilities for strategy, costs, expected returns and predicted risks. Management of an enterprise should decide about innovation projects that it want to realize. Therefore, managing of the set or portfolio of idea is a process through which certain ideas are identified and supported. The first step is to make ideas available to others for insight and discussion. Having in mind the development of IT, there is an increasing importance of innovation process. Managers should focus on knowledge as an evolution of information, and innovation should be treated as a process. The concept of learning during a certain period of time (Constantinescu M., 2008) explains the possibility of increasing the level of knowledge and ensuring business results through effective and efficient innovation process. Accumulation of values can be provided if knowledge and innovation process are successfully managed at the same time.

Especially important issue is considering ways in which certain activities and techniques of knowledge management provide a support in the process of creation and transitions of ideas toward innovation. Some of these ideas will create value for organization, i.e. they will become innovation, and some other ideas will not be realized or preserved for future realization.

The first significant step in the innovation process is creating new ideas. Innovation is predominantly driven by learning and knowledge, and the whole innovation process is a series of learning cycles. Knowledge management activities (such as sharing of learned lessons, i.e. acquired knowledge) expand understanding of relevant issues and problems in an enterprise. These activities can help in thinking beyond everyday operational functioning and, in a way, which stimulates creativity. New ideas are created through formulation or a new combination of knowledge. Discovering new ideas relies on having enough knowledge about the subject of study. Organization would benefit from determining what it does and does not know. This can be achieved through knowledge management activities, such as structuring and mapping knowledge, as well as documenting of internal expertise. Since re-combination of knowledge is the basis of creating ideas, and interpersonal interaction is a key component in a knowledge re-combination, many organizations solve the issue of innovation by establishing research laboratories. The enterprises which think in advance begin to realize that traditional approach to research laboratory can be improved trough knowledge management techniques, especially when intellectual capital of enterprise increases.

Developing an idea is another important activity of innovation process. When ideas are identified and explicitly selected, and possessed, they have to be further developed to final product or process in order to have a value and bring benefits. Including customers in development process has good results and increases demand for product/service, and in some industries, it can affect improving of business processes. Some organizations, especially

laboratories and R&D units in an enterprise, have an explicit process of monitoring the development of product/process. This does not only help in using patents, but also is a great mechanism for knowledge codifying that enables re-using and learning from previous experience. Nevertheless, the development does not need to be realized in an organization, which created an idea. Sometimes a greater value from idea is achieved by so-called selling the idea to another enterprise that is able to implement it faster and more efficiently.

Implementation of ideas is a vital point of the innovation process. Implementation occurs when the idea about product/service is realised in the market or when it is used in new process in organization. The influence of idea becomes visible, first, through the results of selling or through the process of measuring effectiveness, quality, productivity, etc. At that moment, ideas can create the value and can actually be considered innovations. Knowledge management has at least two important roles during the phase of implementing ideas. The first role is reflected in preparation for work, which is realized because of identifying opportunities of adequacy of an idea in the existing element of organization. When a new product or process does not meet to customers' needs, commercialization and implementation are not likely to succeed. The unique knowledge gained from market research, through relationships with customers, and other techniques which are actually recorded, adopted, assimilated and from the begging incorporated into the product/process, often is a key factor for success of this product/process. Another way in which active knowledge management techniques support the phase of implementation is the way in which knowledge about product/process expands and transfers along with the product/process itself that is being realized.

Finally, getting feedback information about product or process is very important for the direction of process of innovating in the future. Information, therefore, should be actively gathered. However, ignoring these activities is not opportune. The key activity of knowledge management is learning through current integration of experience into the existing knowledge base. This feedback information becomes the basis for further innovation activities. The ways of getting feedback information should be explicitly defined. Otherwise, feedback information is gained only at individual level, without knowledge sharing across an organization.

IMPACT OF KNOWLEDGE MANAGEMENT ON ENTERPRISE'S INNOVATIVENESS

One of the central issues in this paper is the impact of knowledge management on enterprise's innovativeness and the results of innovation activity. The general assumption is that knowledge management increases performances of knowledge resources and therefore, the result of innovation output of enterprise. In the context of resource based theory, the direct impact of knowledge management (as resource) on the success of innovation activity of enterprise is emphasized (Krstić B., 2009). Recent empirical researches treat knowledge management as a specific resource that creates a potential for more efficient and effective usage of existing internal knowledge resources, as well as external knowledge resources. Knowledge management is considered a resource that directly increases the innovativeness of an enterprise, which in that way causes heterogeneity among them. This assumption is explicit, because a success of innovation of enterprise depends on its innovation resources, cooperation in innovation process and knowledge management.

Organizations that manage knowledge successfully and have a developed system of knowledge sharing can expect from their employees generating of new innovative propositions for solving problems and development of more innovative business processes. Knowledge management can provide more productive brainstorming and better usage of new ideas, and thereby improve innovativeness of enterprise. Most definitions of knowledge management emphasize its aim to improve innovative performance of enterprise and influence on increase of competitiveness. Innovation actually arises as a result of activities of organizational knowledge sharing, and especially of tacit knowledge in an enterprise. Continuous interaction and dialog among different individuals and groups in an enterprise forms the basis for knowledge sharing and creating innovations. In that way, the atmosphere of cooperation is created, which is useful for knowledge transfer. In this sense, knowledge management has a great importance as a management tool, which promotes creation and sharing of new knowledge. These processes are essential for innovativeness, and innovations create value and increase competitiveness. The impact of effective and efficient knowledge management on improving performance of knowledge usage is positive, as well as enterprises' success in achieving innovativeness (Liao C., Chuang S. H., 2006). Knowledge management system makes enterprise ready for developing innovation capability, creating and implementing innovations. Besides, by using a production function model, a positive impact of knowledge management in generating innovations products/processes in manufacturing enterprise is showed (Huergo E., 2006).

Bearing in mind the results of research on the impact of knowledge management on innovation success (Cantner U., Joel K., Schmidt T., 2009), it can be stated that knowledge management directly increases innovation activity of enterprise. Namely, the goal of this research refers to identifying and analyzing the impact of knowledge management on innovation success in enterprises. The focus is on examining the impact of knowledge management techniques of success of enterprises, which have innovated products and/or processes. Enterprises that have implemented effective system of knowledge management have had success above average in innovating products/processes compared to enterprises which haven't implemented this system.

Thanks to the initiatives of Organisation for Economic Cooperation and Development (OECD), several members of the states conducted research about knowledge management in 2003, among which were Germany (Edler J., 2003), France (Kremp E., Mairesse J., 2003, p. 143), and Canada (Earl L., Gault F., 2003). These authors recognize the positive impact of knowledge management on innovation success. In the study (Carntner U., Joel K., 2007), the conclusion is that knowledge management influences innovation success of enterprise not directly, but indirectly by increasing possibilities for more efficient usage of internal and external resources. Taking into account previous fact, it can be stated that innovation success of an enterprise is in function of its innovative potentials (resources), cooperation in innovation process and, finally, effectiveness and efficiency of the knowledge management process. It can also be emphasized that knowledge management has a positive effect on increasing success in achieving innovativeness of an enterprise.

CONCLUSION

Knowledge management, as a process by which enterprises generate value, becomes an imperative for modern business in the new economy. Knowledge management is viewed in the light of critical issues of adaptation of enterprise and its survival in the conditions of constant changes in business environment. In that context, it is necessary to find unity of information technologies, on the one hand, and creative and innovative potential of human resources, on the other. Achieving sustainable competitive advantage depends primarily on the ability of innovating, developing and implementing newly acquired knowledge.

Knowledge and innovation have essential importance as driving forces for long-term success of an enterprise. In this regard, the change is evident in the insight of knowledge management in the function of developing creativity and innovativeness, and consequently, the development of enterprise, as a whole. In other words, by creating, developing and the incorporating valuable knowledge into new, innovated product of an enterprise, the benefit of knowledge management is realized and competitive advantage is built.

The aim of knowledge management is effective and efficient use of knowledge as vital resource in the era of knowledge economy. The challenge of management of modern enterprises is, therefore, defining, measuring, improving, evaluating and effective knowledge management. Knowledge of an enterprise is a basis for building innovative capabilities, efficiency of innovation process and commercialization of innovation. Growth and development of enterprise have been determined by a realization rate of innovation due to shortening of product and technology life cycle.

Knowledge management in enterprise provides a better use of knowledge and reduces the complexity of innovation process. Here, above all, tacit knowledge in enterprise is emphasized, as well as explicit (market and technological) knowledge used in innovation process. Better usage of knowledge resources influences more productive usage of other tangible and intangible resources in enterprise, which are at the same time exploited for creating various innovations. In this sense, knowledge management is a specific resource of enterprise.

Willingness of managers and employees who participate in creating, sharing and transferring knowledge in enterprise depends mostly on their motivation. Therefore, the system of motivating in an enterprise is one of the key elements of knowledge management system in a certain enterprise.

In the aim of providing the needed knowledge for creating innovation, enterprises should improve their ability of collecting and using external knowledge in commercial ends. Because of that, knowledge management is very important for increasing capabilities of enterprises to absorb and productively exploit externally obtained knowledge. Besides, knowledge management insures that internally created, adopted and transformed knowledge is also used in commercial ends, such as prototypes of products, ideas about services, applying its own patents, and the like. By exploitation, knowledge is incorporated in new product/service and other above-mentioned results of innovation activity.

Of particular importance is the fact that knowledge management enables collecting and codifying tacit knowledge into explicit knowledge, which is available to everyone in organization. Knowledge management further provides not only better gathering and sharing explicit knowledge, but also better integration and availability of total knowledge in enterprise, which has an overall positive impact on innovation capability. Knowledge

management improves capabilities of enterprise to acquire, adopt, transform and apply external knowledge, and in that way increases absorptive capacity of an enterprise which is very important for innovation process.

Knowledge management is essential for achieving internal and external cooperation which, in turn, has a significant role in transferring tacit knowledge among individuals and organizations. The better the relationship performances are, the more intensive transfer of tacit and explicit knowledge among strategic partners is.

Knowledge management creates innovative culture that encourages creating and sharing knowledge. Enterprises with culture based on innovation and knowledge, in a more effective way support the processes and programs for developing knowledge resources, as well as creating and realizing various innovations of products and services.

Knowledge management is very significant for innovation process in enterprise, because it is in function of successful realization of all its phases. It plays an important role in creating, developing and implementing valuable, commercially acceptable and profitable ideas of an enterprise in the market. Also, knowledge management has a significant role in gathering feedback information from the market, which is the basis for future innovations in enterprise.

In order to acquire and sustain competitive advantage, enterprise should constantly develop knowledge resources, encourage creativity of employees and increase innovation capacity. Modern enterprises should continuously increase efficiency in using knowledge resources through an appropriate knowledge management system, and thereby improve its innovativeness. Therefore, enterprises that successfully manage knowledge and have developed system of innovations, can expect from their employees generating new innovative solutions and improving competences, because they represent key determinants of enterprise innovativeness.

Knowledge management generally leads to improving operational performances in an enterprise by providing reduction of mistakes and costs in its daily business activities, greater labour productivity, better and faster solving problems, better decision making, more intensive business cooperation, deeper understanding of needs and requirements of customers, and improving products, services and business processes. Due to inability of quantifying all the effects of knowledge management on business performance and innovativeness of enterprise, results of quality of knowledge management application are expressed mainly in descriptive terms. Effect on financial performance in the future can be predicted, but can hardly be quantified precisely, because apart from management knowledge system there are many business factors that have influence on them. Regardless of the way of measuring the impact and effect of application of the concept of knowledge management, the fact that it enhances innovativeness, effectiveness, and efficiency is undeniable.

Effective knowledge management enables increasing effectiveness of business processes, and overall effectiveness of enterprise as network of business processes in achieving operational and strategic goal. Effective knowledge management helps an organization adjust quickly its business processes in accordance with current conditions, which especially becomes noticeable in times of frequent and dynamic changes. Efficient knowledge management enables employees to use knowledge, and other resources more efficiently. In this way efficiency of business processes is improved, i.e. efficiency of enterprise as business system on the whole.

Examining of knowledge management in the function of improving innovativeness and competitiveness of an enterprise opened up new dimensions of knowledge management. This research points out the need for a change of managing practice in contemporary enterprises in the era of knowledge economy in the direction of consistent implementation of the concept of knowledge management. In inadequate comprehending the importance of knowledge management concept and its inconsistent implementing in the practice of an enterprise, there may be serious barrier in its adapting to demands of dynamic business environment.

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ULOGA UPRAVLJANJA ZNANJEM U POVEĆANJU INOVATIVNOSTI PREDUZEĆA

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U savremenom poslovnom svetu koji karakterišu dinamične i kontinuirane promene, konkurentska sposobnost preduzeća zavisi od brzine kojom ono može uvesti nove, superiornije proizvode/usluge i inovirati različite poslovne procese u odnosu na rivale na tržištu. Konkurentnost preduzeća determinisana je njegovom fleksibilnošću i inovacionom sposobnošću. Znanje kao resurs i upravljanje znanjem kao takozvani meta resurs, faktori su inovacione sposobnosti preduzeća. Cilj ovog rada je da pokaže značaj razvoja i primene efikasnog sistema za upravljanje znanjem za inovativnost savremenog preduzeća. Ovo, stoga, što upravljanje znanjem utiče na bolje korišćenje resursa preduzeća za kreiranje inovacije i povećanje njegovog absorpcionog kapaciteta, odnosno sposobnosti korišćenja eksternog znanja u funkciji povećanja nivoa ranije stečenog znanja.

Ključne reči: *znanje, upravljanje znanjem, inovativnost, konkurentnost, preduzeće.*