INTELLECTUAL CAPITAL AS THE SOURCE OF COMPETITIVE ADVANTAGE: THE RESOURCE-BASED VIEW

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Abstract. The concepts of intellectual capital and competitiveness are widely studied issues among researchers during the last few decades. Intangible assets have been proved to be the fundamental source of value and competitiveness in modern enterprises. Intellectual capital is a valuable invisible resource which drives firm’s growth and provides superior value for stakeholders. Therefore, the aim of the paper is to examine the role the intellectual capital has in creating and sustaining competitive advantage of enterprises from the resource-based perspective.

Key words: intellectual capital, competitive advantage, knowledge economy, value creation, resource-based view

JEL Classification: D83, L25, O34

INTRODUCTION

The first mention of the notion of intellectual capital in the 20th century could be found in Frederick Taylor’s book (1911), in which he writes about knowledge, experience and skills of employees. Intellectual capital, as a term, was originally associated with Machlup (1962) who coined it in order to emphasize the importance of knowledge for the development of enterprises and growth of national economies. In the last few decades, intangible assets such as knowledge, patents and innovations have been identified as key sources of value creation and technological progress. These intangibles represent a main concern for the managers of modern knowledge enterprises and their stakeholders (García-Ayuso, 2003). In the knowledge economy, in order to be successful in the market, an enterprise has to be flexible and capable to adapt its resources and products according to the requirements of national and regional markets (Krstić, 2007).
Intellectual capital represents the area of interest and research for academics from different scientific fields. The economic literature that deals with the role of non-material resources in sustaining competitive advantages indicates significant variations in the use of terminology (intellectual resources, invisible assets, knowledge resources, knowledge-based capital, intangible resources, non-material assets, etc.).

In contemporary conditions, the accounting theory and practice are faced with a declining importance of the information provided by the system of financial reporting. Namely, there is a need for accounting information to be supplemented by non-financial information, which does not come from financial statements. There is a requirement that the accounting system should adequately disclose the so-called invisible assets or intellectual resources on the balance sheet. Therefore, the accountants underline the meaning of the term intangible assets, which actually represents the value of intellectual resources disclosed on the balance sheet.

“Skandia Navigator”, as a framework for measuring and reporting on intellectual capital, was the first implementation of the concept of intellectual capital in business practice (Edvinsson & Malone, 1997). The motivation for measuring, monitoring and reporting of intellectual capital, at the end of 20th and beginning of 21st century, has arisen due to the fact that balance sheets have not taken into account in a proper manner the hidden value, embodied in the intangible (non-material) assets. Namely, these balance sheets have not provided information about internally created intellectual assets that are fundamental for the future growth and development prospective of an enterprise. Intellectual capital, at the microeconomic level, is composed of three essential components – human capital, relational capital and structural capital (Steward, 1997). Intellectual capital represents an all-encompassing concept, which incorporates diverse non-material resources in the knowledge enterprises. These enterprises are intensive with knowledge-based resources. Intellectual capital is the key factor of the sustainable competitive advantage of these enterprises.

Therefore, the aim of the paper is to examine the concept of intellectual capital, its diverse meanings and to highlight its role in creating and sustaining competitive advantage. The paper is organized as follows: First, the paper highlights the role of intellectual capital as knowledge-based resource and provides the systematic overview of noteworthy definitions of intellectual capital in the literature. Further, the study focuses on the basic concepts of competitiveness theory, with the emphasis on the resource-based theory of the firm. After that, the research underlines the importance of intellectual capital as a fundamental resource for value creation for consumers, shareholders and other external stakeholders. Finally, the conclusion is drawn from these evaluations.

1. INTELLECTUAL CAPITAL AS KNOWLEDGE-BASED RESOURCE

Nowadays, in dynamic and knowledge driven economy in the information era, intellectual resources are, comparing to other firm’s resources, principal for achieving superior performance and competitive advantage (Wiklund & Shepherd, 2003). In order to achieve competitive advantage, a firm must create superior value for its customers comparing to its competitors, and the capacity to do this depends on its resources, capabilities and competences, which are the result of the long-lasting experience in the utilization of a certain resource portfolio (Krstić & Sekulić, 2016, p. 355). Valuable resources of a firm are protected from imitation by knowledge barriers to a greater extent than intellectual property rights, since such resources incorporate values which are hardly reachable and whose connection with results is difficult to determine (Miller & Shamsie, 1996). Knowledge-based resources are
predominantly in the form of specific skills, such as technical, creative, coordinative and collaborative skills. Those skills are primarily developed in individuals and afterwards transferred, shared and codified at the level of organizational groups, organizational units and organization as a system. Utilization of knowledge-based resources creates value that can be manifested as human capital, innovations, patents etc.

<table>
<thead>
<tr>
<th>Authors</th>
<th>Terms</th>
<th>Conceptual explanation</th>
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<tbody>
<tr>
<td>Itani (1987)</td>
<td>Invisible Assets</td>
<td>Intangible assets comprise of invisible resources which incorporate a wide range of activities in the sphere of technology, consumer confidence, brand image, corporate culture, and managerial skills.</td>
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<td>Hall (1992)</td>
<td>Intangible Resources</td>
<td>Intangible assets represent the value drivers which transform productive resources into value-added assets.</td>
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<td>Brookings (1996)</td>
<td>Intellectual Capital</td>
<td>Intellectual capital is the aggregate of market assets, human-centered assets, intellectual property and infrastructure assets.</td>
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<tr>
<td>Edvinsson and Malone (1997)</td>
<td>Intangible Assets</td>
<td>Intangible assets do not have physical expression, but are significant for the firm’s value augmentation.</td>
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<tr>
<td>Sveiby (1997)</td>
<td>Intangible Assets</td>
<td>Intangible assets consist of three dimensions: employee competence, internal and external structure.</td>
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<td>Nahapiet and Ghoshal (1998)</td>
<td>Intellectual Capital</td>
<td>Intellectual capital is viewed as knowledge and learning capacity of an organization.</td>
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<td>Brennan and Connell (2000)</td>
<td>Capital</td>
<td>Intellectual capital is the difference between the market and the book value of the company, i.e. the knowledge-based equity of the company.</td>
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<tr>
<td>Sullivan (2000)</td>
<td>Intellectual Assets</td>
<td>Intellectual capital is knowledge that can be converted into profit.</td>
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<tr>
<td>Lev (2001)</td>
<td>Intangible Assets</td>
<td>Intangible assets are the entitlements to future benefits that do not have physical or financial manifestation.</td>
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<tr>
<td>FASB (2001)</td>
<td>Intangible Assets</td>
<td>Intangible assets represent the claims of future benefits. These claims are non-current and non-financial in nature. Also, intangible assets do not have physical or financial expression.</td>
</tr>
<tr>
<td>de Pablos (2003)</td>
<td>Intellectual Capital</td>
<td>According to the broad definition of intellectual capital it represents a positive difference between market and book value of the firm.</td>
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<td>Rastogi (2003)</td>
<td>Intellectual Capital</td>
<td>Intellectual capital can be viewed as holistic capability of a firm to coordinate, organize and use all available knowledge with the aim to create value in the future.</td>
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<td>Mouritsen et al. (2003)</td>
<td>Intellectual Capital</td>
<td>Intellectual capital mobilizes employees, clients, information system, managerial processes and knowledge.</td>
</tr>
<tr>
<td>IASB (2004)</td>
<td>Intangible Assets</td>
<td>Intangible assets are identifiable non-monetary assets without physical manifestation, which firms use for production or supply of goods and services, rental to third persons or administrative purposes.</td>
</tr>
<tr>
<td>Andriessen (2004)</td>
<td>Intangible Resources</td>
<td>Intangible resources are non-monetary resources without physical substance that produce future benefits for a firm.</td>
</tr>
<tr>
<td>Roos et al. (2005)</td>
<td>Intellectual Capital</td>
<td>Intellectual capital can be defined as non-monetary and non-physical resources that are fully or partly controlled by the firm and that contribute to the firm’s value creation.</td>
</tr>
<tr>
<td>Marr and Moustaghfir (2005)</td>
<td>Intellectual Capital</td>
<td>Intellectual capital embraces any valuable intangible resource gained through experience and learning that can be used in the production of further wealth.</td>
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<td>Choong (2008)</td>
<td>Intellectual Capital</td>
<td>Intellectual capital is a non-monetary asset without physical substance, but it possesses value or it can generate future benefits.</td>
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<td>Lerro et al. (2014)</td>
<td>Intellectual Capital</td>
<td>Intellectual capital can be viewed as the set of knowledge assets held by an organization which significantly drives organizational innovation and value creation processes.</td>
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| Lentušenkova and Inga (2016)   | Intellectual Capital   | Intellectual capital is a firm’s assets which include the firm’s human capital, information and communication technologies, business procedures, and intangible assets that can be converted into material and immaterial value.
Researchers in the area of intellectual capital have offered various definitions of intellectual capital (Table 1). Although extremely extensive, the term intellectual capital is interpreted rather precisely in the referring economic and management literature.

Accordingly, in the business practice of a firm, there is even intellectual or knowledge capital manager in the organizational system. His/her task is to initiate, monitor and coordinate knowledge management programs, as well as to enable organizations to maximize the shareholders’ value through investments in different knowledge resources. In fact, he/she manages intellectual capital and it is necessary to develop a methodological framework for the specific system of intellectual capital management (Krstić, 2014). This framework consists of three subsystems: knowledge management, innovation management and intellectual property management. Apart from this, the intellectual capital manager has a task to actuate employees to constant individual learning and thinking. Furthermore, this person has to design and consistently implement an effective reward and motivation system for those employees contributing to the increase of knowledge resource. Besides, an intellectual capital manager has a task to quantify the impact the intellectual capital management has on the efficiency performance of a firm.

2. RESOURCE-BASED THEORY AND COMPETITIVE ADVANTAGE

The resource-based theory of the firm (Douma & Schreuder, 1998, p. 159) has taken a significant place in the economic theory at the end of the 20th century. It represents one segment of the competitiveness theory. Within the competitiveness theory, besides the resource-based theory, important are the theory of dynamic capabilities and knowledge-based theory. Common characteristic of these theories is that they put emphasis on the so-called internal determinants of a firm’s economic performance. Namely, the resource-based theory of the firm starts with the premise that the success of a firm is predetermined by the adequate choice of resources and their combinations.

However, the theory of dynamic capabilities acknowledges that the efficient usage of resources is not enough for the firm’s success, but certain capabilities (in production, procurement, sales, research and development, etc.) that are functionally specific are also needed (Krstić, 2007, p. 349). This is in line with Amit and Schoemaker (1993) who argue that resources cannot contribute to the sustainable competitive advantage of a firm, but such role is attributed to the firm’s capabilities. These authors define firm’s capabilities as the capacity to use its resources in combination with information-based and firm-specific organizational process. Capabilities are developed through complex interactions between the firm’s resources.

Teece et al. (1997) define dynamic capabilities as “the firm’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments” (p. 516). Therefore, dynamic capabilities reflect a firm’s capacity to attain unique and innovative forms of competitive advantage considering market positions and path dependencies.

Namely, Leonard-Barton (1992, p. 113) points out that the core capabilities represent a “knowledge set that distinguishes and provides a competitive advantage”. This knowledge-based view of a firm classifies four dimensions of the knowledge set: knowledge and skills of employees, technical systems, managerial systems and values and norms associated with the various types of embodied and embedded knowledge (Leonard-Barton, 1992).
Knowledge is an imperfectly imitable resource. Hence, if a firm wants to increase its value it has to create new organizational knowledge embodied in the skills and competences of the employees. As, in the changing and fast growing environment, successful firms are those which constantly create new knowledge, disseminate it through organization and rapidly materialize in the form of innovative products.

Performances of resources and the dynamic capabilities of a firm determine the imitating or experimenting activities with resources, along with the cost assessment of these activities and lead to the new configuration of resources. The new configuration of resources resulting from the learning process of imitation and/or experimentation determines the future production quantity, as well as product and process innovations (Zott, 2003).

The resource-based theory of the firm views strategy as the instrument for the alignment of resources and capabilities of a firm with the external environment requirements. Resource-based view observes a firm as a unique set of its heterogeneous resources and capabilities. Heterogeneity of the resources determines the heterogeneity of firms. Namely, firms possess mutually different resources and do not use them equally successful, thus resulting in different performances of efficiency among different firms. Firms aiming at enhancing their economic success, initiate enhancement of performances of the resources (for example, technological sophistication, training of employees, etc.). Continuous actions of firms toward enhancing the performances of their resources, contribute to the relatively stable difference in resources among firms.

Contributions to the final shape of this theory have been put by numerous researchers. Wernerfelt (1984, p. 172) in his work has viewed a firm as the “bundle of resources… which could be thought of as strength or weakness of a given firm”, such as: brands, internal technological knowledge, skilled employees, effective processes, etc. The resource-based theory of a firm stresses that in the process of formulating the firm’s strategy, the basis is analysis of resources and capabilities comparing to competitors. According to this theory, external environment is not the key factor for the strategic action of a firm, but internal firm’s characteristics. Complex competitive environment requires the full commitment of the firm’s management to conceptualization and realization of a resource-based strategy.

Therefore, the focus will be on the role of intellectual capital, as invisible resource of a firm, in creating competitive advantage, from the resource-based perspective. The intention is to understand the characteristics of the intellectual resources that drive competitive advantage of a firm.

3. INTELLECTUAL CAPITAL AND COMPETITIVE ADVANTAGE: A RESOURCE-BASED VIEW

Barney (1991) as founder and proponent of resource-based theory in the economy of the firm, i.e. resource-based view of competitive advantage, considers that a firm achieves competitive advantage due to the resources that have to be valuable, rare, imperfectly imitable and non-substitutable. The characteristics of intellectual capital, as a valuable knowledge-based resource, are (Lin, 2013, pp. 54-55):

a) “Intellectual capital is valuable, rare, imperfectly imitable and non-substitutable;

b) Intellectual capital is communicable to others; and

c) Components of intellectual capital are both distinctive and comprehensive”.

With the above mentioned characteristics, intellectual capital can be transformed in the competitive advantage of the firm.
Barney (1991) points out that when companies possess the same type of resources, such resources cannot create competitive advantage. Only when companies’ resources are valuable, rare, imperfectly imitable and non-substitutable, they become the source of competitiveness creation, improvement and sustainability. Barney’s formulation from the resource-based perspective denotes a very broad definition of resources as all types of tangible and intangible assets, organizational processes, knowledge, capabilities and other potential sources of competitive advantage (Lavie, 2006). Intellectual capital, as a unique combination of a firm’s knowledge-outputs, is an extremely valuable resource, especially in contemporary knowledge economy. Further, the intellectual capital of a firm, as specific combination of diverse intangibles, can and should be a rare resource. Although every organization has elements of intellectual capital, the content, i.e. the mixture of intellectual capital elements is firm-specific in relation to its competitors.

The intellectual capital of a firm cannot be easily imitable, due to the fact that every organization has its individual fundamental material (tangible) and non-material success factors such as: culture, strategy, system, skills, leaders and key employees. The established intellectual capital is a result of interdependence among these factors during a number of years of successful competition in a particular market. Although competitors can compare and adopt best practices, intellectual capital is hard to imitate due to the complex process of its forming at key players in the market. Therefore, the intellectual capital is non-substitutable, i.e. it cannot be easily substituted. Although a company can allocate its business model to other locations (markets) with the same company’s setting and identical number of qualified employees, formed intellectual capital will not be the same in all locations, which makes it irreplaceable. Hence, according to the views of resource-based theory, intellectual capital is a valuable resource that can create shareholder value and competitive advantage.

b) Intangible assets cannot be easily seen, felt or described. For managerial decision makers, who are to comprehend the value and importance of intellectual capital in realizing strategy and specific business model of a firm, intangible nature of intellectual capital makes it even more significant since it can be communicated to others – key stakeholders. On the organizational level, already determined components of human, structural and relational capital (Krstić, 2014) make the concept of intellectual capital communicable to stakeholders. Moreover, the best way for communicating the values of intellectual capital is through the realization of appropriate financial performances. From the resource-based view, firms are obtaining and sustaining competitive advantage through the development of valuable resources and capabilities. This means that resources and capabilities have to be efficiently used in order to achieve superior competitive potential (Barney & Wright, 1998; Ray et al., 2004; Sheehan & Foss, 2007; Andersén, 2011). Intellectual capital is the observable result of management practices, techniques and tools. For example, implementing the intellectual capital concept in practice and emphasizing the value of structural capital (as the component of intellectual capital) by establishing a knowledge management system can improve the firm’s efficiency and effectiveness. Besides, intellectual capital is a resource that can be used in everyday operations and help in converting and synergizing other firm’s material and non-material resources into its competitive advantage in the market.

c) Understanding of resources in the literature has always been multidimensional, since firms have different combinations and configurations of resources (Zajac et al., 2000). As previously defined, the intellectual capital of a firm consists of human capital, structural capital and relational capital. In other words, intellectual capital is a multidimensional portfolio of resources. Intellectual capital is recognizable because three capital components
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(human, structural and relational) represent different constructions of resources. Also, intellectual capital is a comprehensive combination of resources as its capital components encompass people and leaders, structure and systems, as well as social relations.

Human capital is the fundamental resource of a firm, which includes knowledge, skills, experience, competence, attitude, commitment and individual characteristics of employees (Bontis & Fitz-enz, 2002; Hitt & Ireland, 2002). Structural capital is codified knowledge owned by a firm and can be codified, reproduced and distributed among individuals and organizational units within a firm. Structural capital (as a component of intellectual capital) involves efficient business processes, managerial philosophy, information technologies and systems, intellectual property, patents, design, brands, data bases, organizational structure, organizational culture, organizational routines and procedures, etc. Relational capital represents knowledge embedded in the short or long-term relations a firm has with suppliers, consumers, strategic partners and other external entities, while building the reputation of a firm.

The relevant literature points toward the following standards for the performance assessment of tangible and intellectual resources: durability, imitability, transferability. Apart from these criteria, key resource performances are rareness and flexibility (Krstić, 2009, p. 70).

Of extreme influence on the durability of intellectual resources are dynamic technological changes. In some circumstances, patents experience technologically aging before the termination of law protection (as a form of intellectual property). Firm’s reputation, is also an example of the intangible resource which may express significant volatility over time.

Bearing in mind imitability, the firm should have incentive to produce distinctive (unique) intellectual resources. Intellectual resources that are imperfectly imitable are patent technologies. A firm’s capability to sustain competitive advantage during certain period depends, among other things, on the speed by which competitors succeed to obtain certain intellectual resources that are necessary for imitation.

Transferability, i.e. availability of intellectual resources refers to consideration of time and effort necessary to obtain or create resources. Intellectual resources which can be easily and rapidly obtained (bought), cannot secure sustainable competitive advantage over the relatively long period. Generally, such resources can be quickly copied, since firm acquires them relatively easy (obtain, buy, create).

Some intellectual resources are not so easily obtainable, i.e. transferable among subjects. For example, such situation exists with specific intellectual resource – brand. Usually, the brand is associated with the firm, and change of firm’s ownership can erode the value of the brand. In case when particular intellectual resource cannot be purchased, it is necessary to be produced, i.e. built in internal process of research and development. Usually, superior strategic importance is given to the internally created intellectual resources compared to those intangible resources that can be obtained in the market via buying and selling transactions.

Rareness (uniqueness) of some intellectual resources should be protected. The best legal protection frameworks are through patenting. Also, the competition for sustaining the uniqueness of resources is led by continuous investments in research and development projects. Some rare resources are imperfectly imitable. That is especially the case with tacit knowledge, i.e. implicit knowledge of one number of employees or working groups, which manifests in individual competences that are not formally owned by the firm as an entity. In the knowledge-intensive organizations (based on the share of the value of other resources in the total value of assets in the balance sheet), especially with dynamic technology and short
life-cycle of products, tacit knowledge of some employees (experts, professionals) is a considerably unique resource. Containing such a valuable resource in the firm is of extreme importance for its economic efficiency in the future.

Besides, the firm’s competitive advantage is determined by the flexibility of its intellectual resources. Innovative capability of human resources in the firm is of great importance for its efficacy. Some firms are better and more capable than others in innovating. Innovation is important because of achieving and delivering superior value to consumers that will enable competitive advantage. Also, with the strategy of continuing product innovation, competitors will have problems to adjust over a relatively long period of time.

Many companies are now being sold at a much higher price than their actual book value. The market valuation of companies increasingly relies on the so called intangible factors or invisible items. This approach reflects a huge gap between the market valuation and accounting valuation, causing further interest in a more effective and efficient economic use of intellectual resources/capital in knowledge enterprises.

CONCLUSION

The value of a firm, products/services and shareholders’ value is achieved through combination of tangible and intangible resources. By investments in intellectual capital the knowledge resources are increasing, technology is improving, firms are more ready to undertake initiatives regarding the development of new products/services and are oriented toward the improvement of the relationships with the key stakeholders. In the contemporary economy, the success of the enterprise depends on its capabilities to recognize potential in the market and to find a way to use it. Increasing competition in the 21st century and the knowledge economy era puts forward as a necessity a more productive utilization of intangible resources in order to achieve success and survival in the market. Developed economies base their competitiveness on knowledge, information, commercial innovations, intellectual capital strategies, and much less on physical resources and low-cost labor.

The most important activity in the knowledge economy is not production of products and services anymore, but production of new knowledge (from the broader prospective intellectual resources), which is base for improved quality of products and services. High-quality intellectual resources increase the products’ value for customers, the products can be sold at higher prices, thus leading to the higher income.

Intellectual resources enable innovations that are transformed into sales revenues. Besides, intellectual resources enable creating intellectual assets in the form of intellectual property, and hence the utilization of such assets enables higher commercial effects arising for intellectual property (protected patents, designs, trademarks). For many enterprises are especially important incomes which they obtain by selling intellectual property through licenses for products, technologies, brands, etc.

Furthermore, intellectual capital (knowledge, competences etc.) enables efficient structure, better working environment and supporting organization culture, efficient business processes. Namely, more efficient working processes lead to the realization of business and other activities at lower costs. Intellectual resources, especially intellectual property in the form of patents, contribute to the income protection from erosion owing to eventual misuse from other enterprises. Portfolio of intellectual property can be a tool for managing business negotiations during sales, joint ventures, mergers, etc., thus affecting
indirectly future revenues. Intellectual resources contribute to the revenues increase and cost reductions, thus leading to the increase of income and indirectly to the efficiency and profitability of an enterprise.

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INTELEKTUALNI KAPITAL KAO IZVOR KONKURENTSKE PREDNOSTI: NA RESURSIMA ZASNOVANO GLEDIŠTE

Koncepti intelektualnog kapitala i konkurentnosti su dosta proučavani od strane istraživača tokom nekoliko poslednjih decenija. Nematerijalna imovina se pokazala kao ključni izvor vrednosti i konkurentnosti u savremenim preduzećima. Intelektualni kapital je vredan nevidljiv resurs koji doprinosi rastu preduzeća i većoj vrednosti za stejkholdera. U tom smislu, cilj rada je da ispitu ulogu koju intelektualni kapital ima u kreiranju i održavanju konkurentske prednosti preduzeća iz resursne perspektive.

Ključne reči: intelektualni kapital, konkurentska prednost, ekonomija znanja, stvaranje vrednosti, na resursima zasnovano gledište