Knowledge Resources and Competitive Advantage

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The paper discusses some definitions of knowledge as a potential source of competitive advantage. It reviews the literature pertaining to the assessment of knowledge assets. According to the resource-based view, which links the competitive advantage of organizations with resources and capabilities that are firm-specific, and difficult to imitate or substitute, a firm's competitive advantage is built on a set of strategically relevant resources (Barney 1991; Grant 1991; Peteraf 1993). When firms have access to similar resources, it is those companies that are able to maximize the utilization of those resources that attain a competitive advantage. Among various strategic resources and capabilities that help determine the extent of competitive advantages, a pivotal role is often assigned to knowledge – as both a resource in itself and an integrating factor that makes other resources and capabilities effective – especially in complex and dynamic environments.

Key Words: knowledge, competitiveness, firm performance, knowledge-based theory
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Introduction

Managers share the opinion that the mere identification of competitive factors, opportunities and threats, as suggested by Porter (1980), is not enough for an efficient company strategy. It should also be determined which competences and sources are available in the organization in order to make accurate assessments of a company's strategic competences (Andrews 1971). As different companies develop different distinctive competences (Selznick 1957), the most important question is: does the company have appropriate competences in order to reach its targets? For understanding the importance of knowledge for firms, we should consider the contribution of the theory based on resources – the resource-based theory (RBT); and the theory, based on knowledge – knowledge-based

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theory (KBT). Penrose (1959) developed the concept of competitiveness based on competences; this concept was further developed by Wernerfelt (1984), Rumelt (1984) and Barney (1986). They propose the firm as a collection of individual unique resources. This collection is increasingly knowledge-based.

The resource-based view focuses on resources that are permanently tied to a firm (Wernerfelt 1984). The combination of resources over time allows for the evolution of specific capabilities which optimally lead to competitive advantage (Amit and Shoemaker 1993). The most commonly used application of the resource-based view in literature is to use it for identifying different types of competences, where distinctive competence is defined as something a firm can do better than any of its competitors. Specifically, the resource-based view identifies two types of distinctive competence: resources and capabilities (Collis and Montgomery 1997). Resources may be either tangible or intangible. Tangible resources are physical assets that a firm owns, such as a unique product, plant and equipment. Intangible resources, on the other hand, do not physically exist, however they provide significant value, such as a brand name recognition, reputation, patents, and technological or marketing know-how (Collis and Montgomery 1995). The contemporary accounting practice must introduce solutions in the sense of measuring the intangible assets as well. The traditional balance sheet of a company does not provide sufficient information, since it does not contain intangible resources in the sense of the concept of a knowledge-based company (Ivankovič 2006). Capabilities are a company's skills at coordinating its resources and putting them to productive use (Collis and Montgomery 1995). Capabilities include values, people, and processes (Collis and Montgomery 1997).

The resource-based perspective takes the firm's internal approach. The basic logic is that the firm's unique capabilities in terms of knowhow and managerial ability are important sources that may create sustained competitive advantages. The distinctive knowledge and superior organizational routines in one or more of the firm's value chain functions may enable the firm to generate profit from a resource advantage (Mahoney and Pandian 1992; Hitt and Ireland 1985). The resource-based view stresses the internal capabilities of the firm, which determine the strategic decisions for competing in its external environment. As noted by Penrose (1959), firms may achieve performance and profit not because they possess better resources, but because their distinctive knowledge allows

them to make better use of their resources. In order to turn a distinctive competence into a sustainable competitive advantage, a firm not only needs to possess a unique resource, but must also have the capabilities to exploit that resource. Therefore, the distinction between resources and capabilities is critical in order to to understand what generates a competitive advantage. A company may have unique and valuable resources, but unless it has the capability to use those resources effectively, it may not be able to create or sustain a competitive advantage

The use of firm's knowledge also has a social dimension. In firms with positive cultures, where the teamwork is effective and goal directed the utilization of knowledge seems to be more efficient. Many firms outdo their competitors not because their knowledge base is better or different, but because their management of knowledge is rather better. Firms should necessarily analyze their knowledge, so that methods can be implemented to further develop and protect it.

The personal knowledge approach derives from the fundamental assumptions that knowledge is essentially personal in nature and that knowledge is therefore very difficult or even impractical to extract from the minds of individuals. One important reason why some knowledge is found difficult to share between people and organizations is because it has not been codified. Knowledge that cannot be represented by codes is often classified as tacit knowledge, a term introduced by Michael Polanyi (1958). Polanyi argues, that the reason why we are not able to express all that we know, is that our awareness encompasses a lot more than we are consciously aware of. This approach assumes that the knowledge within an organization essentially consists of tacit personal knowledge in the minds of individuals in the organization. Tacit knowledge is the knowledge that employees have, but is hard to articulate (Polanyi 1967).

Working from the premise that knowledge is inherently personal in nature and will therefore largely remain tacit in the minds of individuals, this approach offers recommendations for strategies that focus on managing people as individual generators and carriers of knowledge. To manage the personal knowledge of individuals, managers are typically urged to identify the kinds of knowledge possessed by various people in an organization and then to arrange appropriate interactions between knowledgeable individuals (Sanchez 2005)

Knowledge in firms represents the foundation on which a company's competitiveness strategy is constructed. Similarly, knowledge is the most important resource for company profitability (Grant 1991) and growth

in domestic and international markets (Ruzzier et al. 2007). Companies should therefore identify, improve, develop and employ their knowledge resources in order to strengthen or retain their competitive advantages and to improve their effectiveness (Peteraf 1993; Prahalad and Hamel 1990; Teece, Pisano and Shuen 1997, Ruzzier, Antončič and Konečnik 2006). This means that knowledge should be understood as the fundamental resource of revenues (Grant 1991; Spender and Grant 1996). The organizational knowledge approach assumes that knowledge is something that can be articulated and explained by individuals who have knowledge, even though some effort and assistance may sometimes be required to help individuals articulate what they know. As a result, the organizational knowledge approach fundamentally assumes that much, if not all, of the knowledge of individuals that is useful to an organization can be articulated and thereby made explicit and available to others. The organizational knowledge assets can be disseminated within an organization, usually through documents, drawings, standard operating procedures, manuals of best practice, and the like (Sanchez 2005).

Companies have always been based on knowledge. Knowledge is even more a crucial asset in current times of global competition; organizations are becoming more knowledge intensive and they are hiring 'minds' more than 'hands' (Wong 2005).

Firms with more knowledge will be able to notice changes on the market faster. Furthermore, they are capable of perceiving the profitable opportunities on the market faster than their competitors. Firms should constantly develop their competences, skills and techniques and acquire specific knowledge in order to survive and innovate new opportunities in their industries. Firms are becoming learning organizations. They make considerable efforts to build a systematic strategy for acquiring, storing and disseminating knowledge.

The Classification of Knowledge

Within an organization we can find knowledge taking different forms. There are important differences between the explicit or implicit/silent knowledge forms of knowledge. Explicit knowledge can be coordinated, stored and exchanged (Popper 1972). This is theoretical knowledge, which can be found in the form of databases, handbooks, instructions, etc. On the other hand, implicit knowledge is personal knowledge of people, intuitive and difficult to transmit and to describe. It is acquired through experience. Nonaka (1991) mentions four forms of

flows, namely the flows between implicit and explicit knowledge, the flows from implicit to implicit knowledge, the flows from explicit to implicit knowledge and, last but not least, the flows from explicit to explicit knowledge. For the firm, managing knowledge requires a deep understanding of its characteristics.

While data, information and knowledge can all be viewed as assets of an organisation, knowledge provides a higher level of meaning about data and information. It conveys meaning, and hence tends to be much more valuable (Turban and Aronson 2001). Knowledge is information that changes something or somebody, either by becoming grounds for actions, or by making an individual or an institution capable of different or more effective actions (Drucker 1994). These definitions affirm that knowledge is more valuable to an organisation than in its lower forms such as data or information.

Table 1 shows the classification of knowledge by different authors.

Knowledge and Competitive Advantage

Nowadays firms must compete in a challenging context that is being transformed by globalization, technological development, increasingly rapid diffusion of new technology and the development and use of knowledge (Hitt, Keats, and DeMarie 1998). Firms are required to do things differently in order to survive and prosper. Specifically, they must look to new sources of competitive advantage and engage in new forms of competition. Besides knowledge being an important resource in itself, the efficient allocation and use of other resources requires relevant knowledge. Not all forms and kinds of knowledge are equally important for acquiring competitiveness. Demarest (1997) described the nature of commercial knowledge, which goal of which is not to find the truth, but to ensure performance.

Competitiveness is the ability to provide products and services, as effectively as, or more effectively and efficiently than the relevant competitors. Measures of competitiveness include firm profitability, the firm's export quotient (exports or foreign sales divided by output), and regional or global market share. Performance in the international marketplace provides a direct measure of a firm's competitiveness. Competitiveness is also the ability to match or even beat the world's best firms in cost and quality of goods or services. Measuring competitiveness is often difficult. Measures of competitiveness include firm profitability and measures of cost and quality. In industries characterized by foreign direct investment,

TABLE 1 Classification of knowledge

Nonaka and Takeuchi (1995)	Knowledge is a dynamic human process, it can be either explicit or implicit, in both cases it represents intellectual capital. Authors focus on the transformation of tacit knowledge into explicit knowledge and then back.
Klein and Prusak (1994)	Klein and Prusak (1994) define Intellectual capital as 'packaged useful knowledge.' It is a kind of knowledge converted into some higher form.
Davenport and Prusak (1998)	Knowledge is a 'fluid mix of framed experience, values, contextual information and expert insights that provides a framework for evaluating and incorporating new experiences and information.' In firms knowledge can be found not only in documents but also in firm business routines and processes. Knowledge is information combined with experience.
Bertels and Savage and Bertels (1999);	The authors stress the significance of firm knowledge as it allows the firm to keep up with market needs. As we are in the knowledge Era, working with raw materials is not enough, we should also use raw ideas. The companies that invest in their own knowledge and knowledge management capabilities are not only improving their competitiveness but also increasing their corporate valuation.
Čater (2000)	The author defines the following dimensions of knowledge: *know-what* – it is a conceptual knowledge which is a fundamental knowledge, a necessary one, but not always a condition for success; *know-how* – it can be defined as the applied knowledge which helps translate a written theory into an efficient implementation; *know-why* – this kind of knowledge represents the employee's intuition and his/her ability to react in unexpected situations; *care why* – this is the fourth level of knowledge; it is composed of perseverance, adaptability and motivation.

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the firm's percentage of foreign sales and its share of regional or global markets can provide measures of firm competitiveness.

For the nation, competitiveness means the ability of the nation's citizens to achieve a high and rising standard of living. According to Porter (1990), competitiveness should be measured by the level and growth of aggregate productivity which determines the long-term level and growth of a nation's standard of living. Also, Porter (1990) suggests that no single country can be competitive in all industries, considering that resources (work and capital) are limited. A country should effectively allocate its resources to the areas with competitive advantages. In so doing, a country should create an environment in which companies would develop and grow in such a manner as to be able to successfully compete on

TABLE 1 *Continued from the previous page*

Lam (2000)	The author defines four categories of knowledge, i. e. embedded, encoded, embodied and embrained knowledge. This typology integrates the cognitive and the firm's dimensions. We can define *embrained knowledge* as the conceptual knowledge of the individual. It is based on his/her ability to understand theoretical concepts. It can be formal, abstract or theoretical. The systematic knowledge of scientists, which represents the rational understanding of the basic principles and laws of nature, also belongs to this category. We can define *embodied knowledge* as empirical knowledge, as it is created through practical experience. It is individual and silent and proceeds from experience ('doing'). The embedded knowledge is the collective form of tacit knowledge. It can be found in companies in the form of system routines and generally accepted rules. It is essential in processes which require employee interaction without written rules. We can understand encoded knowledge as information, already codified and stored. It includes written procedures, instructions and rules. We can find encoded knowledge in books, papers or in electronic forms.
Laszlo and Laszlo (2002)	Knowledge is relevant for the firm's performance. It is a product of human experience and reflection. Knowledge is one of the firm's resources that can be individual or collective. Knowledge in the firm is also the main source of value creation. Knowledge is power; it is up to managers to decide how to use it.
Brooking (1998)	The author defines four forms of intellectual capital, of which two of them contain knowledge dimensions. One of these encompasses overall expertise, creativity and ability to solve problems. The second one includes philosophy of management and organization culture.

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international markets. Porter (1990) authored the national competitive advantage theory, according to which the competitive advantages are influenced by human resources, knowledge, natural resources, infrastructure, and capital resources. Porter's (1990) 'diamond of national competitiveness' model postulates that success in international competition in a given industry depends on the relative strength of an economy in a set of business-related features or 'drivers' of competitiveness, namely 'factor conditions;' 'demand conditions;' 'related and supporting industries,' and 'firm strategy, structure, and rivalry.'

In most nations, the standard of living is determined by the productivity with which the nation's resources are deployed, the output of the economy per unit of labour and/or capital employed. Competitiveness at the national level is measured by the level and growth of the nation's

TABLE 1 *Continued from the previous page*

Nemec Rudež and Mihalič (2007)	The authors divide knowledge into four forms of intellectual capital. They are human capital, structural capital and two categories of relationship capital: end-customer relationship capital and non-end-customer relationship capital. Such a model enables us to study the importance of end customers separately, as well as the importance of other firms' relationships with business, government, local authorities and other associations, the media and the general public.
Rodriguez Perez and Ordonez de Pablos (2003)	Companies benefit from so-called core knowledge, which is characterized by high-value and high-level uniqueness. Companies should invest especially in this form of knowledge with a view to increasing company value potential. Firms need also specific knowledge, as it is a potential source of differentiation. It is very important to develop this form of knowledge. The compulsory knowledge can also be important for a company; however, investments in this type of knowledge are different from investments in core knowledge. For the company's operating activities the ancillary knowledge is created. This form of knowledge does not constitute a competitive advantage.
Stewart (2003)	Knowledge must continuously circulate within the organization. As long as there is a stock of knowledge, there should be a flow of knowledge as well. Knowledge is a public good and can be used by several individuals simultaneously. Knowledge is independent of place and can be in several places at the same time. Firms should be aware that the creation of knowledge can be rather expensive, while its propagation and sharing is rather inexpensive.

standard of living, the level and growth of aggregate productivity, and the ability of the nation's firms to increase their penetration of world markets through exports or foreign direct investment.

To be competitive a firm should be able to learn quickly and apply the acquired knowledge faster than the competitors. A company should improve its existing skills as well as master new ones continually. A company's infrastructure should be organized in such a manner that the adequate technological equipment, internet and intranet, knowledge banks, libraries, continuous training, and meetings stimulate efficient team work, creativity, positive attitudes, and self-confidence; and favourable work environments should be organized with a view to gaining or maintaining a competitive advantage (Rampersad 2007). To understand why certain competitive strategies are more effective than others, one must consider the distribution of resources in competing firms. Competitive advantages that are sustained over time lead to higher performance (Peteraf 1993). In the more traditional competitive landscape,

tangible resources, such as buildings, machinery, or access to capital were the most important potential sources of competitive advantage. But firms employ both tangible and intangible resources, and as the nature of work and competition changes, intangible resources are becoming more important. Examples of intangible resources are reputation, brand equity, and knowledge. Among a firm's intangible resources, knowledge is the most important and critical for competitive advantage because it is the most difficult to imitate.

A firm is represented by a series of different resources. Knowledge, as one of the resources, is an important element for company performance. Moreover, knowledge, as a part of human capital, is considered to be the most important factor for selecting and managing crucial resources to implement the desired strategy to achieve performance (Baird and Mashoulam 1988; Bergman Liechtenstein and Brush 2001). Managers should be aware that the unique and relevant knowledge is usually linked to employees. This is why the firm is extremely vulnerable to the degree that these employees are inclined to move to another company. Employees are transferable assets, and the organizations have to do their best to retain the employees with high knowledge capabilities.

KNOWLEDGE CAPITAL

Knowledge capital can be acquired (through education, training, etc.) and preserved (through lifelong learning and continuing education). Unlike other forms of the firm's assets, knowledge cannot be separated from its holder and it is entirely dependent on that person's capability to apply her/his knowledge in an organization. Considering knowledge as the main resource for creating company value suggests that it has come to regard knowledge as capital. Knowledge capital is synonymous with intangible capital. Its existence is difficult to measure. It comes from investments that firms make in their employees. These investments produce knowledge whose benefits extend beyond the years in which the expenditures occur. These investments are perhaps most frequently associated with expenditures on research and development (R&D). The type of knowledge capital that firms develop varies considerably across a wide range of industries. Unfortunately there is nothing to guarantee that by spending money on research and development, firms will actually develop useful knowledge capital (Baldwin and Gellatly 2006).

Throughout history, the forms and the role of capital have been changing. At the beginning capital had a monetary meaning, later, in the 17th

and 18th centuries, capital was closely related with national welfare and wealth. At the end of the 18th century, capital acquired the typical meaning of money intended for the purchase of goods. Nowadays the business world has started considering new forms of capital (Tymon and Stumpf 2003, 13).

The capital structure of firms has received extensive theoretical and empirical attention, including the role of intangible assets on optimal leverage (Rajan and Zingales 1995). The Zucker, Darby, and Brewer (1998) study explores the characteristics and growth of firms. Their findings reveal a connection between the location and growth of intellectual capital. It is apparent from these studies that knowledge capital can influence both the location and capital structure of firms. Liu (2001) studied the interaction among firms' knowledge capital, growth opportunities, earnings dynamics, and optimal leverage. Results suggest that investments in research and development and knowledge capital are related to leverage.

If we regard the value of knowledge as a resource with certain economic effects, this suggests that we understand knowledge as capital. Since knowledge as capital produces economic effects for its holders, it can be assigned economic market value according to supply and demand. In this value process, knowledge turns into capital. When defining knowledge as capital, it is reasonable to emphasize the investment aspect of knowledge, since investments increase the existing pool of knowledge and create sources of future income (Kešeljević 2004). Such investments result in the creation of new human capital which cannot be separated from the individual.

Human capital is a general term that refers to all of the resources that individuals directly contribute to an organization: physical, knowledge, social, and reputational. Human capital resources help individuals contribute to gaining and sustaining a competitive advantage. During the industrial age, human capital was valued because of physical resources such as strength, endurance, and dexterity – these were the aspects of human capital that were most likely to lead to competitive advantages. But as new machinery and technology were introduced, these characteristics became less important. In the current economic landscape, human capital is more likely to be valued for intellect, social skills, and reputation (DeNisi, Hitt, and Jackson 2010).

The understanding of the role of employees is not a new phenomenon. The role of individual entrepreneurial resources is ever changing; while

the importance of financial capital is on the decrease, human capital is gaining importance as a resource. Company employees as holders of knowledge, emotions, competencies, experiences and values are becoming the most important competitive advantage and, consequently, the most important source of company performance (Tomažič 2003, 27).

The human capital theory defines human capital at several levels. From the individual aspect, it emphasizes the importance of understanding knowledge acquisition as the investment in the individual. Investments result in the creation of new capital. From the entrepreneurial aspect, it emphasizes the benefits and costs in the relationship between employer and employee. Training is successful if a company's additional income exceeds the costs of substitute workers and training. From the national-economic aspect, a company as a whole benefits from education advantages (Kešeljević 2004). The implementation of company tasks, processes and transactions requires combinations of different dimensions of employee competencies (Stewart 2003). There exist general competences (more or less applicable in several branches, like typewriting, answering the telephone, and similar), balanced competences (can be applied by other companies, and not only by a single company, like tax consultants, lawyers, and similar) and special competencies (specific to an individual company and determining its strategy, for which reason they constitute its competitive advantage).

The entire human capital is owned by employees. Firms' managements aim at transferring human capital in the form of explicit knowledge and pass it into company ownership. The value created by an employee in a company returns partly to the individual in the form of payment, while part of it remains in the firm in the form of return on capital. Human capital is part of the individual (Nonaka and Takeuchi 1995) and consists primarily of the knowledge acquired on the basis of education and experience. Formal education is only one part of forming human capital. In many ways it is more useful to think of human capital formation as an experience or training, acquired by the life-long learning process. In their study Anderson, Locker and Nugent (2002) stated that in addition to social capital, human capital is the most important factor in entrepreneurship (2002). The impact of human capital on company growth has been studied by many researchers (Watts, Cope, and Hulme 1998; Johanisson 1999; Cope and Watts 2000; Edelman, Brush, and Monolova 2001; Honig 2001; Piazza-Georgi 2002; Ar-

gyris 2002; Baron and Markman 2003). In the literature, the most frequent mention is made of the impact of knowledge on market value, on increasing profitability and, thereby, on performance and competitiveness.

KNOWLEDGE AND FIRM COMPETITIVENESS

Different researchers have shown that there is a significant relationship between organizational resources, capabilities and performance (Barney 1991; Fahy 2000; Gimenez and Ventura 2002; Wiklund and Shepherd 2003; Bowen and Ostroff 2004; Morgan, Kaleka, and Katsikeas 2004; Sirmon, Hitt, and Ireland 2007). Empirical studies by Schroeder, Bates and Junttila (2002) and Ketokivi and Schroeder (2004) have found that a significant level of performance can be explained by organizational resources, capabilities and systems. Indeed, organizational resources, capabilities and systems are regarded as good predicting variables for the variance in firm performance. Competitive advantage plays a significant mediating role in the relationship between organizational resources, capabilities, systems and performance (Prahalad and Hamel 1990; Barney 1991; Mascarenhas, Baveja, and Jamil 1998; Fahy 2000; Ma 2000; Gimenez and Ventura 2002; Morgan, Kaleka and Katsikeas 2004; Sirmon, Hitt, and Ireland 2007).

Employees' knowledge is related to firm performance (Bergman, Liechtenstein, and Brush 2001; Smith, Collins, and Clark 2005; Subramanian and Youndt 2005). There exists the positive impact of the experience of employees on the firm's performance, measured by the return on investment and sales growth (Piercy, Kaleka, and Katsikeas (1998) The linking between knowledge and competitive advantage has been confirmed (Makovec, Brenčič, and Žabkar 2001), as also between knowledge and profitability (Čater and Alfirevič 2003).

Prusak (in Marti 2001, 150) agrees with the economists who have found that knowledge, the manner of its application, and the ability to employ new knowledge as quickly as possible are the most important factors that provide and sustain an organization's competitive advantages. This is why the lack of knowledge constitutes the main obstacle to the achievement and creation of a company's competitiveness. Competitiveness has become more and more a really 'dangerous obsession' (Krugman 1994) for the entities operating in the global economic world. Firm's management has to look closer at the impact of different factors affecting the firm's competitiveness. It has to evaluate them in order to

integrate the positive effects they may generate, and to avoid / reject them if their impact is negative.

Companies should be capable of adapting to competitive trends and taking defensive measures. The company itself is the basis of its competitive advantage (Porter 1980). Firms aim at improving their position through their actions and use competitive factors to their own benefit by accurately anticipating them. Porter proposed a model consisting of five competitive forces, namely: threat of entry of new competitors, intensity of market rivalry, availability and pressure from substitute products, bargaining power of buyers, and bargaining power of suppliers. These forces are viewed as the determinants of the industry's overall competitiveness and profitability. For creating competitive advantage, he proposed (first) lower costs and (second) differentiation of products or services. The latter, however, is not possible without knowledge as a source of intellectual capital. The very relevant and important aspect of the competitiveness of the firm is the industry in which the firm competes. In Porter's wording, 'the industry is the "arena" where competition takes place.'

Nonaka and Takeuchi (1995, 46) note that the competitive environment has changed so much that Porter's five-factor model for strategic decision-making has become obsolete. Companies are indeed forced to rapidly adapt their products or services, markets and sometimes even the entire activity. The consumer needs are changing constantly and transparency among markets and eventual competitors is decreasing. In such an environment, company performance must rely on the use of its own capacities.

Employees of certain companies are being considered a strategic resource which can play a key role in the realization of company strategies and goals. People and their abilities are the creators of value and of invisible structures (Sveiby 2001). Within the company this means the tangible and intangible assets, meanwhile outside a company the value is created through the sale of products and services and through relations between buyers and suppliers as well.

The internal company resources are of key importance in creating competitive advantages Fahy (2000). Fahy classifies the internal resources into tangible and intangible assets and, on the other hand, into competencies. For the analysis of relevance of these categories, Fahy defines the added value as the extent to which an individual category contributes to the realization of a strategy and set goals, satisfies customers and, thereby, increases company performance. The resources which defy

simple imitation and whose transferability and substitution are impeded are important in creating competitiveness. The resources which create such an added value, that for the most part remains in the ownership of a company, are the most important in creating competitiveness.

Fahy (2000) includes among intangible assets: customer confidence, company reputation, intellectual property, databases, and networks of connections within and outside a company. He further adds that intangible assets and competencies constitute rather complex categories of assets, for which reason they are difficult to imitate and transfer from one company to another. Added value created by intangible assets is owned by a company with a mark-up on selling prices, while employee competencies and experience should be integrated in a company's operation system to the greatest extent possible. An adequate management strategy, which can apply intangible assets and competencies on the market with a view to creating added value is required as well.

Conclusion

It is possible for firms to successfully substitute firm resources in the short term, but it is unlikely to be the same for knowledge resources. This is the reason why knowledge meets the criteria for being a source of sustainable competitive advantage. Knowledge adds value to the firm and it cannot be imitated. Certain competitive strategies are more effective than others, it is important to distribute resources effectively. A firm may possess more or less different resources, but only those resources that are rare and difficult to imitate provide a sustainable competitive advantage (Amit and Schoemaker 1993; Barney 1991).

Globalization, technical evolution, and deregulation are changing the competitive structure of markets in such a way that the effectiveness of traditional sources of firms' competitive advantage is often debilitated. Competitive advantages based on physical, financial, or even technological assets are less and less sustainable since these assets are more easily transmittable. This is the reason why firms need to concentrate on the development of difficult imitable capabilities. Such capabilities relate to employees of the firm. They develop and apply their abilities, knowledge and skills, organized and coordinated in ways which can be also distinctive.

The aim of this study was to review the literature in the field of knowledge and to analyze some fundamental challenges regarding the knowledge resources of a firm as sources of competitive advantage. Knowledge

is a source of sustained competitive advantage because it is valuable, rare, inimitable and non-substitutable. It is the resource based theory of the firm that suggests integrating knowledge into the firm's strategy. The resource based theory provides a framework for viewing knowledge as a pool of capital. Examining organizational competitive advantage from the resource-based view of the firm is crucial, as it can be used as a conceptual framework for business organizations in particular to enhance their competitive advantage position and performance via the identification of organizational resources, capabilities and systems. Such a research can contribute to the knowledge by lending empirical support and further extending the resource-based view of competitive advantage by examining the relative importance of organizational internal attributes towards attaining competitive advantage and enhancing firm performance.

We consider that the source of competitive advantages depends on knowledge, as also that knowledge is a necessary, but not a sufficient condition. Future research must be conducted in order to develop more deeply the relationship between different capabilities, especially knowledge, and different measures of competitiveness.

References

Amit, R., and P. J. Shoemaker. 1993. 'Strategic Assets and Organizational Rent.' *Strategic Management Journal* 13 (3): 33–46.

Anderson, C. L., L. Locker, and R. Nugent. 2002. 'Microcredit, Social Capital and Common Pool Resources.' *World Development* 30 (1): 95–118.

Andrews, K. R. 1971. *The Concept of Corporate Strategy.* Homewood, IL: Dow Jones-Irwin.

Argyris, C. 2002. 'Double-Loop Learning, Teaching, and Research.' *Academy of Management Learning and Education* 1 (2): 206–18.

Baird, L., and I. Meshoulam. 1988. 'Managing Two Fits of Strategic Human Resource Management.' *Academy of Management Review* 13 (1): 116–28.

Baldwin, J. R., and G. Gellatly. 2006. *Innovation Capabilities: The Knowledge Capital Behind the Survival and Growth of Firms.* Ottawa: Statistics Canada.

Baron, A. R., and D. G. Markman. 2003. 'Beyond Social Capital: The Role of Entrepreneurs' Social Competence in Their Financial Success.' *Journal of Business Venturing* 18 (1): 41–60.

Barney, J. B. 1986. 'Strategic Factor Markets: Expectations, Luck and Business Strategy.' *Management Science* 32 (10): 231–41.

Barney, J. B. 1991. 'Firm Resources and Sustained Competitive Advantage.' *Journal of Management* 17 (1): 99–129.

Becker, B. B., and M. A. Huselid. 1998. 'High Performance Work Systems and Firm Performance: A Synthesis of Research and Managerial Implications.' *Personnel and Human Resource Management* 16:53–101.

Bergmann Liechtenstein, B. M., and C. G. Brush. 2001. 'How Do Resource Bundles Develop and Change in New Ventures? A Dynamic Model and Longitudinal Exploration.' *Entrepreneurship Theory and Practice* 25 (3): 37–59.

Bertels, T., and C. M. Savage. 1999. 'A Research Agenda for the Knowledge Era: The Tough Questions.' *Knowledge and Process Management* 6 (4): 205–12.

Bowen, D. E., and C. Ostroff. 2004. 'Understanding HRM–Firm Performance Linkages: The Role of the "Strength" of the HRM System.' *Academy of Management Review* 29 (2): 203–21.

Brooking, A. 1998. *Intellectual Capital: Core Asset for the Third Millennium Enterprise.* London: Thomson.

Collis, D. J., and C. A. Montgomery. 1995. 'Competing on Resources: Strategy in the 1990's.' *Harvard Business Review* 73 (4): 118–28.

Collis, D. J., and C. A. Montgomery. 1997. *Corporate Strategy: Resources and the Scope of the Firm.* Chicago, IL: Irwin.

Collison, M. 2002. 'Clear Thinking.' *Summit,* Autumn.

Cope, J., and G. Watts. 2000. 'Learning by Doing: An Exploration of Experience, Critical Incidents and Reflection in Entrepreneurial Learning.' *International Journal of Entrepreneurial Behaviour and Research* 6 (3): 104–24

Čater, T. 2000. 'Znanje kot vir konkurenčnih prednosti in management znanja.' *Naše gospodarstvo* 46 (4): 505–20.

Čater, T., and N. Alfirević. 2003. 'Sources of Competitive Success of Large Enterprises in Transition: The Case of Croatia and Slovenia.' In: *Enterprise in Transition,* 2372–92. Split: Faculty of Economics.

Davenport, T. H., and L. Prusak. 1998. *Working Knowledge: How Organizations Manage What They Know.* Boston, MA: Harvard Business School Press.

DeNisi, A., M. A. Hitt, and S. E. Jackson. 2010. 'The Knowledge-Based Approach to Sustainable Competitive Advantage.' http://media.wiley.com/product_data/excerpt/78/07879571/0787957178.pdf

Demarest, M. 1997. 'Understanding Knowledge Management.' *Long Range Planning* 30 (3): 374–84.

Drucker, P. 1994. *The New Realities: in Government and Politics/in Economics and Business/in Society and World View.* New York: Harper Business.

Edelman, L. F., C. G. Brush, and T. S. Manolova. 2001. 'The Impact of Human and Organizational Resources on Small Firm Strategy.' *Journal of Small Business and Enterprise Development* 9 (3): 236–44.

Fahy, J. 2000. 'The Resource Based View of the Firm: Some Stumbling Blocks on the Road to Understanding Sustainable Competitive Advantage.' *Journal of European Industrial Training* 24 (2): 94–104.

Gimenez, C., and A. Ventura. 2002. 'Supply Chain Management as a Competitive Advantage in the Spanish Grocery Sector.' UPF Working Paper Series 641, Universitat Pompeu Fabra, Barcelona.

Grant, R. M. 1991. 'The Resource Based Theory of Competitive Advantage: Implications for Strategy Formulation.' *California Management Review* 33 (3): 14–35.

Hitt, M. A., and R. D. Ireland. 1985. 'Corporate Distinctive Competence, Strategy, Industry and Performance.' *Strategic Management Journal* 6 (3): 273–93.

Hitt, M. A., B. A. Keats, and S. M. DeMarie. 1998. 'Navigating in the New Competitive Landscape: Building Strategic Flexibility and Competitive Advantage in the 21st Century.' *Academy of Management Executive* 12 (4): 22–42.

Honig, B. 2001. 'Human Capital and Structural Upheaval: A Study of Manufacturing Firms in the West Bank.' *Journal of Business Venturing* 16 (6): 575–94.

Ivankovič, G. 2006. 'Marketing-Oriented and Strategic Management Accounting.' In *Destination Management,* edited by R. Ovsenik and I. Kiereta: 134–56. Frankfurt am Main: P. Lang.

Johannisson, B. 1999. 'Networking and Entrepreneurial Growth.' In *Handbook of Entrepreneurship,* edited by D. Sexton and H. Landstrom: 368–86. London: Blackwell.

Kešeljević, A. 2004. 'Intelektualni kapital kot nadgradnja človeškega in socialnega kapitala.' *Organizacija* 37 (1): 43–9.

Ketokivi, M., and R. Schroeder. 2004. 'Manufacturing Practices, Strategic Fit and Performance: A Routine-Based View.' *International Journal of Operations and Production Management* 24 (2): 171–91.

Klein, D., and L. Prusak. 1994. *Characterizing Intellectual Capital.* Boston, MA: Ernst and Young.

Krugman, P. 1994. 'Competitiveness: A Dangerous Obsession.' *Foreign Affairs* 73 (2): 28–44.

Lam, A. 2000. 'Tacit Knowledge, Organizational Learning and Societal Institutions: An Integrated Framework.' *Organization Studies* 21 (3): 487–513.

Laszlo, K. C., and A. Laszlo. 2002. 'Evolving Knowledge for Development: The Role of Knowledge Management in a Changing World.' *Journal of Knowledge Management* 6 (4): 400–12.

Liu, Q. 2001. 'Knowledge Capital, Growth Opportunities, and Leverage: Evidence from US Biotechnology Firms.' Working paper, School of Economics and Finance, University of Hong Kong.

Ma, H. 2000. 'Competitive Advantage and Firm Performance.' *Competitiveness Review* 10 (2): 16–7.

Mahoney, Y. T., and J. R. Pandian. 1992. 'The Resource Based View within the Conversation of Strategic Management.' *Strategic Management Journal* 13 (5): 363–80.

Makovec-Brenčič, M., and V. Žabkar. 2001. 'Competitive Advantage as a Result of Non-Price Factors: Application of the Structural Equation Model.' *Economic and Business Review* 3 (1): 25–44.

Marti, J. M. V. 2001. 'ICBS: Intellectual Capital Benchmarking System.' *Journal of Intellectual Capital* 2 (2): 148–65.

Mascarenhas, B., A. Baveja, and M. Jamil. 1998. 'Dynamics of Core Competencies in Leading Multinational Companies.' *California Management Review* 40 (4): 117–32.

Morgan, N. A., A. Kaleka, and C. S. Katsikeas. 2004. 'Antecedents of Export Venture Performance: A Theoretical Model and Empirical Assessment.' *Journal of Marketing* 68 (1): 90–108.

Nahapiet, J., and S. Ghoshal. 1998. 'Social Capital, Intellectual Capital, and the Organizational Advantage.' *Academy of Management Review* 23 (2): 242–66.

Nemec Rudež, H., and T. Mihalič. 2007. 'Intellectual Capital in the Hotel Industry: A Case Study from Slovenia.' *International Journal of Hospitality Management* 26 (1): 188–99.

Nonaka, I. 1991. 'The Knowledge Creating Company.' *Harvard Business Review* 69 (6): 96–104.

Nonaka, I., and H. Takeuchi. 1995. *The Knowledge Creating Company: How Japanese Companies Create the Dynamics of Innovation.* New York: Oxford University Press.

Penrose, E. T. 1959. *The Theory of the Growth of the Firm.* New York: John Willey and Sons.

Peteraf, M. A. 1993. 'The Cornerstones of Competitive Advantage: A Resource Based View.' *Strategic Management Journal* 14 (3): 179–88.

Piazza-Georgi, B. 2002. 'The Role of Human and Social Capital in Growth: Extending Our Understanding.' *Cambridge Journal of Economics* 26 (4): 461–79.

Piercy, N. F., A. Kaleka, and C. S. Katsikeas. 1998. 'Sources of Competitive Advantage in High Performing Exporting Companies.' *Journal of World Business* 33 (4): 378–93.

Polanyi, M. 1958. *Personal Knowledge.* London: Routledge.

Polanyi, M. 1967. *The Tacit Dimension.* New York: Anchor.

Popper, K. R. 1972. *Objective Knowledge: An Evolutionary Approach.* Oxford: Clarendon.

Porter, M. E. 1980. *Competitive Strategy.* New York: The Free Press.

Porter, M. 1990. *The Competitive Advantage of Nations.* New York: The Free Press.

Prahalad, C. K., and G. Hamel. 1990. 'The Core Competence of the Corporation.' *Harvard Business Review* 68 (3): 79–91.

Rajan, G. R., and L. Zingales. 1995. 'What Do We Know about Capital Structure? Some evidence from International Data.' *Journal of Finance* 50 (5): 1421–60.

Rampersad, H. K. 2007. 'Organisational Learning for Successful Companies.' Http://www.marshallgoldsmithlibrary.com/docs/ThoughtLeaders/Rampersad/Organisational-Learning.pdf.

Rodriguez Perez, J., and P. Ordonez de Pablos. 2003. 'Knowledge Management and Organizational Competitiveness: A Framework for Human Capital analysis.' *Journal of Knowledge Management* 3 (7): 82–91.

Rumelt, R. P. 1984. 'Towards a Strategic Theory of the Firm.' In *Competitive strategic Management,* edited by R. B. Lamb: 556–70. Englewood Cliffs, NJ: Prentice Hall.

Ruzzier, M., B. Antončič, and M. Konečnik Ruzzier. 2006. 'The Resource-Based Approach to the Internationalisation of SMEs: Differences in Resource Bundles Between Internationalised and Non-Internationalised Companies.' *Zagreb International Review of Economics and Business* 9 (2): 95–116

Ruzzier, M., B. Antončič, R. D. Hisrich, and M. Konečnik Ruzzier. 2007. 'Human Capital and SME Internationalization: A Structural Equation Modelling Study.' *Canadian Journal of Administrative Sciences* 24 (1): 15–29.

Sanchez, R. 2005. 'Knowledge Management and Organizational Learning: Fundamental Concepts for Theory and Practice.' Working paper, Lund Institute of Economic Research.

Savage, C. M., and T. Bertels. 1999. 'A Research Agenda for the Knowledge Era: The Tough Questions.' *Knowledge and Process Management* 6 (4): 205–15.

Selznick, P. 1957. *Leadership in Administration.* New York: Harper and Row.

Schroeder, R. G., K. A. Bates, and M. A. Junttila. 2002. 'A Resource-Based View of Manufacturing Strategy and the Relationship to Manufacturing Performance.' *Strategic Management Journal* 23 (2): 105–17.

Sirmon, D. G., M. A. Hitt, and R. D. Ireland. 2007. 'Managing Firm Resources in Dynamic Environments to Create Value: Looking Inside the Black Box.' *Academy of Management Review* 32 (1): 273–92.

Smith K. G., C. J. Collins, and K. D. Clark. 2005. 'Existing Knowledge, Knowledge Creation Capability and the Rate of New Product Introduction in High Technology Firms.' *Academy of Management Journal* 48 (2): 346–57.

Spender, J. C., and R. M. Grant. 1996. 'Knowledge and the Firm: Overview.' *Strategic Management Journal* 17 (1): 5–9.

Stewart, T. A. 2003. *Intellectual Capital: The New Wealth of Organization.* London: Brealey.

Subramaniam, M., and M. A. Youndt. 2005. 'The Influence of Intellectual Capital on the Types of Innovative Capabilities.' *Academy of Management Journal* 48:450–63.

Sveiby, K. E. 2001. 'A Knowledge-Based Theory of the Firm to Guide in Strategy Formulation.' *Journal of Intellectual Capital* 2 (4): 344–58.

Teece, D. J., G. Pisano, and A. Shuen. 1997. 'Dynamic Capabilities and Strategic Management.' *Strategic Management Journal* 18 (7): 509–33.

Tomažič, E. 2003. 'Z informacijami o neotipljivih virih podjetja do večje kakovosti letnih poročil.' *Finance,* 20 October.

Turban, E., and J. E. Aronson. 2001. *Decision Support Systems.* 6th ed. Englewood Cliffs, NJ: Prentice-Hall.

Tymon, W. G., and S. A. Stumpf. 2003. 'Social Capital in the Success of Knowledge Workers.' *Career Development International* 1 (8): 12–20.

Zucker, L., M. Darby, and M. Brewer. 1998. 'Intellectual Capital and the Birth of US Biotechnology Enterprises.' *The American Economic Review* 88 (1): 290–306.

Watts, A., J. Cope, and M. Hulme. 1998. 'Ansoff's Matrix, Pain and Gain Growth Strategies and Adaptive Learning among Small Food Producers.' *International Journal of Entrepreneurial Behaviour and Research* 4 (2): 101–11.

Wernerfelt, B. 1984. 'A Resource Based View of the Firm.' *Strategic Management Journal* 5 (3): 171–80.

Wiklund, J., and D. Shepherd. 2003. 'Knowledge-Based Resources, Entrepreneurial Orientation, and the Performance of Small and Medium-Sized Businesses.' *Strategic Management Journal* 24: (13): 1307–14.

Wong, K. Y. 2005. 'Critical Success Factors for Implementing Knowledge Management in Small and Medium Enterprises.' *Industrial Management and Data Systems* 105 (3): 261–79.