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THE BASIC DYNAMICS OF SUSTAINABLE COMPETITIVE ADVANTAGE IN ENTERPRISES: KNOWLEDGE MANAGEMENT AND INTELLECTUAL CAPITAL

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─ Abstract ─

Today, enterprises need to develop and carry out different and original practices in order to attain sustainable competitiveness and to keep up with rapid macro-level changes. In the process of differentiation, the concepts of "knowledge management" and "intellectual capital" are of significance. Knowledge management is a strategy that helps direct knowledge to the right centers in the processes of transmitting the right knowledge at the right time to the right targets, sharing knowledge with workers, and bettering the organizational performance. The fact that intellectual capital is addressed as a combination of three main dynamics demonstrates that the scope of this concept has widened significantly. Each of these dynamics "human capital", "structural capital" and "relational (or client) capital" is a separate value and of utmost importance for sustainable competitiveness.

The aim of this study, thus, is to provide a perspective by conceptually discussing the notions of knowledge management and intellectual capital as well as the interaction between them in terms of sustainable competitiveness at the dimension of value creation.

Key Words: Knowledge Management, Intellectual Capital, Sustainable Competitive Advantage

JEL Classification: L25, M19

1. INTRODUCTION

The notions of knowledge management, intellectual capital, knowledge capital, knowledge organizations, learning organizations, organizational learning, knowledge systems, knowledge assets, intangible assets and human capital provide significant competitive advantage to organizations in the knowledge society; and their importance as the definers of the new paradigm in the process of sustainable value creation rises every day.

In today's changing social processes, it is possible through knowledge management to create values that provide competitive advantage. In the process of turning knowledge into a value, the issue of the management of intellectual capital and its main components becomes current (Wang and Zhang, 2012). On the other hand, since knowledge constitutes the main input of intellectual capital, the management of knowledge as a strategic resource in the process of increasing intellectual capital points to a significant approach for accounting for the interactive dynamic between these two concepts.

Knowledge has become a strategic resource for enterprises especially in recent years, and those firms that possess and effectively use this strategic resource have gained competitive advantage over others. The driving force and the essential source of the knowledge society is knowledge, the product of the information technologies. Specialized experts manage knowledge due to its strategic importance for firms. The knowledge management strategy of a firm also reflects its competitive strategy (Tansen et al., 1999).

The purpose of knowledge management is to increase the organization's capacity to create value by ensuring the more deliberative and efficient use of knowledge. The purpose of intellectual capital management, on the other hand, is to define, develop and enhance intellectual capital as part of the process of value creation. Both of these definitions involve the acts of creating and increasing value (Edvinsson, 2000). Knowledge management ensures the most efficient use of intellectual capital within the organization. To accomplish this objective, it turns intellectual capital through various financial analyses into an instrument of "value creation" for the organization, and uses this for the purpose of creating competitive advantage. In this study, the concept of intellectual capital is addressed under the dimensions of human capital, structural capital and relational capital that an organization possesses. In addition, its interaction with knowledge management is conceptually analyzed with references to value creation and sustainable competitiveness.

2. KNOWLEDGE MANAGEMENT AND SUSTAINABLE COMPETITIVENESS

The process of transformation for organizations started with the efforts to increase productivity and quality, and it turned in the 1980s into the philosophy of providing higher value to customers. What firms want to achieve is to obtain competitive advantage and to maintain it in the long-run.

In an economic atmosphere in which uncertainty is the only certainty, the mere reliable source of permanent competitiveness is knowledge (Nonaka and Takeuchi, 1995). The new social structure, called by Drucker (1993) as “the knowledge society”, has completely different characteristics from its industrial predecessor. While the strategic resource was *"capital"* in the industrial society, *"knowledge"* comes into prominence in the new society as the essential resource. Knowledge-based industries grow much more rapidly than others and shape the economic structures of many countries (Drucker, 1993).

Today, the concept of “knowledge chain” is used with the aim of defining the capabilities of organizations to adapt to changing environmental conditions and the extents to which they efficiently utilize their knowledge resources. Knowledge chain demonstrates the intellectual power that an enterprise needs to take action, its capacity to identify and understand its environment, and its response speed to market changes or technological advancements compared to its rivals. Therefore, the most important skills that constitute an enterprise’s knowledge chain are environmental awareness (being aware of what is going on in the environment) and ability to respond to changes in time (Spinello, 1998).

Creation of knowledge has become an important priority for management. The rise of global competition has rendered knowledge a significant strategic resource (Inkpen, 1998). What really matters here is the creation of knowledge and its efficient distribution within the organization. Such knowledge will pave the way for the emergence of new knowledge. Since the human is the main source that creates knowledge; he needs to learn, internalize this learning and transmit the knowledge to others. For learning to be permanent, fast and efficient dissemination of knowledge within the firm is required. Knowledge increases by creating a synergic impact only if it is effectively shared (Garvin, 1993).

Today, not only in the US but also in almost all countries, investments made in capital goods of knowledge economy are on the rise. Knowledge and information have gained a unique reality steering away from the physical movements of goods and services. This transformation has brought about two important consequences: First, knowledge and the assets that create and distribute knowledge can be managed just like physical and financial assets. In this process of management, intellectual and physical-financial assets can be managed separately, together, and in relation to one another. Second, since knowledge has become the greatest source of wealth, individuals, firms and countries are now obliged to invest in assets that create and process knowledge (Stewart,1997).

Knowledge is an abstract concept. Therefore, in the new economy called knowledge economy, the importance of non-physical intangible assets is rising rapidly (Edvinsson, 2000).

Today, values of many firms, which are expressed through stock prices, are at least tenfold more than the assets recorded in their financial accounts. This value can be calculated not through properties and physical assets but through intangible assets such as the firm’s future competitiveness, know-how, brand image, partnership ability, innovation potential, patents, copyrights, computer systems, business practices, relations and customer lists. That is, this difference is largely attributed to intellectual capital (Alle, 1999 ; Porter, 1980).

3. THE CONCEPT OF INTELLECTUAL CAPITAL

Leif Edvinsson, who is known as the first professional intellectual capital manager, defines intellectual capital as “knowledge that is convertible to value”. Edvinsson suggests that firms have two invisible assets –human capital and organizational capital- and that intellectual capital refers to the sum of these two (Edvinsson, 1997).

Intellectual capital largely consists of intangible assets. The intellectual capital approach is based on extracting value out of intangible assets, that is, acquiring intangible assets and rendering them useful to the firm. What is needed in the phase of deriving added value from intellectual materials is organizational intelligence, in other words company IQ (Gates,1999) .

OECD defines intellectual capital as two different intangible assets that are economically-valuable owned by a firm. These assets are human and organizational (structural) capitals (Nerdrum and Erikson,2001).

Klein and Prusak, on the other hand, define intellectual capital as “intellectual materials that are formalized, acquired and mobilized in order to produce a higher-value asset” (Klein and Prusak, 1994).

Sveiby, on the other hand, addressed intellectual capital in three dimensions: organizational structure, management, R&D works, business processes and software as processes inside the organization; brand, corporate image, customers and suppliers as processes outside the organization; and education, experience, skills and social relations in the human dimension (Sveiby, 1998).

Stewart, in the book “Intellectual Capital: The New Wealth of Organizations” published in 1997, defines intellectual capital as “the accumulated useful knowledge” arguing that it comprises an organization’s processes, technologies, patents, workers’ skills, and knowledge of other relevant parties such as customers and suppliers. In other words, intellectual capital is “intellectual material that can be put into use to create wealth, that is, knowledge, information, intellectual property and experience” (Stewart,1997).

In other definitions of intellectual capital, similarly, the concepts of source competence, intangible asset and knowledge are covered; (Bontis et al., 2000)

* It is difficult to define intellectual capital, but once it is defined and unravelled, it can provide firms with numerous resources to succeed in the competitive atmosphere.

* Intellectual capital is constituted by intangible assets concerning the market in which the firm operates, the intellectual properties the firm holds, human characteristics and the organizational infrastructure (Brooking, 1996).

* Intellectual capital is a concept that comprises intangible assets that are not shown in financial statements such as processes, patents, commercial rights and brands. In addition, it is the knowledge possessed by the workers of the organization and the use of this knowledge within the organization (Roos et al., 1997).

The junction of all these definitions of intellectual capital is the construction of knowledge towards profitable conversions for the sustainability of firms' competitiveness.

Naturally, firms have to prioritize profits. In this respect, intellectual capital should guide firms' internal and external dynamics in the processes of value creation and profit making. In parallel with this approach, the relations concerning intellectual capital and value creation can be interpreted on Figure 1.

Intellectual Capital

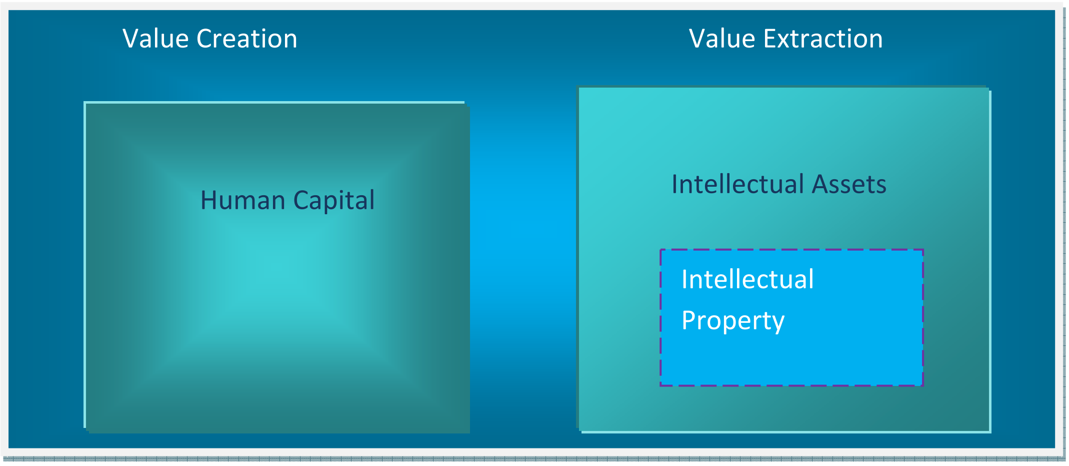

Figure 1. Intellectual capital and value formations (Harrison and Sullivan, 2000: 35)

Human capital, as the most critical component of intellectual capital, is a source of value creation due to its embedded tacit knowledge. Tacit knowledge becomes explicit knowledge as the former is analyzed and transferred into the organization memory. This analyzed knowledge is now called intellectual asset, which refers to more intangible assets. Intellectual assets are knowledge-based assets possessed by the firm that will provide income inflow such as technology and management. When intellectual assets are protected under a legal framework, that is, when they become properties; they are now called intellectual properties. Examples of intellectual properties are patents, copyrights, commercial brands, commercial secrets etc. (Harrison and Sullivan, 2000). The notion of intellectual capital includes the conversion of these knowledge and assets into value. Each product produced by this process is called an intellectual asset, or knowledge asset. Intellectual capital comprises assets that are not shown in financial statements; it measures the non-measured. It is a research conducted with the aim of revealing the relations among individuals, ideas and knowledge (Edvinson,1997).

The difference between market value and the value of physical assets in fact refers to that firm's intellectual capital which is defined through the firm's accumulation of knowledge and creativity. As these developments clearly demonstrate; value creation, which is –or needs to be- the main objective of firms, is increasingly based on a better management of intellectual capital. It is observed that the fastest growing and value creating firms are the ones that manage their knowledge networks best. The achievements of firms like Microsoft and Google in increasing their values in very short periods of time compared to other firms that had much more fixed investments and assets are the most striking relevant examples. For instance, the total value of Microsoft's assets such as buildings, lands, machines, cars, furniture and cash in banks is around 6% of its total market value. In other words, in the eyes of its investors, around 94% of Microsoft's value stems from assets that are not recorded in a formal financial statement such as R&D and brands of Bill Gates and Microsoft (Leadbeater, 2000).

With an effective intellectual capital management; strategies based on knowledge and creativity can be developed, and this way the effective competitiveness of the firm can be improved (Carol and Tansey, 2000).

It is certain that knowledge-based firms will have significant competitive advantages in the future, because when managed efficiently, intellectual capital increases firms' performances and thus creates value and competitive advantage.

3.1. Components of Intellectual Capital

It is difficult to say that there exists a consensus on the components of intellectual capital. However, there are certain undisputed components. These components generally are human capital and structural capital. Hubert Saint-Onge and Leif Edvinsson address intellectual capital through three components: human capital, structural capital and client capital. Nick Bontis (1996), on the other hand, sees relational capital as the third component instead of client capital.

Human Capital: It is regarded as the essential component of intellectual capital models. It is related to the experiences, knowledge, skills, motivations and working talents of managers and employees (Edvinsson and Malone, 1997). This capital can be enhanced by attaching importance to employees' opinions and listening to their proposals regarding business development.

Human capital is the component of intellectual capital embedded in the employees of the firm. Employees' intelligence, culture, skills, knowledge and talents fall under the definition of human capital. It is of crucial importance for organizational and relational capitals, because both of them hinge on human capital. The first definition of human capital in the literature was made in the early 1960s. It has been defined by numerous authors under different names (Abeysekera and Guthrie, 2004; p.251-268); such as "human assets" (Likert, 1967), "human resources" (Brummet, Flamholtz and Pyle, 1968, Heckmian and Jones 1967, Elias 1972a, 1972b), "cultural capital" (Thompson,1998), "worth of employees" (Roslender and Dyson,1992), and finally, "Human Capital" (Liebowitz and Wright,1999).

While converting knowledge into intellectual capital, the available human capital is of great importance, because human beings possess the creative power. However, the real skill needed in an organization is to convert human capital into structural capital (knowledge systems, knowledge of marketing channels, customer relations etc.). Employees' tacit knowledge is among the most important elements that affect the firm's performance. However, the presence of tacit knowledge alone is not sufficient for the organization's performance. The purpose is to turn employees' tacit knowledge into organizationally explicit knowledge. Only then the creation of organizational value becomes possible. Human capital generally consists of a mixture of employees' professional and other knowledge, their leadership skills, competences in risk-taking, and problem-solving skills. It is difficult to measure human capital as it is difficult, even impossible, to define it within clear boundaries. Human capital is a catalyst for firms that mobilizes intangible assets and increases operational efficiencies of tangible assets (materials and instruments) (Fitz-Enz, 2000).

Structural Capital: Structural capital can be defined as "the knowledge that the workers do not take home while leaving the workplace in the evening" (Stewart, 1997). Each organization has a unique structural capital, which is shared by its members. While technologies, inventions, publications and processes constitute forms of structural capital protected by laws, there are other forms of structural capital such as company strategy and culture. Structural knowledge in a company should be well-protected and easily-found for reuse. Thus, such knowledge does not undergo a change or loss due to personnel leaving the company. Structural capital may be addressed under two main categories: capital that helps examine the existing situation of the company (business processes capital) and capital concerning the future state of the company (innovation and development capital).

The component of intellectual capital that can be created by the company and that really belongs to the company is structural capital. Structural capital is regarded as the sum of a company's strategies, structure, systems and processes that enable the company to produce and distribute the product (Edvinsson and Sullivan, 1996). Structural capital is a supportive superstructure on which performances of employees are based. Edvinsson and Malone (1997) divided structural capital into three components: organizational capital, process capital and innovation capital. Organization capital comprises the philosophy and systems of the organization that increase its business skills. Process capital involves the techniques, methods and programs that provide and improve the distribution of goods and services. Innovation capital, on the other hand, consists of intellectual property, such as copyrights and commercial brands, and all other intellectual assets such as skills and theories that ensure the healthy operation of the company.

Relational (Client) Capital: Companies should effectively utilize knowledge obtained through relations in order to be able to compete with their rivals. One of the most important elements of environment is clients. Today, the common goal of many companies is to satisfy customers. Apart from customers; relations with suppliers, shareholders and investors also fall within the scope of this capital.

Enterprises are obliged to establish relationships with all parties within the value chain from customers to suppliers. Many researches demonstrate that being market-oriented is effective in increasing profitability and market share (Narver and Slater, 1990).

Firms have to invest not only in themselves and their employees but also in their customers as a requirement of their social responsibilities. Relational (client) capital is very similar to human capital. Firms cannot own customers just like they cannot own people. Client capital is a wealth created jointly by the producer and the consumer. The stronger the cooperation, the higher the outcome (Guthrie, 2001).

These three dimensions of intellectual capital create a value chain (Lev, 2001) that necessitates a strategic consideration of the issue. For this reason, knowledge management should be seen as a high-level function in the organization and it should receive absolute belief and support from the top management (Fincham and Roslender, 2004). A company becomes able to manage these assets and derive profits from them only if it recognized what joint cost is. A harmonious functioning of these three components enhances creativity, openness to innovation, cooperation and feedback within the organization.

4. SUSTAINABLE COMPETITIVENESS AND THE INTERACTION BETWEEN INTELLECTUAL CAPITAL AND KNOWLEDGE MANAGEMENT

In the knowledge management approach; knowledge is firstly created at the individual level and then spread across the organization by going through various knowledge processes. In this respect, knowledge can most generally be defined as "the most essential input of all kinds of organizational activities". The most important factor that provides an organization with sustainable competitive advantage is the amplitude of knowledge.

Today, in the process of converting new knowledge into competitive advantage, companies continuously change, renew or review their behaviours, structures and styles. The main purpose here is to determine, improve and protect the formations that can be converted in the context of "knowledge-based assets/intellectual capital".

The purpose of knowledge management is to increase the organization's value-creation skill by ensuring the more conscious and efficient utilization of knowledge. The purpose of intellectual capital management, on the other hand, is to define, improve, convert -and finally- increase intellectual capital in the context of value creation. Both definitions include the acts of creating value and increasing value (Edvinsson, 2000). Knowledge management ensures the most efficient use of intellectual capital within the organization. To accomplish this objective, it turns intellectual capital through various financial analyses into an instrument of "value creation" for the organization, and uses this for the purpose of creating competitive advantage.

Management of knowledge is as much important as acquisition of knowledge. The ultimate aim of knowledge management is to produce, store, and reuse organizational knowledge, that is, to maximize intellectual capital by improving organizational knowledge and rendering organizational intelligence more functional and productive. There exist differences, similarities and complementary aspects between intellectual capital and knowledge management. Knowledge management aims to increase intellectual capital in the short run through operational and tactical means. Intellectual capital and intellectual capital management, on the other hand, aim to increase the market value of the company with a strategic perspective (Zhou and Fink, 2003). In this respect, it can be stated that the notions of knowledge management and intellectual capital management are notions that continuously interact with and complement one another (Hendriks ve Sousa, 2012).

Sveiby suggests that a term can best be defined through its usage, and thus that knowledge management and intellectual capital management can be seen as two branches of a single tree, based on his own experiences. If one has to look for a difference, he needs to look into the weaknesses of these two concepts. Intellectual capital is static, and there is a need for actions like managing intellectual capital or improving intellectual capital in order for managers to be able to express what they can do with it. Knowledge management, on the other hand, is a dynamic concept since it already embodies the act of converting raw information into knowledge. Sveiby, for these reasons, defines knowledge management as the art of creating value out of intangible assets (Sveiby, 1998).

Competitive advantage in the knowledge economy depends more on how firms manage their intellectual capitals than on their tangible and financial assets. It is observed that big companies that foresee the future increasingly hire CKOs (*Chief Knowledge Officer*), whose main responsibility is to effectively and correctly manage intellectual capital, along with CEOs (*Chief Executive Officer*) (Bontis, 1996).

The success of the investment that firms' make in intellectual capital depends on the transformation of organizations. It has become more and more of a priority for firms to restructure themselves and to turn themselves into learning organizations (Senge, 1990). The main factor that will ensure this organizational transformation is undoubtedly the accumulation of intellectual capital. Particularly, forming learning-based systems aimed at improving labour's skills in business policies and strategies and securing the accumulation of intellectual capital are of critical importance for firms to gain competitive advantage.

5. CONCLUSION

Knowledge has become a strategic resource for enterprises especially in recent years, and those firms that possess and effectively use this strategic resource have gained competitive advantage over others. The most important factor that provides an organization with sustainable competitive advantage is the amplitude of knowledge.

The purpose of Knowledge Management is to increase the organization’s capacity to create value by ensuring the more deliberative and efficient use of knowledge. The purpose of Intellectual Capital Management, on the other hand, is to define, develop and enhance intellectual capital as part of the process of value creation. Both of these definitions involve the acts of creating and increasing value (Edvinsson, 2000).

Intellectual capital largely consists of intangible assets. The intellectual capital approach is based on extracting value out of intangible assets, that is, acquiring intangible assets and rendering them useful to the firm. The fact that intellectual capital is addressed as a combination of three main dynamics demonstrates that the scope of this concept has widened significantly. Each of these dynamics “human capital”, “structural capital” and “relational [client] capital” is a separate value and of utmost importance for sustainable competitiveness.

While converting knowledge into intellectual capital, the available human capital is of great importance, because human beings possess the creative power. However, the real skill needed in an organization is to convert human capital into structural capital (knowledge systems, knowledge of marketing channels, customer relations etc.). Structural capital is regarded as the sum of a company’s strategies, structure, systems and processes that enable the company to produce and distribute the product. Relational (client) capital is very similar to human capital. Client capital is a wealth created jointly by the producer and the consumer. A company becomes able to manage these assets and derive profits from them only if it recognized what joint cost is. A harmonious functioning of these three components enhances creativity, openness to innovation, cooperation and feedback within the organization.

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