

Knowledge Economy: Characteristics and Dimensions

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Abstract. *Over the past several decades, the theme of knowledge economy (KE) has become increasingly important, being seen as a source of economic growth and competitiveness in all economic sectors. As a consequence of this development, the author provides evidence that scholars and commentators have pleaded in favor of using modern resources which enrich knowledge-based-economies, such as investments in IT&C, high-technology industries, and highly skilled workers. These factors are perceived as fundamental factors of KE, as the present research will state. The drivers of KE are indeed technologies with the help of knowledge and the production of information, all these conditioned by dissemination. The hereby article opens with a compare and contrast analysis of the traditional economy versus the knowledge economy. Also, the article defines the KE, focusing on the debate existing on the subject of its key characteristics and components (dimensions) according to international forums, scholars, and practitioners. At the same time, the author provides information on the drivers of KE, by thoroughly reviewing the academic literature in this field. In the end of the research, the focus moves to the four pillars of KE and their means of assessment. The positive economic trends that the KE brings forth are also analyzed, as well as the core elements of KE, also known under the name of the four pillars of KE: economic and institutional development stimuli; educated and skilled workers that can facilitate the creation and dissemination of knowledge; an adequate innovation system able to embrace the globalized knowledge stock, grasp it and adjust it to particular regional/local conditions; up-to-date information infrastructure enabling communication, information delivery and handling of information and knowledge.*

Keywords: *knowledge economy, intellectual capital, knowledge characteristics.*

Introduction

Globalization and technological revolutions transform the contemporary economy into what is called the “knowledge economy” (KE). In this economy, a new form of organizations and work govern the world of business, demanding the rapid development of skills, solid knowledge and

greater responsibility. Contemporary society thus becomes a learning society, adapting to the new, and in this context *educational systems* must aim at the formation of people able to contribute to the development of their own competencies, to integrate fully in the socio-cultural context in which they live. In the first part of the article, the researcher identified the dimensions of the concepts developed, through the technique of bibliographic documentation. This task was also accomplished by deduction as well as by empirical correlation of the individual dimensions with the total concept and the other concepts. Further on, among the methods used in the elaboration of this article, can be mentioned the inductive method, observation, analysis, synthesis. The last one provided the essential structure into which the pieces of our research fitted.

Since the mid-twentieth century, some disputes and controversies have arisen in the literature on industrial society and implicitly on post-industrial society. Against this backdrop, the first signs of the new society, the knowledge-based society, have come to light. Globalization has helped to the more easily distribution of information, data, and knowledge. This was largely due to modern technology. During the last decades, four concepts have been used interchangeably, according to Figure 1:

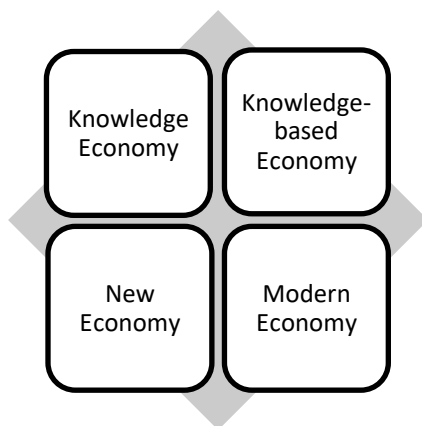


Figure 1. KE concepts used interchangeably

The first two concepts are currently preferred by international organizations and policymakers and will be used also in the hereby paper. The reason why these terms are used and not the others is that both words composing it, illustrate the most important aspects of the whole concept: knowledge, “a driver of economic development”. Within the “traditional economy”, the knowledge economy is developing continuously as a direct consequence of the increase of importance of knowledge in economic processes in all economic sectors (Davenport & Prusak, 2000; Mehmood & Rehman, 2015; Nonaka & Takeuchi, 1995; Viedma & Cabrita, 2012).

Literature review

Traditional economy versus knowledge economy

If it were to make a contrastive approach between the knowledge economy and the traditional economy the following differences can be observed:

- The KE means rather an abundance instead of scarcity as it used to be in the traditional economy. Thus, if in the past, resources used to be diminished, in the KE, both information and knowledge do not decrease, on the contrary, they can be shared and increased through their application (Dalkir, 2005; Edvinsson, 2002; Ricceri, 2008).
- There is no longer a problem of location in the KE economy. Thus, everything is becoming virtual and therefore global if appropriate technology and methods are being used. Also, time is no longer an issue.
- There emerge difficulties in applying regulations nationally. Instead, global regulations must be promoted, particularly if we consider that knowledge and information flow in direct accordance with the highest demand and the lowest barriers (Nissen, 2006).
- Low knowledge intensity products or services cannot request relative prices over comparable products with enlarged knowledge.
- The context is highly important for the KE. Thus, price and value differ a lot according to the given period of time and according to individuals. Identical information or knowledge can have a different financial value in various contexts.
- Human capital skills add value to corporations, but, despite this, competencies are not usually evaluated by companies in their annual statements (Ricceri, 2008; Stewart, 1998; Tocan, 2012).

Apart from the aforementioned differences, other key differences between traditional and knowledge economies have been outlined by Brinkley (2006, p.13):

- KE is "a soft discontinuity from the past".
- KE encloses all sectors of the economy.
- IC&T is a key concept in KE, alongside with skilled workers.
- The traditional economy argues that capital can be explained only in financial terms or in physical terms. In the new economy, traditional capital, which had only financial or physical characteristics, turns into intangible capital. The new economy records that over 50% of gross domestic product in economically developed countries, based on the knowledge-based economy. This is due to the intellectual capital and the professionalism of the staff.
- Innovations play a major role in KE.
- KE depends on KM in order to handle, store and share information.

Suciu (2004) considers that knowledge and knowledge economy are based on other means of managing time and distances: information and knowledge. In her works, the professor presents the implications of the knowledge economy on every aspect of the economy, always making a comparison between the traditional economy and the knowledge economy. For example, if the traditional economy is characterized by balance and stability, focusing on traditional production factors and comparative advantage, having as its main objectives economic growth, balance and stability, full employment and price stability, the knowledge economy is seen as a complex, dynamic and adaptive system, which relies on new production factors, leverages e-commerce and other modern e-development tools, at the same time emphasizing competitive advantage on multi-functional teams (Suciu, 2004). According to Suciu (2004), knowledge economy is characterized by imbalance, instability, fluctuations, chaos, due to the mixture of the following phenomena: the technological revolution (rapid technological progress, particularly with regard to new information and communication technologies) and the acceleration of globalization (the internationalization of a part of the world economy and changes induced in the international financial environment).

In the knowledge economy, intangible assets, such as knowledge and information management, become the new core of competencies. We are in a world where we are dealing with “cognitive domains”, where ideas are worth billions, while products cost less. Continuing the parallel between the traditional and the knowledge economy, knowledge economy calls for a rethinking of the theory of the factors of production in the sense that the traditional factors become secondary and knowledge becomes the essential component of the system of contemporary economic and social development. Creating, acquiring and effectively developing knowledge within an organization has become the core source of competitive advantage. Organizations that use their knowledge as a source of competitive advantage are called “learning organizations”. Knowledge, in the form of intellectual property or intellectual capital, replaces labor and capital as traditional production factors. A knowledge-based organization can inspire a new entrepreneurial spirit and motivate managers to be concerned about transforming the organization into an organization capable of capturing, applying and developing value as a result of the implementation of performing technologies.

Brief history and definitions

Launched towards the end of the 1950's and early 1960's due to researches of Drucker (1959/1994) and Machlup (1962), the concept focused mainly on the emergence of innovative industries as well as on the impact they had on the economic changes. However, the newly coined term proved to be *difficult* from the point of view of finding a universally accepted definition (Bontis, 2004; Wood, 2003). When referring to a knowledge economy, Drucker (1998) depicts it as the appearance of knowledge management and knowledge workers, in the detriment of the manual workers, or another way round, the transition from 'brawn to brain'. Several economic forums and institutions, and not only, manifested their interest in defining KE as well as trends that this economy is characterized by.

OECD (1996) and APEC (2000) see it as very much bound up with the high skills/high performance/high value added scenario, as a way for firms and countries to compete in a globalized economy. Another view, found principally in the scientific and technical community, tends to view knowledge economy narrowly as applying to knowledge-intensive industries where knowledge itself is the core competence. The latter is typically found in software, internet companies and the health care sectors (Bankes & Builder, 1992; Bolisani & Bratianu, 2017; Bolisani & Oltramari, 2012).

The knowledge-based economy is defined by representatives of the Organization for Economic Cooperation and Development (OECD, 1996, p.7) as "economies which are directly based on the production, distribution, and use of knowledge and information". In the knowledge economy, people who possess, use and transfer knowledge are important. That is why people, knowledge, and technology need to be concerted and synergized to facilitate the enhancement of added value at the level of the organization, local community and/or macroeconomic level. The theme of knowledge-based societies has become extremely relevant in the debates on *globalization* but also in the activities of the main international organizations. Increasing the awareness of its importance for social and economic progress and the formation of such a society is a global priority issue, globalization becoming another characteristic of the KE. It is about the penetration of knowledge in all areas related to society and economy and a significant change of mentality and attitude with appropriate projections at the level of all socio-economic structures.

Often, as already acknowledged at the beginning of the paper, alongside the term „knowledge-based economy”, concepts such as the „knowledge-based

society” or „knowledge economy” are also used. In the papers of the World Science Forum, organized by UNESCO and the International Science Council in November 2003 in Budapest, the following definition was proposed: a society based on knowledge, - an innovative society based on lifelong learning concept throughout life. It unites the community of scientists, researchers, engineers and technicians, research networks, as well as firms involved in the process of research and production of high-tech goods and services. It forms a national innovation and production system, which is integrated into international networks on production, distribution, use, and protection of knowledge.

Means of communication and information technologies available in such a society can provide access to the humanities. Knowledge is used for individuals to enrich opportunities in cultural and material terms, and for the construction of a sustainable society (World Science Forum, 2003). Several characteristics of the knowledge economy emerge from this ample definition. In brief: innovation / production / network / distribution / technologies, all in relation with knowledge. Starting from this definition, Chartrand (2006) insists on the importance of the dissemination of knowledge and technology, an action requiring a very good comprehension of “knowledge networks and national innovation systems” (Chartrand, 2006, p.8). In this definition, three key terms are brought to our attention: knowledge, networks, and innovation. Researches on innovation identify knowledge within organizations as core aspects of effective innovation (Cooke, De Laurentis, Tödtling & Trippel, 2007; Harris, 2011; Lundvall, 2010).

Another scholar Brinkley (2006, p.3) considers that KE “is what you get when firms bring together powerful computers and well-educated minds to create wealth”. Therefore, wealth can only be obtained, in KE through IT&C and skilled workers.

The UN experts add other features to the previously mentioned definitions: *competitiveness and economic growth* (Huggins, Izushi, Prokop & Thompson, 2014). Thus, the knowledge-based economy is an economy in which knowledge is created, distributed and used to ensure economic growth and ensure the international competitiveness of a country. At the same time, knowledge has beneficial effects spread across all sectors and economic processes. This definition is completed by the Asia-Pacific Economic Cooperation, which highlights the importance of the knowledge-based economy, arguing that the production, distribution, and use of knowledge are the engine of development and profit-making and the premise of employment in all areas of trade (APEC, 2000). APEC (2000) considers as essential to the knowledge-based economy - the need to be *competitive* in a

world full of both economic and political changes. The knowledge-based economy promotes innovation, initiative, entrepreneurship, and dynamism, being the economy whose one production factor is knowledge (Skrodzka, 2016). Changing the paradigm of development, in the global economy, leads to an unprecedented increase in the value of science and education for social progress. Given the latest trends in the global development of the emerging countries of the market economy, the most important is the focus on building a knowledge-based economy. This means that the main priority should be to develop *human skills*, focusing on: education, science, and vocational training. Only in this way is it possible to integrate into the rapid processes of globalization. The knowledge economy also envisaged increasing the intensity of new knowledge and increasing the *globalization* of economic activities. Increasing the intensity of knowledge was in turn influenced by the ever-changing information revolution and technological change. The knowledge-based economy has transformed the business world by re-evaluating the role of innovation as a core process of production, and as an important factor in business success.

The knowledge economy impacts the entire system, as Lüthi, Thierstein, and Bentlage (2011, pp.162-163) puts it: “the knowledge economy is that part of the economy in which highly specialized knowledge and skills are strategically combined from different parts of the value chain in order to create innovations and to sustain *competitive advantage*”. Romanian researchers have also been preoccupied with defining KE. Thus, Nicolescu (2006) considers that the knowledge-based economy is characterized by the transformation of the knowledge in base material, capital, products, production factors essentials for the economy and through economic processes in which the generation, selling, acquisition, learning, stocking, developing, splitting and protection of the knowledge became predominant and decisive for the profit obtaining and for the assurance of the economic sustainability on the long term.

Characteristics of KE

Many international forums and academics strived to define KE by highlighting various aspects of investments in knowledge. In doing so, Tapscott (1998/2014) illustrated the features of the knowledge economy, as follows:

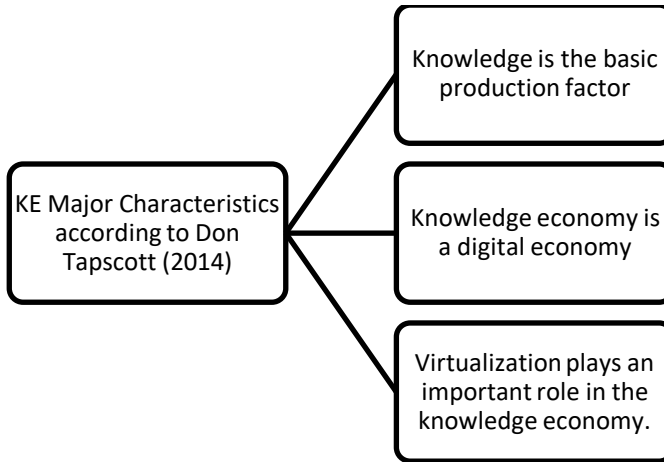


Figure 2. Major KE characteristics according to Tapscott (2014)

A detailed account of the knowledge economy features may include the production of knowledge (both research and education), its use and diffusion, as well as the macroeconomic consequences of growth and social sharing of knowledge. Figure 3 illustrates the KE major characteristics according to Karlsson, Börje, and Stough (2009):

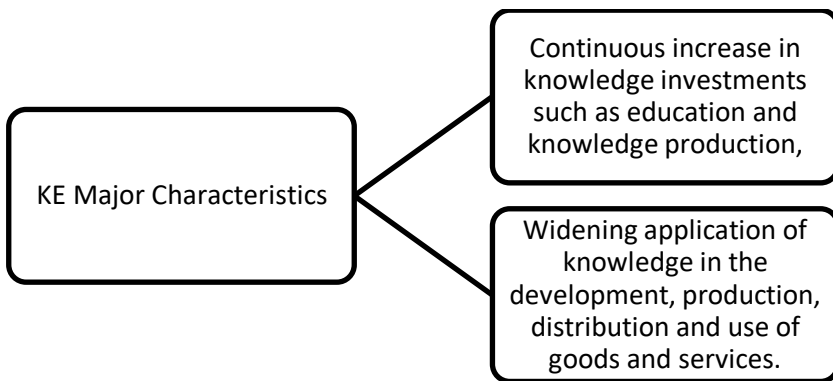


Figure 3. Major KE characteristics (Karlsson et al., 2009, p.2).

White, Gunasekaran, and Ariguzo (2012) find the following characteristics for the knowledge-based economy:

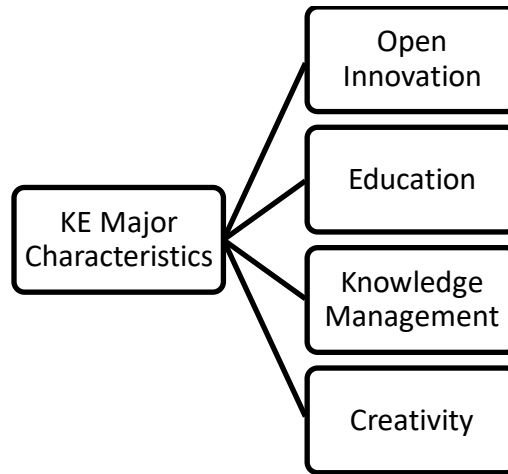


Figure 4. Major KE characteristics according to White et al. (2012)

At the same time, these characteristics have as a foundation, the IT&C infrastructure. According to White et al. (2012), these five structural components of knowledge economies can be found in Figure 5.

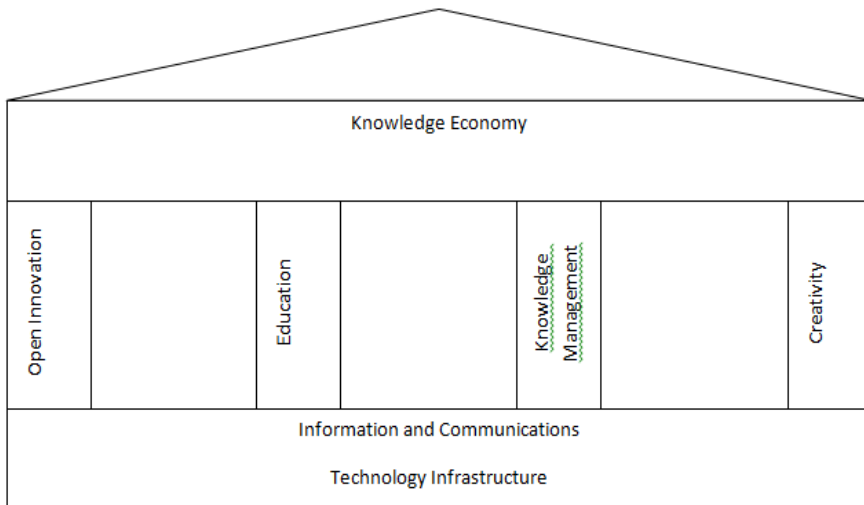


Figure 5. Structural components of knowledge economies according to White et al. (2012)

The development of the KE has led to changes in the role of the *employee* (Bontis, 2004; Malhotra, 2000). As Drucker (2001) puts it in *The Economist* “the next society will be a knowledge society. Knowledge will be its key resource and *knowledge workers* will be the dominant group in its workforce” (Lingenfelter, 2012). Employees in the knowledge economy

must be able and competent to apply their knowledge, the role of education becoming crucial. "Employment in the knowledge-based-economy is characterized by increasing demand for more highly-skilled workers" (OECD, 1996). Hence, the importance the *intellectual capital* and the HRM hold (Voronchuk & Starineca, 2014, p.169). At the same time, consumers can also access knowledge and their requirements are increasingly focused on products and services that involve knowledge. Knowledge-based economy refers to the speed with which markets and businesses capture and create change. In the process of transition from the industrial society to the knowledge-based society, both the positive and the negative aspects on the individual and on his work must be taken into account. Being cautious, being challenged, educated, are the components of knowledge and learning. The technology provides the opportunity for as many as possible to acquire such information.

At the same time, *innovation* is the most important element that leads to business performance. As White et al. (2013) state in their research, open innovation stands as a fundamental, core element towards the expansion of knowledge economy. If in the center of the industrial society used to be the physical capital, at the basis of the knowledge society are information and innovations. Indeed, the knowledge economy has been created by the information society. Thus, both competitiveness and productivity are driven by the knowledge creation, knowledge use and management of knowledge. The factors which conducted to the emergence and proliferation of knowledge economy are globalization of economic processes, IC&T development and the intensive knowledge (Sakız & Sakız, 2015, p.95). It can easily be seen the intermingling of these concepts, how they support each other and how they evolve together. Because it becomes more and more clear that the confines of the "knowledge economy" (Cooke et al., 2007, p.28) are uncertain until now since there cannot be made a difference between businesses which are knowledge intensive and those which are not (Cooke, 2002).

In accordance with Cooke (2002), Castells (2000, p.409) certifies as well the interconnection of knowledge activities in the whole economy "advanced services, including finance, insurance, real estate, consulting, legal services, advertising, design, marketing, public relations, security, information gathering, and management of information systems, but also R&D and scientific innovation, are at the core of all economic processes, be it in manufacturing, agriculture, energy, or services of different kinds.". In fact, as Cooke (2002, pp.4-5) states, it's about "exploitation of new knowledge in order to create more new knowledge". This idea can be found also in Schumpeter's work, according to whom, innovation is activated and accelerated by "new combinations of knowledge" (Schumpeter, 1934, p.57).

In the knowledge economy, there is an amplification of the importance of *intellectual capital*, reflecting the increasing dependence of an intangible asset organization. For any organization, knowledge means power and profitability, intellectual capital contributing to the sustainability of a long-term organization. Intellectual capital has an essential role for competitiveness, as illustrated by a plethora of authors. Thus, Bratianu confirmed in his research that “the new economy is becoming increasingly important in the business spectrum of the highly developed countries, demonstrating the decisive role played by intellectual capital in achieving the competitive advantage of companies” (Bratianu, 2006). The expansion of intellectual capital into an organization is based on creativity and innovation. If in the old economy innovations were the result of separate processes of research, development, and production, in the knowledge economy innovation emerges from *networks* and collaboration. In the literature, terms of creativity and innovation are sometimes used as equivalent terms. But the moral values expressed by these terms are different, creativity referring to the quality and the force of manifestation of the intricate creative capacities, and the innovation to the usefulness of a product or service. However, creativity and innovation cannot be considered to be independent concepts from each other. Technological innovations, on the one hand, are a means of ensuring human development and, on the other hand, are the expression of human creative potential (Suciu, 2008).

Open Innovation

An important and acknowledged driver of the knowledge economy is innovation, a process which was and is carefully studied (Mention, 2011) not only by scholars but also by firms. The open innovation is that particular innovation in which clients, stakeholders and third parties are involved (Wallin & Von Krogh, 2010). The open innovation process is according to Wallin and von Krogh (2010) a five states process, in which knowledge is central:

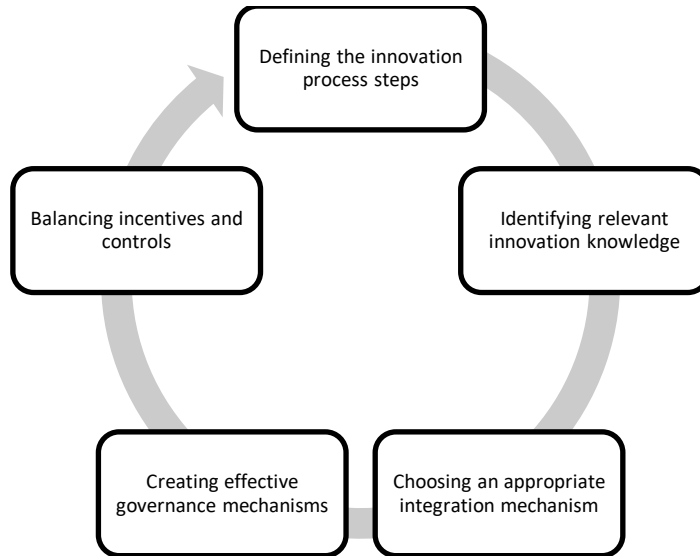


Figure 6. Open innovation states process (Wallin & von Krogh, 2010).

Education

Human capital, as part of the intellectual capital, is made up of knowledge, skills, personal agility, experience, intuition and personal views of employees. Human capital is not in the possession of the organization, and the staff takes it when leaving the company (Sharabati, Jawad & Bontis, 2010). In other words, human capital is based on the individual capacities of the employees with the purpose to achieve the goals of the organization. Human capital is part of the intellectual capital along with the structural capital and relational capital (Samad, 2011; Mazzota & Bronzetti, 2013).

Human capital has been debated in many economic and management books. This fact reflects the economic value of this element of intellectual capital. The problem was because of the value, not the cost of labor, had to be identified, in order to capture as much human capital as possible within an organization (Bontis & Serenko, 2009). The human capital in the traditional economy was represented by the fact that the employees represented a social collective group and were active in the organization. In the knowledge-based economy employees' skills are defined by their knowledge, talent, and skills.

In today's economy and business, an employee who has knowledge has a special value, knowledge being the basic tool for generating profits (Thai, Cahoon & Tran, 2011). Therefore, the value of the company, apart from the

physical inventory, is also made up of intellectual capital based on knowledge of the staff. It is important for the management of the company to be able to identify the skills and capacities of human capital and channel it towards innovation (Bratianu & Orzea, 2013; Davenport & Prusak, 2000; Nonaka & Takeuchi, 1995).

Human capital reflects the individual skills, knowledge, professionalism, and experience of employees and employers within an organization. "It also includes individual experiences, ideas, values, attitudes, abilities (like creativity, know-how, loyalty, etc.), and competencies of the people who work in the organization (employees and managers)" (Olmedo-Cifuentes & Martínez-León, 2015, p.209). This knowledge refers to the knowledge relevant to the field of activity and the activities and tasks the person has at his place of work, but also to the ability to improve and develop the knowledge acquired through continuous learning, training and various courses. This is the knowledge that each employee possesses and which is relevant to the organization's interests and purpose, is based on employees' talent and skills (Bejinaru, 2016; Schiuma & Lerro, 2010).

Figure 7 presents the content of the most important components of human capital, according to Bratianu (2008), namely: knowledge, intelligence, and values:



Figure 7. Operational structure of the human capital (Bratianu, 2008).

Adam Smith (1776) pointed out that there is a link between human capital and the division of labor, that is, the productive power of the labor force is also dependent on the division of the labor force. „The greatest improvements in the productive powers of labor, and the greater part of the skill, dexterity, and judgment, with which it is anywhere directed, or applied, seem to have been the effects of the division of labor.” (Smith, 1776).

Human capital can be classified in relation to the following activities:

- Knowledge - the activity of an employee;
- Collaboration - activities involving more than one employee;

- Processes - knowledge-oriented activities and collaborative activities generated by organizational robustness, such as internal policies and others;

- Absence - holidays, absences with health problems and others.

It is expected that the organization will diminish activities that do not require the putting into operation of thinking and diminish the bureaucracy that is stereotyped. It is important for the assessment of human capital to take into account which capital also works in which part of the organization, for its relevance.

Human capital is the most important component of intellectual capital (Edwinson & Malone, 1997; Stewart, 1998). Human capital is a basic factor in creating structural capital and relational capital within an organization. These, in turn, contribute to the development of human capital. In order to take advantage of the human capital as much as possible, top management must pay close attention to staff considerations and provide adequate training (Watson, 1996).

The theory of human capital (Becker, Huselid & Ulrich, 2001) suggests that investing in human capital can be done through formal education or through workplace training. In both cases, they will increase employee productivity, as well as wage growth. Studies have shown that formal education is crucial in defining wages in developed countries (Cohn & Addison, 1998).

Knowledge Management

The knowledge economy has also created new topics in the economic sciences. A new discipline is *Knowledge Management* that has arisen on the basis that contemporary companies accumulate a huge amount of knowledge, being seen as learning organizations. *Knowledge Management* addresses a set of activities of an organization, correlated with each other, the management being focused on the strategy of managing human capital, that is, to develop the knowledge, skills and competence of employees through education and training, generating professional experience (Becerra-Fernandez & Sabherwal, 2010; Dalkir, 2005; Hislop, 2005).

Additionally, Bratianu (2013, 2015), has taken the existent knowledge dyad (cognitive and emotional) to the next level by transforming it into a knowledge triad (cognitive, emotional and spiritual). Therefore, organizational knowledge can be best described by means of the multiple field metaphor lying at the intersection of the interaction of spiritual knowledge, emotional knowledge, and rational knowledge fields. These

three fields shape the actual DNA of knowledge. Organizational knowledge is the result of integrators that contribute to the absorption of knowledge into the organization: technology, associated processes, and management are used for the integration of cognitive (implicit and explicit dimensions) organizational culture is used for the integration of emotional knowledge, leadership is the nonlinear integrator of both emotional and spiritual knowledge.

According to Bratianu (2009), several challenges regarding KM were found:

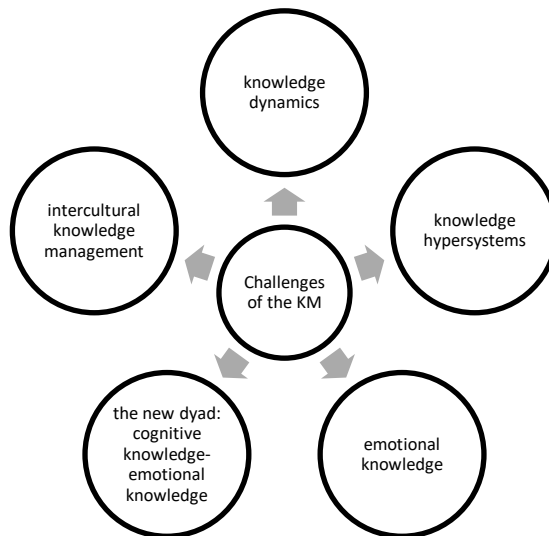


Figure 8. Challenges regarding KM (Bratianu, 2009)

Creativity

Creativity has become more and more important, especially in the context of the emergence of a knowledge-based economy. According to Seltzer and Bentley (1999), creativity is characterized by four main characteristics: individuals' ability to formulate new problems; their capacity of transferring their knowledge in various contexts; their ability to learn and their ability to pursue goals. In the literature, the terms of creativity and innovation are sometimes used as equivalent terms. But the moral values expressed by these terms are different, creativity referring to the quality and the force of manifestation of the intricate creative capacities, and the innovation to the usefulness of a product or service. However, creativity and innovation cannot be considered to be independent concepts from each other (Bode & Villar, 2017). Technological innovations, on the one hand, are

a means of ensuring human development and, on the other hand, are the expression of human creative potential (Peters, 2009).

Education and creativity complement each other, the human potential having an increasingly important role in supporting technological development, development in general. Creativity is not something special, for particular individuals; it belongs to everyone, each person possessing creative potential. Also, it is not directly proportional to the level of instruction, since creativity exists in the rich and the poor, the literate, or the illiterate (Comunian, Gilmore & Jacobi, 2015). That is why education has to develop and exploit creativity, education being the key component of the development of human capital (Hearn & Rooney, 2008).

The history of economic thought shows how it was only in the second half of the XX century that the economists have come to consider creativity as a factor of growth and economic development. Especially after 1950, economists began to focus on the issue of scientific-technical creativity and its role in economic development. Although adepts of a dynamic vision of the economy, contemporary theorists of economic growth included creativity quite late in their models because they considered it an exogenous factor of the economic system.

The economist who saw technical growth as a factor in economic progress was Joseph Schumpeter. Although Schumpeter reduces technical progress only to the innovation process, specialists in the field increasingly agree that the basis for his creation is more directly dependent and integrated into a system that Lemnij calls “acts of technical progress”. These are scientific discovery, invention, and innovation. The scientific discovery is considered to be a “new idea”, the invention is mental creation, which involves finding solutions for different problems, and innovation is the practical application of the invention.

The technical and scientific progress has actively accompanied the whole evolution of human society, but its implications and effects have never been as strong and ample as it is today. Basically, there is no area of human activity in which it does not find usefulness and involvement. In turn, economic progress exerts an important influence on creativity, because it increases the material, human and financial means that society can allocate for this purpose, improves the organizational and institutional framework, necessary for the development of this process (Buda, 2004).

The *Creative Intelligence* publication provides data on regional indicators developed by Richard Florida (2002) and his team. They point out that regional development and growth is animated by creative people who

prefer working in organizations where tolerance and openness to new ideas are manifested. The creative class, as defined by Florida (2002), brings together all people who have a high level of knowledge, education, a great creative potential, and therefore benefit from rapid advancement in corporate hierarchy structures, incentive wages, professional recognition. At the same time, the creative class is distinguished by a great diversity of work, of the field of activity, ranging from information technologies to entertainment programs, media, and others.

People belonging to the creative class, as previously defined in this paper, are not considered a separate social class. What brings them together is the fact that they share a series of common values that put a special price on creativity, individualism, differentiation, and recognition of merits. According to the study conducted by Florida (2002) and Catalytix Inc. in the US, published in *Creative Intelligence* in December 2002, the share of the creative class in the total number of people employed is 30% compared to those working in production (26%) and those in services (44%) (Florida, 2002).

The creative dimension of economic activity means abandoning the old (routine and tradition) and moving the emphasis on the new (represented by innovation, originality, diversity). Since young people have, generally, a particular inclination towards the use of new technologies, they must be geared to channel their talent to develop their potential and, more importantly, the creative manifestations. In his work, "Growing Up Digital: The Rise of Net Generation", Tapscott felt that young people are the ones who "force" the frontiers of the knowledge economy (Tapscott, 1998).

The four pillars of Knowledge Economy as main dimensions and drivers

The growing need to measure the KE forced International Institutions to develop instruments and programs for measuring it in every country/region and also for comparing countries at the international level (Debnath, 2015). In this respect, several KE Assessment Methodologies were developed, the most important and highly used being the one created and applied by the World Bank. Currently, this assessment is made up of 109 structural and qualitative variables, differentiated for 146 countries, the final goal being the measurement of their performance in direct accordance with the four KE pillars (World Bank, 2012):

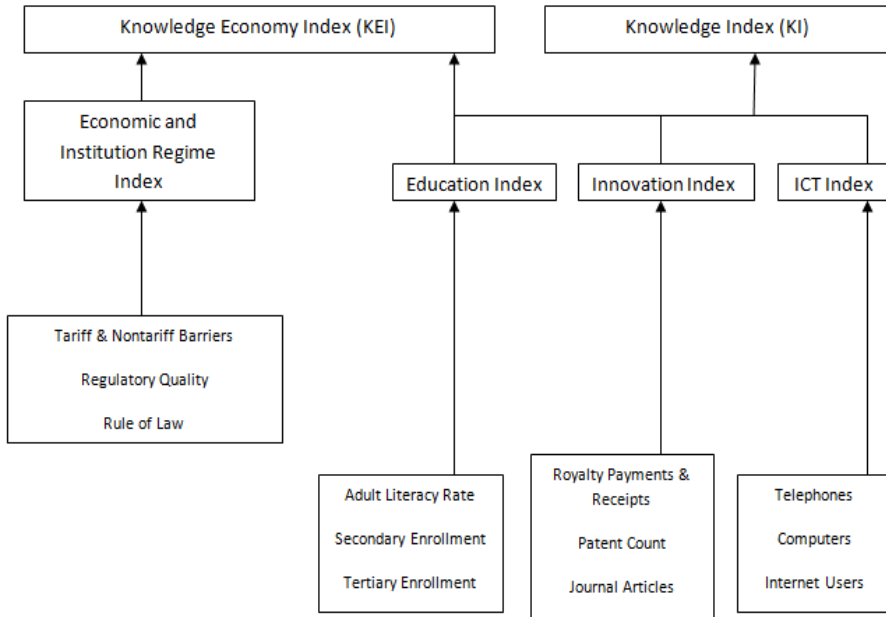


Figure 9. Knowledge Economy Index (KEI) and the Knowledge Index (KI) (World Bank, 2012).

The results from the analysis of the four pillars are grouped in two indexes: Knowledge Index and the Knowledge Economy Index, according to Figure 9. The indices have values ranging from 0 to 10, the highest rank representing the highest KE as well (Chen & Dahlman, 2005; Sundać & Krmpotić, 2011).

Conclusions

Summing up, we can say that information - under the aspect of knowledge becomes the driving force in the knowledge economy. In this context, we are witnessing an increase in the importance of human, intellectual and social capital, and an increase in the role of creativity as key factors for sustainable long-term development. Third-millennium organizations are learning organizations, where the core of competence is the ability to coordinate all competencies. The creative dimension of economic activity means abandoning the old (routine and tradition) and moving the emphasis on the new (represented by innovation, originality, diversity). Knowledge is an important strategic resource for companies and they should concentrate on designing actual knowledge strategies to enhance competitive capabilities based on a rational assessment of both internal resources and

external competitive environment, also take into account the existent turbulences and uncertainties faced (Bolisani & Bratianu, 2017).

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