

The affirmation and development directions of the knowledge - based society

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Abstract: We are facing the anticipation of substantial changes in the society which offer it other valences and a new configuration. The society we know surrenders its spot to the knowledge society based on creativity and innovation, processes that assure not only a knowledge explosion but also new directions of sustainable development. This paper, by firstly clarifying the creativity and innovation concepts, intends to detect these action directions in the context of the general objectives that exist on a European Union level.

Key words: creativity, innovation, sustainable development, knowledge-based society.

1. Introduction

The beginning of the XXI century is characterized by a real “explosion” of knowledge and according to some specialists it can actually be called a knowledge revolution, process that “designates the fundamental change from the economy mostly based on physical resources to the mostly knowledge based economy” [5].

The knowledge revolution intercepts the considerable transformations recorded by humanity in accordance with obtaining and assimilating new information, producing

and using new technologies, revolutionizing the informational and communicational technology, reconsidering the human capital, increasing their qualifications and the organizations of any type etc.

There are knowledge based transformations which tend to turn it in the main characteristic of numerous activities even more than the produced goods and services. In other words knowledge is becoming the essential element in economy, the main production factor, thus leaving behind the importance of the classic factors and giving another course and importance to the non-factors. Under

these conditions knowledge is becoming the main “wealth” of every national firm and economy, not only that of every individual in particular, and the achievement base of a high increase in the economy, progress and development.

Hence the knowledge revolution signifies the transition from an economy dominated by physical, tangible resources to an economy dominated by knowledge [6].

These are intellectual intangible resources that hugely intensify the traditional production factors. The knowledge becomes not only the main wealth in a modern society but also the most required merchandise which sits at the base of the innovative process that includes the entire economy. It is natural in this case to see the entire economy and society from a different angle, the society being in a transformation process and placing even more the knowledge as its basis, and also it is a knowledge-based society that is acquiring specific characteristics.

In this type of society knowledge, as a result of the knowledge processes, constitutes the main source of a competitive advantage on a national, organizational and individual level. The increase of the activity's complexity, the society's computerization and the accelerated rhythm of technical and technological changes requires new qualifications resulted in the knowledge accumulation which is obtained by society's members through a continuous learning process. Consequently in the knowledge-based society the human resources are permanently trained in learning processes on an institutional level (schools, high schools, colleges, universities, academies etc.) as well as on an organizational level (in private non-profit public organizations).

The knowledge-based society presumes a sustainable development in all the human activities spheres through improving on a superior level the knowledge capital as a main component of a nation's intellectual capital.

We are attending the anticipation of substantial changes in the society which offer it other valences and a new configuration. The “classical” economy surrenders its spot to the creative economy in which knowledge - as we highlighted - becomes the firm's main resource but also the main product. The majority of them produces knowledge, massively invest in research, with a predilection towards the applicable research, creating stimulants for their own employees to learn and produce knowledge. It is not by hazard that the new entrepreneurs manifest an orientation towards new domains that permit the fructification of knowledge and transforming it into an important advantage in survival and success.

Creativity and innovation are in these conditions key - coordinates of the new society. It is not only the case of producing information and assuring its circulation but also that of creating information and obviously methods of using them efficiently. In other words the knowledge has a very large sphere of coverage thus giving a person the possibility of achieving in perspective another type of production and on other coordinates than those already known at the present.

“The knowledge-based society - as Professor Peter F. Drucker shows - will inevitably become a lot more competitive than any other known human society because of the simple fact that once with the increase of the information's accessibility there will not be any excuses for the lack of performances. “Poor” countries will not exist anymore but

only ignorant ones. The same principle will also be applied to the companies, industries and organizations of any type. Actually it will be equally applied also in the case of people”.

Certain is that the new society is one based on creativity and innovation (see Global Scientific Forum carried out at Budapest in November 2009), supported by a large community of university researchers, reunited in a network composed of universities, research centers and innovative firms that together can offer products of high technology and services that use and reevaluate information. [14].

2. The society based on creativity and innovation

Creativity - a concept on which numerous specialists have put their interest - constitutes in our opinion a man's capacity of producing new ideas that can later on be used as solutions to solve different problems that have been encountered, as starting points in projecting and fabricating new products etc. It is basically about inspiration, inventiveness and new ways of thinking. It is doubtless that with its help the world can change and new things and even new methods of thinking are being invented.

The human society has always relied and developed on creativity. What is new at the present?

What essential processes intervene at this beginning of the century? Nothing other than the simple fact that we are taking part in the increase of knowledge amount in all our activities and actions. The deposited routine and experience are dislocated. The fact that the amount of new knowledge is increasing and becoming dominant determines

a rearrangement of the entire economic system. There is no need to change the capitalist system with another one or to abolish the private property rule or the market mechanisms but their natural evolution in the new conditions generated by the knowledge revolution.

Within this context it is natural to see the tight connection between creativity and innovation. The production of new ideas and new knowledge is not sufficient for they require to be fructified. The innovation is exactly the process through which the new ideas should be applied in a context given by the other existing factors in society. It has a fundamental role in the organizations' competitiveness' increase and implicitly in the economical, social and cultural development of any nation. The new tendencies lead the way not only in rethinking the idea of innovation but more importantly in bringing changes in the innovation policy of the organizations and of course of the society's.

The developed countries in the European Union adopted stimulation strategies and politics for the innovation that can assure the transition to new economical, social and institutional structures specific to the knowledge-based society.

An eloquent proof of the European Union' preoccupations manifested in the sphere of creativity and innovation can be the designation of the year 2009 as the "European year of creativity and innovation" by the European Commission.

The campaign initiated by the European Commission and that took place with the motto "Imagine. Create. Innovate" had as a main objective the promotion of creative and innovative intercessions in different sectors of the human activity as well as the awareness regarding the importance of creativity

and innovation for the personal, social and economical development. A key-factor for the future economic growth is the complete development of the innovation and creativity potential of the European citizens which rely on the European scientific culture and excellence [10].

Therefore along the year 2009 conferences, manifestations and expositions took place that highlighted the important role that creativity and innovation have in the personal, social and economical development. Also a series of projects took place that were meant to inform the public opinion regarding the need to find creative solutions to the challenges that the contemporary society is facing.

To this extent the European Union launched a long term strategy that visions the promotion of knowledge-society based on learning throughout the entire life time period in order to assure the durable prosperity and welfare of the European citizens.

The regional politics commissioner, Danuta Hübner, affirmed that "on the background of an always harsher competition and the important global challenges the innovative practices and creative solutions represent a jumping board for the economical growth and the welfare of our regions and countries. Abilities, ideas, processes: all of them combine to help us win a competitive advantage. Europe does not need to react to the actual crisis by reducing investments in aptitudes and innovation. We must have faith and to rely on the quality of our ideas and our adaptation capacity." Also it must be highlighted that the creativity and innovation cannot lead to durable economies without respecting the cultural diversities which is itself a source of creativity and innovation [12].

The creativity and innovation transform the economy under our eyes. It is the case of profound changes in the production system of goods and services, of commercializing them, restructuring firms and their management, reproaching priorities etc. Therefore a series of characteristics of the knowledge-based society can emerge [6]:

- The increase of the knowledge's role in all the society's life domains;

- Transforming knowledge in a main factor of production;

- Orienting the economical activities with predilection towards the production and commercialization of knowledge;

- Organizing and sustaining the economical activities with knowledge as its base (intangible resources) and after that the other resources;

- Increasing the production of symbolic products (computer programs, cards, e-commerce etc.);

- Intellectualizing the production processes and other more;

- The powerful development of the small and middle enterprises sector. Their orientation towards activities that incorporate and produce knowledge;

- Expanding the "service" activities especially in high technology domains;

- Internationalizing and globalizing economy as a natural consequence of the proliferation of informational technology and of electronic communication. The trans-boundary becomes accessible not only to large firms but it transforms into a good of the greater majority of the economic agents.

3. Towards a new enterprise - the sustainable enterprise

As we have noticed the creativity and innovation will change the coordinates in which the activity of the small, larger and very large firms will take place in, they will change the technologies that are being used, the organization system, the processes and firms' management, the methods of distribution and sale of products, communication with clients and stakeholders etc. They tend to make the enterprise a new-type organization, a sustainable enterprise into a sustainable society. If we regard the sustainability as it is defined in rapport with "Our common future", also known as the Brundtland Rapport [13] it is natural to follow the satisfaction of the present needs without compromising the possibilities of the future generations to satisfy their own needs. This is exactly what the knowledge-based society can achieve by having its main resource – knowledge- as a practically inexhaustible resource. In this context the sustainable enterprise will rationally combine on a long term the economical, social and ecological objectives, aiming at fulfilling the knowledge that it owns and creates by enhancing its value for its own benefit as well as the clients', society's and all the stakeholders'. It is about a new approach of the mission of enterprising in a society in which the economical efficiency will work hand-in-hand with the ecological and social efficiency.

Transforming the firms in sustainable firms based on knowledge is a complex process that requires time and that will be achieved differently from one branch to another and from one country to another. Not only on a firm level but also on the whole

economy ensemble the money "handlers" will give away their place to the knowledge "handlers". Certain is that the main role in the firm will be owned by the knowledge specialists. It is an optical change regarding the firm specialists' profile as well as on an economy and society level.

The knowledge-based society can thus assure through its technological and functional vectors a human development under the conditions of creating and maintaining equilibrium between the economical, social and ecological dimensions. These vectors represent instruments that transform the information into knowledge and the informational society into a knowledge-based society in which creativity and innovation affirm themselves without boundaries.

4. Directions of action

The new type of society and economy at the base of which preponderant stand creativity and innovation assume substance transformations in the context of mostly all the human activities, while a series of directions to follow in the present and in the future are already being prefigured. Some of them do not even require to be mentioned again because their impact is felt all over the world. It is the case, for example, of computerizing economy and society, extending the internet and using everything we define as computerized technology in all of society's structures. Others begin to manifest by opening unprecedented perspectives for the future and here it is especially the case of:

► Reorienting the consumers towards individualized products, thus obviously surprising the tendency to change from a mass production to an individual production. We

mention that this process must not be seen as mechanical for it is very elastic thus generating the spectacular increase of a business's opportunities in society;

► Developing highly advanced technologies that also have high reductions on consuming prime mater and materials. First of all this is the case of nanotechnologies that by novelty and importance create a large field of action for the entrepreneurs that center on the latest science achievements. But we cannot stop at nanotechnologies because we also have to mention the technologies that aim at obtaining different synthetic materials with special properties, advanced semiconductors and super-conductors, artificial intelligence etc.; To these we inevitably add biotechnologies whose development presents a special interest not only for the scientific world but also to the business world;

► Innovation in management a process carried out in conceiving new managerial procedures, extensive organizational structures, permanently adapted to the firm's objectives to the orientation and placing the enterprise in the client's service, to transforming him into a partner;

► Internationalizing the economical activities, a process that started a long time ago, but that opens a new perspective not only to the large firms but also to the small and middle ones. It is not by hazard that there are specialists that affirm that the 21st century will be that of small and middle independent firms, integrated in networks, unlike the 20th century that was that of high firms that mainly focused on reducing costs. This generates a reassessment and a replacement of the markets, discovering the niche markets, redesigning products and the accelerated assimilation of new products, a continuous adaptation to the consumer's exigency etc.

► Sustaining and developing small and middle enterprise and of the "small giant" of the contemporary economy.

The small and middle enterprises must be sustained through adequate strategies and politics whereas they represent a key-sector of the sustainable economical development, an important factor of absorption of the available or redundant labour force and at the same time a flexible vector in adapting the goods and services production at the volume and structure of the requirement manifested on the market.

Also these organizations have a high innovative potential on a technical, technological and managerial level. Anchored and integrated in the social environment the small and middle enterprises permanently create and innovate a diversity of products and services, are much closer to the market and permit a better adjustment through quantity but especially by the qualitative differentiation of these quantities.

Paul Almeida [1], Professor at Georgetown University, considers that "the IMM play a unique, active and critical role in the process of innovation through their ability of inventing in the new technological space and improving the networks of high technology information". This affirmation has as its basis the empirical research in the avant-garde industries and the time period required for the analysis being of 10 years (1994-2004). The specialist appreciate that the social, formal and informal networks are vital to the process of innovation in the small and middle enterprises. The creativity of the small firms constitutes the fuel of the entrepreneurial spirit and of the sustainable economy.

The development of human resources whose creative-innovative potential is inexhaustible. The human resources produce, accumulate, transfer and disseminate knowledge which is the main source of competitive advantage in the contemporary society. The communitarian states adopted the Operational Programs that settle the priority axes and the major intervention domains in the human resources domain in the objective of implementing the financial assistance of the European Union through the agency of the Social European Fond, during the Convergence Objective for the programming period of 2007-2013.

We mention that it is imposed for a substantiation and operation of new programs in the human resources domain that will mainly regard the favour of the access to quality education and professional training, promoting entrepreneurial culture, stimulating participation at continuous training programs, supporting organizations and employees for the increase of adaptability to the new challenges specific to knowledge-based society etc.;

Developing entrepreneurial dimensions of the university and post-university education in the sense of forming qualifications centered on the entrepreneurial spirit and on the individual's capacity to identify and re-evaluate possible opportunities of business. Highlighting the entrepreneurial dimensions of the licentiate's and master degree programs is imperiously necessary if we take in consideration the fact that on a medium scale over two thirds of the busy population is developing its activity in small and middle firms.

Extending the grants and research-development projects competitions that constitute one of the most efficient ways of showing

the value of the creative-innovative potential of a nation. Therefore the results obtained in the research activity that took place during the grants and the national and international projects contributes to the development of the knowledge-based society through: the increase of the technological competence and the promotion of the knowledge and technology transfer; the creation of clean products, processes and technologies; scientific substantiation and technologies development for the conservation, reconstruction and consolidation of the biological and ecological diversity; the development of medical therapies and creating an efficient public health system; promoting sustainable agriculture and increasing the food security; developing biotechnologies with an impact on the quality of life; developing new materials, products and processes with a high added value; solving the main social problems; diminishing the social inequalities and the regional disparities.

The development of entrepreneurial-managerial programs that are centered on creativity and innovation. Participating to these programs the entrepreneurs and managers will be aware of that fact that the organizations which they lead can become more competitive through an added creativity and innovation. In the context of the new knowledge-based society, they have to act in a few main directions such as: creating an organizational climate favourable to creativity and innovation; encouraging the creative employees to apply in practice their own ideas; sustaining the human resources to follow training programs and participate to conferences, profile markets and thematic expositions; promoting the workers whose knowledge and qualifications constitute sources of competitive advantage for the

organization; using new methods and techniques of stimulating the creative-innovative processes in the organization.

5. Conclusions

As we have noticed in the new type of society the knowledge constitutes the main source of competitive advantage on a national, organizational and individual level and having as a base the creativity and innovation which are supported on a large community of specialists reunited in a large network composed of universities, centers and institutes of research and innovative firms.

The year 2009 was claimed by the European Commission as the "European year of creativity and innovation". The campaign that took place under the motto "Imagine, Create, Innovate" had as a main objective the promotion of creative and innovative intercessions in different sectors of the human activity as well as the notifying the importance of the creativity and innovation for the personal, social and economical development. A key-factor for the future economical growth is represented by the fully development of the innovation and creativity potential of the European citizens which rely on the culture and excellence of the European science.

The results of the European Commission's Campaign in the year 2009 were synthesized in the "Manifest for creativity and innovation in Europe" that includes seven priority directions of action and constitutes a support for the substantiation of the communitarian strategy in the creativity and innovation domain for the period 2010-2020. The European Union sustains through active politics the creative-innovative processes, this fact also being illustrated by the

Program of the cohesion politics for the period 2007-2013 in which creativity and innovation are appreciated as being sources for the sustainable development.

The knowledge-based society can assure through its technological and functional vectors a human development under the conditions of creation and maintenances of equilibrium between the economical, social and ecological dimensions. The most representative directions of development of the knowledge-based society are - as we have shown - the internet, the expert systems of artificial intelligence, the intelligent ambient environment, nano-electronics and nanotechnology. Among other directions we remind: the knowledge management for the economical, non-profit and public organizations; the biological, genomics knowledge; the system of health care on a social and individual level; the protection of the ambient environment through a knowledge specific management; improving the knowledge of existence; the production of technological knowledge through innovation; the creation of a culture of knowledge and innovation; the development of a learning system based on the methods of the informational society.

On a community and national level it is a priority to take in consideration the substantiation and implementation of efficient strategies and politics of sustaining the small and middle enterprises; the operation of politics and programs of developing human resources; organizing more national and international competitions of grants and projects of research-development; creating and developing partnerships between universities, research institutes and private companies; carrying out programs of entrepreneurial-managerial development that are centered on creativity and innovation.

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