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INFORMATION AND KNOWLEDGE IN A GLOBAL CONTEXT

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Abstract:
Information and knowledge are two important entities, which make up present stage of globalization, based mostly on their dynamics. This paper is providing an overview of information and knowledge in global context, highlighting the importance of information society that turned into knowledge society in the beginning of the 21st century, being driven by Internet – the latter, as part of globalization process. Modern economic theories recognise the importance of information in economic process because its impact on globalization process in economy was essential, and change the way how markets and companies work and represent the key factor of new era of economic development. This paper presents main results from available literature about the relationship between information, knowledge and economic theory in a global conterxt and finally explained the benefits of the knowledge economy to all countries.

Key words: knowledge, information, global, society

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INTRODUCTION

Global policies must increase economies performances by transforming them in ***knowledge based economies***, which utilises knowledge an information in processes of distribution and production.

As a result of importance of knowledge in economic growth, economists develop the concept in more phases, which generate the actual phase of development.

The stage which assured premisses of today's developement of this concept materialised in 1990, when Yoneji Masuda defined the concept of ***information society*** as key factor of development in post-industrial society. According to this, in the centre of post-industrial society there are production, dissemination and utilization of information, symbolically represented by entities of economic, scientific, technical, social, political reality, 'created' through processes of knowledge.

Definition of *information society* is related, according to specialists with development of information, from its classical form, to of files, magnetic or electronic-optical support, databases or data banks managed by computers, collections, documents, information registers, and computerized, patent funds as well as information held by humans (Dobrotă, 1994, pp. 86).

Knowledge represents more than information, in *information society*, a reality at the end of 20th century and helped it to achieve the next level into knowledge society in the beginning of the 21st century. Nowadays knowledge is a process that empowering societies, but also individuals, improving the quality of there life.

CONTENTS

Knowledge society can be defined as the human structured organisation of society, build on contemporary developed knowledge to give new quality of life support systems. Knowledge society requires broadening and deepening scientific knowledge and truth on the existence, use and management of existing knowledge under the form of technological and organizational knowledge,

obtaining new knowledge through innovation, an unprecedented dissemination of knowledge to all citizens by new media, using mainly internet. Internet represents the key factor that improves substantial the access to information but also turn information into knowledge.

Development of information and communication technology represented a revolution to the global social-economic level, generating increasing economic performances of developed countries, which invest in new technologies. Internet became the agent of change in economic but also in social life, people are nowadays more interconnected economically, within markets, but also socially, and we assist to an increase interest for social ideas.

That is practically the second phase in development of the concept, generated by the economic need of development, in the context of an increasing population and also of energetic consumptions.

The new economy (economy + internet), or *knowledge economy* is part of the knowledge society, marking the moment when the innovation process becomes crucial to create new products and services. Innovation in *knowledge society* aims to improve productivity, not only in relation to classic labour productivity and capital productivity but also in relation to energy resources and natural materials, and with environmental protection.

In that context, knowledge society is the solution for development of human society in the frame of sustainable development. Knowledge is helping us to measure sustainability, in the global context of increasing production and also the demand for resources, safeguarding biodiversity and ecosystem.

Therefore, the new economy requires fostering creation and development of innovative companies having their own knowledge structure.

Knowledge society is both a global system and a factor of globalization. The notion of knowledge society tries to make a synthesis of developments from globalized economic space in the last decades, especially in research, innovation, education, training, all of these based on the use of information technology (IT) and communication technology (ICT).

A characteristic of knowledge society is the volume of knowledge and its increased rhythm of development and also the fact communities become more powerful *through* information. It is estimated volume of knowledge doubles every five years and must be managed for the benefit of society, because this type of society includes not only economy and technology, but also the system of organization of human beings, where there is a new division of labour, a new way to produce through easy access to extensive and interdisciplinary knowledge that makes 'simple' knowledge an economic resource, a commodity traded on the global market (by the means of patents, market information, consulting, training, etc.).

Industry of knowledge is a result of both types of societies defined above, developed in a fast rhythm in the last few decades and whose results have been materialized into microelectronics, biotechnology, new materials with special properties, telecommunications, civil and military aircraft, robots, computers, space technology etc. The support of this knowledge industry is represented by research and (infrastructure) development, global flow of information and knowledge and, above all, existence of (over)qualified staff. The second key component is trade with knowledge and disseminating it at global level, for the benefit of investments in knowledge *industry*.

In the world of knowledge society, information and knowledge are put up by *organised* human *activity* (i.e. by private companies, governments, alliances of countries). Human capital is crucial in knowledge society and generates the information that appears in education based on innovation, research and development entities involved in the industry of knowledge, supported by all logistics needed to enhance information and knowledge, consisting of databases, trade patents, licenses and technologies, flow of information and knowledge, internet.

Focusing on knowledge, innovation, human intelligence in the heart of the concept of knowledge society or new economy, means it will develop a new concept of intellectual capital, which includes human capital, structural capital and relational capital, all together forming intangible assets. This intellectual capital (Baker, 1994, pp. 217) forms the invisible wealth of a

nation, its "software", a true engine of development, role that Winston Churchill intuited, an in a speech given at Harvard University in 1943, when he stated "The empires of the future are true empires of the mind" (Suciu, 2008, pp. 242-287).

Later, Gary Becker, in the 40's, developed the concept of human capital, considering it as one of the decisive competitive advantage of nations (Baker, 1994, pp. 217). Human capital is the one that transforming information and gives knowledge a meaning in the knowledge-based society.

The access of human capital to information makes it to turn information into knowledge and this process is related with its own intelligence. But human capital needs development and affirmation of an efficient infrastructure (management capabilities, advanced technological processes, information systems, intellectual property, etc.), valuable relationships established by other organizations, companies, individuals, etc., components that form the capital of social relations (relational capital). As prerequisites, human capital requires, among others, an advanced training educational system, a stimulating internal and an external environment.

INFORMATION SOCIETY AND KNOWLEDGE

Understanding knowledge at country level is reflected also in their development stages. Developed countries, with easier access to markets increase their economic performances. On the other hand, the poor developed countries remain isolated from this point of view, without access to the latest information and progresses in science, culture and economy. We have also the case of emerging countries' national policies are focusing on research and development sector, and it becomes evident at global level. They understand that research and development represent the source of knowledge. If the end of end of 20th century was dominated of US, EU and Japan on the market of global research, the long domination was eroded by emerging countries. Asia's share in global spending for research and development increased from 27% to 32% from 2002 to 2007, being especially driven by China, India, South Korea, as UNESCO reports in 2010.

Analysing the period 2002-2008, America's share in the Thomson Reuters science citation index - best-known database of research publications - fell from 30.9% to 27.7%. Meanwhile, the number of Chinese publications recorded in the same index has doubled. Brazil's experience is similar. Research and development expenditures increased strongly in the last decade, at global level, from 790 billion to 1.1 trillion dollars, respectively an increase of 45%.

Information society brought the advantage of research and development findings that do not remain within the borders where they appear. Knowledge becomes a public asset for which national borders have low relevance. They are present in all fields of activity, being facilitated by means of information transmittance. The effects can be found at multiple levels and appear under various forms.

The shift of economic structure from resources, processes, products and materials distribution systems, towards resources, processes, products and symbolic distribution systems means, in other words, an economy that relies more on converting information and knowledge than on converting material goods. According to European institutions, knowledge society is required to substitute natural capital (non-renewable, such as *ores*), and man-made capital (physical capital, financial assets) with human capital and social capital (inexhaustible resources). The social capital (of social relations) is defined as a set of values and informal norms shared by members of a group that foster cooperation among them (Fukuyama, 1999, pp. 10).

At conceptual level, Nicolas Georgescu-Roegen (1996) introduced the notion of entropy and neg-entropy in the economic process. The ratio of these may be similar to the ratio in conventional economy based mainly on non-renewable resources, *hard economy* and in new economy based on knowledge, *soft economy*. An interesting development of the concept of neg-entropy (the software side of it) belongs to a Romanian specialist in this field, PhD Professor Paul Bran. In his opinion, neg-entropy is a contribution to forming value-added products and services, therefore adding knowledge in the production factors is justified.

Through knowledge (neg-entropy), the human factor is brought into the centre of economic activity, contributing, for example in Japan, to 80% of national wealth, 60% in the US and 20% in Australia and Canada. Rates of investment income directed towards development of human resources, in the context of IT and ICT, are more than two times higher than those directed towards investments in factories, production equipment. Economic growth rate is three times higher in countries where knowledge attributes are present, than in those where knowledge is generated more difficulty (by their own participation or by purchase).

The market gains other dimensions in case of trading intangible assets (principles, management methods, software, etc.). Global partnerships are set up either among companies, or among employees of the same company, which can reside in any part of the world, depending on the parent company. Such activities are organized in the fields of marketing, consultancy for industrial design, financial services, research in engineering, agriculture.

If knowledge industry sectors are ranked based on the volume of expenses for research and development, then 8 sectors receive 80% of the total expenditure for research and development in developed countries, namely: pharmaceutical products, electronics, computers and office equipment, aerospace industry, vehicles, electrical machinery and instruments (medical, measurement, optical, photography, clock).

The specialization degree of a country in products of modern knowledge can be assessed by the number of invention patents registered in that country, or at the European Patent Office or at United States Patent and Trademark Office. Companies, corporations in the industrial field have their own research and development activities and by foreign subsidiaries they extend their influence on the market of patents, evaluation of knowledge potential of the host country and any potential turning into value.

Human capital formation, component of the knowledge society is not only the product of the national training systems or activities of companies, corporations, academic environment. The competitive advantage brought in developed countries, including South Asia, is linked to human resources capital. Those societies started with generating a *knowledge-based state of mind*, mixed with investments and a motivational environment generated outputs that represented key factors in their countries development.

Globalization of knowledge boosts knowledge output – the pilar for the emergence of knowledge society. As effect of globalization, it may include migration of experts from abroad, through various forms of association (from collaboration to recruiting, 'brain theft', immigration, scholarships awarded to exceptional pupils and students). There are also countries with certain vocation in the field of knowledge. India, for example, provides a lot of experts to the globalized space of knowledge.

CONCLUSIONS

This paper wants to prove *knowledge society* is a tool that could improve living standards inclusively, because it empowers not only individuals but also societies – people becomes more interconnected, with more access to global socio-economic dynamics. In developed countries, easier access to markets increases their economic performances. On the other hand, the underdeveloped countries remain isolated from this point of view, without access to latest information and progress in science, culture and economy. Information and communication technologies act in two different directions, encouraging development of society.

First direction is a better communication about products, services and culture; second direction is the fact it represents the key which gives access to information. According to those assumptions, we can conclude both directions can be used, on one hand, to break borders between countries and generations and to accomplish globalisation both of economy and of human society, on the other hand. For example, 7.5% of the EU companies' patents are converted into products into their US subsidiaries and 11% of US patents come from subsidiaries of US corporations located in Europe, EU-US technology flows forming three quarters of the international technology flows.

Knowledge brings an organisational structure of information, divided on certain criteria and with specific proprieties which require specific support systems. In fact knowledge, more than information, improve quality of life, supporting individuals in their activities but also in their decisions. The problem of modern individual is invasion of knowledge, also quantitative and qualitative, but knowledge society gives it the solution to organise those information, in systematization and management of available knowledge, taking in consideration specific proprieties and processes.

Another future topic that could highlight in the future the importance of knowledge is its relation with the sustainable development, because – according to specialists – global context of knowledge helps us to measure economic but also environmental performance.

In the global context, analysing model of knowledge based economies, where knowledge was the key factor on their development, combined with others inputs (capital, labour), and is generating the competitive advantage regarding the produce goods and services on the global market. Knowledge generates also increased productivity and competition on the global market, state of affairs individuals can only benefit from.

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