THE CONCEPTS OF INFORMATION AND KNOWLEDGE SOCIETIES: AFFINITIES AND DISTINCTIONS

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Abstract

The human society experience continual and never ending process of development in social, cultural, economical, and technological as well as others aspects. The scientific literature analyses and presents several periods of its development. Recently the society appears in very dynamic and constantly changing stage in which technologies, information and knowledge play very important and significant role in contemporary society. With the reference to these processes the phenomena of Information and Knowledge societies rises. This paper analyses the affinities and distinctions of the concepts of Information and Knowledge societies as the results of the development of society.

Keywords:

Information society, Knowledge society, development of society.

Introduction

Simultaneously going various changes influence human society's development. Due to these changes and particularly due to the appearance of information communication technologies two phenomena: Information and Knowledge societies appeared. As concern some similarities between the features of these paradigms the concepts started and still, in some cases, continue to be used in parallel.

Consequently the **scientific problem** appears – to study the origins of the concepts of Information and Knowledge societies as well as to identify their affinities and distinctions in scientific level in pursuance its' clear understanding and usage.

Goal of this paper - the analysis of the concepts of Information and Knowledge societies and to identify the affinities and distinctions.

Research objectives:

- To study the ICT input on society's development;
- To analyse the aspects of the evolution of the concept of the Information society;
- To analyse the preconditions of the Knowledge society appearance;
- To identify the affinities and distinctions of the concepts of Information and Knowledge societies' paradigms.

Research methods: analysis of scientific literature and EU, UN, UNESCO documents as well reports.

The ICT input on society's development

The simultaneous growth of the internet, mobile telephony and digital technologies with the Third Industrial Revolution – which, at first in the developed countries, has seen much of the working population migrate to the service sector – has revolutionized the role of knowledge in societies. These technologies play an important role not only in economic development, but also in human being development.
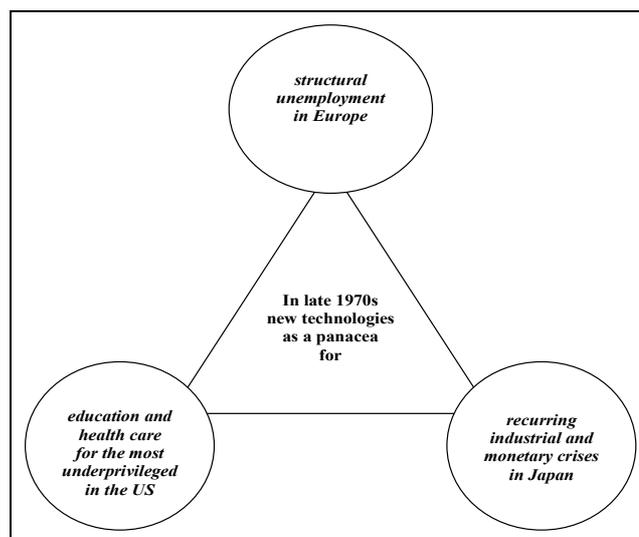

Figure 1. The effect of new technologies on Economies in late 1970s.

In the face of some economic difficulties, in the late 1970s, the growth of new technologies seemed like a panacea for many nagging domestic problems (see fig. 1), such as: education and health care for the most underprivileged in the United States, the recurring industrial and monetary crises in Japan and structural unemployment in Europe. For the developing countries, the promise of "technological leapfrogging", of being able to skip the stages of industrial development by adopting the most advanced technologies directly and to capitalize on their tremendous potential, held out special appeal (fig. 1)

The diffusion of information and communication technologies appeared as new opportunities for development. Under the influence of these changes the creation of Information society started. Following these processes and analysing the development of Information society the formation of other phenomena – Knowledge society appeared (see fig. 2). At first it rose as a vision and as far as later it emerged as another, wider and multidisciplinary stage of activities.
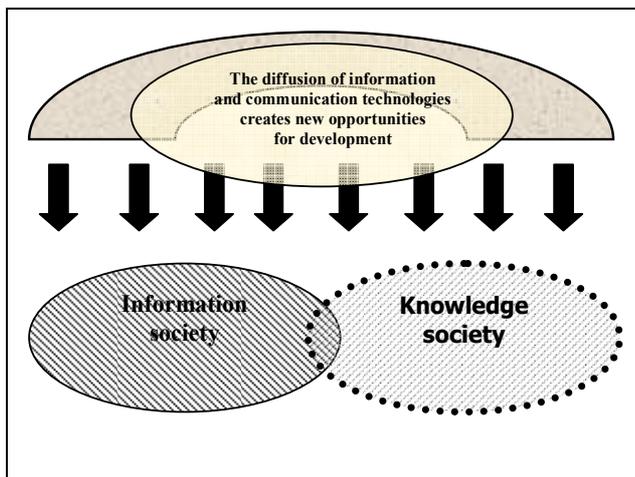

Figure 2 ICT as a new opportunity for society's development

Some aspects of the evolution of Information society

The social dimension of information society has been an integral part of the visions of computer networking for several decades. Since the 1960s, different technology developers have had quite different visions of the use of information and communication technologies:

- Donald Davies (1965) (the leader of a team in the U.K. National Physics Laboratory that developed many core ideas of what later became known as the ARPANET and the Internet) was searching for a socio-economically important new technology, inspired by policy initiatives looking for national competitiveness in the emerging computer networking technologies;

- Other developers of computer networks were more interested in making complex calculations using advanced computers;

- In the U.S., computer networking for example emerged as an economically efficient way to use expensive mainframe computers remotely. The users of computer networks were expected to be researchers and technology specialists.

The two perspectives – focusing on technological systems and on society – have been visible in the information society discussions for several decades. In the 1980s and early 1990s, these views became integrated in a very specific way: information society was started to be understood as an economic issue, and technology was understood as the driving force that made economic development and growth possible.

Due to these processes as well as the global, geographic, economic and social preconditions and changes the formation of the paradigm of Information society started in social sciences.

In Japan, an ongoing discussion on the need to transform the manufacturing-based economy toward an informationalized economy had been going on since the late 1960s. In the 1980s, Japan and the European countries created large research programs that focused on new telecommunications and information technologies. In 1992, the newly elected Clinton/Gore administration made information infrastructure one of its key policy areas. Soon after, the Internet and the World Wide Web moved from the periphery to the center. The rest is history. Each country and region found the legitimization for information society initiatives from its current situation (see also fig. 1):

- In the U.S., information society was introduced as a solution to the U.S. infrastructure crisis (Schneider, 1996);

- In Japan, information society was seen as an answer to the "hollowing out" of Japanese manufacturing as well as the problems created by the continuing *endaka*, the high valuation of yen (West, Dedrick, & Kraemer, 1996);

- In Europe, information society was introduced as a way out of unemployment for high competence workers.

- Policy initiatives in Japan, Europe, and the rest of the world were launched in response to the high-profile American dream of a new knowledge-based world (Kahin & Wilson, 1997; Bohlin, Aizu, & Oniki, 1999; Ducatel, Webster, & Herrmann, 2000a).

In the U.S., the social legitimization of the information society was to a large extent based on such assumed consumer benefit. The social dimension came in mainuly through the belief that open and

universal access to services would be necessary for balanced socioeconomic development.

In Europe, the emphasis was more on the role of "consumers" as members of a civil society. The government and the public sector were often seen as providers of services for the citizens, and information society was an opportunity to reorganize, for example, health care systems, education, and political processes.

In general, compared with the U.S., in Europe the public sector was perceived more as an active participant in the information society development, creating the institutional basis for the new socioeconomic order by designing new regulatory regimes, organizing the production of human resources, and by providing services.

Much of the early discussion in Europe was related to the impact of ICTs on employment. In this sense the Japanese focus on industrial competitiveness and the European focus on job creation were close to each other.

The juncture and ongoing situation attracted the attention of the policy makers of social affairs. Their reaction had a reflection in politic and administrative documents, which made a big impulse towards the development of Information society.

For example, the *European Commission White Paper on Growth, Competitiveness, and Employment (CEC, 1993)*, was one of the first documents which introduced the theme of information society in a structured way. It was presented as a central concern for policy, started by asking why the paper was written. The answer was unambiguous: *"The one and only reason is unemployment."* ICT had become a core ingredient in technological Keynesianism.

More broadly, the three concepts that were used in the white paper, growth, competitiveness, and employment, well describe what the public discourse on information society was about: economic growth was based on competitiveness, and the end result was expected to be full employment.

In the reports published by the European Commission in the 1990s, information society was therefore constructed around a strong economic and technical focus. Although the European discussion emphasized more the social dimension than the U.S. discussion, both put the expected economic impacts on the central pillar. Economic actors, therefore, were the main actors. *The so-called Bangeman report, "Europe and the Global Information Society – Recommendations to the European Council," (CEC, 1994)* pointed out that the development of information infrastructure is the primary responsibility of the private sector. Public authorities, in turn, need to "set new rules of the game," control their implementation, and launch public interest initiatives. The reports and communications were framed in a context of a global

"race" for economic competitiveness. "Social" was primarily understood to be a question of economic growth. In its communication in *1996, "Europe at the Forefront of the Global Information Society,"* the European Commission stated that:

The information society is not a challenge for the future but one for the present. Decision makers are now fully aware that Europe's future in the global economy will be shaped by the speed and success with which it exploits the opportunities arising from the new information and communication technologies (ICT). (CEC, 1996).

Similar request for urgent and broad adoption of information and communication technologies also underlies the more recent eEurope initiative.

In contrast to the European Commission, the European Parliament has more systematically emphasized societal issues. In its 1996 resolution it commented the Bangeman report and Commission's action plan by clearly stating that information society is not only an issue of economic competition:

Parliament draws attention to the need for the information society to develop within a framework designed to prevent the exclusion of unqualified workers, the aggravation of inequalities between regions, the sidelining of the female population, the violation of privacy and the undermining of cultural differences. It feels that the new forms of electronic distribution should be fully exploited in order to disseminate public information to all citizens, and calls on the authorities concerned to guarantee free access to information infrastructures, particularly for all educational establishments, cultural organizations and libraries. (EP, 1996)

Although in the early policy statements the European Commission emphasized the economic and technological dimensions of the ongoing transformation, the Commission, however, has increasingly highlighted the importance of the social dimension. Already in 1995, the Commission set up a high-level expert group (HLEG) to analyze the social aspects of the information society. According to the HLEG information society can be defined as: *...the society currently being put into place, where low-cost information and data storage and transmission technologies are in general use. This generalization of information and data use is being accompanied by organizational, commercial, social and legal innovations that will profoundly change life both in the world of work and in society generally. (HLEG, 1997).* The experts noted that technological development is always a process where new needs and new technologies are mutually articulated. Technology is always socially embedded. A too narrow focus on technological issues, therefore, easily misses much that is of importance when we try to understand the ongoing transformation.

The HLEG further argued that whereas the emergence of earlier technological clusters created high intermediate demand for material goods, information economy creates a high demand for skills and tacit knowledge. According to the HLEG, we therefore should view the information society as a "learning society". There the demand appears to start talking about the new features of current society's development, which process turns to the stage of knowledge society creation (see also fig. 2).

Preconditions of Knowledge society appearance

With reference of the analysis of scientific literature and some documents can be stated that the origins of the appearance of the Knowledge Society emerge approximately in the same time as Information society.

Knowledge society appears phenomenon. Information, communication, and computation technologies (ICCTs or ICTs) are not about technological functionality anymore; instead, the drivers and constraints for technology development are increasingly found in the social dimension. Although technology has always been fundamentally a social issue, when ICTs penetrate everyday life, these technologies become protean platforms for social change. Based on the results of the current work, it, indeed, seems that a new type of society is emerging. Even when we discount all the hype around new technologies and the new economy, we have to admit that the ongoing transformation is a profound one. It changes lifestyles, organizations, politics, and values.

The term "knowledge society", which the academic Peter Drucker used for the first time in 1969, came into its own in the 1990s, in particular with the detailed studies by researchers such as Robin Mansell(1998) and Nico Stehr(1994) As we shall see, the idea emerged in the late 1960s and early 1970s, at about the same time as the notion of "learning societies" and lifelong education for all, which is surely not a coincidence.

UNESCO played its part, if modest, in this change, as is exemplified by the publication of the report of the International Commission on the Development of Education, *Learning to Be* (Faure et al., 1972). In addition, the idea of the knowledge society is inseparable from studies on the information society, whose premises appeared with the growth of cybernetics. From the 1960s to the publication of Manuel Castells "information age" trilogy (1996, 1997) in the late 1990s, the notion of information society in a way summed up the changes and trends that the earliest trailblazers described or foresaw – technology's penetration of the power structure, the

new economy based on scientific knowledge, changes in the workplace, etc.

With reference to the analysis of the scientist can be stated that the stage of society's developments called as Information society can not be the last stage of this process and gradually gains some other features which construct the other phenomena – knowledge society.

The consequences of the rise of information and knowledge society themes on the institutional level are important for defining research, education and innovation policies. Even before the first phase of the World Summit on the Information Society (Geneva, 10–12 December 2003), the international community's reflections in this area had been followed up by a number of initiatives, such as the World Conference on Higher Education (UNESCO, Paris, 5–9 October 1998), the World Conference on Science in Budapest, "Science for the Twenty-first Century: A New Commitment?" (UNESCO/ICSU, 26 June – 1 July 1999), and the World Summit on Sustainable Development (Johannesburg, 26 August – 4 September 2002). This interest in the issue also translated, during the preparation of the Geneva Summit, into the organization of regional summits and initiatives on governmental and non-governmental levels. The intellectual and scientific communities, and civil society in general, were involved in this effort, as is illustrated by the many works on new scientific knowledge production methods, innovation, learning societies and the links that unite knowledge societies, scientific research and lifelong education for all. In addition to these initiatives by government, the private sector and civil society, and the emergence of mixed initiatives bringing together those three players – such as the World Bank's Global Knowledge Initiative and the United Nations Information and Communication (UN ICT) Task Force – are also worth mentioning.

It is very far from being the case, then, that governments have disregarded the transition to a new technological and social paradigm. Today, the concept of the knowledge society has become an essential framework of reflection not only for most member countries of the Organisation for Economic Development and Co-operation (OECD), but also for many emerging economies and developing countries, especially in East and Southeast Asia, Latin America, the Caribbean, sub-Saharan Africa, Central and Eastern Europe and the Arab States.

The consolidation of the conception of knowledge society was started was presented in various documents as well as in Handbook of Knowledge Society Foresight (2003) put by European Foundation for the Improvement of Living and Working Conditions. It maintains that: *Knowledge*

society involves the intersection of several related trends:

- The development of information societies based on the large-scale diffusion and utilisation of new **information technologies (IT),** which have allowed for unprecedented capabilities in 'capturing', processing, storing, and communicating data and information.

- More generally than just in the IT case, the increasing importance of **innovation** (especially technological, but also organisational) as an element in corporate and national competitiveness, and in strategies to increase the efficiency and effectiveness of organisations of all types.

- The **development of service economies**. The bulk of economic activity, employment and output is taking place in service sectors of the economy. 'Service' is an important management principle in organisations in all sectors, and specialised services (especially knowledge-intensive business services) provide critical inputs to organisations in all sectors on a vastly increased scale.

- **Knowledge management** arises as a specific issue: knowledge generation, dissemination and usage of new knowledge, where organisations seek to apply formal techniques and new information systems to help them make more effective use of their data resources (e.g. data mining), information assets (e.g. enterprise resource systems) and expertise (e.g. human resource development, groupware and collaborative systems).

- Other important developments, related to the points above, include **globalisation, changes in demographic structures, in cultural practices, and in environmental affairs.**

Although can be stated that this description has to be added by others trends which are very important and were pointed in UNESCO world report "Towards Knowledge Societies" (2005). The Report promotes the concept of *Knowledge Societies* involving the concept of *Information Society.*

UNESCO expert believes that, in addition to technological, infrastructural and economic forms of information, dimensions of knowledge rooted in community, culture and social identity must equally be addressed. For UNESCO, the use of information and communication technologies (ICT) must be linked to the recognition that knowledge is the principal force of the social, political, cultural and institutional dimensions of development, founded on human rights.

The plurality inherent in the concept of Knowledge Societies implies diversity, variety and openness to choice. Accordingly, UNESCO wants to ensure that information societies evolve into knowledge societies, in which people can access and Exchange quality information and ideas that are relevant to their life and development.

Through its proposals, UNESCO is responding to the three main challenges in building Knowledge Societies:

- first, to narrow the digital divide that accentuates
- disparities in development, excluding entire groups and countries from the benefits of information and knowledge;
- second, to guarantee the free flow of, and equitable access to, data, information, best practices and knowledge in the information society; and
- Third, to build international consensus on shared values and principles.
- There are four principles that are essential for the development of equitable knowledge societies:
- Freedom of expression;
- Equal access to education;
- Universal access to information, especially in the public domain;
- Giving expression to cultural diversity.

According to UNESCO experts, Knowledge societies should be based on a strong commitment to human rights and fundamental freedoms, including freedom of expression as defined in Article 19 of the Universal Declaration of Human Rights and pluralistic and independent media. Knowledge societies should allow the full realization of the right to education and of all cultural rights. In knowledge societies, access to the public domain of information and knowledge for educational and cultural purposes should be as broad as possible. An important principle of knowledge societies should be encouraging and giving expression to cultural and linguistic diversity.

In recognition of these principles, UNESCO experts present three strategic objectives:

- to foster digital opportunities and social inclusion, by using ICT for capacity-building, empowerment, governance and social participation;
- to strengthen capacities for scientific research, information-sharing, cultural creativity and performances and exchanges in knowledge societies; and
- to enhance learning opportunities through access to diverse content and delivery systems.

The analysis of the concepts of Information and Knowledge societies: affinities and distinctions

The UNESCO report, which was done on 9 November 2005, came a week after the European Parliament overwhelmingly adopted an EU lifelong learning programme, designed to inject momentum into the EU's drive towards its goal of becoming a vibrant knowledge-based economy. It was stressed in the report that Knowledge societies are not to be confused with information societies. There were emphasised the affinities and distinctions which can be described as such: **Information societies** *are based on technological breakthroughs that risk providing little more than "a mass of indistinct data" for those who don't have the skills to benefit from it;* **Knowledge societies,** *based on knowledge generation and utilisation, contribute to the well-being of individuals and communities, and encompass social, ethical and political dimensions.*

Cultural and linguistic diversity are also central to the development of knowledge societies. The stakes are high, stresses the report, for the cost of ignorance is greater than the cost of education and knowledge sharing. It argues in favour of societies that are able to integrate all their members and promote new forms of solidarity involving both present and future generations. Nobody, it is stated in the document, should be excluded from knowledge societies, where knowledge is a public good, available to each and every individual.

With reference to the analysis of the scientists on ongoing processes and changes can be stated that society's development is dynamic and constantly changing process. On the one hand it is still the same human society but on the other hand it is the human society which all the time observing its environment, processing information and changes in the environment and producing "new meaning" that is part of that society's response to the challenge of change (Understanding Knowledge Societies, 2005).

However one stage of changes can not be distinguished sharply from another one. It is dynamic and versatile process where one stage of the process involves the features of the other. For instance the concept of Information society covers ones features which can be recognised in Knowledge society concept also.

Beside the affinities, both of these paradigms are being directed towards development of the societies as well as bring big and new benefits. Another one common feature of these concepts is based on the accessibility to the new opportunities and especially technical ones (of course this element is easier to implement in developed countries, but it always stands as one of the main objectives which should be achieved as much broadly as it possible in all over the world).

According to the analysis of the concepts (which were done above) of the Information and Knowledge societies the wider interpretation of the Knowledge society appears. It could be stated that the concept of Knowledge society almost completely covers and involves the concept of the Information society. Information society rises as the most important precondition for Knowledge society's creation and its features strengthening. Without the capacities of the Information society the appearance of Knowledge society would not be possible.

Conclusions

- The diffusion of information and communication technologies brought new opportunities for development of multidisciplinary stage of activities on which the Information society and the Knowledge society started to appear.

- Although the origins of the Information and Knowledge societies started to rise approximately in the same time (in 1960s) with the appearance of information and communication technologies, the concepts of the paradigms started to be considered in institutional-political as well as academic level for several decades.

- With the reference to the analysis of scientific literature and various politic and administrative documents could be stated that human society is the same one but constantly changing towards development. The stages of the development of the society are very connected to each other and cover the features which can be common. Due to this, one stage of the development can not be distinguished sharply from another one.

- With reference to the analysis of the concepts could be stated that the concept of Knowledge society can be interpreted more broadly then Information society, which means that the concept on Knowledge society almost completely involves the concept of Information society enabling its creation.

- Knowledge society's paradigm depends upon the Information society's paradigm: have the common infrastructure – Information and communication technologies.

- Information communication technologies are necessary but not sufficient condition for a Knowledge society, which requires more than just the active implementation of new technologies.

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