INFORMATION SOCIETY AND THE NECESSARY DIGITAL SKILLS

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Abstract: *The article presents chosen issues of terminology and circumstances of the information society and especially points out difficulties in preparing a uniform and widely accepted definition of the information society. The authors identify ICT skills of the modern society and differences in using contemporary technology between generations.*

Keywords: information society, digital skills, ICT skills

INTRODUCTION

The process of creating the information society has been, is and will relentlessly be a complex and multi-stage process requiring a comprehensive insight into the human life. At the beginning it was considered that communication engineers and IT specialists should deal with the scholarly reflection on the development of the information society. Over the years the issues have been many times considered in separate analyses by economists, politicians, psychologists, educationalists or sociologists in their academic and popular science publications. As the research has intensified over the last years and, consequently, more and more new issues and questions have been appearing, the need has arisen for more research, and of a more multidisciplinary, interdisciplinary or even transdisciplinary character. M. Castells (2013) is the author who approached the problem in a considerably broader way than the researchers who perceive the basis for the rise and growth of the information society only in the intensive development of IT tools. His concept of the net society was an attempt at a comprehensive analysis of changes happening in the global world of today. In his opinion the transformations occurred as a result of three independent processes: the IT revolution, the economic crisis of capitalism and Soviet socialism, and development of cultural social movements.

1. CONDITIONS AND GENESIS OF THE INFORMATION SOCIETY NOTION

The information society is a new society type formed mainly in highly developed countries where information management, its quality and the information transfer speed are essential factors of competition in both, industry and services, and the progress requires new methods of collecting, processing, transferring and using information (The Republic of Poland Communications Ministry 2001).

Thus, it comes as no surprise that the quickest development of micro-engineering, being the basis for digital technology, occurred in Japan and led to the first records on the information technology occurring already in the mid-1960s. The term *johoka shakai* meaning the society communicating via a computer or just the Information Society, IS for short, was used for the first time in 1963 by Tadao Umesao, a journalist of the Japanese daily "Hoso Asaki" in his article on the evolutionary theory of the society based on information. The expression was also used by professor Yonei Masuda at the beginning of the 1970s in his work on social transformations connected to the development of the information sector and telecommunications (Nowak 2005).

Unlike in Japan and the USA, the issues of transformation from the industrial to information society were not considered in Europe. Only in 1978 in their report prepared for the French government S. Nora and A. Minc embarked on describing the developmental trends of social systems in the post-industrial society. To a large extent the information society concept was made popular following the publication of M. Bangemann's report. The report of the EU Commissioner for Development issued in 1994 "Europe and the global information society" considered issues of social development in European countries. The created information society was proposed to be based on private sector finances and market mechanisms, while the public sector should focus on legal regulations, protection of citizens and consumers and improving awareness of the society. The document makes a few major recommendations that determined the EU policy in the sphere for the years to come, i.e.:

- development of the information society should be based on the free market, i.e. conditions of fair competition should be created in the sphere of ICT services,
- services, interoperability of IT software, services and applications should be freely available to the public within the EU,
- financial means for the information society development should mostly come from the private sector,
- protection and promotion of language and cultural differences throughout the EU,
- protection of privacy and secure information flow,

- development of cooperation with less developed countries of Central and Eastern Europe,
- society's awareness of the new possibilities brought about by the information society and access to suitable training at all levels of education (Casey 2001).

Appearance of the new society type has brought about many changes within the social, cultural, economic and political spheres. Numerous definitions of the information society have been put forward in literature in Poland and worldwide and their authors, while attempting to come up with the valid description, have referred to technical, professional, spatial, cultural and economic grounds. J. Gnitecki (2005) pointed out the complexity of this definition as, in his opinion, the concept describes a society in which knowledge and information are fundamental; the new technological civilisation moves beyond the technological, information and organisational systems as they used to be, the civilisation generates new processes of creating, collecting, distributing and using information; the civilisation is based on information-processing methods and exceeding the present awareness condition; the civilisation is based on the process of human perfection being updated in the course of processing bit, qubit or sub-qubit information; changes within the bit, qubit or sub-qubit IT are sources of civilisation transformations. Unfortunately, despite the multitude of definitions, none has been specific enough. The need for compiling an appropriate definition covering all possible aspects has been pointed out by A. Bógdoł-Brzezińska and M. F. Gawrycki (2003) who however consider it an "unrewarding (task) as the notion of the information society is a catch-all one and thus indistinct and vague".

A proposition put forward by Polish authors is a definition which describes the information society as "a society which not only has the means to process information and to communicate, but also for which processing information is the basis for creating the national income providing livelihood for the majority of the society" (Goban-Klas, Sienkiewicz 1999). Another definition identifies "the information society as the society in which information is intensively used in the economic, social, cultural and political life; it is the society which has abundant communication and information-processing means being the basis for creating the majority of the national income and providing livelihood to the majority of people" (Krzysztofek, Szepański 2002).

Analysis of the numerous definitions allows identification of four fundamental pillars of the information society, namely: "(a) a technological one: created by ICT, i.e. hardware and software, accessibility; (b) an economic one: the strength of which is directly proportional to the share of sectors taking part in creating and processing information, and the participation of information technologies in economy and in the GDP distribution; (c) a social one: the stability of which is strictly related to the new technology users index and, in most cases, is related to the society education level and inversely proportional to the digital divide indexes; (d) a cultural one: the feature most often unjustly neglected as the

information culture should not be ignored, as the aspect includes the acceptance of information as a form of goods and products; discussing the information culture one should keep in mind its vital ingredient, namely IT culture related to the level of skills of using software and hardware" (Stachowiak 2012).

The Polish Office of the Committee for European Integration provides basic conditions to be met to acknowledge a society as the information one. They include an extensive modern telecommunications network that should include all citizens within its range and available to the broad public information resources. Another important aspect is educating the society for further development so as every citizen could stand the chance of taking full advantage of the opportunities provided by means of mass communication and information. To account for that, members of the information society have to be provided with essential IT skills. The concept of the so called *IT skills* results from the development of information society. The skills are recognized as one of the most important in the 21st century. An OECD document on education in the digital era treats them as the skills of searching for and interpreting information. The necessity for teaching ICT skills was also the subject of the World Summit on the Information Society organised by the UN in 2003 in Geneva (qtd. in Derfert-Wolf 2005).

2. CHOSEN ICT SKILLS OF THE SOCIETY

The new media culture embraces communication and information. The contact of those two important spheres results in preparing the society for skilfully moving around in the ICT world. The fact that ICT (*Information and Communication Technology)*, comprising three domains: computers, the Internet and multimedia, is so widespread is of major importance not only for individuals but also for groups and the society. In Polish literature ICT is called "technologia komunikacyjno-informacyjna" (communication and information technology). In brief, ICT is an intelligent tool allowing the net society to communicate freely owing to the unlimited Internet access. The net society, also referred to as the Internet society, comprises people establishing the social relations network on the Internet. The core of the net society is unforced engagement in different activities on the Internet. Finding themselves in the ICT environment facilitates the process of creating digital natives which is the name for the new generation brought up in the IT-communication-information technology. This way they have developed the so called multitasking, i. e. an elementary ability of dealing with many tasks at the same time. People using new technologies send emails, chat, surf the net, learn, etc. all at the same time (Siuda 2015). According to Marc Prensky (2001), educated Digital Natives are the opposite of Digital Immigrants whose perception of the modern world overflowing with information much differs from that of youth (Kuruliszwili 2014). The young are referred to as Generation Y if they were born after 1980 or Generation Z – those born after 1995. In this context digital skills are of fundamental importance as they are the

skills for the future. The increase of e-skills significance in the future resulted in signing *the Broad Agreement on Digital Skills in Poland* on 17 July 2013. Development of technologies enabling Internet access is intensive, however, it does not mean the digital skills are developing in the same way. Simultaneously, irregularities have been observed concerning using new technologies for criminal activities. To avoid pathologization of the digital sphere the society should be educated to develop the skills protecting itself from the Internet-related dangers. Characteristics of the information society skills and the already mentioned division into digital natives and digital immigrants is not however indisputable. Malwina Popiołek (2014), referring to research of David Buckhingham (2006), Sue Bennett, Karl Maton and Lisa Kervin (2008), Rolf Schulmeister, Anoush Margaryan, Allison Littlejohn and Gabrielle Vojt (2011) and her own analyses, describes controversies concerning digital skills of different age groups. Mateusz Muchacki (2013) and Tadeusz Piątek (2004) also point out the youth's preparation for using IT. The discourse indicates noticeable differentiation between the digital skills in possession of the young and adults.

Digital skills are a very broad concept referring to easy navigation within the Internet environment. The present article stresses the sphere of information and communication. The information contains data and signals interpreted by the recipient. An Internet user is looking for data from all spheres of life. However, the communication in the contemporary sense is perceived as transferring information from sender to the recipient in which the sender is aware of the recipient's existence. Aspects revealed in the process of sending information are particularly stressed in communication. Thus, two basic social processes occur, those of allocution and exchange. Allocution means social processes of transmission and the exchange refers to consultation, registration and conversation. The core of communication in the new media is the information passed from a sender to a recipient who create common meanings for signals arising in the process. Individuals taking part in the communication process by means of the new media are immersed in the social context (Dijk 2010). Digitalization of the world is considered to be of substantial importance, however, the so called "productivity paradox" is observed in which the technology playing mainly an informational role does not bring the assumed profits in the service domain. At present a seeming contradiction is observed as men produce and collect much different information about the environment but at the same time have less and less up to date knowledge about it. It is the result of one of the dangers as an individual has problems filtering information that is continuously provided to him irrespective of his wishes or wants (Siemieniecki 2003). Digital technology has rendered accessible the unreachable before opportunities for acquiring knowledge but has not produced any mechanisms preparing people for its reception and selection. Referring to Dijk's analyses one should also cite discussions by J. Bruner and D. Olson who believe that three ways of experiencing the reality correspond to three types of learning. As follows, using information provided by the new media requires greater and

greater selection of information. It is thus necessary to know how to take advantage of available IT tools (Dijk 2010). Therefore, a basic question about the existence of differences between generations arises. Sergo Kuruliszwili specifies three groups of differences, namely ways of perception and reception of information, habits and attitudes, and IT competencies. Juxtaposition of the mentioned differences and the differentiation of the digital skills levels within particular age groups allows identification of skills indispensable in the third millennium. The main skills necessary in every individual's life include using ITC technologies. The key ICT skills are: effective and efficient use of modern tools continuously perfected by technology; taking advantage of modern means of collecting, processing, generating and transferring information; effective direct and indirect communication using up-to-date communication software; critical reception of multimedia information and its use in the process of education or at work; proficiency in cooperation and collaboration in a variety of task groups, the skill of working towards the group success; the ability to present team work results; ease of self-presentation (Furmanek 2002). The first environment facilitating acquisition of the knowledge and skills is a family, and then a school. Focusing on the school, in accordance with the National Curriculum, the main task of teachers is to provide students with conditions for shaping their skills of searching for, ordering and using information from different sources and using ICT effectively. What is crucial here is the ability of creative thinking as the elementary mission of every man at work. A contemporary man necessary on the labour market is a non-routine individual generating new knowledge. Consequently, young people should be prepared for creating new knowledge. The people who cannot manage either in the public or in the market sector will transfer to the third sector created by local government organisations within which interpersonal relations are given priority (Muraszkiewicz 2004).

Results of empirical research into skills of communication by means of social forums, blogs and into specific skills connected with the process of education, i.e. sending tasks and messages to pupils and students, communicating via mail or electronic school register systems, are not optimistic. Teachers not very often make assessment using specialist software, look for didactic materials, contact parents sending emails, use a laptop or a projector at classes. At the same time, few of them take advantage of utility programs (word processors, spreadsheets, slide show presentation programs). They often are not able to move freely within the sphere of educational programs. Only few teachers have those skills and, as a result, use them in their educational activities (Noga 2011, Siuda 2015). The research pointed out to shortcomings of teachers. Other studies describe teenagers and children's skills in reaching information by means of a computer, smartphone or other devices, decoding, deciding on, collecting, processing and taking advantage of it. In this way the continuous learning develops resulting in the implementation for lifelong learning. Incessant schooling, professional training will not be confusing for those young people (Juszczyk 2007). Development of ICT technologies has forced teachers to acquire knowledge of modern technology

perceived by teenagers in a completely different way as, having contact with the technology since their early days, they are not apprehensive of it. Contemporary teachers should take care of their own ICT education and, as far as their students are concerned, prepare for cooperation and team working on implementing tasks.

CONCLUSION

The information society of the third millennium is in the course of creation. Comparison of studies on levels of skills in different age groups is not optimistic. It is difficult to divide the society into groups of digital natives and immigrants, generation Y and Z. It seems that there still exist other groups specialised in using chosen tools or programs. Doing the job of e.g. an accountant, a scholar or a student enforces people to acquire skills of using specific software. A student unable to use the Moodle platform is not able to study anymore as the platform contains not only lectures, timetables or curricula but also examination tests. The analysis of empirical data has revealed a diversity of skills possessed by teenagers and adults, skills that are among key competencies of the modern world. Although the mentioned above research should not be generalised, it certainly specifies important areas for further research.

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