

# Digital Future(s)

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## INTRODUCTION

The term *digital* as used in the information society discourse (Zacher, 2006) refers to technical change, i.e., change in the form of signals (e.g., sounds, pictures, data) from analogue to digital (strings or packages of zeroes and ones). *Digitization* is the process of this change. Nowadays, digital technology includes computing, communications and content. All forms of data are computer processed into a uniform digital form. This form – information of one sort – provides new possibilities of linking any files. Conversion to digital technology creates a better quality of transmission (e.g., CD case) and enables interactive applications. The process not only ensures higher precision of signal transmission, as well as better facility of information storage and transmission, but this technology builds a totally new *network reality*, which is a breakthrough in creation and management of information (Tapscott, 1996).

Digitization of information is not limited to a technological dimension. Together with other technological processes, such as informatization, virtualization and robotization, it contributes to a general process of the technologization of civilization (called technological civilization), societies (called technological societies) and culture (called technopoly; Postman, 1992). Only innovative societies are able to overcome a cultural delay consisting of contradiction between new technologies and traditional values, attitudes, thinking and acting. Culture and technology interact throughout history, but in times of technological revolutions, their feedback is not symmetrical. Technology, during technological revolutions, is predominant over culture. Such seems to be the case with the *digital revolution*. Its technological dimension and dynamics generate radical changes in the technosphere, transforming it and determining its future shape. However, what is no less important – socially and humanly – is its present and future influence on man and society, and on all

activities of people, or philosophically speaking, the *conditio humana* in the future. This gives a rationale to researching and debating our digital future, including its costs, risks, promises and challenges.

## BACKGROUND: NEW VOCABULARY CONSTITUTED

The term “digital” has become increasingly popular in recent times. In many cases, it substitutes such terms as “information(al)” and “networked.” However, it seems that the term has some performative potential, giving a new perspective of the information revolution, showing its new technical directions and introducing more future-oriented thinking on its effects and impacts. Additionally, the digitization of a growing number of domains of human activities and life is a goal, a process and a set of policies shaping human environment and making it an intelligent ambience.

An overview of the literature pertaining to the subject shows the emergence of a new vocabulary, which is frequently used both in scientific and public discourses. The use of new terminology is important for policy, as well as for elaboration and communication among ICT’s inventors, policy-makers, businesses, citizens and their organizations. Digital constructs, in the form of thinking and acting, are about the future. That is why visions, strategies and their societal acceptance and implementation should not fall behind with new narrative using new terms. So “digital” as a term specifying first of all a higher level of technology, can be used in a more metaphoric way also. Also, the term emphasizes a qualitative change of technological applications in many domains and spheres of human activities.

To present a handful of applications used in the subject literature, we may quote a number of examples. In such, “digital” can be assigned to: revolution (e.g. Brooke, 2011); age (e.g., Bauerlein, 2008; Feenberg,

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2004); era (e.g., Dunleavy et al., 2006); world (Holt & Schell, 2011); environment (e.g., Cordoba & Arias, 2010); technology (Tapscott, 1995); devices (MacDougall, 2012), machines (Poster, 2006); domains (MacDougall, 2012); economy (e.g., Druica, 2012; Tapscott, 1998); collaboration (Albert, 2009); piracy (Higgins, 2007) and digital privacy rights (Knapp, 2010); nation (e.g., Wilhelm, 2004); government (Cordoba & Arias, 2010); democracy (Fuchs, 2008); natives and immigrants (Small, 2008); women (Plant, 1997); information (Hilbert, 2010); literacy and competence (Cartelli, 2012); culture (Miller, 2011); art (Fuchs, 2008); music and media (Holt & Schell, 2011); shock (Fischer & Wright, 2001); vertigo (Keen, 2011); the sublime (Mosco, 2004); a divide (James, 2008; Maskery, 2007; Tucker, 2007); and exclusion/inclusion (Fuchs, 2008). The authors mentioned are only exemplary, as many more studies exist.

This new vocabulary is also a subject pertaining to scientific fashion and a new research area that is intellectually promising. The new terms constitute a kind of “research map” for further investigations and public discourse. Such discourse not only determines “spaces” of research, debates and policies but expresses people’s aspirations, expectations and fears. New terms and new vocabulary constitute a new language that is necessary to identify and to name new phenomena and processes, as well as to understand them and to control them (if possible). Our perception is changing due to digital technology and digitization. Hyper textual digital information enables a better insight into the complexity of the present *hybrid world* (real and virtual). The new language extends the limits of our knowledge and, as a result, changes our thinking and finally the modes of our activities. This language is creative, since it describes phenomena and processes that have never existed before. Even traditionally-used terms gain new meanings.

## **SOME APPROACHES TO LOOKING INTO THE FUTURE**

Revolutionary technologies (as, for example, ICTs, biotech, nanotechnology) generate – in a natural way – interest in the future, since they start from “embryos.” Their emerging effects, costs and risks will become massive and more distinct in the future, although

sometimes the very distant future. Therefore, studies, reflections and deliberations on the *digital future* seem important, timely and useful.

Thus, the future studies predominantly devoted to information, the Internet, VR and digitization are increasingly popular. They use various approaches and methodologies. They form the intellectual basis and provide the inspirations needed for understanding future challenges, opportunities and risks and for shaping the future – from s-f, utopias, visions and imagination of inventors to trend analysis, projections, forecasts, scenarios and visioning (e.g., Zacher, 2008). Very often, prospective investigations concern general problems of development, civilization and technology. To have better insight into the future – including what is possible, desirable and probable – systematic multi- and transdisciplinary research and discussions are necessary. Theoretical studies on technology can be a good starting point to understand the nature, mechanisms and dynamics of technology (see, e.g., Bijker & Law, 1992; Smith & Marx, 1994; Katz et al., 2003; Misa, 2004; Seidensticker, 2006). Even general approaches to the future studies can be helpful (e.g., Mack, 2007; Wagner, 2008). Imaginative visions as the Singularity of Kurzweil (Kurzweil, 2005) and utopias (e.g., computopias), s-f (e.g., Lem & Gibson) and fantasy literature can be inspiring. Analyses of trends (mega and micro), that are both general and sectorial of technology, innovations, their applications and impacts, show “objective” trajectories of development that could occur in the future. However, there are co-shaping factors, such as long-term strategies of governments and businesses, especially big, transnational businesses, having powerful research labs producing groundbreaking innovations. Potentialities of progress are located in the R & D sector, in national and international structures of research, in big projects (as, e.g., Apollo, Genome, Large Hadron Collider, space exploration), in financing research and in application and diffusion of innovations. Strategies and policies – public, private and mixed – can be oriented to stimulation of cutting-edge technologies to achieve comprehensive modernization of economy and society. Technology is heavily exploited in demand-creating industries, in marketing promoting new technological (electronic) gadgets, and in formation of imitative consumption patterns adopted by societies, also less advanced. Additionally, social aspirations, expectations and fears (e.g., of nuclear energy, cloning, GMO, elec-

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