

# Modeling Knowledge Society

**Lech W. Zacher**

*Kozminski University, Poland*

## INTRODUCTION

Human history shows that knowledge was always crucial for the functioning of individuals, societies, organizations and institutions. From the ancient times, there were intellectual temptations to use knowledge as a basis of societal (also state) functioning. Philosophers and scientists throughout history, from Plato to Bacon, and from Marx and Weber to contemporary creators of technology in Silicon Valley are good examples of such temptation—some just in thinking and futurizing; others in practical activities, such as design, management, and production.

The idea of progress and the Enlightenment rationality become still a great hope stimulating discourse on the scientific and technological future. A scientific and technological revolution (term coined by J. D. Bernal in 1939 – Bernal, 1939) was trumpeted in the second part of the Twentieth Century. It was based on production of new knowledge, as well as its rather prompt diffusion and practical applications, such as nuclear power, new materials and info-communication technologies. Production of knowledge was greatly stimulated by governments (armament race, space exploration, Cold War) and increasingly by businesses enjoying governments' orders and other support, such as tax reductions, risk sharing, etc.

Postwar economic reconstruction and growing markets were also helpful; many streams of innovations appeared as its result – mostly in the advanced industrial countries; the postcolonial Third World was still delayed, dependent and brain-drained. These knowledge and technology streams were also named revolutions, e.g., the information revolution, biotechnological revolution and nanotechnological revolution (the last one just in the beginning stage). Knowledge, especially technical, dominated economy, and new labels were invented such as information economy, New Economy, digital economy, high tech economy, wikinomics and macrowikinomics (see e.g., Tapscott,

1998, Tapscott & Williams, 2010). All types of economies with such labels can be called knowledge-based or simply *knowledge economies*.

Changes in economic activities, their fields, structures, organization, technologies, needed competencies and knowledge are a product of advanced societies (*de facto* of their technological and managerial elites) and have a great performative influence on societies, not only on their elites, political ones included. So the production – seen as an emergence – of technological change and its feedback create a new level – cognitive and practical – of a society. Knowledge is needed to generate change and a new knowledge is added to the social fabric out of this change. Stock of resources and human and social-cultural potentialities together with strategies, policies, with creativity and innovativeness, with imagination and visioning make societies knowledge leaders. So, these factors may constitute a general model of change. However it seems evident that its use and imitation in various countries will be rather bounded by many diverse factors and contexts. So, in modeling knowledge societies in the real world (virtual one as well), one should consider varieties and differences in their history, potentials, economic and political systems, strategies and policies, cultural and educational abilities of people, aspirations, patterns of behavior and so forth. In such, it is needless to prove that knowledge gaps and divides are possible and existing.

## BACKGROUND

### Knowledge Society: Discourse and Practice

The knowledge society narrative can be ascribed to many intellectual sources, from philosophy to politics, not to mention various theories concerning innovation, education and the future. All these sources produced ideas, concepts, theories, and approaches, and also

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popularized information for media and for lay people. There are quite many philosophers and other scientists dealing with technology development, as well as its role, effects, risks and dangers. The arbitrary list would comprise not only philosophers but also sociologists, political scientists, engineers, technological innovators and managers. There are classics such as Spengler, Heidegger, Gehlen, Jonas, Ellul, Bunge, Mumford and Habermas. Some contemporary authors are also involved in this problematique. Often they represent various backgrounds and differentiated approaches, e.g., Durbin, Ferkiss, Feenberg, Bijker, Law, Marx, Wyatt, Johnson, Wetmore, Hughes, Lenk, Rapp, Ropohl, Zimmerli, Grunwald and Coates. Some are more connected with STS studies, e.g., Webster, Woolgar, Jasanoff and Vanderburg. Still others locate their interests in more general areas such as civilization, man and machine, computers and robots, network society, culture and technology, future, e-economy, cognitive capitalism, etc. Several exemplary names are Toffler, Zubov, Negroponte, Rheingold, Kurzweil, Gates, Jobs, Turkle, Postman, Castells, Drucker, Schiller, Tapscott and Benkler. This variety has something in common: knowledge is seen as a driving force or the main factor and transformative power. These authors and many others have built an intellectual and scientific base for a research perspective on knowledge-based societies. This perspective is predominantly interdisciplinary and future oriented, as well as innovative.

Therefore, the discourse on knowledge society is multifaceted, multidimensional and very complex. Its roots are connected both with real trends and developments of science, technology and the human imagination, with creative ideas promoting the role of knowledge in transforming and shaping societies. It is worthwhile to point out that all of these – ideas, trends, strategies and practices – originate mainly from the Western cultural heritage and experiences. Implicit assumption that the Western pattern of development will be accepted and diffused everywhere – by imitation, technology transfer, migrations, trade, globalization interdependence, international co-operation, FDIs and TNCs activities – becomes too simplistic; especially nowadays, when so-called ‘new emerging powers’ begin their developmental acceleration and their world play. Rather than becoming universalistic, functioning and development of societies worldwide seems rather

multilevel, multitrajectory and multicultural. Thus, a knowledge society as a pattern should comply with such a complex and diverse perspective.

## Knowledge and Society: Multidimensional Agenda

Knowledge is produced within society, by society and for society; also, knowledge transforms society, giving a new platform – intellectual, technological, economic, social and cultural – for further changes and development. Compartmentalization of science, a monodisciplinary approach, and aversion to the future studies make difficult the use of a holistic and interdisciplinary approach to the knowledge society field. Of course, disciplinary studies and empirical research are useful but multidimensional, holistic and systemic and prospective insights are necessary for recognition of problems; understanding their interpretation and evaluation; and elaborating recommendations, strategies and policies. Knowledge society discourse takes advantage of various disciplines, areas of research and cognitive orientations: from philosophy of technology (see works such as, e.g., Mitcham, 1994; Feenberg, 2002; Hughes, 2004; Grunwald et al., 2012, Hanks, 2010; Vanderburg, 2005); sociology of technology (e.g., Woolgar, 2000; Wyatt, 2008; Lanier, 2011); other technology studies (e.g., Batteau, 2010; Bijker & Law, 1992; Harbers, 2005; Johnson & Wetmore, 2009); cyberspace (e.g., Mosco, 2004; Plotkin, 2012; Babcock, 2001); Internet (e.g., Slevin, 2000; Sarikakis & Tussu, 2006; Fuchs, 2008; posthuman technology and society (e.g., Featherstone, 2000; Sussan, 2005); information society (e.g., Castells, 2000; Cortada, 2009; Mossberger, 2007; Rheingold, 2002; Webster, 1995a; Currie, 2000; Dumas, 2012; Shaviro, 2003; Targowski, 2008; Van Dijk, 2006; Mansell, 2009; May, 2002; Van Dijk, 2005; Baker, 2013; Braun & Wetmore, 2010; Rainie & Wellman, 2012); future (e.g., Lessig, 2001; Kurzweil, 2005; Spiller, 2002); and culture and cyberculture (e.g., Miller, 2011; Nayar, 2010; Keen, 2007; Breton, 2011; Taylor & Harris, 2005; Trend, 2001).

There are many more important contributions on digital economy, the digital world, media, feminism, e-exclusion, digital divide, virtualization, network communities, e-politics, socio-technical systems, psychology of the Internet, connectivity, digital literacy,

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