

## Chapter XIV

# Information Societies

### INTRODUCTION

The purpose of this chapter is to define the evolution and key indicators of the information society that is being triggered by the Information Wave of the last 25 years. Several types of the information society from the point of view of information-communication technology (ICT) will be reviewed and their developmental paths will be defined.

The fast development of the global economy based on information-communication technology (ICT) is supported by the information society, because without this technology it would be rather impossible to perceive information society. Depending on the different levels of a given country's development, the information society has different levels of complexity and influence on the global economy and vice versa. Hence, it is important to recognize the information society's different trends of development and their solutions and internal and external consequences. A question appears whether the information society is a new tool of thought or a new way of life. The answer to this question is provided in this chapter.

### THE FORCES OF CHANGE

The "information society" is a fuzzy concept. It is considered the answer to the problems created by the postindustrial *modus operandi*. In a modern economy, growth is owed to advances in information-communication technology. By the beginning of the 21<sup>st</sup> century, the need for information handling and processing in world societies is being shaped by the following trends:

1. Politics in the post-Cold War Era. A new world order may lead to the formation of 1,000 countries and a highly decentralized "international society." This physical trend of disintegration will require tools to integrate such entities informationally. Eventually, this new system of nations will be based on a new information-communication infrastructure, which needs new information-communication systems and services.
2. Democratization and peacemaking. Societies would like to be better informed; therefore, they need more communication based on free speech and solutions like the Internet.
3. Globalizing information. This is caused by the proliferation of ICT and is a major

driving force in the trans-nationalization of the world economy. Eastabrooks (1988) predicts that programmed capitalism in a computer-mediated society will integrate all national markets and create one international market.

4. The globalizing economy. A network of 50 global corporations now "rules the world," because they apply the global information infrastructure. ICT is at the core of the current process of economic globalization (Madon, 1997).
5. Population growth and health threats. In 2025 there will be about 8-9 billion people, who will generate at least twice as many transactions as are currently processed today. This means more needs for ICT capacity.
6. Global environmental threats. If these threats are considered seriously, then there is a need for planetary management and ecology. This new management and ecology will require monitoring information-communication systems and services.
7. A new path for development. Since the gap between rich and poor nations continues to widen, a world focused on people is being created. This undertaking requires new concepts of human security, new models of sustainable human development, new partnerships between state and market, new patterns of national and global governance, and new forms of international corporations (Boutros-Ghali, 1994). This trend requires more education and research, which will necessitate the formation of "knowledge" and "learning" societies (Marien, 1995).

As society, particularly the information society, becomes more interconnected, we face a loss of boundaries, throwing into question the basic conceptual distinctions we use to make sense of the world. As society becomes more complex and takes on more variety and differentiated configurations, the capacity of existing regula-

tory (governance) systems is being overwhelmed. A group of 14 Canadian public servants offered the following new focus how to govern in the information society (Rossel, 1992):

- Information-based ways of organizing to include more players to innovate and learn
- Forging consensus
- Strategic use of information to provide leadership in the continuing process of learning

For example, the Japanese information society's purpose is the transformation of *Homo sapiens* into *Homo intelligens* in the spirit of globalism through transparent networks and an open educational system. This purpose portends that anyone, anywhere, at anytime in Japan should be able to get any information easily, quickly, and inexpensively. We see that these premises treat the information society as a "computopia" and as a rebirth of technological synergism (Masuda, 1971). Perhaps we expect too much from the information society, which can provide "computopian" platforms for information-communications but does not necessarily require that people use them.

As ICT makes information society a reality, its analysis is undertaken by many researchers from many disciplines. Frank Webster (1995; 2004) provides a very useful review of different approaches towards the information society concept. Table 1 presents another summary of the different approaches to the understanding of information society.

Based on this review of major developmental trends of information society, a matrix of these trends is defined in Figure 14-1. This model allows for the following observations:

- ICT is not *neutral*, it can be of developmental or regressive characters
- ICT-triggered *surveillance* and *digital divide* are regressive and strong trends

Table 14-1. Different approaches towards information society

PERIOD	SYMPTOMS	PARADIGM	REASON	IDEA PIONEERS
Transformations due to ICT growing applications				
1970s	Political Transformation	Informed Society	To intellectualize the Japanese Society To break censorship in Poland 1971-74	Masuda (1971) Targowski (1971; 1980; 1991)
1970s	Economic Transformation	Post-Industrial Society		Bell (1973), Porat (1977)
1990s	Job Transformation	Information Society	Intensive Computerization	Reich (1992)
1990s	Work place transformation (from local to global, migrating for a job)	Mobile Society	To open borders after the fall of Communism	Urry (1995)
1990s	Solutions Transformation (from simple to complex)	Knowledge Society	Competition at the level of innovations	Mulchap (1962) Stehr (1994)
1990s	Landscape Transformation (from physical to virtual)	Virtual Society	Growth of cyberspace	Balsamo (1995)
Networking due to computer-telecom networks & Internet wide applications				
1980s		Information Wave		Toefer (1980)
1980s	From Global to Electronic Global Village integration	Electronic Global Village	Growth of computer-telecom networks	Targowski (1990)
2000s	Connecting people	Network Nation Electronic Republic Network Society Digital Nation	Wide spread of netcitizens	Hiltz and Turoff (1993) Grossman (1995) Castell (1996) Wilhelm (2004)
Digital Divide due to too high cost of ICT for underprivileged				
1990s	From truth to greed	Uninformed Society	Manipulation of data on purpose	Schiller (1996)
2000s	Deepening inequality	Disconnected Society	The gap between those with an access and those without an access to the Internet	Norris (2001) Van Dijk (2005)
Surveillance due to desire for better control & efficiency				
1940s 1970s 1980s 1990s 2000s	Utopian quest for better efficiency	Big Brother Prisoned Society Dossier Society Informed Society Automated Society	Total control A cell for every one A file for everyone Every worker informed Automated Service	Orwell (1949) Foucault (1979) Laudon (1886) Zuboff (1988) Targowski (2008, Chapter XI)

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Table 14-1. continued

Democracy due to better informed citizens				
1970s	Applying technology by government to control society	Controlled Society	Scientific government	Westin (1971)
1970s	Applying fair game in discussion	Liberal Public Sphere	Growth of public media	Habermas (1974)
1980s	Preserving freedom	Free-speaking Society	To apply technologies of freedom	De Sola Pool (1983)
1980s	Searching for better democracy	Teledemocracy	Technology as protecting democracy	Arterton (1987)
1990s	Searching for democratic politics of technology	Democratic Technology	Political-social criteria is more important than economic criteria in technology assessment	Scolve (1995)
2000s	Fragmentation of "virtual sphere"	Flaming and Unresolved Conflicts	To search for equal access opportunity	Papacharissi (2002)
Virtualities due to growing presence in cyberspace				
1990s	Growth of cyberspace-oriented life	Virtual Society	Quest for a culture of the future	Michaels (1994)
1990s	Growth of women participation in IT profession	Powered women	Future has no place for "historical man"	Plant (1996)

Source: (1) the Author and (2) the categorization of five kinds of techno-social trends by Webster (2004).

- ICT-triggered democracy may be preserved, since the citizens are better informed

Of course all six ICT-driven societal trends require very active and responsible social actions and regulations. But information-oriented social action is *per se* positive, since it leads to better awareness of strength and weaknesses of social and technological issues and their solutions.

On the other hand, information society is not the *panacea* of every social problem. Even May (2002) argues that while there have been some major and important changes prompted by the information technology revolution, these are often changes only in the forms of activity and not their substance. The Information Age according to May supports previous social practices rather

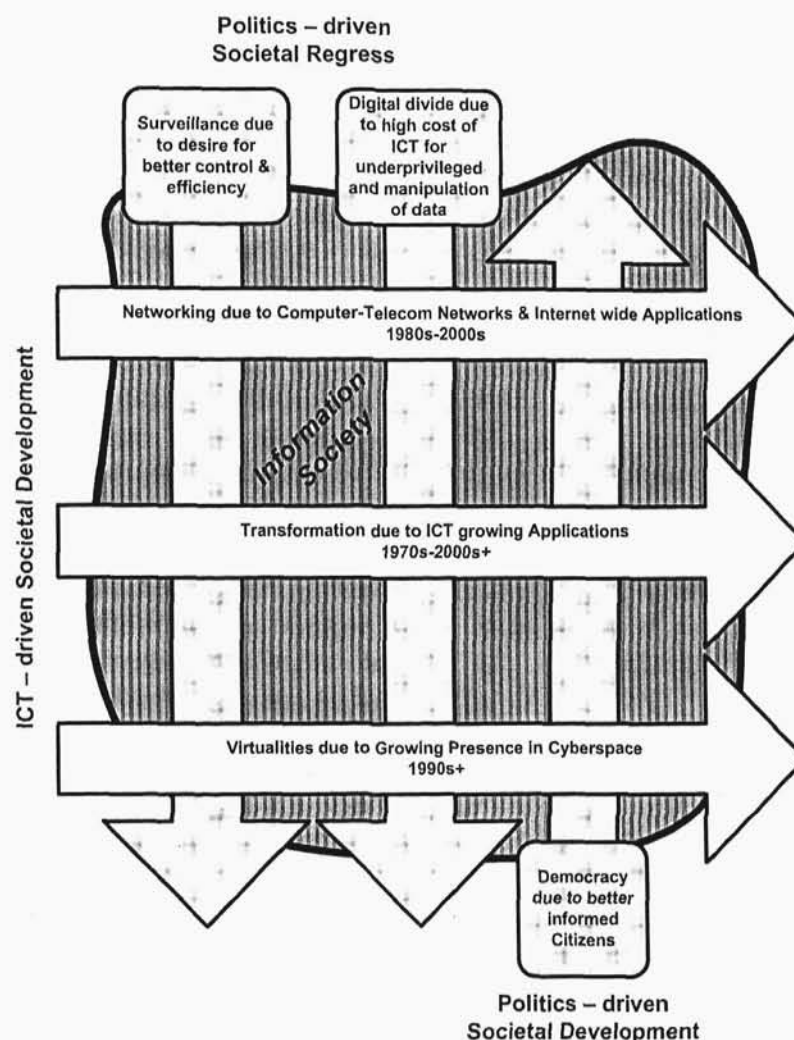
than overthrows all that has been practiced before. Perhaps it is too skeptical a view, since a better informed person is more knowledgeable and wiser; this is a great progress of civilization.

In the following sections of this chapter, the information society will be synthesized from the ICT point of view since without this technology there is no information society.

### THE INFORMATION SOCIETY: A NEW TOOL OF THOUGHT OR A NEW WAY OF LIFE?

The impact of information-communication technology on individuals and organizations has

Figure 14-1. A matrix of ICT and politics-driven trends of the information society development



been analyzed under the rubric of the information society since the beginning of the computer revolution in the 1960s (Masuda, 1971; Bell, 1973). It is a socio-economic view of the impact of computers on society in general. The increasing role of computer and network applications affects almost every facet of human life. Sociologists and computer pioneers have tried to rationalize the computer's role in society.

The term "information society" was applied for the first time by Koyama in 1968 and subse-

quently by his compatriot Masuda in 1971 in his master plan for building the Japanese information society. The "information society" evolved from such slogans in the 1960s and 1970s as computer-serviced society (Sackman, 1967), Age of Cybernetics, Information Era (McLuhan, 1968), knowledge society (Drucker, 1970), technotronic society (Brzezinski, 1971), computer revolution, wired society (Martin, 1978), telematic society (Martin, 1981), post-industrial society (Bell, 1973), and Gutenberg Two (Godfred & Parkhil,



1979). The term "information society" was coined in order to intellectualize the change in social behavior which transformed the capitalism of "capital and material" into a new political and social order based on "information."

In Eastern Europe, specifically Poland, these ideas were almost implemented in 1971-74 under the form of a national information system whose purpose was to transform a totalitarian society into an informed society (Targowski, 1991). A similar project, though only a tool of central planning, was a subject of experimentation in Chile. President Allende invited the famous British cyberneticist Stanford Beer to apply his ideas of feedback to reduce planning complexity, but the assassination of the president also killed the cybernetic society in South America (Schwember, 1977).

Pawlowska (1992) offers the following six characteristics of the information society, which are agreed upon by most authors:

1. Information materialism – information as an economic good that can be sold, bought, and possessed
2. Widely applied information technology
3. Integration of different types of information technology
4. A national economy dominated by the information sector (information economy)
5. Special status of knowledge

The information society with its information economy occurred as a result of industrial evolution rather than resulting from the information revolution. Although it is the same capitalistic society with the same values, the focus on information increases human cognition and changes the future of mankind and its environment, particularly its infrastructures, and perhaps brings along with that a change in societal values. The information society requires that the human process of cognition is no longer limited to reductionism, mechanism, and analysis. The process in this new society can be more open, more expansive in generating ideas

and solutions channeled by a better focus (aims) and synthesis of system thinking.

The strong development of media in the information society, particularly interactive ICT, facilitates the communication of one's message. It may lead toward a participatory democracy which should assure an equal access to power and the right to decide one's fate. These are the new values that can be implemented in the information society.

Sociologists perceive the information society as a dream of idealistic values and clean hands not involved in the "dirty" material economy. Is it realistic to expect so much from the information society or even to think that such a society can exist? The answer is no. The post-industrial economy, also known as the service or information economy, has been reduced by Daniel Bell (1973) to an association of the elite (lawyers, financiers, and researchers). Such a financial system cannot sustain the nation in the long term, since it exports "jobs" and disharmonizes the development of a mature economy.

A narrow interpretation of the information society, as a culture based on information as a "commodity" makes the concept of the information society more of an unfulfilled, even misleading, premise. However, if the information society is conceived as a tool of making more informed, knowledgeable, and wise decisions, then such a society can pass a reality check and its development should be supported. Such a society has the chance of becoming the "conscious society" on the way to developing into the "wise society," driven not only by information and knowledge, but also by the wisdom of how to survive and be satisfied.

If the information society applies electronic mail, telecommuting, electronic commerce and/or distance learning on a wide scale, then these technologies lead to new ways of human behavior in civilization.

The politics of information should also be as important as "computer literacy." We pay a

lot of attention to applying computer tools, but do we scrutinize the application systems design and operations of the information society? This lack of application design checks may lead to the abuse of social activities, and ICT may become unwanted technology.

## THE ESSENCE OF THE INFORMATION SOCIETY

The social framework of the information society defined by Bell (1979) is a new integrated computer-telecommunication infrastructure which transmits structured facts, ideas, judgments and experimental results. Bell's view that technology is the main agent of change has been questioned by several authors, who argue, that the new technology is not the main cause of change in our society today. On the other hand, Bell may be thinking the same way when referring to Machlup's (1962) and Porat's (1979) thesis that the information society is defined by the proportion of information/knowledge activities to material ones. If the latter activities are more important than the former, then the information sector becomes the primary one (information products and services), with two deviated information sectors (public and private bureaucracies). The three remaining sectors are the private productive (producing goods), public productive (building roads, dams, and so on), and household sectors.

Beniger (1986) hypothesizes that the information society is the answer to the control crisis caused by the industrial revolution. Hence, he concludes that "control" is the engine of the information society.

Where are the real roots of the information society? They are in the concept of "information" rather than in that of "material control." Information is a process of forming a new idea, concept, event, material, energy, product, service and so on. By forming some idea or description, we inform it. Peters (1987) argues that with the decline of

scholasticism and the rise of empiricism around the seventeenth century (the rise of the natural sciences), "information" gradually came to refer to "the information of the senses" (such formulations are found in Bacon, Locke, Berkeley, and others). Where once "information" referred to the defining of universals, nowadays it also describes the processing of particulars (data, information, concept, knowledge, wisdom).

Instead of defining the information society by its dominant product, information, the author perceives the information society through its general structure of social and economic relations.

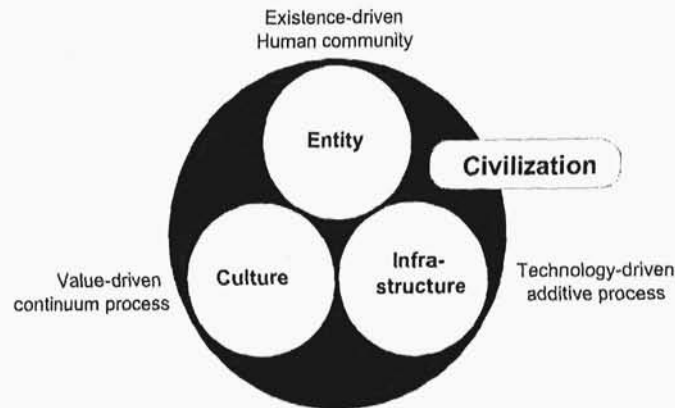
An investigation of the general structure of social and economic relations must lead to the analysis of civilization. Civilization is an informational structure developed by humans to effectively cope with themselves, nature and their creator. The mission of civilization is to improve human existence. The civilization model (Figure 14-2) has the following components:

- Human entity – organized humans
- Culture – a value-driven and symbols-driven processes of developing patterns of human behavior
- Infrastructure – technology-driven additive process of acquiring and applying material means

A human entity in the political sense is a family, tribe, ethnos, people, proto-nation, nation, international community, global society, and so forth. A society is an organized human entity on the same territory in order (more on this topic in Chapter I):

- to support their own existence through the exchange of specialized services and goods via infrastructures
- to develop the human race by the development of culture and infrastructures

Figure 14-2. A model of civilization



The role of a society in a civilization context must take into account the stage of civilization development. The first civilizations (Mesopotamian, Egyptian, Minoan, Indic) were societal civilizations: they organized society. Based on these, the next civilizations (Hellenic, Roman, Sinic, Japanese, Buddhist, Islamic, Eastern, Western, Sub-Saharan, and Carthaginian/Punic [Maghrebian nowadays] in B.C. times) were organized around cultural issues. Hence, we can call them cultural civilizations. The third generation of civilizations (Japanese, Buddhist, Sinic, Hindu, Islamic, Eastern, Western, and African in our times) are organized around the issues of developing infrastructures; therefore (Chapter I), we will name them the infrastructural civilizations.

Among civilization infrastructures one can recognize the following configurations:

1. Core infrastructure (authority I, economic I, military I)
2. Foundational infrastructures (urban I, rural I, health I)

3. Integrational infrastructures (transportation I, knowledge I, communication I, Information I)

Does the level of development in a society depend on the era in which the civilization existed? Although all eight civilizations developed infrastructures, each put a different emphasis on a particular category of infrastructure. Most literature describes the societal development in Western civilization. In fact, the current Western emphasis is on the integrational infrastructure, which is being developed for the purpose of pursuing the culture of management, media, education, and entertainment as well as strengthening the economic, military, and health infrastructures. Of course, societies from other civilizations have different priorities. Western societies develop the integrational infrastructure not for the sake of infrastructure but for the purpose of developing the aforementioned cultures. In other words, an information society emerges when a society's purpose and primary means of solving prob-



lems are focused on information handling and processing.

For example, the levels of ICT advancement in both the United States and Singapore are high. However, the proportion of information to material activities in the U.S. is much higher than in Singapore, although that city is still involved in manufacturing American goods. Does this mean that there is no information society in Singapore? Singapore is an automated state-city with some solutions that are not conceivable in the U.S. Are both states at the level of an information society? At this moment, we may say that the U.S. has entered the “informed” society level while Singapore is at the level of the “informative” society. (See below for elaboration of these and related technical terms.)

Alvin Toffler (1980) offered a very elegant concept of civilization development through three waves of agriculture, industry, and information. Later, Alvin and Heidi Toffler (1994) became

advocates of the “new civilization,” because they perceived the information wave as replacing the agricultural and industrial waves. Is bread being replaced by “Windows XP” or a car by the Internet? That will not happen. The next wave includes the previous ones as illustrated in Figure 14-3. The quality of any information society depends on the quality of the previous societies. In other words, the information society is not exclusive but inclusive. The relationships among these societies determine the quality of life in the information society.

## TYPES OF THE INFORMATION SOCIETY

The term “the information society” was sufficiently descriptive in itself when it was first described 30 years ago. Nowadays, the information society is being developed in several mutations. Some types of the information society are:

Figure 14-3. The inclusiveness of civilization waves

