

Key terms

Actor-Network: A heterogeneous network comprising human and non-human components where technological objects and their socio-political context shape each other and co-develop into socio-technical entities through constant interactions. [Actor-Network-Theory]

Age of atoms, age of bits: A descriptive metaphor used by Nicholas Negroponte, according to which industrial societies are determined by the physical environment (raw materials, material goods), in other words atoms, while information society is determined by the flow of digital information, i.e. the movement of bits.

Back-office: A back-office system serves the effective cooperation within or between public administration bodies.

Benchmarking: A research procedure suitable for the qualitative and quantitative comparison of the performance level of an intervention with one that qualifies as the best in a similar field. The method makes the analysis and correction of key processes, as well as the elimination of errors, possible. It also improves performance and the definition of targets. *Benchmarking* is an important tool for finding “best practice”, which can also lead to higher performance befitting the targets aimed at.

Civil society: For the majority of authors dealing with the topic, “civil society” is understood as organisations that operate on a voluntary basis, serving to balance the relationship between the two poles of the individual and the state by infiltration. From a network viewpoint, it can be defined as the relationship-network of society which develops independently of the state, and its operation falls outside the sphere of influence of state/executive power.

Convergence: In the context of the information society the strict, originally mathematical sense of convergence is interpreted in two ways: on the one hand, it means the ability of various network platforms to provide basically similar services, and on the other hand, it is used to refer to the unification of consumer goods such as the telephone, the television and the personal computer. Convergence is a multifaceted phenomenon and besides information society it is used in politics, in regulation, in the area of services and markets, as well as in intersectoral associations and fusions.

Culture: The human race is unique in that it has culture. According to the most general and concise definitions, culture is a sum of all non-inherited information, and the sum of mankind’s survival strategies.

Customer Relationship Management (CRM): This means all the methods, information technology applications and Internet access with the help of which a company is able to maintain relationships with their customer-base, within an organised framework.

Cyberspace: The term cyberspace is linked to William Gibson’s book *Neuromancer*, published in 1984, and refers to computer networks and information resources accessible through them. Cyberspace was often used at the end of the 1990s as a synonym for the Internet.

Deliberative democracy: In the traditional conception of democracy, citizens play only a passive role as consumers, since they practice the right of democratic control mainly by voting. At the same time, they have almost no influence on determining the public good. In deliberative democracy, however, public debate plays a central role, which is usually centred on different ideas concerning the public good. In public debates, citizens express not only their existing ideas, but also formulate their point of view as a result of constant reflection.

Deprivation: Literally meaning ‘poverty’, the term is particularly powerful when used in the expression ‘multiple factors of deprivation’. This implies that poverty / deprivation is caused by the combination of elements such as: economic distress, deficient schooling, inadequate housing, unemployment.

Diffusion network: Social networks through which innovations diffuse within a given social group. [Rogers’ diffusion theory]

Diffusion of innovation: This term refers to the process characterising the spreading, adoption and consolidation of innovative tools and artefacts. In Molnar’s theoretical model, diffusion patterns are shaped by a combination of three variables: the degree of penetration of technological innovation; the rate of growth, and the actual properties of the technologies themselves. The interaction of these three variables leads to three types of ‘diffusion state’: saturation; plateau; dynamic. (See “types of diffusion states”).

Digital divide: In general terms, it refers to the gap between those with access to information and communication technologies (ICT) and those without. Initially the term was used to indicate those who had access to hardware (i.e. a Personal Computer) in comparison with those who had not. As technologies evolved and their use also changed qualitatively, the divide has been seen as separating users from non-users, and latterly, distinguishing different types of users. It is clear that there is not just one digital divide but multiple divides which relate to a variety of factors, such as: gender; age; ‘ethnic clustering’; uncertainty of living/financial conditions; work insecurity, and social insecurity.

Digitalisation: The process during which works (texts, images, and sounds) originally published non-digitally are converted into an encoded form readable by computers. When texts are digitalised each character (letter, punctuation mark, etc.) is given a separate code; this is often complemented by commands about how the text is to be displayed.

E-inclusion or **digital inclusion:** refers to the conception that all citizens should have access to ICTs and should be able to make effective use of them.

E-portfolio: The function of the electronic portfolio (e-portfolio) is to compile in one place all the documents related to the studies of a student. The knowledge maps, learning diaries, solutions to problems/tasks, tutor- or self-evaluations, various links stored in wiki or assembled with the help of other knowledge management tools all promote the pooling/exchange of knowledge among people. Those participating in network learning can form an opinion concerning the previous knowledge of their partners, their sphere of interest and their style of learning on the basis of the e-portfolio, and this can help cooperative learning.

Electronic democracy: The use of interactive technologies in the interest of strengthening democratic processes, as a result of which people may feel they have more space in which to express their views and opinions, and they can be more active participants of democracy. In other words, exploiting the possibilities offered by the digital technologies to strengthen the relationship between citizens and the

government, in order to improve the democratic processes between the governing power and those governed, between the representatives and those represented. Electronic democracy can be further divided into “electronic participation” and “electronic elections”.

Electronic government: Using the combination of information technology, structural changes and new skills in public administration in order to improve the standard of public services, and make the operation of public administration more simple, more efficient and more economical, and to further strengthen the democratic processes.

EU 20 services: The 20 basic public services defined in the eEurope 2002 Action Plan (Common List of Basic Public Services - CLBPS). The online sophistication of these services is measured annually in every Member State of the European Union.

Ex ante: see “information society law”

Ex post: see “information society law”

Freedom of information: Public accessibility to data in order to ensure the transparency of state. Public data includes information in regard to activities performed by the state, local government or other public service organisations.

Front-office: A customer service and information technology system through which the IT back-office systems of public administration bodies are made accessible to authorised users.

Globalisation: refers to the increased interdependence and mutually exerted influence between countries and between human communities on a global level, which shapes economic, cultural and political subsystems.

Informal learning: an activity that is realized outside the framework of institutional organisations, aimed at promoting learning, and acquiring and applying knowledge.

Information: The term originates in Latin and has a complex meaning closely related to facts, the communication of facts, data, knowledge, learning, communication, news. In certain cases “information” appears to be identical with these concepts (e.g. fact, data, knowledge, news), in other cases it is the subject of the aforementioned notions (e.g. instruction, learning, communication). (The transformation of data into information requires knowledge, whereas its conveyance necessitates communication.)

Information literacy: The ability to access information and use it to create value. Someone can be regarded as information literate if he recognises when he needs information, and if he has learnt how to learn.

Information society: A new form of social existence in which the storage, production, flow, etc. of networked information plays the central role. (There are several other definitions of the concept.)

Information society approaches: Research principles of social sciences originating from the 1960s and 1970s which offer different explanations to the reasons leading to the development of information society and accounts of its major features (technological, occupational, economic, spatial, cultural).

Information society law: A group of laws that includes the protection of personal information and the freedom of information. The sum of regulation governing social relations built on communication

networks. We can differentiate between two kinds of regulations of the information society: either the legislator attempts to regulate the anticipated developments of interactions in advance, which is called *ex ante* regulation, or alternatively waits to see how these processes will develop and retrospectively regulates them, this latter approach is called *ex post* regulation.

Information society studies: An area of science that emerged in the 1990s for the systematic study of information society issues and its “translation” into higher education curricula

Information strategy: A new stage of high level political planning that emerged in the early 1990s, uniting areas such as the development of information infrastructure, the informatisation of the key subsystems of society and the development policy for the information industries. Functioning as a framework for social planning that determines the programme of building the information society, it includes visions about the future, outlines a comprehensive view of society, has long-term aspirations, and presupposes a consensus between the players of the political elite regarding the future attainment of a desired social quality. It prescribes the controlled concentration of resources. It regards education as the main sector where competitive advantage can be achieved and therefore considers it as a priority of national prosperity.

Innovation: The implementation of a new or significantly improved product (goods or service), or process, a new marketing method, or a new organizational method in business practices, workplace organisation or external relations.

Interactive services: Services that go beyond simply offering information - downloadable forms, search systems, thematic guides that require the active participation of the customer.

Interconnectivity: On the one hand, the concept that, within dynamic systems such as biological entities, economic systems or societies, the changes between connecting subsystems mutually affect one another; on the other hand, the development of mutually connected information and communication systems.

Internet filtering: The application of software restricting access to Internet contents, depending upon various settings (URL, words, images, etc.).

Interoperability: The ability of systems to cooperate with one another. Interoperability can be:

- technical, concerning the necessary standards for the cooperation of systems
- semantic, concerning the standardisation of the description of concepts and objects
- political, human, concerning the disposition of resources
- between communities, concerning the distribution and common use of resources
- legal
- international

Interpretative flexibility: refers to the flexible nature of discussed and debated meanings ascribed to scientific results, engineering processes and the resulting technologies by relevant social groups within a certain social context. [Social Construction of Technology, SCOT]

Learning management programs: (e-learning framework systems) (Learning Management Systems, LMS) Learning management programs based on the Internet contain the following functions:

- Keep a record of the learners and their results
- Keep a record of applications to courses and exams
- Give access to the various materials and elements of the courses
- Keep a record of the activities of the users: teachers and students
- Usually provide the primary communication interface
- Endeavour to increase student activity with automatic functions
- Support the teacher's evaluation/assessment (both formative and summative evaluation)
- Contain elements of self-evaluation and accountability
- Inform users of the latest news concerning education
- Support the realisation/arrangement of web-lectures and web-seminars
- Support the work of virtual groups and provide a collaborative platform.

Lifelong learning: The concept of lifelong learning focuses on the development of a new culture of learning and the dissemination of competency-based education. It encompasses the whole life cycle of the individual, from early socialisation and pre-school education to the post-active age (from the point of view of employment). Its objective is to guarantee access to learning for everyone, and includes forms of learning that are outside the school. Apart from learning within the formal framework of school systems, it regards personality-building experiences taking place in any other area of everyday life (for example through the media), at the workplace or in the family, as learning.

Linear service: An audiovisual media service provided by a media service provider for simultaneous viewing programmes on the basis of a programme schedule.

Marketing innovation: The application of new marketing methods, during which changes are introduced in product design, packaging, the launch of a product onto the market, product advertising and pricing.

Multitasking: In computing this term is used when a computer seemingly runs several programs and tasks simultaneously. "Media-multitasking" is the simultaneous use of more than one communication channel, e.g. if someone uses the Internet while watching television or listening to the radio. Human multitasking involves a person simultaneously carrying out more than one activity.

National Innovation System (NIS): The network of institutions in the state- and private sectors the activities and interactions of which initiate, import, modify and disseminate new technologies. The main objective of NIS analyses is to assess and compare the channels of knowledge flow as well as to identify bottlenecks. In this way economic policy can intervene where necessary and ensure the uninterrupted flow of knowledge. In a simplified way, what is under examination is the role of relationships in scientific and technological development between industry, R+D and the government.

Network: Every system that is made up of separate elements connected to one another can be considered to be a network. Social networks are formed from relationships between the participants forming a society.

Network economy: The economic system of information society. The attribute "network" signals that the creation of products and services - the actual creation of values, takes place in networks.

Network node: The smallest building unit of the network is the network node. In collective networks, we consider individual acting agents as network nodes, while in computer networks, this is what we call the individual computers connected to the network.

Network society: A social form based on the production, processing and transmission of information. The basis of its operation is ensured by the network of modern information and communication technologies.

Network state: A complex institutional system in which different local, regional, national and supranational decision-making levels are combined.

On-demand service: A non-linear audiovisual media service provided by a media service provider for the viewing of programmes at the moment chosen by the user and at his/her individual request on the basis of a catalogue of programmes selected by the media service provider.

Open Method of Coordination (OMC): Links governmental and non-governmental players, providing them with joint objectives and a means to encourage them to share their experience and to cooperate in working out solutions and necessary measures.

Open source code: This expression applies to software where the source code is either public property, or, more often, the owner of the copyright distributes it under a licence that complies with an 'open source' definition. This type of licence may, for example, prescribe that the source code must be distributed along with the programme, and that it may be modified freely (or at least with minimal restrictions).

Organisational innovation: The implementation of new organisational methods in a company's business practices, workplace organisation or external relations.

Output-control: In a pedagogical sense, output-control means that it is the desired learning (competency) aims that are defined, and not the input content, broken down into a detailed syllabus divided into time-units. Choosing the individual route leading to these aims depends on the previous knowledge of the individual and on the various time demands. In this system, the output is uniform and the input is different.

Personal data protection: The protection of any data relating to a specific natural person, ensuring the right of self-determination over data processing about them. The expression *privacy* used in Anglo-Saxon legal systems covers a wider spectrum: it means the protection of the private sphere from the outside world. In these legal systems euthanasia and abortion come under the scope of protection of privacy among other things. The expression "data protection", used in continental legal systems, is a part of the protection of the private sphere.

Post-industrial society: This term was the most frequently used one before the expression "information society" gained overall acceptance; it defined the newly emerged social-economic phenomenon by emphasising the fact that the old structures of the industrial era were replaced by new ones rather than by focussing on its "content".

Presumptive anomaly: based on scientific calculations, system builders anticipate such future changes – that a technological system becomes inoperable or uncompetitive compared to a new and more effective

system. As a result, the course of research and development can take a completely different path. [Systems approach to history of technology]

Process innovation: The application of a new or significantly improved production or transportation method; innovation of a technological type.

Product innovation: the implementation of a new or significantly improved product or service.

Relevant social groups: The members of such groups shape the development of a technology. They may be individuals, organisations or institutions. All other groups organise around these groups if they consider technology related problems relevant [Social Construction of Technology, SCOT].

Research and development (R+D): Regularly conducted creative work aimed at expanding the existing body of knowledge, including the knowledge formed about man, culture and society, as well as at using this body of knowledge in order to develop new uses. R+D incorporates three types of activities: basic research, applied research and experimental development.

Reverse salient: An anomaly in the growth phase of technological systems. It occurs when a conservative innovation of a component makes another formerly functional component (physical or non-physical) inoperable. If it cannot be corrected by conservative innovations - a radical innovation is needed to foster a new technological system. [Systems approach to history of technology]

S-curve of adoption: Refers to the diffusion pattern characterising the introduction of a new technology; it shows a slow start, then a steep rise, and then a slow progress again. It implies that the adoption of a new technology goes from the bottom of the curve, where there is a long period of research and attempts to address the market, and then it suddenly takes off when the market is ready and willing to adopt it.

Scale-free network: A network in which there is a small number of nodes with many connections, as well as a large number of nodes with few connections. The majority of community networks belong to this category. When analysing the “links” pointing to one another on homepages on the Internet, we come across similar, scale-free network connections.

Self-regulation: An independent system of rules that take into consideration the norms applicable in sectors of business life, like chambers of commerce and associations.

Social capital: Several definitions of social capital are known, but a common characteristic of all of them is that the concept is connected to social networks in which interactions, preferences and friendly attachments related to the everyday life of people develop. By social capital, we mean non-material resources resulting from relationships between players who constitute the networks, and influence the social and economic processes taking place on the different (e.g. family, neighbourly, settlement, national) community levels of social cooperation.

Social exclusion: This term refers to the condition of individuals who are not active members of the society they live in. It is assumed that this social phenomenon is caused by a number of inter-related factors including low income; labour market exclusion (linked to ill-health, low educational attainment and lack of skills); access to education and learning opportunities; housing status; degree of social capital and neighbourhood status, linked to the reinforcement of ‘cycles of poverty’. These factors tend to occur commonly across many western societies.

Social inclusion: denotes the opposite situation to ‘social exclusion’. In other words, it implies that individuals or groups are active within the society they live in, with the potential to access available educational, professional, economic and/or political opportunities.

Social informatics: A strongly interdisciplinary research field exploring the meso- and micro levels of information society and the social issues pertaining to telecommunication and computing.

Social resistance: can occur when radical innovations are introduced. It can delay or halt the diffusion of a given technology. On the other hand radical innovation can change the dominant values and lifestyles in society. [Evolutionary history of technology]

Social software: Social software is a relatively new collective term, encompassing applications which make the cooperation and communication of different individuals or groups possible. The simplest and most evident examples of this are the *e-mail*, the *Instant Message (IM)* programmes and the diaries (blogs) posted on the World Wide Web. Social software that has been properly used promotes communication between users and network connections, contributes positively and effectively to the accumulation of social capital, and through investments in information and communication technologies (ICT), they may even serve as a key to increasing productivity.

Sociometry: J. L. Moreno’s method of investigation, which shows the structure of the network with the help of mapping the hidden choices within communities. Sociometry is typically used to reveal the problems of small communities such as school classes, or groups working together in departments at work.

Supernarrative for development: An interpretative framework for the development of society, a focus for political discourse and a specific worldview which guides decision-makers in setting the direction for the development of society.

Technological determinism: argues that technology is the principal driving force in society determining its mode of operation, development, course of history, structure and values in a decisive manner. The effects of any opposing direction are taken into account to a limited extent, fully disregarded or disclaimed. Technological development is thought to be propelled by the logic of science alone.

Technological momentum: Components of a system (especially capital intensive ones with a long amortisation period) move in the same direction following certain goals along a specific trajectory. Technological momentum can move a system forward that has already lost its functionality. That is why technological stasis (the end of evolution) can be delayed. [Systems approach to history of technology]

Technology transfer: The process during which ideas and techniques generated in one area are applied in another area.

Technophilia: is enthusiasm for technology, which expects and perceives only positive social changes from technological development. Ideologically it originates from liberal-progressive traditions.

Technophobia: The opposite of technophilia. Aversion to and fear of technology and its negative implications for society. Technophobes expect and perceive only negative changes and anticipate a dystopian society.

Technorealism: makes efforts to assess the social impacts of technology objectively taking into consideration positive and negative effects.

Time-space compression: A term coined by David Harvey. The development of transportation technology and the increasing role of the media bring about a decrease in the importance of physical distances and the time needed to bridge them.

Translation: is the constant shifting of power between technology and society, and between entities of the network. [Actor-Network-Theory]

Types of diffusion states: In Molnar's theoretical model, *saturation* refers to the situation where penetration is practically complete and growth is stagnant; *plateau* refers to the situation where penetration is very high but not complete and growth is low or oscillating; *dynamic* refers to the situation where penetration is lower but increasing and growth is very high.

Virtual reality: Real or imaginary worlds simulated by computers. The term can be used for graphic- and text-based computer-generated worlds. Virtual reality is closely linked with the development of 3D computer representation; special software and hardware is often used to achieve 3D effects (e.g. VR glasses).

Web 2.0: The expression "Web 2.0" designates second-generation Internet services based primarily on the activity of *online* communities, more exactly on the user generated contents (UGC) and on sharing these contents (e.g. blogs, wikis, etc.).

White collar revolution: Jean Gottmann used this expression for the title of chapter 11 of his book *Megapolis*, published in 1961; it is the first analytical description of information society.