

Theoretical approaches concerning information economy

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Abstract. *Some achievements of the World economy attained between 1996 and 2000 determined many economists to speak about a “new economy” – “information economy”. They identified that the rules of the game played by the economic agents had changed as a result of the introduction of new technologies.*

This article purposes the analysis of theoretical concepts of the information economy. Studying these concepts allows one to easily explain the nature of changes in the economic activity at micro-, macro- and mondo- levels.

Keywords: *Economics of information, informational technologies, post-industrial society, post-economic society, the individualised society.*

The economic phenomenon that emerged at the end of the twentieth century has played a decisive role in the social life of the developed countries. This phenomenon resides in the dominance of the intellectual labour in the production of goods and information within the process of socio-economic development. The product of creative work has an *informational* nature rather than a *material* one, the latter being a characteristic of the industrial era. Thus, the new economic trend replaces the old one inside the contemporary society. It is worth mentioning that the society has not experienced such a major change for several centuries.

The term “information economy” is used to formulate two concepts. Firstly, information economy is a contemporary *stage* in civilisation’s development, which is

characterised by the leading role of the intellectual work and the informational assets. Secondly, information economy is a *theory* whose object of study is *information economy* in its primary purpose. In this case, the information economy comprises the economic theory of the information society or the theory of information economy. According to J. Stiglitz, information economy represents a fundamental change in the dominant paradigm of economic theory.

The theory of *information economy* is in its initial stage of development since civilisation’s transition towards the information phase has started just a few decades ago. The term “information economy”, widely used in the scientific sense, was proposed by the economist Manuel Castells who published a monograph in three volumes between 1996-1998 – “*The Information Age: Economy, Society and Culture*”. Up until now, an integral theory of information economy that would be accepted by most economists has not yet been outlined. Different criteria are used to characterise the information economy: technological, economic, labour, spacial, cultural and creative.

1. The **technological criterion**. New technologies underlie the emergence of the information society. Here we refer to the satellite and the cable television, the computer networks and personal computers, the new office technologies etc. It is assumed that due to its significant influence on the society, such a wide range of technological novelties leads to the profound transformation of the society.

2. The **economic criterion** supposes the existence of records regarding the added value of the economic information. The increase in the share of the informational business inside the country’s Gross Domestic Product is treated as a move towards the information society. F. Machlup (1962) was among the first economists to use this economic criterion. He makes reference to the following *information branches*: training, law, publishing, the media, computers production and informational services. Mark Porat proposed the following distinction between the primary and secondary information sectors: the primary sector may be subjected to an accurate economic assessment because it creates value, while the secondary sector is more

difficult to assess from the economic perspective because it includes the information activity within the company and the public enterprises (e.g. the “Human Resources” departments within companies). He concluded that half of USA’s GNP is linked to these two sectors and, therefore, USA represents an *information society* where the production of informational goods and services, along with the private and social activities has a leading position [1].

3. The **labour criterion**. Here, the structure of the labour force usage and the tendency in changing this structure are studied. It is assumed that the society has moved to the *information phase* of its development since most of the employed people work in the information sphere. The driving force of modern economy is represented by the people, whose main ability is the creation and the use of information.

In his works, Daniel Bell (1979) was the one who argued the labour criterion from the theoretical perspective. According to Bell, the dominant feature of the society is represented by its most widespread form of labour. He proposed a typology of the social structures based on the criterion of the dominant type of labour. Bell believes that if in the pre-industrial society agrarian labour was the most widespread form of labour and in the industrial society – it was the industrial work, then in the post-industrial society, the central role is allocated to *services*. The author explains this phenomenon by the increase in the labour productivity. Productivity growth allows the society to increase the number of specialists in such fields as education, medicine etc. More industrial goods are produced– more services can be provided and, therefore, more employees shift to the services sector. Considering that work in this sector can be difficult to automatize, the number of employees will increase proportionally to the growth in the industrial labour productivity [2].

4. The **space criterion** is based on the geographical principle. The main emphasis is given to the information network that connects various places, which can seriously impact time and space aspects of the social life. In the light of this aspect, modern society is an information society – network society.

The new form of society, which Manuel Castells refers to as “*information capitalism*”, uses information networks for production management and worldwide marketing. In the information society – network society, economic activity is carried out in real time without space restrictions, which is impossible to achieve without a broad ICT network. Inside giant transnational corporations, bureaucracy is replaced by informational workers, who perform worldwide transactions using the network. They usually work in collaboration with people who have similar positions. In the context of globalisation, competition transforms large corporations into complex networks.

5. The **cultural criterion** supposes that, nowadays, culture has become more informative than in the past. We live in an informationally oversaturated environment where symbols are used to represent various aspects of life inside a consumption culture. People have also realised that one’s style of clothing transmits some very important information, which helps an individual create his own image and by the means of this image, convey certain information to others. The peasant’s shirt was not important, as it was worn by most individuals over several centuries. However, in the modern world, access to cheap and modern clothing allows the individual to share ample information about himself with the people around him, “announcing” what social group he belongs to, his aesthetic preferences and personal qualities etc., therefore, facilitating communication.

6. The **creative criterion** suggests that information economy is characterised by the dominance of the superior and creative activity of social life, the word *creative* being related to *productive*, and implicitly to the idea of causing something to come into being. The volume of creative activity, expressed in units of time reflects the degree of maturity of the knowledge economy.

The creativity criterion was argued by J. Schumpeter, who was the first to introduce *creativity* as the main factor in economic development. According to Schumpeter, the success of an entrepreneur depends, first, on the ability to “create new combinations”, i.e. specific information products, that, as a result of their uniqueness, ensure benefits to the creator. After

a while, entrepreneur's idea is "borrowed" by competitors and his benefits suddenly drop. He suddenly faces a situation when he must be creative again. Thus, creativity is a vital necessity for the entrepreneur.

Thus, it becomes difficult to define *information economy* as the current stage of a country's economic development. Quantitative, as well as qualitative contradictions, arise when measuring the changes related to the transition towards the stage of an *information economy*. Indeed, there is a lot of information, but does this add any new value? More information – is this good or bad? Will it make us more *informed*? To answer these questions, we will take note of the theoretical concepts related to the transformations taking place.

Two visions on information economy have been formulated. The supporters of the first vision consider that information economy is a new stage of social development. This vision is represented by the theories of John Kenneth Galbraith (the new industrial society), Daniel Bell (post-industrial theory), Mark Porter, Zygmunt Bauman (postmodernism), Alvin Toffler (third wave), Manuel Castells (informational method of development) I. Masuda (information society, knowledge society). Those who support the second vision do not deny that information has an important role, but consider that its forms and functions obey historically established principles and practices and that computerization is just a continuation of the previously established relationships. Economists who represent this vision are Herbert Schiller (the Neo-Marxist theory), David Harvey (theory of flexible accumulation), E. Giddens (reflexive modernization theory) and others. For example, H. Schiller concluded that, regarding various innovations related to information and communications, the important role is given to markets: information must be transformed into products, and access will be possible only on a commercial basis. So, information will increasingly be perceived just like any other product. Schiller argues that market principles, represented by the idea of maximising the profit, are required in the information sphere, just as in the capitalist society [3]. According to this principle, the amount and quality of the

information produced depend directly on the possibility of marketing it successfully. Thus, the market pressure influences *the kind* of information being produced, *for whom* it is produced and under what conditions.

Theoretical conceptions related to the development of the information economy

1. The conception of the *post-industrial society* described by D. Bell.

Daniel Bell distinguishes three stages in a society's development: pre-industrial, industrial and post-industrial. The pre-industrial society is organised according to the principle of human interaction with nature and such a society obeys the laws of diminishing return and low productivity. In the industrial society, we find the human interaction with the *modified* nature based on the relationship between the man and the machine. Such an interaction uses energy to transform the natural environment into a technological one. The post-industrial society is based on the "games between people", where technology, which is based on information, has a dominant position.

A post-industrial society based on services. If the industrial society used to be assessed by the quality of products, which determines their life level, then the post-industrial society is characterised by the level of life quality, measured through the extent to which various services and comforts are present: health care, education, leisure and culture. Information becomes the basic instrument and a source of power for a company. Professionalism becomes the basic criterion of social attitudes. The post-industrial society is, to the same extent, also an *information society*, while the industrial society is a society of manufacturing goods.

The post-industrial society is a knowledge society from two perspectives. Firstly: research and investigations, which are based on theoretical knowledge, are the main sources of innovation. Secondly: the progress of any society is determined by its successes in the field of science. In the industrial society, the main economic problem concerning the capital was how to accumulate savings and to turn them into

investments. The main problem in the post-industrial society is how to organise science and the universities, the activity of the scientific research laboratories becoming of utmost importance. The post-industrial society is also a *communal society*, where the social community becomes a *social unit* rather than an individual having the right to outline the success of the "social judgment", the result of an individual decision differing from the sum of individual decisions. Social life, as a means of interaction between citizens, becomes more difficult due to the political speculations about the civil rights and because of the speed of the social changes, affecting the behavioral norms, cancelling the traditional values [2].

2. The third wave of A. Toffler.

A. Toffler distinguishes three stages or *waves* in the development of our civilisation. The first *wave* is the settled agricultural society. The second is related to the industrial revolution. The third *wave* has the following characteristics:

(1) The electronic revolution accelerates the information flow and enables the development of the energy saving industry. Technocrat revolutionaries insist that new technologies should be subjected to a harsher economic regime than the technologies from the era of the first wave. They mention the danger of electronic and information pollution, cosmic wars, genetic interventions etc.

(2) Along with the new technological sphere, the information sphere or info-sphere has emerged. Its basic element is not the mass media. Currently, not all people receive the same information, but information is shared by groups of individuals. The information model that people receive is not objective and complete. They are constantly forced to reform and process it, which leads to the increased individualization of information not only by the person but also by the culture.

(3) "Social memory", also called the "shared memory" – which has open access to society, is also subjected to a qualitative transformation. New technologies enable a detailed recording of society's activities. The society, in its turn, receives a better and

amplifier access to information about itself. Thus, social memory becomes not only *broad* but also *active*. The combination of these characteristics also acts as the driving force for the development of the civilisation. The level of this development is now reflected by the ability to store and find information inside the social memory.

(4) Production is characterised by the combination of the "mass" production and the "not for mass" production. There will come a time when production will be made strictly under the command and control of the customer. This will represent the restoration of the production that prospered until the Industrial Revolution, with the difference that the former type of production will be performed using information technologies.

(5) The "Electronic House" is the office situated in a worker's house. It is equipped with the telecommunication means necessary in carrying out the worker's job tasks. The need for the "electronic house" is motivated by the following factors:

- contemporary information technologies allow to transport the labour results by means of telecommunications;
- worker's activity from home allows the company to save money that would have otherwise been used for renting, maintenance of office space and for building premises;
- "electronic houses" decrease environmental pollution;
- the employee has more free time;
- small towns and country life become more attractive;
- families consolidate;
- young people do not avoid production: within the "electronic house", not only can children watch their parents working, but they can also get involved in the process.

(6) Various types of families. Civilisation does not restrict the individual in creating only one type of family. The new family system enables the individual to seek his own niche, to choose or to determine their own family

style. The concept of an “enlarged electronic family” becomes more and more important. An “electronic family” may include not just an individual’s traditional work colleagues, but also a client or a neighbour’s child who might be interested in the job. Such families may communicate between each other, forming a network. The new family system will have a leading role in the new social sphere.

(7) Corporation’s transformation is a response to the following 5 revolutionary changes in the production conditions:

- corporations pollute the environment;
- they are responsible for the “social pollution”, which manifests itself in unemployment, social divide etc.;
- society requires free access to a large volume of corporate information;
- corporations can directly or indirectly influence the political decisions;
- corporations can have a negative moral impact on the society related to corruption and other negative phenomena.

Because of these changes, corporations cannot afford to focus just on fulfilling the economic goal of maximising their production profits. The term “production” acquires a broader meaning that includes the external effects. Social and political information emerges as a product, alongside economic and ecological products. Corporations become *multipurpose institutions* capable of dealing with difficult social problems. [4]n

3. M. Castells’ *information society*.

Castells suggests that every society is characterised by the means of production (capitalism, collectivism) and by the method of development (industrialism, informational methods). The development method represents the pattern in which labour influences the material in the process of creating the product, determining the size and quality of the economic surplus. The development of each method is determined by the element that is fundamental in increasing the production. In the new information-based development method, the source of production is located inside the technology used for generating knowledge,

processing information and symbolic communication. A specific characteristic of this method is the fact that knowledge, which traditionally acts as the executive producer, can be influenced by knowledge itself. Industrialism is oriented towards the economic growth, i.e. maximising the production volume, while the information method focuses on technology development, i.e. on the accumulation of knowledge and on the advanced level of information processing. The method of development determines the sphere of social behaviour and the symbolic communication. Therefore, inside an information society, there is a close link between culture and productive forces referring to information and communications technologies.

The current technological revolution is characterised by the generation of information regarding innovations. The new information technologies are not only a *tool* to be used but a *process* that needs to be developed. Technological paradigm is the interrelationship between the system of technological innovation and its management, whose priority is maintaining the dynamics of the innovation structure. The new technological and information paradigm has the following features:

- the focus is placed on technologies influencing the information and not just information influencing the technology;
- the complex effects of the new technologies – all vital processes are formed under their influence;
- the logical network system of relationships is required for *structuring* the information within a flexible time frame, while *unstructuring* is the driving force for innovation;
- flexibility – organisations and institutes can be modified and even fundamentally restructured by means of regrouping components;
- the convergence of technologies as part of the logic of generating information, which is most visible in natural history, and is often taken over by the informational systems.

Information economy becomes global because, under the new historical conditions,

major production successes are only possible within interconnected global networks. The global economy can function as a single system in real time, being characterised by its interconnection, asymmetry, regionalisation, diversity and choice.

The information economy is characterised by the development of new organisational logic. An important trend in organisational evolution is moving from mass production towards a more flexible production: from Fordism to Post-Fordism. Under the rapid technological changes, the network is the actual production unit, rather than the companies. The company network, as a new organisational form, has emerged because of the interaction between organisational change and the new information technologies. Only this type of network organisation can provide flexibility in time, which is seen as a *resource*. Time processing becomes, in fact, a new field of activity for network companies. Any effort directed towards the crystallisation of the network positions leads to the depreciation and obsolescence of the network because it becomes quite rigid for the variable geometry method of informational needs. The culture of the network organisation or "the spirit of information method" represents the culture and "creative destruction", whose dynamics is comparable to the speed of the electronic signal.

The diversity in using the work time depends on the firm, networks, jobs and the personal characteristics of each employee are limited to his/her capacity to use his/her own time. Generally, the traditional form of work, based on the employee fulfilling his activities throughout a full "working day", and on a precise outline of professionals' positions within the company, as well as the advanced models in career growing, disappear with time. [5]

4. The conception of *post-economic society* of V. Inozemtsev.

Transition to post-economic era is characterised by the fact that the individual's interests go beyond the material interests. Overcoming the economic foundations of society can be accomplished not by transforming social structures, but because of the individual's intellectual and spiritual evolutions. Creativity is the most important element in organising a new

type of society. Such an activity is motivated by the individual's desire for perfection, which is cardinally different from traditional work. Thus, the most important feature of the post-economic society is overcoming work as a meaningful activity and replacing it with a creative activity that is not motivated by material factors.

Switching to the post-economic society is characterised by fundamental changes in the society:

1. The technological revolution. The speed of the information revolution is from 3 to 6 times higher than the tempo of technology development in energy use and has a tendency to continuously accelerate. The time between the release of an innovative product and its mass production decreases. The role of the intellectual capital, compared to the physical one, increases.

2. Overcoming valuable relations. Economic success is determined by the informational resources, which cannot be subjected to the categories of value. Information uniqueness - as a production factor - is characterised by the fact that it can be spread; it has rarity, is infinite, but, at the same time, has an end. The spreading of information and knowledge, as the main production resource, serves as a fundamental factor in overcoming the valuable relations. For the valuable characteristics of the goods to cease to be the basis of exchange relations, it is necessary to convert a working activity that cannot produce economic value in its traditional sense, into a creative activity.

3. The vanishing of the private property is only possible in the case where a considerable part of the production means becomes the property of individual producers. A new type of individual property appears, belonging to individuals able to create information and knowledge and to appropriately manage it in unordinary circumstances; these individuals are the *subjects* of management, which significantly reduces their dependence on the traditional institutions of the industrial society. Consequently, the conflict between "labour" and "capital", characteristic of the industrial society, is overcome not only at the expense of the depersonalisation of capital, but also at the expense of giving the worker more possibilities

to handle the situation than before – when his freedom was limited by his choice of working place.

4. Changing the social structure of the society. The great mass of knowledge is now concentrated in the hands of a small group of people – the true owners of information. The condition for belonging to the new ruling class is not only the right to manage the property but also the ability to use it. Enrichment does not have wealth as its goal – the new upper-class representatives receive the wealth towards which they do not tend. Meanwhile, members of society, who do not possess the necessary skills and knowledge, aspire to material goods but do not obtain them. There appears the conflict between the ruling class and the oppressed one. The basic criterion of man's appurtenance to one class or another depends on his ability to create new knowledge, which means conquering a segment that s/he is unlikely to abandon throughout his/her life.

5. Socio-psychological changes. The reason that motivates a man to broaden his horizons and possibilities, to find out more, to do something etc. is his desire to increase his social importance. Because creative individuals do not have material goals, they are not subjected to exploitation. The creativity expansion is the basis of the technological process in the post-economic society. [6]

5. The conception of the *individualised society* of Z. Bauman.

Bauman confronts the modern society with the postmodern one. Modernity is characterised by him as something "hard" and postmodern – as something "soft". Social processes in the postmodern era are characterised by dynamism and greater uncertainty. The price of freedom is the lack of confidence, lack of security of one's condition and income. As long as poverty still exists, even the rich are kept in fear and helplessness. This feeling will not disappear until we manage to get rid of poverty.

Work becomes "flexible". The employer may dismiss the employee much easier without giving him any compensation. Temporary and part-time jobs can be found more frequently.

The strategy that involves a lot of investment being made with the aim of improving one's qualification and becoming a specialist, is no more reasonable. Obtaining the means for existence becomes uncertain and unstable, production needs are changing faster than one can acquire the necessary knowledge and skills. Therefore, the value of traditional principles in education decreases and there is a big difference between people capable of quickly adapting to real social changes and those unable of doing so.

A cleavage between labour and capital takes place under the conditions of the postmodernist society. Consequently, in the light of the complete freedom of movement, the capital does not depend on the labour force as much anymore. Capital has become extraterritorial, undetectable, and compact, and is not tied to a particular place. Travel speed has become a determining factor of the social stratification and social hierarchy. The privileged ones may not need to be dependent on their wealth anymore since poverty is rather associated with being attached to outmoded things and with the inability to get rid of them. Wealthy people tend to control the changing reality and constantly make changes themselves. The main source of profit is the *idea* and not the material objects. The *idea* is sold only once. After that, it starts bringing income depending on the number of consumers. Therefore, modern capital strives to establish *relationships* with consumers.

Postmodern society destroys the old social relationships and values – a fact that dictates the human need to individualise. Individualization means to release the person from his restrictions, both inherited and innate, which, in the modern era, used to predetermine his social role. It also means that establishing individual autonomy de jure and de facto is not mandatory. The problem of the predetermination of the social position, which occurred in early modern times, is reduced, in the postmodern society, to one's active adjustment to various types and models of social behaviour by means of imitation, often motivated by the desire not to be ordinary or not to comply with the existing rules. Belonging to a certain class and gender influences personal

choice. In the postmodern era, individualisation has taken a new form.

Now, both the current social position of the individual and the position he might be aspiring to occupy are constantly undergoing a transformation. Thus, the individual is not able "to secure the future" just by respecting the existing standards and norms and is confronted with self-affirmation and self-management problems.

Today, the concept of family is no longer defined by long-term relationships. Countries are no longer defined by their own sovereignty. Everything falls apart under the pressure of globalisation.

Families are the ones that ensure the contact with eternity. Today, marriages are being replaced by *partnerships* and are meant to last as long as both partners jointly bring satisfaction. In the modern era, "glory" represented a path to eternity. In the postmodern world, this concept has been replaced by that of being "well-known". Belonging to this category is a matter of bringing immediate satisfaction, which is consumed very quickly, and is not the result of thorough work. The culture of the postmodern era is the first in the history of mankind which does not support the idea of eternity.

The postmodern society reaches such stages of "development" and "steps" into such "territories" that the modern society would have considered *unsuitable for life*. [7]

Conclusion. Does "information economy" exist?

The world has already stepped onto a new path proposed by the new economy – the information economy. Contemporary processes are unthinkable without the information technologies. High speeds of information broadcasting allow countries with different degrees of economic development to take part in the global processes and stimulate their growth. The combination of information technologies and globalisation trends is *real* and will have the highest economic effect among all the technological revolutions that have transformed the civilisation.

Daniel Bell prophetically stated in *The Coming of the Post-Industrial Society* that we can expect "*new premises and new powers, new constraints and new questions – with the difference that these are now on a scale that had never been previously imagined in world history*" [8].

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