

# An Epistemological Approach of the Knowledge-Based Society from an Economic Perspective

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*Abstract.* The concept of knowledge-based society started to be defined at the end of the 20<sup>th</sup> century and the beginning of the 21<sup>st</sup> one, as a result of the increasingly important technical and economic progress, opening ways to new challenges in all the fields of human activity. Humanity obviously joined an ascendant trend of evolution, a context in which each country tries to capitalize all the opportunities that knowledge offers.

In the present paper we refer to the concepts of information society and knowledge-based society and we try to picture the world's evolution towards the phase of knowledge from an epistemological point of view.

*Keywords:* information society, knowledge-based society, economic growth, economic development, epistemology

## I. ACKNOWLEDGEMENT

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## II. THE KNOWLEDGE SOCIETY – DEFINITION, CONCEPTS, EVOLUTION

### *The knowledge society – definition, concepts*

Humanity is now crossing a period of transition from an industrial towards a knowledge-based society or even right in the middle of the *knowledge society*, as some voices state.

In *Cultura și societatea cunoașterii [Culture and Knowledge Society]*, Mihai Drăgănescu defined the *knowledge society* as an intermediary stage between the *information society* and the *society of consciousness... the knowledge society* should be thought and developed in the beginning with a view to this future society [of consciousness, our note].<sup>1</sup>

The concept of *knowledge society* established itself at the end of the 20<sup>th</sup> century, in USA, as a result of the papers and studies of several theoreticians, among whom **Peter Drucker**<sup>2</sup>.

<sup>1</sup> Drăgănescu M., *Cultura și societatea cunoașterii*, [www.racai.ro](http://www.racai.ro), pp. 1-2

<sup>2</sup> **Peter Fredinand Drucker** (1909-2005), was a management consultant, with a rich editorial activity in the economic field, one of the most appreciated American personalities in this domain. In his reference books, he made correct predictions and assessments regarding the important economic tendencies of the end of the 20<sup>th</sup> century (privatization, decentralization, Japan's economic expansion,

Initially, the *knowledge society* was called *information society*, outlining one of the main characteristics of the *knowledge economy*, that is the knowledge-based economy, a characteristic that “implies the utilization and management of the existing knowledge under the form of the technological and organizational one, the production of new technological knowledge through innovation, a new economy in which the process of innovation is decisive, in which the tangible goods become more important than the intangible ones”<sup>3</sup>.

**Wikipedia** defines the *knowledge society* as the society where knowledge is the primary resource, besides land, capital and labour, with the purpose to ensure the prosperity of people and a high standard of life.

*Knowledge* carries most of the influence in human activity, so that the specific economic, cultural or social activities grow more and more dependent upon a necessarily increasing volume of information, outlining a new era in the process of economic and social development based upon *knowledge*.

### *Concepts of information society and knowledge society*

The beginning of the 21<sup>st</sup> century marked the shift of general attention from the *information* to the *knowledge* society, as statistically, it seems that 70-80% of the economic growth is due to knowledge<sup>4</sup>; this passage did not happen all of a sudden, but over time, in a somehow vague and non-homogenous manner.

In the framework of the **WSIS (World Summit on the Information Society)** two terms were invoked: information society and knowledge society.

The notion of *information society* was introduced in 1973 by **Daniell Bell**<sup>5</sup> in *The Coming of Post-Industrial Society*,

the importance of marketing and management, the development of the information society). In *The Effective Executive?* Drucker analysed the knowledge-based role and manner of action of the employee and of the manager, regarded as a primary factor of productivity, which, in its turn, is relying on knowledge in a more and more significant way.

<sup>3</sup> Drăgănescu M., *Cultura și societatea cunoașterii*, [www.racai.ro](http://www.racai.ro), pp. 1-2

<sup>4</sup> \*\*\*, (2002), *Building the Knowledge Society*, Report to development, Information Society Commission, Ireland (re-updated in 2009)

<sup>5</sup> **Daniell Bell**, sociologist and professor at Harvard University, he self-describes as “a socialist in economics, a liberal in politics and a conservative in culture.” He wrote *The Coming of Post-Industrial*

where the basic idea was that in the future the society will base upon theoretical knowledge, and from an economic standpoint upon services and the tertiary sector, which, in general, will be a priority, while ideologies will be superfluous.

**Bell** had anticipated, since 1973, a new society that he calls *post-industrial*, based on information and oriented towards services, which will replace the industrial one as a dominant system. From his point of view, there are three major characteristics of the *post-industrial society*:

- In the foreground of the economic activities will be the services (the tertiary sector) and not the productive activities;
- The productive industry (the secondary sector) will base upon science;
- An ascension of the technic elites will be recorded, and the social structure will be modified.

The pillars of the *post-industrial society* will be, according to **Bell**: *data* with whose help empirical analyses will be made, *information* that will be processed with the help of statistic models and analyses and *knowledge* as a result of the utilization of information and of the value judgement transmission.

The economic-social structure (technology, economy and the operational system), as part of the *post-industrial society*, will suffer modifications.

While the *pre-industrial society* was characterized by the domination of the primary sector and of the traditional industrial branches (agriculture, fishery, mining), and the raw materials represented the main technological resource, the *industrial society* based upon the domination of the secondary sector, upon power as raw material used in the mass production of tangible goods, and the entrepreneurs offered employments to average qualification persons and to engineers, the *post-industrial society* will be dominated by services and activities that need a high qualification, a big volume of knowledge especially in the technical fields.

In **Bell's** assertion, the *post-industrial society* has five strongly correlated dimensions:

1. *Predominance of the sphere of services*. An obvious mutation occurs from the production of tangible goods to that of intangible ones. Initially, this transformation had happened since the 1950s in USA and continued in Western Europe, Japan and the "Asian tigers".
2. *The rising of the qualification standard*. The *post-industrial society*, mainly basing upon the information and knowledge, needs highly qualified persons, who get involved in the activities they undertake, regardless of their nature (economic, social, cultural, etc.). There are, however, two main fields where high qualification, research and engineering but also the professional development are needed, so that the volume and quality of knowledge should increase continuously. On the basis of improvement and instruction the importance and volume

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**Society** in 1973, anticipating the passage from traditionalism towards a new phase in the economic and social development.

of the existing knowledge in society rise and a qualitative jump is achieved in the direction of development.

3. *The domination of theoretical knowledge*. In the *post-industrial society*, knowledge will be dominantly theoretical, abstract, manifested on different levels, unlike the applicative knowledge pertaining to the *industrial society*.

**Bell** tries to define *knowledge* as something objectively known already and certified by a right of intellectual property associated to a person or group of persons or by another form of social acknowledgement.

The theoretical knowledge is important in the *post-industrial society* because it is the binding material between science and theory, the basis of scientific-technical research, of development and innovation and implicitly of the rise of productivity, of the creation of employment and of the economic prosperity of a country.

4. *The anticipation of the technological evolution*. The anticipation of the technological evolution is possible due to the high volume of theoretical knowledge. Generally, any new technology supposes higher costs, risks and advantages, that can be appropriately controlled and administered as long as a previous documentation exists.
5. *The emergence of informational technology*. Information and knowledge will allow the development of informational technology, and this will significantly contribute in the decision-making, including the intuitive form of it.

These are, according to **Bell**, the five dimensions of the *post-industrial* or *information society*, strongly marked by novel elements that determine a decisive rupture from the *traditional society*, that **Webster** considers somehow components of a strongly vitiated society from the empiric, technological and methodological points of view<sup>6</sup>.

The concept of *information society* was borrowed from **Bell**, frequently used in the 1990s, within high level discussions as well, like **G7**, **G8**<sup>7</sup> or **OECD**<sup>8</sup>.

The concept of *information society*, from an ideological point of view, took shape with a view to the neo-Liberal globalization, implying stable and sustainable development of the free market, but also with a view to helping the developing countries by renouncing the internal economic rulings and the protectionist measures that discourage liberalization and

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<sup>6</sup> Webster F., (2002), *Theories of the Information Society*, 2nd Edition, London: Routledge

<sup>7</sup> These are the summits of the seven and eight most powerful states of the world, which happened in 1995 (G7: SUA, UK, France, Germany, Italy, Japan, Canada; G8: G7 plus Russia)

<sup>8</sup> **OECD** (*Organization for Economic Cooperation and Development*) is an international organization of the most developed states of the world that accept the principles of democracy and of free trade. The organization was founded in 1948, as **OEEC** (*Organization for European Economic Cooperation*), meant to apply the *Marshall Plan* for European reconstruction. Starting with 1961, members from outside Europe started to be accepted, the name of **OEEC** having thus to be changed in **OECD**

emphasise the economic and social discrepancies between the industrialized states and the less developed ones.

At the end of the 20<sup>th</sup> century, the technic, informatics and telecommunication progress influenced the economic and social one as well, but with the saturation of the developed countries' markets, pressures started on the developing ones, in order to liberalize their markets, so that the major producers could find new niches for their products, especially the informational or the telecommunicational ones. The liberalization created the appropriate environment for globalization, a process associated with the image of the *informational society*, even if the great winners still are the developed states.

The end of the last decade of the 20<sup>th</sup> century marked a shift in the terminology: instead of the *information society*, the concept of *knowledge society* started to be used, including UNESCO<sup>9</sup> in his institutional policies.

The concept of *knowledge society* is a vast one, one that is not confined to its economic dimension. If that of *information society* is related to the idea of technological innovation, the *knowledge society* includes in its domain the economic, social, cultural, political, environmental, and institutional dimensions, as influenced by the complexity and dynamism of the current changes.

The **World Bank** accepts the following dichotomy<sup>10</sup>:

- Knowledge as information;
- Knowledge as informational technologies.

This institution defines *knowledge* in a vague manner, but its primary variables seem to be: education, research with the purpose of development and technological infrastructure. *Knowledge*, both as information and technologies, represents an important factor of socio-economic development for the developing countries, but just as easily it becomes one that deepens the discrepancies between this category of countries and the developed ones.

### ***The evolution towards a knowledge society***

Over time, several assertions regarding the socio-economic evolution of humanity were made. The most famous one is probably the explanation according to which society developed on three levels:

- *Agricultural (natural) society*: the activities, regardless of their nature, took place as part of the individual households, independent of each other, with a view to satisfying one's own needs. **Alvin Toffler** thought that

agricultural society is "the civilization of the first wave"<sup>11</sup>, characterized by the fact that the land was the main factor of production, agriculture and hunting were the main economic activities, the division of labour was simple, and the economy was decentralized. With the emergence of production, trade and complex division of labour, the stage of the agricultural society was exceeded.

- *Industrial society*: the economic activities are dominated by the law of the supply and demand, they base upon the private property and the motivation of profit; the industrial activities are predominant, the production is standardized and competition is the basis of socio-economic effectiveness.
- *Post-industrial society*: the activities specific to the tertiary sector are the predominant ones, the progress in communications and technology is significant and at the basis of any activity lies a bigger and bigger volume of information and knowledge.

From the natural society to the knowledge society, humanity was submitted to four major transformations<sup>12</sup>:

- *The first industrial revolution* (1750-1960) was marked by the advent and development of the manufacturing activities, and knowledge was used in order to create equipment and products;

- *The second industrial revolution* occurred in the seventh decade of the 20<sup>th</sup> century, marked by Japan's economic expansion and by the increasing requirements on the quality of products (presently, quality is a basic requirement), and knowledge was used especially on the labour market, creating the grounds for the next stage, the *revolution of productivity*;

- *The third industrial revolution* occurred in the eighth and ninth decades of the 20<sup>th</sup> century and was marked by the western technical revolution (the digital revolution), by the increasing economic liberalization, allowing the generalization, on a large scale, of innovations and technologies, as well as the rise of productivity; knowledge started to be used in order to obtain knowledge;

- *The fourth industrial revolution* occurred at the beginning of the 21<sup>st</sup> century, with the intensification of the role of knowledge and people as primary factors of productivity in all fields.

The passage from the *information society*, which characterized the first three revolutions, to the *knowledge society* (the fourth revolution) took place in a relatively short period of time, on the background of the economic liberalization.

From **Tiberiu Brăilean**'s standpoint, society crossed six phases<sup>13</sup>:

<sup>9</sup> UNESCO (*United Nations Education, Science and Culture Organization*) was founded in 1945 by 20 states, and at the beginning of the 21<sup>st</sup> century the organization counted 191 members and 6 associated states. The declared objective of the organization is to ensure world peace and security by international collaboration in fields like education, science, culture and communications.

<sup>10</sup> Evers H.D., (2003), *Knowledge Society and The Knowledge Gap*, at International Conference "Globalization, Culture and Inequalities", Aug., Malaysia

<sup>11</sup> Toffler A., (1983), *Al treilea val [The Third Wave]*, București: Editura Politică, p. 78

<sup>12</sup> Balloni A.J., (2010), *Challenges and Reflections on Knowledge Society and Sociotechnical Systems*, in *The International Journal of Managing Information Technology*, vol. 2

1. *The traditional society* (self-sustenance, natural economy);
2. *The meeting of previous conditions* (the formation of the national states, the emergence of a scientific culture, the boom of commerce, the agriculture revolution) – mercantilism;
3. *The take off* (the rise of the investment instalments, the creation of a motor industry, the advent of the economic policy) – physiocracy;
4. *The technological maturity* (continual technical and economic progress) - classicism;
5. *The mass consumption* (mass production, higher standard of life and of civilization, the welfare state, the focus on development, not only on growth) – neoclassicism;
6. *The knowledge society (of prosumption*, as Alvin Toffler put it, an anti-industrial one, a quantic jump relying on the information and the advantage of globalization and liberalization).

Whether we talk about *stages* in the evolution of society or about *revolutions*, each one of these was characterized by a certain factor of production that quickened its progress: initially, the *land* and *labour*, then *capital*, and today, besides the three factors of classic production (labour, land and capital) we accept the fourth, *knowledge*.

Within the framework of the current society, *knowledge* is both a primary factor of production and a product (current innovations represent the future basis of development); it is an unlimited resource, an increasing one, this is a source of positive externalities (the production costs diminish, while productivity increases, the employment rises, the level of education and civilization increases, as well as the standard of life, etc.). We are undoubtedly crossing a period in which the role of *knowledge* is more and more important in all domains and fields of the economic, cultural and social life.

### III. CONCLUSIONS

Knowledge has become now the main source of progress, domination, and a factor of differentiation between states, regions, companies and people. Every day, knowledge becomes a creative force and a component of maximal importance of most of the human activities. Whether they are economic, social, cultural or of any other nature, they become dependent on a huge volume of knowledge and information. For each country, progress is conditioned by the way in which it is capable to administer its base of knowledge.

Maybe it is too early to talk so convincingly about the current society as a *knowledge* one, but one thing is certain: we have an economy of knowledge and we are surprisingly fast heading for a *knowledge society*.

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<sup>13</sup> Brăilean Tiberiu, (2006), *Politici economice conjuncturale* [Circumstantial economic policies], Iași: Editura Junimea, pp. 50-51