

## The new economy. Horizon and changes

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**Abstract:** Any concept, and even more so those in economics, have an origin and history because it results from an intellectual and social construction. Therefore, the concept of "new economy" could not escape this observation. Projects for creating knowledge-based organizations require strategic engagement and managerial ingenuity in combining intelligent assistance IT facilities with consolidated organizational practices related to innovation, learning, and partnership interactivity. Knowledge-based organizations are likely, due to their specific culture, to promote the value of conceptual relevance as a source of influence, as well as an ethic of responsible legitimacy in the behaviors and relationships of social actors.

**Key words:** digitalization, creativity, new economy, innovation.

**JEL Classification:** A13, O33.

### Introduction

Paraphrasing Karl Marx with his expression "*Give me a windmill and I will give you the Middle Ages,*" we make the following remark about the industrial era "*Give me the steam engine and I will give you the industrial era,*" and if we go further with the paraphrase to the contemporary era, we add "*Give me the computer and I will give you globalization.*" Although these determinisms are somewhat forced, they summarize a basic idea: at all moments of history, there is a capital invention that disrupts the normal order of things, bends the evolution of a society and sets in motion a long-term movement (Borghoff, 2005).

At the end of the 18th century, the steam engine caused the industrial revolution that led to a series of significant changes: the rise of capitalism, the emergence of the working class, the birth of socialism, the expansion of colonialism. As if wanting to replace the human brain, the computer is about to cause formidable and unprecedented mutations. Each of us can already see that everything is changing around us: the economic context, the data on politics, the environment, social values, cultural criteria or individual attitudes.

The new information and communication technologies (NICTs) are bringing us, whether we like it or not, into a new era whose central characteristic is instant data transfer, along with electronic connections and networks. The Internet is the heart of this great change. Communication highways are, for the present period, what railroads were for the industrial era: an intensive factor of impulse and intensification of exchanges (Ibelings, 2003). With the Internet as the brightest illustration of them, the new ICTs have a significant impact not only on the growth rate of the economy, but also on the content of economic activities, whether they are production, consumption, finance or regulation: this is how we are witnessing the surge of a new economy.

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Before anything else, we want to emphasize the fact that the competitive advantage of countries, in the new economic and social realities, depends essentially on the following three factors: innovation, training and research (Cavanagh, Gélinas, 2005).

### 1. The new economy. The premises of the approach

Currently, new information and communication technologies are present in all sectors of the economy, which offers the prospect of a deep digital economy. Some authors<sup>1</sup> speak of a "*digital civilization*" to highlight the deep changes that society is going through, in general. The new paradigm represents the virtual reality in which many sectors of the economy are found, , by the meta-convergence of the materials sciences (nanotechnologies), life sciences (biotechnologies) and information sciences (cognitive sciences) (Gadrey, 2000).

The Internet, from the mid-1990s, is the universal convergence platform between computer science, electronics and telecommunications. It has become the privileged and unequal means of quickly delivering any form of information and messages to any corner of the world. Associated with new networks (Wi-Fi, Wi-Max, GPRS) and tools that allow mobility (PDA, Smartphones, Pocket PC), the Internet now allows entrepreneurs, merchants and self-employed professionals, who were previously constrained by a lack of financial, human and technological resources, to integrate into business structures on a local, regional, national or international scale (Midiere, 2006).

The new economy changes the competition ratio in traditional activities by providing more transparency and interactivity. The tertiary sector is being remodeled (Nahavand, 2005). It should not be forgotten that  $\frac{3}{4}$  of service companies depend on their links with industry: they remain essential for the productivity of activities and the competitiveness of the national economy. Intermediation is the best example of transformation of the productive system. For example, in the classic scheme of car distribution, the dealer was authorized by the manufacturer to sell to customers. This type of intermediation is a "*push*" type whose role is *to bring* products from the manufacturer to the consumer. In contrast, the new online intermediaries provide buyers with much more powerful and individualized tools: auction sites, price comparison sites, order groups. They practice in this way a "*pull*" type intermediation that tends to transmit market power to the buyer (Perthuis, 2001).

Throughout history, humanity has experienced several episodes of globalization, but this should not lead us to excessively trivialize the current developments, because "*never before has the number of people tripled in a lifetime; never before have needs been so great and so quickly multiplied; never before have inequalities been so obvious between the last century and past centuries; never before have technological changes been so rapid and*

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<sup>1</sup> Landau, A., *La globalisation et les pays en développement : Marginalisation et espoir*, L'Harmattan, 2006, p. 11; Hernández, V., Ould-Ahmed, P., Papail, J., Phelinas, P., *L'action collective à l'épreuve de la globalisation*, Editeur : L'Harmattan, Paris, 2009, pp 23-28

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*radical;... never before has the number of poor people been so high; never before have so many goods and opportunities been offered to such a large number of people with purchasing power (Beaud, 2000). "*

The current economic globalization is characterized by the strong surge of emerging economies, such as China, India, or Brazil. Although the US remains the "technological frontier" (Cohen, Aghion, 2004), we are witnessing a significant surge in these new technological territories that will be able to reposition this frontier and, as a consequence, upset the global hierarchy in terms of technological innovation and economic power. It is worth noting, in particular, that spending on new information and communication technologies is now much higher in countries that are not part of the OECD, which in turn are experiencing impressive progress in their exchanges, foreign direct investments and merger operations.

The new economy does not make the old one disappears, it overlaps it by adding new rules and new tools. In terms of the economic development of industrial societies since the second half of the 19th century, we can identify three major periods of this revolution (Artus, 2002):

A. *The first period, between 1850 and 1910, was mainly focused on transportation, goods processing, and resource-based.* Sectors such as steel, coal, and railroads were central to many industrialized countries. In this era, the key factor for economic growth was the ability to produce steel at low prices; the economic infrastructure was based on rail and maritime transportation. Economic indicators, already widely used at this time to evaluate the health of the economy, referred to the production of ingots, the benefits of railway exploitation, coal production, and cotton consumption (Karnouh, 2004).

The respective era is considered to be the last stage of modernity and economic efficiency. This fact led Prince Albert of Saxe-Coburg and Gotha, the husband of Queen Victoria of the United Kingdom of Great Britain and Ireland, on the occasion of the Great Exhibition of 1851 in London, to make the following statement. "*We live in an age of great and wonderful transition, which tends quickly towards the fulfillment of this noble destiny to which, in the end, history urges us: the realization of the unity of all humanity (Beck, 1994). "*

B. The wealth thus obtained and the technological progress recorded lead us to *the second* important economic period. This begins *in 1910* and continues until almost *the middle of the 1970s*. Thus, the processing of goods gives way to new ideas, oriented towards the production assisted by increasingly sophisticated machines. In this period, important industries appear: the automobile and machine tool industries.

The example that best illustrates this period is undoubtedly Henry Ford. Producing more than 250,000 vehicles per year and reducing the price of a Model T from \$950 in 1909 to \$360 in 1917, Henry Ford became the richest man in America. A true Bill Gates of the period, Henry Ford, is still the reference for all economic activities based on innovation, new forms of mass production, and mastery of technology (Boissieu, 2006).

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The key factor of success in this period was access to cheap energy sources, particularly oil. With the new forms of organization in factories, we see the mass production of automobiles, electromagnetic devices, and heavy machinery. In the face of this new economic reality, infrastructure had to be modified, which primarily involved the construction of roads and airports. Tools were also needed to be improved for production, innovation and accessibility to products, which led to important progress in communications: telegraph and telephone. Economic indicators taken into account to evaluate the health of the economy during this period were (Frey, 2008): industrial production, orders for machine tools, retail sales, residential construction, and automobile sales.

C. *The third major period begins with the oil shock of 1970.* Indeed, the era of cheap energy, the origin of a formidable economic boom based on mass production, which had placed the United States at the forefront of industrialized countries, was coming to an end. In this period, we see *the emergence of new technologies with a strong computer focus*: the advent of robotics and all the new possibilities offered by the rapid and radical advances in the telecommunications sector. This results in a new and very interesting phenomenon: this transformation *changes the relationship between the human brain and production* and tends to exclude humans from the direct manufacture of things (Shapiro, 2008). During the industrial period, human labor was engaged in the production of goods and the provision of basic services. Today, "intelligent" machines are replacing human activity in services and sectors such as agriculture and industry.

Many of the sectors of the economy require the computerization of economic flows to increase the efficiency of the economic act, through the development of IT services. In the United States, in 1992 when the agricultural, service, or industrial sectors were losing employees, the aerospace industry had more employees than all of these combined. The computer industry had more employees than the automobile, steel, oil extraction and refining industries combined. With no other choice, the world has accepted that, both socially and economically, it has undergone a fundamental change, characterized by a transformation of material culture through the implementation of a new technological paradigm organized around information technologies (Beck, 1994).

*Imagination, creativity, and user-generated thinking* become *goods and services* or intellectual and cultural productions. Thus, we can see the immateriality of this activity and it is precisely this that has allowed for connectivity, hence the emergence of network organizations.

Another element, perhaps not as important, but equally relevant, explains the difference between our current informational society and those of previous economic periods. This element is located in the logic and intensity of expansion. In the period of technological revolutions, we notice the prevalence of a logic of very precise geographical localization: the revolution could spread, but in a very limited way and only within societies that were more or less similar in terms of their economic functioning. For example, technological progress mainly affected capitalist, industrialized and wealthy countries. On the other hand, information technologies have managed to spread everywhere in the world faster than any other socio-economic phenomenon since the mid-1970s and mid-1990s of the last century (Freitag, 2008).

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Any revolution causes changes in the way of managing activities and social phenomena, whatever they may be. A technological revolution, such as the one we are currently experiencing, is no exception to this rule. Indeed, we are witnessing changes in the organization of our society, in today's businesses, in the organization of work and in the relationships between individuals and society.

## 2. "The new economy" concept

The global surge of "*everything is a market and everything is for sale*" is increasingly producing an undifferentiated society where "*from now on, only what has a price has value* (Balantzian, 2003). " In the same vein, the informational revolution makes us think that through the increasingly increased communication between people, barriers will fall, and then to realize that the simultaneous explosion of the Internet and mobile phones makes us communicate more than meet, and this virtual seduction often translates into a crazy escape from reality.

The term "*new economy*" was first given by Business Week in 1996 in the United States, to a complex reality manifested for a few years in the most advanced economies. Although no precise definition has been adopted so far, with the literature that followed, it became widely accepted that the new economy refers to permanently improved products, commercialized by innovative agents who exploit the first new niches opened or even created by themselves on markets in the process of globalization. This suggests entering a new paradigm of economy as a social activity.

Given the nature of the new economy, it has been attempted to define it through a series of phrases, such as:

- "*digital economy*" because it targets goods and services whose production, development, and sales depend, essentially, on digital technologies;
- "*information economy*" because it includes all goods and services related to information technologies, such as: research, banking services, financial services;
- "*virtual economy*" because the environment where transactions take place is not a physical environment but virtual;
- "*internet economy*" because the work environment is the internet; □ "*e-commerce*" and "*e-conomy*" (Chirovici, 2001)

All these concepts are frequently used to denote the major technological change - information and knowledge become the most important production factor in the technological process, and new technologies generate the share of productivity growth. Although all these concepts are synonymous with the concept of "new economy," they do not provide a clear sense of the concept studied (Işan, 2002).

*"The concept of "New Economy" considers quantitative and qualitative elements that generate a new functional structure of the economy in general. The new economy refers to knowledge and ideas, and the key*

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factors for job creation and socio-economic well-being are the innovative ideas and technologies contained in the economic goods produced. It is an economy where risk, uncertainty and assuming the need for change are inherent.<sup>2</sup>"

"When we talk about the new economy, we are talking about a world where people work with their brains instead of their hands. A world where communication technology creates global competition - not just for shoes or portable computers, but for banking loans and other services that cannot be packaged, put in a box and transported. A world where innovation is more important than mass production. A world where investors buy new concepts and means of creating them, instead of buying new machines. A world where rapid change is a natural constant. A world that is at least as different from the one before it as the industrial age was from the previous agricultural age. A world that can only be described as a revolution<sup>3</sup>."

The term "New Economy" is often referred to as *the economy of information* due to the superior role of this resource in creating wealth in relation to material or capital sources. Technologies invented over time have had the goal of communicating and eliminating isolation. Today, we are engaged in a large scheme of growth, amplification, and expansion of relationships and communication between all beings and all things (Artus,2002).

Most definitions of the new economy summarize by highlighting the changes that have taken place in information and communication technologies, in a short period of time. To the extent that they consider the transformation of the economy to be generated only by the replacement of old technologies - based on capital and labor intensity - with new technologies, intensive in knowledge and information, these concepts can be suspected of a certain technological determinism. Because the emergence of a "new economy" is neither uncausal nor instantaneous. There is a capacity for structural absorption or adjustment of any economy given by the limited reason and the power of informational absorption of individuals (Işan, 2002).

### 3. The principles of the new economy

The new economy must take into account the principles that have emerged over time, reflecting both the current situation and the requirements, current aspirations, and future long-term goals, which have always included counteracting the negative effects accumulated so far in the process of human existence.

These principles can be summarized as follows (Ghiță, 2001):

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<sup>2</sup> Progressive Policy Institute, *The New Economy Index. Understanding America's Economic Transformation*, November 1998, [http://www.neweconomyindex.org/index\\_nei.html](http://www.neweconomyindex.org/index_nei.html)

<sup>3</sup> Wired, *Encyclopedia of the new economy*, <http://hotwired.lycos.com/special/ene/>

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- *The principle of reintegration of man into nature.* When producing the goods he needs, man acts on nature. As a result, he needs to integrate with the nature from which he has separated and which he always wanted to subdue, but forgetting that for normal evolution he needs to be in harmony with it. Recently, the planet gives clear signs that the current human existence models can no longer be sustained for a long time. For this, we must be able to understand these signals and actively align our existence to the demands of nature in order to give a chance for future generations to perpetuate.
  - *The principle of ensuring permanent resources.* This principle implies both conservation and rational use of renewable resources as well as achieving the necessary balance between the exploitation rate of resources and their regeneration rate. The most suitable solution that can be considered is designing economic activities similar to the existence of nature in a circular flow active circuit. This means that everything that is taken from nature should be economically used, and the useful substance from waste and used goods should be recycled. This is not enough if it does not take into account the elimination of waste, the fact that in most sectors of the economy, it is possible to significantly reduce the consumption of natural resources per unit of product without any decrease in quality or standard of living.
  - *The principle of economic, social and ecological efficiency.* Economic efficiency has led to increased costs on resources and their ability to recover. For this purpose, the economy will create models for the rational use of resources through convergent actions on changing the behavior of individuals, the consumption decision, in principle. This approach strengthens economic, social and ecological efficiency because the interests of the economy are added to those of society as a whole, and society cannot develop without ignoring the natural environment. Analyzed over a longer period, current production appears to be extremely high compared to that of 100 years ago, but its contribution to improving the quality of life is much less than this growth, because the difference represents expenses and productions dedicated to reproducing natural conditions that were once freely provided by nature.
  - *Societal existence interactive with the environment.* The growth theories and developed activities approach the natural environment as the space in which man manifests economically to dominate it and make it his own, but nothing is said about man; he is the supreme value. It has not yet become an obvious concern how to act on mankind in terms of current realities, instead, it is clear that in economic activity, flows must be bilateral. This biunivocal relationship must be beneficial for the environment; man must respond to the demands of the environment to ensure his existence.
  - *The transition from discretionary demographics to one based on responsibility and adequate societal involvement.* The need for a more realistic approach to demographic growth is determined by the fact that at least one quarter of the population has serious problems with food and over 60% with health care, by the fact that pollution obviously affects the planet's agri-food potential and the inheritance of future generations, and by the fact that resources seem to be increasingly unevenly distributed and poorly managed.

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- *The principle of social equity.* Involves continuing to pursue the development objective accompanied by a reduction in income disparities. Furthermore, it also aims to avoid discrimination and ensure equal opportunities for all members of society. Sustainable development requires a comprehensive vision between social equity and the natural environment.
  - *The responsibility of governments for how they manage and increase resources to ensure the future of future generations.*

Based on the principles stated, we consider it necessary to make the following clarifications:

- *The goal of this economy will remain the human being and the satisfaction of their needs.* If we exclude the human being from the economy, it loses its justification. Until now, everything has started from the human being, but the unequal demographic distribution on the globe has created serious problems that reveal the insufficiency of resources to support such behavior. Increasing economic growth is imposed by the fact that the population is increasing and everyone wants to live better. To support economic growth, new and new resources have been used, considerably reducing non-renewable resources and not reproducing them adequately.
- Because the stage at which developed countries and the market have reached creates the possibility for the actors involved to satisfy their individual interests, the economy needs to be rebuilt on new foundations in which *the public interest needs to be correlated with the individual interest* at new dimensions. In this context, public policy must occupy a central place, as society can no longer progress in better satisfying needs while maintaining or amplifying income polarization in current trends.
- *Learning becomes the general process characteristic of the new economy*, because it requires people's attention and behavior in terms of consumption and attraction to consumption of non-renewable natural resources. In order to move from the predominant increase in the consumption of non-renewable resources to renewable resources, both creativity and a rational approach are required in terms of the goods attracted to consumption and the prioritization of needs. The learning effect consists an increase in efficiency, in general, and economic efficiency, in particular.

#### **4. The new economy and new economic strategies**

Historical factors determine to a small extent economic structure. Developed regions in the "old economy" they have a reduced capacity to adapt to the new economy. Thus, countries that have a low capacity to use human capital, through cultural models based exclusively on the attraction of natural resources, not on their rational use, through adaptability to change using innovation and creativity, are economies with high costs of creating economic goods. These countries score low on innovation.

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The Progressive Policy Institute produces an annual report called *The State New Economy Index. Benchmarking Economic Transformation in the states* (Atkinson, Andes, 2008), in which these indicators are presented:

*Group 1. Occupations in the field of information and knowledge.* The indicators measure occupations in offices and offices held by managers, specialists, and technicians on the one hand, and the acquisition of education for the workforce on the other hand.

*Group 2. Globalization.* The indicators measure the export orientation of production and foreign direct investment.

*Group 3. Economic Dynamism and Competition.* The indicators measure the number of jobs in the most dynamic companies, known as "gazelles" (companies with sales growth of 20% or more in the last four years).

*Group 4. Transition to a digital economy.* The indicators measure the percentage of adults connected to the internet, the number of registered ".com" domain names, communication technologies in schools, and the degree to which the central government and other institutions use information technologies to deliver their services.

*Group 5. Technological innovation capacity.* The indicators measure the number of jobs in advanced technology ("high-tech jobs"), the number of scientists and engineers in the workforce, the number of patents issued, investments in research and development, and activity in venture capital".

Public policy determines how a country's or region's resources are used and how efficiently they are leveraged (Landau, 2006). For example, policies that promote technological innovation and drive educational progress have the effect of increasing the innovative capacity of the state and creating a more dynamic and productive workforce. However, the aforementioned gains can only be achieved after a certain period of time, when the fruits of present policies can be harvested. On the other hand, other states or regions that currently have high scores could, due to neglect of investments and the need to change policies imposed by the trend of the new economy. Administrations will adapt to technological changes, the creative economy and digitized flows.

The success of regions in the new economy will increasingly be influenced by how they manage to promote technological innovation, education, specialized skills, and the transition of all organizations, public and private, from bureaucratic hierarchies to learning networks.

## **5. Characteristics of Organizations based on knowledge**

The knowledge-based economy is a new approach to economics. It is a path that has a "*greater chance for democratic and sustained economic growth that will bring, in the near future, prosperity and social justice*

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(Stiglitz, 1999)."

The concept of knowledge has evolved as new and new aspects of reality have been discovered, analyzed and defined. In the light of the changes produced by the industrial revolution, the acceleration of productivity and new managerial approaches, Peter Drucker considered that what we now understand by knowledge is "*effective information in action, information oriented towards results. These results are seen outside the person, with a role in society and economy or in promoting knowledge itself* (Drucker, 1999)."

Given this, we can say that new information technologies, associated with knowledge, modify both the production process and society as a whole. Men lives in a world that is no longer made up only of material things but also of symbols. In this complex structured world, dominated by uncertainties that ensure evolution, entities are relative, the goods that are the subject of exchange are now information flows that link indifferent individuals to each other.

Since ancient times, wealth and power were associated with the possession of physical resources, while the need to have knowledge was limited, if not ignored. The wealth and power of the 21st century will no longer consist of the same possession of physical resources, but will primarily stem from intangible intellectual resources, from knowledge capital.

The process of transitioning from an economy dominated by physical, tangible resources to an economy dominated by knowledge is particularly comprehensive and profound, generating changes in essence in all components of economic activities, similar to those produced by the industrial revolution. Currently, we are in the early stages of the knowledge revolution.

Following the application of the principles of the new economy, there is an in separation between economic goods and services, from the perspective of utility value and embedded science. at the same time, due to the high content of technology and innovation, many of the products can be reproducible by machines, which can reduce the level of employment, especially of low-skilled labor (Gadrey, 2000).

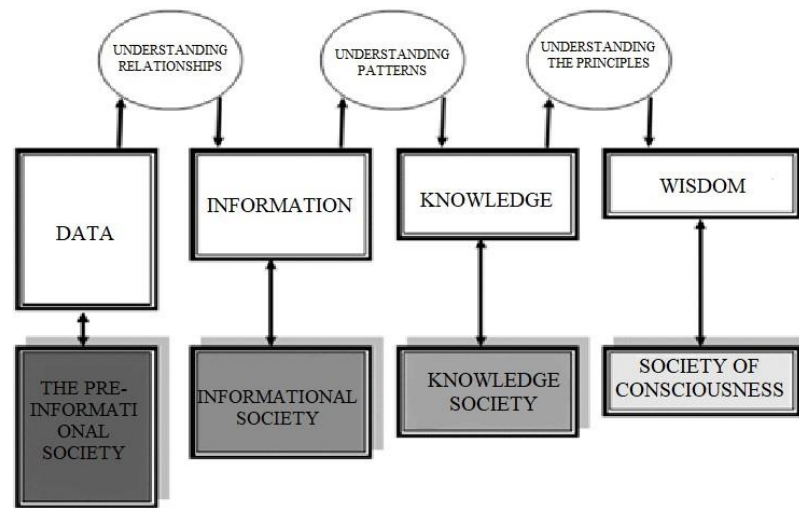
The result of human thinking, concepts, are subject to a permanent evolutionary metamorphosis: *data* → *information* → *knowledge* → *wisdom*. The evolution of society is closely linked to the evolution of these concepts, and the economy follows the model of the society in which it is practiced.

"Data are raw material, facts, symbols, figures, details, which without proper understanding have no utility, no meaning.

*Information* refers to the description of concepts based on understanding the relationships between data, defining models, and connections, etc. (what, who, when, where?).

*Knowledge* is the awareness and understanding of a set of information and how that information can be used in the best way and obtained through understanding the models and include strategies, practices, methods or approaches (how?).

*Wisdom* is based on understanding the principles that govern knowledge, judgments about their usefulness and morality (why?)” (Drăgănescu, 2003).



**Fig. 1.2. The evolution of society, the path towards wisdom and a society of consciousness**

Source: adaptation from Drăgănescu, M., *De la societatea informațională la societatea cunoașterii*, Editura Tehnică, București, 2003, p. 46

Economy is closely linked to the type of society in which it takes place. In the agricultural era, most workers were farmers or animal breeders, whose lives were centered around agriculture. In the industrial era, there is a simplification of work processes through the introduction of mechanization, automation and robotics, technology being used to ease physical labor. As a negative effect in the first phase, this led to unemployment, but in the information era, most workers are involved in creating, distributing and processing information, technology being used to increase the possibilities of mental supplement of workers. Both agriculture and industry remain important in information societies, but most workers are involved in activities of creating, distributing and processing data and information. These so-called knowledge workers today outnumber those employed in

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agriculture or industrial production in developed countries of the world. For example, in the US, "white-collar" (knowledge workers) have become more numerous than "blue-collar" (workers) since 1957, this date is often used to mark the beginning of the information era.

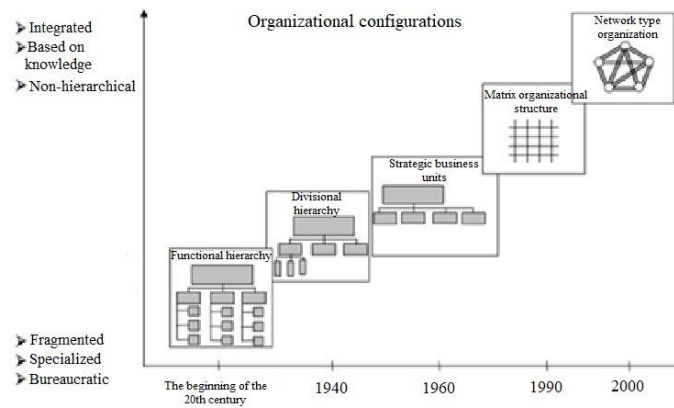
At present, the economy of advanced countries is increasingly tending towards a knowledge-based economy, through the widespread use of integrated ERP systems, expert systems and computer systems for decision-making assistance.

The new society in which humanity irreversibly fits into is defined as a society of knowledge and at the same time as a society of organizations (Drucker, 1992). Knowledge-based organizations are the collective intelligent actors of the information society and play a decisive role in establishing it as a knowledge society. They mark the convergence of two phenomena that define human nature - that of knowledge and that of organization - in a social construction emblematic of the ideas of collective competence, intelligent action and sustainable performance. In the functioning of such organizations, the processes referred to as the "3 I's" are crucial: *innovation* (creation of new knowledge), *learning* (assimilation of new knowledge) and partnership *interactivity* regarding knowledge (Karnoouh, 2004).

Promoters of information technology define a knowledge-based organization as "*a community of conceptual workers, interconnected in a computerized structure*"<sup>4</sup>. The existence of such an organization, equipped with local workstations, support centers, communication channels and distributed knowledge collections, requires an explicit design and implementation effort. In management approach, Drucker (1998) treats the company as representing the organizational model of the 21st century and predicts the following characteristics: a composition dominated by professionals, a reduced number of intermediate levels of hierarchical management, ensuring coordination through non-authoritarian means. Figure 1.3 shows the succession of organizational configuration models.

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<sup>4</sup> Holsapple, C.W., Whinston, A.B., *Knowledge-based organizations*, Information Society, 5(2), 1987, pp. 77-90 și Drăgănescu, M., *De la societatea informațională la societatea cunoașterii*, Editura Tehnică, București, 2003, p. 129



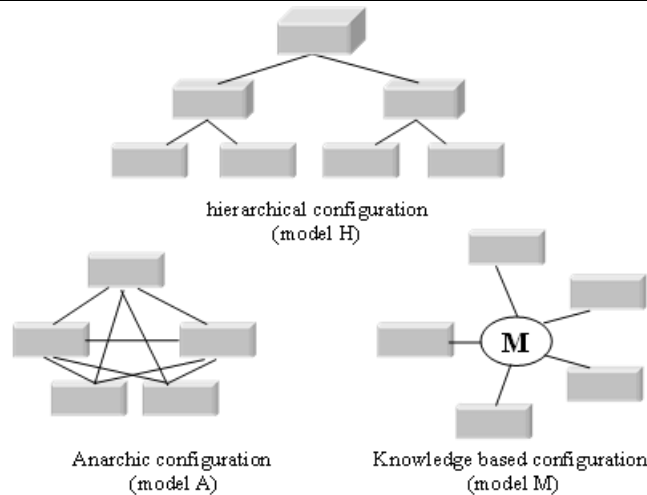
**Fig. 1.3. Succession of models of organizational configurations**

Source: Palmer, J., *The human organization*, *Journal of Knowledge Management*, 1(4), pp. 294-307, 1999

The organizational typology presented shows that organizations have evolved towards an increasing foundation on knowledge, understood as a progressive humanization trend. While this evolution was inspired by the paradigm of the control and authority-based organization, it has been supported by improvements in hierarchical configurations, specific to industrial capitalism, culminating in the matrix organizational form.

At the end of the 20th century, against the background of the consecration of the paradigm change in organizational theory, the limits of hierarchy as well as the relevance of the knowledge-based organization alternative become increasingly clear. Instead of rigid pyramidal structures, which were omnipresent until then, a diversity of non-hierarchical structural forms, generally of the network type, appear; typical behaviors for their authors are entrepreneurial in nature, but managerial professionalism can also be found, even if the hierarchical pyramid seems to have been reversed.

To highlight the distinctions mentioned earlier, in Figure 1.4 and Table 1.5, the main attributes of the hierarchical organizational model and those of the non-hierarchical alternative are presented in the form of structure diagrams and, respectively, a comparison grid, illustrated by two models: the anarchic organization and the memory-centered one.



**Fig. 1.4. Organizational models**

Source: Le Moigne, J.L., *La modélisation des systèmes complexes*, Dunod, Paris, 1990, p. 94

**Table no. 1.5. Comparison grid of organizational models**

Attribute	Hierarchical organization	Anarchic organization	Knowledge based organization
The dominant type of organizational relations	Vertical (submission)	Horizontal (interactions between counterparts)	Multilateral collaboration
The dominant type of internal coordination	Directive	Transactional	Communities of professional practice
The effect of environmental stimuli	Top-down imposed relationships	Ad hoc relations of the actors	Systemic selforganization based on learning

The degree of autonomy of organizational actors	Reduced to tactical/operational level options	High, entropic effect for the system	High, with selfdevelopment effect
The typical behavior of organizational actors	Reactive	Opportunist	Proactive
The synergy of the organizational system	Based on formal rules; Limited rigid operational safety	Based on convergent situational interests; Minimum operational safety	Based on common goals; High operational safety

Source: Harari, O., *The brain-based organization*. *Management Review*, 83(6), 1994, pp. 57-60.

In conclusion, we believe that the knowledge-based society has reflects a sum of knowledge specific to the present and future economy in which individuals and communities find themselves, namely:

- *The primacy of knowledge* in all spheres of economic activity, due to the decisive impact it has on the functionality and performance of organizations. In production processes, knowledge often represents a more important input for achieving performance than land, money or labor.
- *Intellectual property holds a significant share* in national patrimonies, in continuous growth, and the boundaries between intellectual property and classic property tend to fade as a result of changes in the structure of production factors. In the knowledge-based economy of the future, intellectual property will prevail.
- The consistence of economic activities, not on the production of goods, but on the *treatment of information, the accumulation of knowledge and the production of knowledge-goods*.
- The foundation of economic activities not primarily on tangible resources (land, buildings, equipment), but on *intangible resources*, represented by knowledge and the minds of competent people.
- The proliferation of *symbolic equipment and products*, along with the relative decrease of physical products; symbolic products are based on information, whose value is independent of the physical characteristics of these goods. Cards, e-commerce, electronic banking, computer software packages, projects, consulting, etc. are categories of symbolic products that will predominate in the knowledgebased economy.

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- The division of labor, within the traditional economy, is based on the capitalization of resources in productive activities that converge to goods, obtained under conditions of yield. In the knowledge-based economy, *the element that determines the most intense division of labor* at all levels of organization of economic activities *tends to be knowledge*, usually surpassing material resources. Of course, the most effective forms of division of labor are based, to the same extent and at a relatively high level, on possession, simultaneous possession of knowledge, material, human and financial resources, harmonized qualitatively and quantitatively.
  - *The increasing intellectualization* of work processes, in general, and economic processes, in particular.
  - *De-massification of production*, in the sense of eliminating the need to concentrate large amounts of physical and human resources in an organization in order to generate viable economic performance. The first steps were made through "just in time" systems, industrial processing based on computer integration, extending work to the employees' homes, telecommuting, etc. Concurrently, de-massification of products is also the result of "integrating" knowledge into products, which leads to a decrease in the amount of material substance incorporated or even to the almost elimination of them, simultaneously with the amplification of qualitative parameters.
  - *Gradual disappearance of the boundaries between activities within the company and between companies at the sectoral, regional, national and international level*. The organization centered on division of labor and hierarchy gives way to an organization based on teamwork, task interchangeability and interdepartmental functionality. Gradually, the differences and borders between activity fields and sectors, regions, at the national and global level, all in the context of globalization, decrease.
  - *Generation, exploitation and perfection of technologies* become very widespread and important activities, basic conditions for survival and performance of a significant part of companies. Furthermore, technologies and information networks, which are centers for creating, distributing and using knowledge, become preconditions for economic development.
  - The majority share, in continuing growth of the service sector, in the economy as a whole, to the detriment of the production sector, in conditions where services generally incorporate a higher volume of knowledge, compared to products.
  - *Rapid multiplication of small businesses*, concurrently with the relative reduction of large companies, because the former is more flexible and can quickly adapt to contextual developments. Flexibility and dynamism, well-known innovation of a part of these, represent essential assets of SMEs in manifesting as the main promoters of a knowledge-based economy.
  - Globalization, a particularly strong trend in the last decade, will intensify in the sense of generalizing the production of goods and especially services that will become desirable to mankind, for survival in accordance with progress, companies will be able to synchronize their supply chains and organize crossborder cooperation more effectively. Benefiting from the new technological support, value-generating activities will be carried out in those areas of the world where the most accessible and high-

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performing knowledge exists, which generates high productivity, products, services, and sales with high and sustainable profitability.

- *The foundation of competitive advantage* at the level of all forms of social organization- companies, groups of companies, networks of companies, economic branches, economic regions, national economies and global economy- is predominantly based on the knowledge possessed and used. Knowledge, as an input, generates an increase in the quality of traditional products or their replacement, as well as economies of scale. We remind that in the capitalist type of industrial economy, the competitive advantage is based on reduced costs or the high quality of products. The explanation of this new type of competitive advantage lies in the multiple and decisive roles that knowledge plays in the new type of economy: basic raw material, essential capital, production force and often product. **Conclusions**

We believe that in order to achieve innovation-oriented policy, aimed at stimulating access to the new economy, governments should take into account the following key strategies:

- investing in workforce training;
- investing in infrastructure for innovation;
- promoting the transition to a digital economy; ➤ promoting government actions to support innovation; ➤ supporting civic collaboration.

States that focus their policies in these areas will be much better positioned, allowing them to achieve strong economic growth and income for all citizens regardless of their socioeconomic status. Ultimately, this should be the true objective. It is just a means to advancing towards progressive goals: well-being, jobs in areas of sustainable economy, increased freedoms, especially in the act of decision, stronger communities, and greater citizen participation in public life.

It has become evident that, given their specific nature and configuration, knowledge-based organizations *can no longer be managed using the principles and methods valid in the industrial era*. Managers will acquire new skills to motivate and especially lead people to exclusively use their innovative and creative capacities.

The foundation of contemporary organizations on knowledge is inevitable and arises from a level of systemic complexity that exceeds the rigid limits of traditional hierarchies and leads to the emergence of non-hierarchical organizational configurations and practices; from strictly inertial evolutions, of the nature of self-organization, at most, isolated solutions can result, eventually articulated ad-hoc; instead, obtaining integrated, viable systems implies transformative intervention on existing organizations or creating new ones, dedicated to the intended purpose.

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