

# Part 1

## THE NEW ECONOMY

In the history of the human society, developmental stages have changed, characterized by specific dominant economic and social reality. They responded with the specific developmental levels of civilization. They have always had significant differences. Conditionally and generally interpreting, they were naive optimism of antiquity, religious mysticism of the Middle Ages, rational scientism of industrial society and modern globalism of post-industrial society. The above classification ignores a number of „elastic“, permeable boundaries (temporal, geographic, and others.) and transitional periods in which „collisions with the future“ (A. Toffler’s term) occurred. Each of these stages had its own development paradigm<sup>1</sup> with the appropriate criteria and values. They revolutionarily changed (with different dynamics in the space and time), exactly during those long transitions between stages. Each new historical period required (mostly paradigmatic) change of thoughts and behavior. Basically, it was adjustment to civilization norms, achievements, and challenges (V. Draskovic, 2002, p. 11).

Pace, extent and dynamics of modern changes, that have brought globalization and information society, are more revolutionary than ever. Generally, dynamic of change and technological change are especially dominant feature of today. It was followed by the creation of a super-active development strategies and appropriate activities for their realization. They are based on the idea of progress as a permanent process of development of knowledge and science, followed by the formation of new social structures and organizations. Innovative organization is based on continuous learning, ie. specialization of existing and new knowledge, which are a function of the application and/or the creation of new technologies. Without innovation, changes have cosmetic character and they are short term. Constant innovation, evolutionary and revolutionary, is necessary for the development. The pace of change is increasing exponentially. Technological renovation is indispensable in every industry and/or organiza-

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<sup>1</sup> Paradigm is a Greek word (παράδειγμα) which means an example for the reputation, a role model, a pattern, but could be used in a different sense. In our case, it refers to the fundamental economic theory that dominates in given time (period) of its development. Basically, each paradigm is a general idea or a concept, which could be expressed by a) initial or original concepts and b) system of ground principles, the law, or sufficiently probable hypothesis.

tion that strives for success, survival and sustainable development. Therefore, the choice of modern business is very simple: „To be quick or quickly forgotten!” Technological progress is supported by constant expansion of capital, its investment into profitable business and awakened competition. That is how new developments and technological progress is stimulated, as a result of knowledge. It has virtually limitless potential to create and improve everything that exists. Technological innovations affect the significant improvement of company performance, creation of competitive advantages and competencies. New technologies create new opportunities, remove barriers to international trade and investment, increase transparency and diversification opportunities, intra-corporate exchange and virtualization. Innovations in information technology, computer networks, telecommunications and transportation systems have contributed to connecting the market at all distances and areas. New quality development is based on an extraordinary technological growth in the last quarter of the XX century in the field of automatization, informational technology, telecommunications, transportation, biotechnology, genetic engineering, and aero-cosmic technology. The leaders are the global “boom” of information, communication, and transport monitoring. Technological superiority is usually accompanied by modern organizational skills, marketing and managerial know-how and expansion of the service sector. As a result of the technological revolution, the share of services in creating GDP is increased. The best example is the U.S. with 73% in 1990 (Statistical Abstract of the United States 1995, p. 452).

The growth of service activities is accompanied by corresponding changes in the structure of employment. The labor force is more focused in the service sector, whose share of employment have long exceeded 70% in developed countries. According to the Bell’s foresight from 1967 (p. 102), economy will transform from dominant production of goods to the dominant production of services, class professionals and specialist technical profile will become the largest group of employees and intellectual institutes will become the leaders. It is believed that the future is in the growth, based on knowledge and innovation (but not in the growth of so-called “innovation sectors”, as some authors misinterpreted). The third knowledge revolution occurred with the Internet. It enabled completely new way of management and organization, based on productive use of knowledge. Internet is essential tool for the normal functioning and survival of the market and people in general. Knowledge has become easily available and relatively cheap for everyone. Anywhere and anytime, it is there, hovering in the air around us, in the unlimited computer space, primarily due to the rapid development of the World Wide Web. Knowledge revolution is spreading at a tremendous speed. It can not be isolated, or restricted.

Information infrastructure enables expansion of the knowledge across the world almost instantly. Education has turned into an extremely efficient “technology”, which monitors all modern updates. Knowledgeable people make the organizations different, more or less successful (or unsuccessful). In the companies, knowledge has become a priority and strategic resource. But, it requires new ways of organizing. Operations must be performed untraditionally, which requires flexible and innovative (often virtual) forms of organization, producing the groundwork for a constant flow of creative achievements.

New economy, (hereinafter n.e.) based on the knowledge, has created the new rules of business. As defined by the neoclassical production, function, output in old economy is the result of inputs used: land, labor and capital. While these traditional inputs still play a role in the new economy, knowledge is the most important factor of production. According to classical economics, traditional resources as a source of competitive advantage are prevailing. In n.e. the comparative advantage is based on innovative activities, the most important source of knowledge transfer. While the old economy depends on continuity (Chandler, 1990), n.e. provokes changes and thrives on them. Innovation is present in both cases. The difference is in the nature of innovation (incremental and radical). N.e. is characterized by an extreme volatility. It's all in the motion, with a large number of new companies emerging every year. It is based on heterogeneity. The world of homogeneous economy promotes expansion, rather than innovation. In a heterogeneous population, each individual has a unique set of information. New ideas are likely to occur through communication in heterogeneous than in homogeneous world. The main feature of working in a heterogeneous environment is dealing with uncertainty, as it replaces a predictability. The work and working environment are changing, so everyone who is able to deal with uncertain situations is more valuable. Therefore n.e. motivates people to participate in the creation and commercialization of new ideas. Almost unprecedented phenomenon has formed in terms of the knowledge economy - an open economy virtualization, its dematerialization and great independence of national borders. At the expense of human capital and knowledge there is enormous growth of high-tech companies and Internet companies capitalization. The market value of the shares exceeds their annual profits by hundreds of times. Fundamental changes in human knowledge are hypothesis of the new world perspective: a holistic, global, ecological, human and collective. On this basis a new culture is born, a new understanding of the world, a new philosophy and a new value orientation.

The current development trends and the global economy shows that the comparative advantages of geography is based not only on inputs found on

technological innovation, but also on intangible assets such as style, brand, design, aesthetic and symbolic value. New era of development as well as new economy is dominated by knowledge, creativity, skills and originality. This causes a change of integrated development paradigm, economic and social, accepted by all who sincerely wish to develop. Economic, political, civil and social power in the world will not be determined by the amount of resources owned by some social and/or national community, nor its size and economic power, but knowledge and skills to efficiently increase its wealth and power to. It is no coincidence that the most powerful countries (economically, military, politically, etc.) mainly invest in knowledge. They have the highest level of development and the largest stock of knowledge and innovation, representing the appropriate award or recovery of the investment. Finally, the term n.e. was used in the 1980's to describe the sphere of production services. After 1990's it is used in two senses: first, as a part of the economy that make high-tech innovation sectors (communications, digital technology, IT applications in the media, etc.) and second, as the influence of high technology on the environment and changing certain macroeconomic and market parameters. As stated by K. Kelly (1998, p. 2) „*The world of sophisticated (virtual – author's note) technologies starts controlling the world of machines - the world of reality.*”

## 1. THE KNOWLEDGE SOCIETY

Socio-economic changes in recent decades are direct result of a strong scientific and technological development, especially in the area of information and communication technologies, which emphasize the role of knowledge - conditional intellectual capital. In 1960s, M. McLuhan wrote that the world has become a „Global Village” thanks to the modern electronic and communication technologies. He was referring to the growing electronic connectivity and networking of the companies and the people around the world. In the “knowledge society”, where everyone aspires, companies and national economies competitive advantages are based on the knowledge. Among the main developing goals of propulsive states are the increasing investment in knowledge and innovation activities through continuous learning and training of human resources.

The widest access to „knowledge society” was in the early 1960's. It focused on the growth of new industries based on science and their role in social and

economic change. Some analysts included the professional services and other information-rich industries, where employment growth is noticeable (Machlup, 1962; Porat, 1977, Stanback, 1979; Noyelle, 1990). Fundamental idea of unifying this working element is theoretical knowledge as a source of innovation (Bell, 1973). Expanding knowledge is included in the new theory of economic growth (Romer, 1986, 1990), noting that innovations differ from other inputs because they have no competition and they encourage further innovation.

The concept of “knowledge society” („*knowledgeable societies*”) was mentioned in 1966 by American sociologist R. Lane. Soon after that (1973) American sociologist D. Bell has also popularized the knowledge society in his book *The Coming of Post-Industrial Society*. Lane’s approach was closely related to the network access, as M. Castells (2000) noted that for the first time in the history, the basic organizational unit is no longer a subject but the network of related subjects. The structure of the “knowledge society” was first defined by the *World Bank Institute* in the program called “*Knowledge for Development*”. It included long-term investments in education, development of innovative skills, modernization of information and communication infrastructure and effective legal and economic (institutional – author’s note) framework, which should stimulate innovation, entrepreneurship and sustainable economic development.

Numerous changes have caused a significant transformation in the organizational behavior of understanding the necessity of learning and applying the new knowledge in all spheres of human activity. Therefore, modern society is now called the „*knowledge society*” or a „*learning society*” (in order to improve the knowledge). Under the „*learning society*” S. Ranson (1994) refers to „*a new moral and political order, which uses learning as the main tool for achieving historic transition.*” Constant process of learning and educating becomes an important form of modern human resource development. Knowledge is used as a crucial resource in the production and management of the complex processes (informational, organizational, projecting and other). Many agree that we already live in an age of information, although it is clear that the modern economies make the coexistence of *mass* (industrial) *economies of scale*, which, according to P. Hawken (1983) covers the period from 1880 to the present time and the *information economy* (knowledge economy). The above disciplines rapidly evolve because intellectual capital, knowledge, information, intellectual property and experience are unlimited and strategic resource, bringing a competitive advantage in the market (“*nuclear weapons in modern competition*” - T. Stewart). Knowledge has become the main factor of production, work has become flexible, and bureaucratic uniformity is replaced by sophisticated tools of systematic integration and information management, according to A. Aune (2001, p. 45).

Some economists (Bresnahan and Trajtenberg 1995; Rosenberg, 1976, 1982) regard information technology (hereafter IT) as a *general purpose*, such as telegraph, steam engine, and electric motor. Their true value derives from a series of complementary innovations and not directly from an original technology. Therefore, the profit of the general-purpose technologies is limited by managers skills to create new organizational structures and processes, rather than technological capacities (David 1990; Brynjolfson and Hit 2000). The introduction of new technology without adequate organizational changes could lead to significant losses in production, with potential negative interactions of existing organizational practice.

The large 20th century corporation was designed to meet the objectives of the increased production and reduced cost per unit of production. A. Chandler (1962, 1977) explained in detail the growth of the functional hierarchy and the associated multi-divisional structure and expansion of mass production, with detailed division of labor and delegation of administrative obligations. The role of managers in large bureaucratic company is „*created as a guardian of the organizational centralized knowledge base*” (Zuboff, 1995, p. 202). Technological changes that enabled gradual achievements in computer capacity were initially slow, bolstering the hierarchical, controlled organizational structure. Managers were struggling to control the information, relying their authority on them, even after the new IT created the opportunities for widespread distribution of information. Distributed knowledge can threaten the old base of managerial control. Profit from IT could not be achieved until the older, more centralized organizational arrangements were abandoned to develop alternative ways of organizing.

Recent studies on the “knowledge society” in part of organization and management claim that it corresponds to the flexible working arrangements (Kelly, 1998; Atkinson and Court, 1998.) They facilitate the involvement of workers and allow them to use their specialized knowledge in solving problems. In his article for the *People Management* magazine (2000) H. Scarborough (Leicester University Management Centre) has warned that „*the interpretation of intellectual management is not purposeful exclusively from the stand point of technological achievements and approaches.*” He underlines the importance of human resources and culture, which basically consists in the creation, transmission and dissemination of knowledge. Many authors focus on the intellectual network, which is interpreted as a “mobility of the intellect.” This corresponds with the basic development perspective of mankind, associated with the knowledge economy, which emphasizes the role of a modern education and science.

The advantage of the knowledge economy (n.e.) compared to the “standard” (traditional) economy based on the principle of alternation of resources is that sharing of knowledge creates the multiplication with no losses. This radically, even paradigmatically, changes the theoretical approach to the process of exchange. The main problem here appears to be the intellectual property rights, which requires upgrading the existing theory of property rights. Knowledge and innovation have become the key elements to understanding the society and its development. This must take into account the theoretical critique of “economy based on knowledge”, suggested by C. Vercellone (2006, p.p. 809-822), opposing its “cognitive capitalism”, i.e. the fact that the key role of knowledge is not some historical novelty *per se*. This is rather a matter of terminology but the essence, as the term “knowledge economy” specifically and accurately emphasizes the importance of modern knowledge, innovation and turbulent changes in the environment. Economy was always based on knowledge, but never so developed and crucial in all economic activities and society in general, nor was the social and economic development ever so dependent on the knowledge.

Other than popular terms of „*knowledge economy*“, „*innovative economy*“, „*knowledge management*“ and similar, the scientific principle based on IT and the corresponding technical (instrumental) questions of knowledge transferring through various types of links is still dominating. Of course, more is invested in the creation and sharing of knowledge, as well as its transferring by modeling the dialogue. Regardless of the enormous power of the IT industry, the knowledge and intellect are exclusively human. „Knowledge society“ is understood as the production of services based on intensive learning activities that contribute the acceleration of scientific and technological progress, but also the rapid obsolescence of innovation. A key component of the knowledge society is a greater dependence on intellectual abilities for research and development (R & D) laboratories than on physical and/or natural resources, i.e. on increasing the relative contribution of gross domestic product, attributed to „intangible“ capital (Abramovitz and David, 1996). Economists have noted that changes in the production moved from material to the immaterial and informational resources (Shapiro and Varian, 1999). Those sectors were based on the intensive knowledge and productivity growth (Brynjolfsson and Hitt, 2000; Gordon 2000). A “knowledge society” has to learn constantly (*life-long learning society*). That way, the quality of education is measured by the usefulness of acquired knowledge, skills and habits, necessary for the efficient and successful operation in the complex and exponentially changing conditions of a developed society (Pastuovic 2008, p. 17).

Several characteristics of the “knowledge society” differ from the industrial society. *First*, the form of the production organization has been changing. There is no need for a high concentration, because a man can now take the full part in the production process, even from the distance; *Second*, the importance of bureaucratic management is decreasing, workers are increasingly becoming independent in fulfilling their obligations; *Third*, the system of values is changing, because the public demands from the companies are not only economical solution, but also social (protecting the interests of consumers) and environmental issues (protecting the environment); *Fourth*, the role and importance of supranational institutions and supranational regulation has been growing. The dominant national feature of manufactured goods is fading; *Fifth*, international social networks are providing communication and information channels of connection, and various interactions among participants (exchanging information, material and non-material resources) and decentralized management; and *Sixth*, the term of network goods is emerging, characterized by complementarity, standards, the effect of production volume, specific network external effects (each additional user increases the usefulness of a network goods for other users), and the effects of traps (*lock-in effects*), mutually connected with technological dependence of both companies and industries (eg, different training on operating systems, Windows and Macintosh, the conversion of information from one program to another, the cost of connecting the device, etc.).

As the economic science becomes more formal, more instrumented and more severe (often tautological and too ideological), less attention has been paid to certain practical issues and problems of the economic environment (which were more interesting for the political economy and institutionalism). For example, theoretically perfect market and/or competition as neoclassical standards, where every distinction is considered pathological, although reality is completely different. Or sustainable development, directly opposite to the actual market prices, which are objectively far from being based on real externalities, so that they can not reflect all the environmental damage due to the market operations. There is a the growing conflict between competing economic objectives - efficiency and social justice, ignored by many practitioners (policy makers) and theorists (especially those with quasi-neoliberal orientation), considering it an ethical issue. In this respect, the economic theory is very much at odds with the practice. Transition events are a good example of the above reasoning.

Although the economic theory (such as it is, a comprehensive in content and disunited, consisted of theories) “bypasses” many essential and existential questions of economic reality and a many failures (faults) of economic policies (especially the quasi-neoliberal), we can not support the opinion of some au-

thors that is in crisis. We incline to explanation that this is a classical economic apologetic, not economic, ignorance. Economic apologetic, by its nature, limits possible action of economic science and allows expressing the private interests of its protagonist, so-called “economic reformers.” In this context, the economic science can always find a “justification” in the long lasting dilemma: Is it a science (and to what extent) or art? We can not neglect the fact that the number and the rate of changes in the economic reality exceed their capabilities and pace of study.

Undoubtedly n.e. and knowledge society largely decline and/or relativize the thesis of the eternity and universality principles (and myths) of “*the market choice and self-regulation*” and “*government-planning dictate*” (or “spontaneous evolution and cognitive control” in the jargon of F. Hayek). Because it modifies the market choice and verifies the convergence and the combination of competition (as the horizontal dimension) and economic necessity (as the vertical dimension), while on the other hand greatly reduces them by monopolization of production and market (intra-corporate exchange, online business networking and the like.).

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### **Box 1 - WHAT IS KNOWLEDGE SOCIETY?**

*The emergence of the knowledge society, building on the pervasive influence of modern information and communication technologies, is bringing about a fundamental reshaping of the global economy. Its significance goes well beyond the hyping of the Internet. What is underway is a transformation of our economy and society. Knowledge has always been a factor of production, and a driver of economic and social development. Earlier economies depended, for example, on knowledge about how to farm, how to build and how to manufacture. However, the capacity to manipulate, store and transmit large quantities of information cheaply has increased at a staggering rate over recent years.*

*The digitisation of information and the associated pervasiveness of the Internet are facilitating a new intensity in the application of knowledge to economic activity, to the extent that it has become the predominant factor in the creation of wealth. As much as 70 to 80 percent of economic growth is now said to be due to new and better knowledge. Information and communication technologies (ICTs) are also facilitating a rapid globalisation of economic activity. In an increasingly global economy, where knowledge about how to excel competitively and information about who excels are both more readily available, the effective creation, use and dissemination of knowledge is increasingly the key to success, and thus to sustainable economic and social development that benefits us all. Innovation, which fuels new job creation and economic growth, is quickly becoming the key factor in global competitiveness. Innovation fundamentally means coming up with new ideas about how to do things better or faster.*

*It is about making a product or offering a service that no one had thought of before. And it is about putting new ideas to work in enterprise and having a skilled work force that can use those new ideas. It is a further feature of the knowledge economy that it increasingly relies on the diffusion and use of information and knowledge, as well as its creation.*

*The success of enterprises, and of national economies, becomes increasingly dependent on the information infrastructure that is necessary for the gathering and utilisation of knowledge. The importance of broadband telecommunications infrastructure in this context must be recognised as no less significant than the importance of electricity to 20th century industrial development.*

*Knowledge has become the key resource. Knowledge has value, but so too does knowledge about knowledge. Creating value is about creating new knowledge and capturing its value. The most important property is now intellectual property, not physical property. And it is the hearts and minds of people, rather than traditional labour, that are essential to growth and prosperity. Workers at all levels in the 21<sup>st</sup> century knowledge society will need to be lifelong learners, adapting continuously to changed opportunities, work practices, business models and forms of economic and social organisation*

Source: <http://www.pragfoundation.net/concept/what-is-knowledge-society/>

### **Box 2 - SUSTAINABILITY PARADIGM, KNOWLEDGE SOCIETY AND SUSTAINABILITY METRICS**

*Sustainability is a notion which comprises the multi-criteria validation of the system. Sustainability is a metric of the quality of human life. It includes economic, environmental and social validation. It is understood that no generation will indebt any future generation's comfort.*

*Sustainable development encompasses economic, social, and ecological perspectives of conservation and change. In correspondence with the WCED, it is generally defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." This definition is based on the ethical imperative of equity within and between generations. Moreover, apart from meeting the basic needs of all, sustainable development implies sustaining the natural life-support systems on Earth, and extending to all the opportunities to satisfy their aspirations for a better life. Hence, sustainable development is more precisely defined as 'a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations.*

*This definition involves an important transformation and extension of the basic concept of physical sustainability to the social and economic context of development. Thus, terms of sustainability cannot exclusively be defined from an environmental point of view or based on attitudes. Rather, the challenge is to define operational and consistent terms of sustainability from an integrated social, ecological, and economic system perspective. This gives rise to two fundamental issues that need to be clearly distinguished before integrating normative and positive issues in an overall framework.*

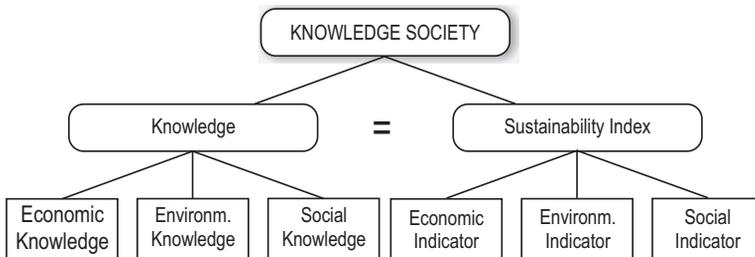
*Sustainability provides a framework for integrating economic, environmental and social interests into effective strategy. For life support systems that recognised the need to embrace sus-*

tainable development the first step is to understand how to implement it. Putting this concept into operation requires identifying practical indicators of sustainability and understanding how it can be measured over time to determine if progress is made.

In order to verify the mutual relationship between knowledge society and sustainability, we have to consider the difference between these two terms. Since, knowledge society is based on the agglomeration of eco-knowledge, env-knowledge and soc-knowledge it may be evaluated as the complex knowledge of quality of life support systems. In order to do so, we have to introduce metrics which will allow us to present knowledge as the paradigm of the number of indicators to verify whether progress is made.

Sustainability metrics are designed to consolidate measures of economic, environmental and social performance of any system. It can be understood as a pattern for evaluation of the available knowledge about a system and its performance. In particular the decision-making process for selection of the system under consideration must be based on available knowledge. The link between knowledge and sustainability makes it possible to visualise that the sustainability paradigm is the essential frame of the knowledge society.

FIGURE B1: KNOWLEDGE AND SUSTAINABILITY INDEX



Since every life support system requires knowledge about its structure, efficiency, operation and maintenance, it is immanent to the knowledge base of the respective system to be organised as the object oriented system. Also, the sustainability of the same system is described by the appropriately selected criteria and corresponding indicators organised in the appropriate paradigm describing its functionality. The mutual relation between knowledge and sustainability reveals the possibility of anticipating the knowledge society as a sustainability paradigm. As shown on Figure B 1.2 the knowledge society is organised as the equity between the knowledge and sustainability index. These are structured with economic knowledge, environmental knowledge and social knowledge of the system. The Sustainability Index is composed of economic indicators, environmental indicators and social indicators as the basic indicators of sustainability, including material intensity, energy intensity, water consumption, toxic emission and pollutant emission. Complementary metrics within each of these categories can be developed as support for the need for the knowledge about area decision.

Source: Afgan & Carvalho 2010, pp. 34-35.

**Box 3 - UNDERSTANDING THE KNOWLEDGE SOCIETY**

*It is commonly thought that knowledge has replaced industrial organization and production as the major source of productivity. The term 'Knowledge Society' generally refers to a society where knowledge is the primary production resource instead of capital and labour. It may also refer to the use a certain society gives to information: a knowledge society 'creates shares and uses knowledge for the prosperity and well-being of its people'.*

*Globalization and the changing world economy are driving a transition to knowledge-based economies. In particular, developing countries need knowledge-based economies not only to build more efficient domestic economies, but to take advantage of economic opportunities outside their own borders. In the social sphere, the knowledge society brings greater access to information and new forms of social interaction and cultural expression. Individuals therefore have more opportunities to participate in and influence the development of their societies. According to Evers (2000), characteristics of a knowledge society are:*

- *Its members have attained a higher average standard of education in comparison to other societies and a growing proportion of its labour force are employed as knowledge workers i.e. researchers, scientists, information specialists, knowledge managers and related workers;*
- *Its industry produces products with integrated artificial intelligence;*
- *Its organizations - private, government and civil society - are transformed into intelligent, learning organizations;*
- *There is increased organized knowledge in the form of digitized expertise, stored in data banks, expert systems, organizational plans, and other media;*
- *There are multiple centres of expertise and poly-centric production of knowledge; and*
- *There is a distinct epistemic culture of knowledge production and knowledge utilization.*

*The concept of 'knowledge societies' includes a dimension of social, cultural, economical, political, and institutional transformation, and a more pluralistic and developmental perspective. It is regarded as a human process. UNESCO argues that progression from Information Societies to Knowledge Societies requires that 'use of ICT must be linked to the recognition that knowledge is the principal force of the social, political, cultural and institutional dimensions of development, founded on human rights.*

FIGURE B2 -ALICT'S PILLARS OF THE KNOWLEDGE SOCIETY

KNOWLEDGE SOCIETY			
Education	ICT	Innovation	Science & Technology

*As the status of information and knowledge are different in a knowledge-based society, the*

*vision of what knowledge people need to acquire, and how they can acquire it, also needs to change. Knowing where knowledge is located and who has access to what kind of knowledge and why are becoming increasingly important. Social skills and 'relationship capital' become key skills for employment in the knowledge economy. Such skills are increasingly exercised using ICT. There is thus a need to skill both the workforce and the unemployed to increase their ICT literacy. These efforts need to be an ongoing part of lifelong learning, since a dynamic and fast-changing knowledge-based society requires continuous skills updating.*

Source: GeSCI 2011.

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## 2. PARADIGMATICS OF NEW ECONOMY

Challenges, consequences, possibilities and limits of n.e. are large and numerous. They deserve scientific attention and a phenomenological approach, especially in explaining its paradigmatic character. This section explains some of the theoretical and practical aspects of n.e. as a metaphor that reflects the spirit of the post-industrial-information era, through the prism of valuation and phenomenology of its paradigmatic. It gives answers to some current issues in relations of n.e. and economic theory, progress, civilization approaches, skills, business and economic choice. In terms of theory, our analysis shows that the n.e. paradigm is highly questionable, because there are no objective elements that prove its existence. Traditional laws, principles and categorical apparatus of economic science are still valid and active. Basically, n.e. has not changed.

Therefore, it can not hold the title of paradigmatic theory, knowing that it significantly reduces the choice as the essence of the economy, creating top competence of individual economic subjects (monopolists), forcing intra-corporate exchange and network partnerships, representing the modern sophisticated "naturalization" of goods and money relations and restricting competition. In practice, IT, telecommunications, innovation, organization, globalization and other developments and events undoubtedly make the economy "new", even in the paradigmatic sense. The latest technological revolution (especially in the field of communications and transport, which use micro-processors, fiber optics, databases, computers, digital networks, lasers, etc.) has great economic impli-

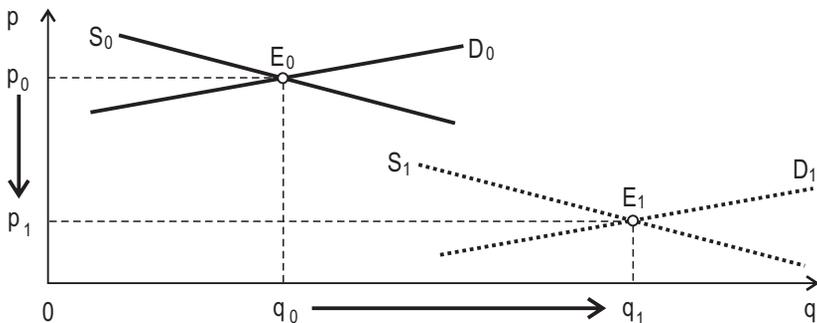
cations. The most important is creating the basic infrastructural requirements for the so-called post-industrial (post-Fordist) era, that relativizes the number of differences (spatial, temporal, cultural, ethical, political, ideological and others) and verifies the theory of convergence, but not the economic convergence.

Through the knowledge and information, waves of globalization are persistently surging. By the end of last century, the service sector has become globally dominant with 61% in the value-added GDP (*World Bank*, 1999), with a tendency of accelerated expansion. Innovations in the field of IT, computer networks, telecommunications, and transportation systems, have contributed to connecting markets at all distances and boom international capital movement, goods, services, people, ideas and cultural values. In such conditions, the economy is nowadays called weightless, informative, networking, digital, technotronic, E-economy, etc. It is believed that F. Machlup was the creator of the information society concept. In his study *"The production and distribution of knowledge in the United States"* (1962), he noted that *"knowledge industry represents 29% of the total national output,"* (according to Clark, 2004). The term n.e. is the synergic unity consisting of knowledge (intellectual property), digitalized communication and information, the Internet, online business networking with the very permeable boundaries, innovation, virtual and dynamic connecting, intra-corporate exchange with reduction by eliminating intermediaries and markets, global competition, Web electronic business, flexible manufacturing systems and organizational structure, ownership and partnership, etc. (Kotlica, 2000, pp. 197-199). In addition to these, the new trends are forming new economic sectors, modifying classical forms of work, eliminating and/or relativizing the traditional vertical hierarchy and horizontal structure of organization, changing the structure of employment and moving towards the service sector, multiplying human knowledge by accessing, processing and distributing the information, automatising business transactions, experiencing a real boom of e-commerce, online banking services and electronic media. The effect on the economy is variable, but here are some positives: less time to conduct business transactions, reduced operating costs and prices, increased revenue and profit, reduced engaging of the business assets, increased productivity, more efficient inventory, better and faster handling customers and so on (Bjelic, 2001, p. 29).

Paradigm of n.e. is reflected in the practical sense and the fact that the high-tech has directly influenced the economic environment and has changed some common laws, primarily the market. Since the network goods can not be practically manufactured at zero marginal costs and since they manufacture external network effects for users, it leads to a non-traditional behavior of supply and demand. It is well known that the standard (neoclassical) economic

theory exhibited behavior of manufacturers and customers across the supply and demand curves. The supply curve has a positive slope (because of rising marginal costs that are in its basis), and the demand curve has a negative slope (because of diminishing marginal utility of goods). In the situation of network goods, supply and demand curves are changing their traditional places. The supply curve  $S_0$  has a negative slope because of the marginal costs tending to zero in significant intervals, while the demand curve  $D_0$  has a positive slope, because the marginal utility of network resources increases the extent of growth in the amount of users. If the process is to be developed with the current pace in the long run, the curve will tend to the equal coordinating point that represents decreasing price and increasing amounts.

FIGURE 1.1: MARKET EQUILIBRIUM FOR NETWORK GOODS



Source: Adapted from Strelets 2006, p. 166

Figure 1.1 shows that the equilibrium market price decreases from  $p_0$  to  $p_1$  and the equilibrium quantity from  $q_0$  to  $q_1$ . Market equilibrium is moving from the point  $E_0$  to the point  $E_1$ . This way, the network good increases its value in proportion to the growth of its quantity, and thereby its price declines in proportion to the growth of its value for the customers. So, the highest value in terms of the knowledge society has the goods to be provided free of cost! It is a paradoxical conclusion, but only at first, because we are not talking of any goods, but the network goods, which are essential to the knowledge society. Above mentioned cases already exist in practice: *Microsoft*, *Netscape* and other provide their browsers for free. Not to mention piracy in the area of software products and their free copying.

There is another phenomenon, important for the knowledge society, linked to the creation of new monopolies, such as *Microsoft*, based on knowledge and innovation. C. Shapiro (1999, p. 352) has shown that a combination of the volume effects on the side of supply and demand reinforces monopolistic tendencies. In addition, there is another paradox: monopoly in the market for information products increase production volumes and reduce costs! The first 5Mb hard drive in 1956 costed \$50.000 (which means that the 1Mb costed \$10,000). From early 1980's to today, the price of hard disk capacity of 0.1 GB was reduced from \$20,000 to \$300 (1000 GB). So, in 30 years (1980-2010) 1Mb price was reduced from \$200 to \$0.0003 or 666,666 times! And in the period of 1956-2010 as much as 33.3 million times! It seems unlikely, but it is true.

## 2.1 Economic Theory and The New Economy

**T**he economic theory is a scientific generalization of facts and evidences about the processes and phenomena that occur in the economic reality, therefore the term n.e. can only refer to the new conditions of economic reality, ie. to the specific and new forms of organizing economic activities created under the dominant influence described in the Foreword. N.e. can not be identified with the new economic doctrine (study about something exposed as a system; a set of theoretical conception reviews) because it is not based on the principles and states, but is dynamically formed, modified, adapted and evolved.

Unlike the economy seen as an economic theory or economic science, which is the theoreticaly and methodologicaly limited (abstract, relative, hypothetical, pluralistic, delayed in explaining the phenomenon, ideological, model instrumentalized, open to changes), n.e. represents the sum of the economic reality manifestations. As such, it has its own specific and/or virtual organizational forms, developmental logic, laws of existence and changes of the "outside world." The task of modern economic science is to explain a variety of problems, processes and phenomenology of n.e., to research and find its most general, fundamental principles of the economic activity organization in their tight mutual dependences and links with social, political, ideological, institutional, cultural, ecological, ethical, and other processes (eg. the attitude towards the market economy, competition, entrepreneurship, corporative management, ownership, state regulation, certain forms of social and economic system, sustainable development, etc.).

The similarity between economic theory and n.e. can be sensed in *the use of synthetic and multidisciplinary knowledge*. It allows adjustment to the general laws of economic development, improving the mechanisms of functioning and organization of macro and micro-economic (business) systems (at the national and international level) and the affirmation of the rational economic behavior principles. While economic science, as a teaching discipline, *synthesizes* the science achievements and explains the law of business and mechanisms of its implementation, methods of economy and competition, economic politics, problems and contradictions of different economic area (ie. the behavior of the people in the process of economic activities in order to efficiently use the limited productive resources and/or their management), n.e. exclusively represents the form of their expression (realization, manifestation). There is another similarity between economic science and n.e., referring to a smaller or larger ideologisation. M. Castells defines n.e. as the “*new capitalist economy*”, bypassing the areas that are not profitable (according to: V. Draskovic 2002, p. 24).

Economic science is interested in all modern economic problems (inflation, unemployment, government spending, energy crisis, regional differences in development, external debt, budget deficit, hunger, poverty, inequality, environment pollution and so on.). N.e. is interested only (or mostly) in achieving the competitive advantages, competence and agreeable business success, expressed through a variety of target indicators (profit), which is possible (achievable) through the best functionality, organizational, time and spatial combining the limited factors of production and alternative modes of their use. Most interpretations of the economy as a science of rational choice is based on the definition of L. Robbins: The economy studies human behavior as a relationship between unlimited targets (human needs) and scarce resources which have alternative uses. Interestingly, the authors of the most modern economy textbooks praise L. Robbins, forgetting that long time before him, the reverend Thomas Robert Malthus had pointed out the limitations of food (as a resource that is being developed by the arithmetic progression) in relation to population growth as the carrier of the needs (increased by geometric progression). Though, it seems that the holder of this ideas is Malthus.

Since economic theory studies the functioning of the economy (business), n.e. is understood as specific and modern form of business. The economic theory, among other things, must have n.e. phenomenology as an object of its study. In other words, the economic theory is the “philosophy of economy”, which explores the types of economic behavior, organization and economy (in general, and n.e. in particular), their evolution, goals, criteria, and forms of ownership and contract, the system of interest, subject motivation of economic busi-

ness, etc. Nobel Laureate M. Allais pointed to the “*necessity of synthesis and unconditional submission to practice*” of modern economic science, alluding to its abstractness and increasing specialization in various fields (price theory, institute, risk, money, development, international exchange, market equilibrium, rational behavior, and so on.). In his opinion, this specialization is necessary and desirable, but it must take into account the necessity of scientific synthesis. Full objectivity in maintaining the practice is impossible (because it is impossible to draw conclusions about the relationship between people and objects, as he put it), but it is necessary to make efforts to get as close as possible. In this sense, Allais (1989, p. 27) stands for “*reapproachment of the economic theory to the reality and finding a basis on which to build a normal economic and social policy.*”

However, n.e. is the practical phenomenon to be respected and scientifically analysed, particularly with regard to the need for the adjustment of the local entrepreneurial behavior, as well as the actual economic policy. The economic theory must always be open to the changes in the actual practice. The changes that n.e. brings are certain and predictable in some way: dynamic, complex, uneven, informatively rich, technologically modern, and innovatively intense. This reality of n.e. must be respected and implemented in all development plans, based on the assimilation to the external environment, possible retention of its specific features and the need to maximize its usefulness. Because n.e. nolens-volens, appears as a new social-historic and economic environment, which (in conjunction with globalization as its generator) relativizes even national sovereignty, institutions of state regulation and the applicability of every economic theory with its explained phenomena. The new original theory, based on the appropriate paradigm, can not be reviewed.

N.e. is based on a synthesized thought, the multidisciplinary scientific approach, the relativized scale value criteria, the overcoming of one-sidedness and exclusiveness, the latest scientific and technological achievements, but it does not create a new theory of economic paradigm, which would modernize and enrich economic science, ie. economic thought. In the past there have been a few original and scientifically established theoretic economic paradigms: physiocrat, mercantilist, classical, Marxist, institutional, Keynesian, neo-classical, new-institutional, etc. Regardless of all errors, complaints, and conceptual-methodological contradictions, all above economic theories have been analyzing complex economic reality, the choice as a way of solving contradictions in economic reality and original economic motives.

Modern economic theory solve the same problems in terms of the complex n.e. and its dynamic changes. Heterogeneous world of economy have never been theoretically explained as homogeneous and uncontroversial construction. Especially in a very complex and virtual world of n.e. From the *ontological* point of view, through economics research, it is clear that the post-industrial era had already occurred in economically developed countries. The focus of business is transferred to the service sphere. Limited (and therefore strategic) resources have become information and accumulated knowledge. The market economy and “homo economicus” do not vanish, they are significantly replaced by neetwork and virtual economy, e-commerce, intra-corporate exchange, creative specialists of free individuality and one partner inequality (replacing hierarchical). Modern economic activity, however, creates certain ontological assumptions for creation of the *post-industrial paradigm*, which is often equated with n.e. Through the prism of industrial and post-industrial relations, it is clear that the first subject has exhausted themselves. This means that the economies in crisis (such as ours) on the road to recovery should need to be focused on post-industrial values and principles of economy. Of course, no less significant are *gnoseological assumptions* of the new paradigm, because post-industrial civilization has a strong influence on the development process. Although a formal logic, dialectic method, systematic approach, mathematical method (linear programming, etc.) have their scientific importance in economic science of post-industrial era, it seems that the increasing significance of information, business networking and virtuality put the emphasizes on the dominance of analytical models, system-structural and functional analyses, as well as the other modern methods for the information processing. The unilateral monistic approaches give way to more complex - pluralistic methods (Nureyev 1993, p. 144).

## 2.2 The New Economy and Progress

**M**an and society always strive for progress. Progress is natural, historical and legal process. The ground for social progress is an economic development. Hence the need to constantly study the factors and the laws of economic development (variable in time and space) and to explain the process and phenomena of the past and the present, in order to predict the future, to reduce the uncertainty and stochasticity, and to identify the driving forces of socio-economic progress. N.e. advances thanks to the new and original meth-

ods of business, organization, communication, processing and distributing the information, thoughts and actions. Its success is based on overcoming, equalization and neutralization of differences in development, culture, nation, politics, and the like., on the harmonization of business interests and differences, and on the convergence of polarized socio-economic systems. N.e relies on the *globalization* of the development goals and activities within its domain. Out of this context emerges the essential question: Is this the only way to reduce or increase the original contradiction of economic reality between the unlimited human needs and limited natural resources? Analysis of a many authors, from various aspects, would give different and contradictory answers.

N.e. corresponds well with the civilizational approach, that views the development of society through the prism of all aspects of social life and relationships, and the economy as a subsystem, which has a) the organizational and technical-economic aspect (where economic relations are focused on the rational and efficient use of available resources ), and b) the socio-economic aspects (where economic relations are determined by the character of ownership relations). In practice, n.e. solves those issues and uses them, taking into account:

- complex relations and influences between economic, social, political, cultural, and other subjects in economic activities,
- multidisciplinary scientific and systematic approach,
- relativized scale of values and standards,
- developmental specificity (different conditions and levels of development),
- virtualization of the business relationships,
- flexibility of deadlines, spatial dimensions, specific organizational forms, conditions of partnership cooperation, etc.

The unilateral conversion of the characteristic (*unification*) into their true oneness (*unity*), long observed by A. Toynbee (1934, p. 150) is a modern reality, fully supported by n.e. It has become a criterion of civilization, despite the achieved level of economic development, the respect for historical tradition, social motivation, institutional form, democratic achievements and human rights. The necessity and affirmation of civilization methodological approach to social development was influenced by many evolutionary and revolutionary (term used by T. Kuhn, 1974), changes in the capitalist and socialist systems (which, after lengthy ideological polarization, affirmed the principle of their convergence), and the latest scientific and technological achievements. In this way they overcome outdated notions of linear, non-alternative and determined development.

The traditional scheme of production factors<sup>2</sup> and economic growth (labor, land, capital), absolutism of any kind of ownership, old-fashioned interpretation of government's socio-economic role and one-sided "messianic" monistic theory of development (liberalism, monetarism, etc.). These concepts maximally respects rapid technological advances and the increasing importance of the service (and information) component of economic growth, and a variety of environmental, social and other limits.

We probably can not discuss the "*creation of an entirely new civilization in the broadest sense of the word,*" as metaphorically envisioned by A. Toffler (1980, p. 30), but we must acknowledge n.e as a formation of *new development concept*, which is free of many traditional burden. In terms of development, n.e. can objectively aspire to a new paradigm. It fundamentally changes all areas of life and business, as well as the general social form. In his study (1982) *Mega-trends: ten new directions that change our lives* (1982), I. Naisbit has predicted many of the dominant tendencies of the 80s and 90s: the transition from the industrial to the information society, from the "forced technology" to the "high human element", from national economy to the world economy, from short-term to long-term orientation, from centralization to decentralization, from institutional help to self-help, from representative democracy to participatory democracy, from hierarchical systems to socializing systems. In his later book, *Mega-important choice: variants of tomorrow*, (1985, p. 13-6) Naisbit has all of these trends collectively encompassed in the most important characteristic of our age: "*the transition from choice – either-or to a society with a wide range of choices.*"

We can not agree with the latter as a universal principle. It is questionable, not only the society *coverage* that have a wide range of choices, but the *freedom of choice*, which is often stifled and reduced in various ways, at all levels (individual, local, national, international, and global). The reduction of choice is directly proportional to the institutional vacuum, which is, unfortunately, widespread and prevents the development of many countries and regions. Using the term *post-industrial society* (also known as cybernetic, information, Third Wave civilization, ecological, post-collective, humanitarian, post-optimal, technotron, digital, etc.), we must be aware of its limitations, imperfections and conditionality, particularly with regard to its *prevalence* in the world. Although n.e. provides

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2 Converting information into important production resource undermines, in some way, the labor theory of value, extends the scheme of production factors and causes many of the practical consequences. Technology expels people from different fields of material production sphere, which is reflected in the social system (through higher unemployment, etc.). There is a whole complex of issues related to the revision of the original role of labor in creating the surplus products, for the ability to measure the value of different information services based on abstract labor, etc..

great opportunities for concretization and the self-proving, there is a significant (say perhaps fatal) gap between the developed and developing world in application of its positive effects.

According to the Pareto principle, modern economic science agrees, in a variety of ethical and democratic principles, that the maximizing behavior of economic entities is allowed only if it does not jeopardize the interests of the other participants. Their economic interests are protected by legal norms, whose development measures the “rule of law” development. In this perspective, the law represents a compromise between economics and morality. The analysis of this n.e. aspect exceeds the scope of our subject, but we are convinced it would lead to a dramatic and disappointing results, only discernible in the media. Ethical and economic analyses would include many issues such as: a review of the application consistency of the market business principles and privatization operations, evaluation of new values, distortion and reduction of competition, exploitation of resources, the level of contradiction between private and public interests, acknowledging the standards of professional ethics, disharmony of material and human values, the position of small and developing countries, causing environmental problems and so on.

### 2.3 Paradigm of the New Economy Skills

Many authors attribute paradigmatic significance to n.e., not in theory but only in a practical sense. Those are the key elements of this “*new scientific paradigm*”. In this self-developing capability of processing information (in terms of size, complexity, and speed), A. Dragicevic and D. Dragicevic (2003, p. 36) see its ability for recombining and decentralized flexibility. So, we can rather speak of technological paradigm (informational, communication, transport) than economic, where the first applies to n.e., which is based on this paradigm and receives a dominant influence from it. We disagree with B. Ilic’s conclusion (2004, p. 115) that “*a new economy emerges in theoretical ... sense*”, because it is, among other things, contradictory even to his (Ibid., p. 106) prior understanding that “*it does not eliminate the economic laws*”, but only “*demonstrates a new quality of economic growth and reveals new opportunities for cooperation and development*”. It seems that n.e., at least in some segments, (eg, the competition), significantly reduces the choice and economic laws, but it does not

formulate the new ones. This may be its greatest paradox, because it generally increases awareness and essentially broadens the horizons of choice. Clearly, there is a discrepancy between the apparent and the real, which is logical in the various levels of selectivity and asymmetric of information.

Economic reality drastically changes under the influence of the high tech. There are new forms of production, business and organizational relationships, increasing the complexity of the system, integration, virtuality, spontaneity, communication, alternation, independence, adaptability, globality, innovation, dynamism, organization, and institutionalisation, and reducing conflicts, predictability, module dependence, hierarchical managing, and bureaucracy. In accordance with relativizing reduction and competition, and the increasing virtualization of business networking, n.e. characteristics:

- providing the flexible conditions for business partnership,
- fairly reward participants in the activity with the agreement,
- protecting the property rights, entrepreneurship and innovation,
- systemic, organizational and business adaptability,
- warranty time of the business cooperation,
- relativization of the spatial distance,
- the speed and reliability of the communication and control,
- dynamic adjustment of the partnership,
- narrowing the boundaries of the organizational hierarchy, and
- overcoming the conflict between “*freedom of union and freedom of competition*” (M. Friedman).

After physiocratic, mercantilist, classical, Marxist, Keynesian, neoclassical, monetarist, institutional, new-classic and new-Keynesian economic theory paradigm, the question is if we can, in the same sense, speak about theoretical *paradigm* of n.e.? Epithets like information, virtual, network, digital, participatory and “teaching” the economy, do not represent a new theoretical structure, which could be marked as a new economic paradigm (regardless of the consistency level, applicability and abstractiveness of those economic paradigms). N.e. does not offer a new theoretical concepts nor contradict the old and the current. Obviously, there is no need for that. Because, on its modern and technologically intensive form of business, it realizes its own goals, traced by its creators. The economic experts are expected to identify similarities and differences in existing economic models, and to eventually upgrade and adapt them to the new phenomenons, contradictions and paradoxes (perhaps the largest of them is the global market expansion and the competition reduction of intra-corporate exchange and various forms of partnership and cooperation network).

The whole economic history is about finding a perfect economic system, and trying to achieve it. M. Jaksic (2005, p. 65) points out the utopian character of such attempts to create an exclusive and unique economic model. Rather than utopia, he prefers the evolution system, and rather than a “*big order*” - the complexity of the various systems. There is no universal or meta-economic theory and paradigm for all the times. In practice, there is a particular *economy* in terms of business, based on the skills, knowledge, development strategies, and economic policies, rather than on theoretical abstractions from textbooks.

In terms of economics as a skill (many agree that economics is not a science but *art*, seen as the art of business), the original pragmatic can be attributed to the n.e. J. N. Keynes (J. M. Keynes’s father) emphasized the *skill of economy* as a third dimension, which balances economic policy as a positive (what it is) and normative economics (what it should be). In terms of positive and normative economics, we feel that n.e. does not have an adequate theoretical paradigm, only the skills and economic policy (macro and micro). In this regard, we support the notion M. Jaksic (Ibid., p. 67) that “*the methodology of economics skills is more complex, less deterministic, implying the knowledge of institutions, business and society network.*” It is various in time and importance, it is dynamic, diverse, adaptable and respects priorities. This context emphasizes *paradigmatic skills* of the n.e., which directs the development in accordance with the actual circumstances in the region. The key impact on them is information and communication technology boom and a corresponding rise in the service industry.

N.e. with its concrete practical manifestations bypasses well-known paradigm of theoretical economics, and even the institutionalism in some paradoxical way: the leading actors are forcing the freedom of personal choice, based on the availability of modern technologies, limiting the range of others, to whom those are not available. But it has nothing to do with the theoretical economics, it is just a *new paradigm of domination and exploitation*, incarnated in so-called global competition. Its motto is the group-partnership application and top competence of the most developed in relation to the others, supranational institutionalization and control, as well as overcoming many differences (dominance of economic interests), while retaining and enforcing the most important differences - in economic development and power (absence of economic convergence).

While controlling (and globally eliminating) the competition, the expanding of the power and transforming it to the omnipotence becomes a matter of technology (operational), tactics and strategy. Only through the techniques and technology - information, communication, transport and others, could be achieved

a competitive advantage, dominating the market and increased the property. Therefore, the secret of the economy, if it exists at all, is not even in the market, nor in the property, but in the competition, as underlined by Russian and American academics (1994) on a round table discussion in Moscow. N.e. has outstanding growth performances, based on intensive development and practical paradigm, where superiority becomes powerful competence, taking on a global character in many segments. In this context, the new practical aspects of its paradigm are springing. Its analysis is beyond the scope of this topic, noting that the need and necessity of adjustment have no alternative for.

Changes are acting fast, they rotate and alternate practical aspects of the economic paradigm. There are conflicting opinions on these aspects, but the *original economic motives* remain eternal and unchangeable. Economic science is too slow in search of explanations for dynamic business practices. Economy as a science is too interdisciplinary and politically subordinated to frequently change and define paradigmatic theoretical models that would be universally accepted. The future is uncertain, it essentially depends on the economy and politics, but more and more of the human relationship to environment, morality and economic institutions. But apparently – it largely depends on knowledge and innovation. Although “*there is an eternal truth that everything will pass away*” (Russian proverb), the era of *timeless paradigm of knowledge* is comming. This may be the most important lesson for the suffering population of post-socialist and underdeveloped countries. The largest paradoxical virtue of the n.e. is investing in the collective (networking) values and relationships through the affirmation and valuation of individual knowledge. Only the knowledge has no barrier. It is the greatest opportunity and the challenge of the future.

## 2.4 The New Economy and the Choice

Most authors agree that the essence of economics is the choice, beginning with the limitation of resources. Efficiency, rationality and other forms of economic behavior are seen in the context of functional choices. Free economic choice has always been and remains an unfulfilled ideal for many economic agents, no matter how needfull, democratic and natural. In the way of free economic choices there were many restrictions, influencing its reduction: a pseudo-market structures (*monopoly power*), government intervention (*government*

*controls*), social goods (*public goods*), the external effects (*externalities*), market fiasco (*market failures*) and asymmetrical information (*asymetric information*).

While the essence of theoretical economics is in the analysis of choice, the essence of n.e. practice is in the globality. At the national level, the essence is in a monopolistic tendencies to reduce as much choice, especially in the competition as the basic problem, which should be overcome by creating a top competition and international market control. The plurality of business relations in economic reality is exceeded in interest, virtual, network, organizational, computer, communication, innovation, strategic and other ways, with the number and complexity of elements, a number of contradictions, cultural and other differences, etc. Formalism, sophistication, volatility and non-procedurality of the partner collaboration, as well as combining knowledge, skills and competencies are used to eliminate possible competition, creating a key and/or top competition, and reducing the share cost and risk, for easier access to the missing resources etc. If the essence of the economy is in the choice, then in terms of reduced choice (in some segments related to the n.e.) reduces the economy itself. Does it mean that n.e., which is largely focused on eliminating economic competition (creating a partner networks and so-called “global” competition as a transparent facade, bypassing the regular economic laws and rules of behavior by virutalization, intra-corporate exchange, monopolization, etc.) represents the more reduced economy in recent business practice?

The answer based on science needs a broader analysis and elaboration. In this case, we tend to ignore scientific caution and strive to a positive response. Because, the intra-corporate export exchange is globally huge – in 1993 it was 33.3% (*Unctad*, 1995, p. 193), and today it is much higher, although it is difficult to determine the actual amount. The laws of the free market are not valid within the transnational corporations, but they dictate an internal price. Taking into account their number, branching, size and economic power, it appears that only 1/4 of the world market operates in a “free” market, while the other 3/4 cover command-corporation, intra-corporate and network “planning” system. Globally, there is a unique, convergent and reduced economic system, which is a combination of strategic planning and market regulators. On the other hand, there is an opposite but logical question: What would actually happened in the conditions of ideal and complete choice? Could it disappear, as B. Loasbi believes? Would only stimulus and response remain (M. Jaksic, *Ibid.*, p. 66)? We believe, however, that there would be a choice, even then, because it is immanent to the human nature. There is no need to go from one utopia to another, assuming impossible things, such as a Loasbi assumed the certain future, in which, according to him, there would be no choice.

In addition to analyzing the choice of routes (ways) for exploiting the limited resources that society has to meet the growing and virtually unlimited needs (as alternative and competing goals), and complex economic reality (which is in constant transformation), economic theory studies the *original economic motives*. They are not a subject to change, even in the long run. Seen through the prism of the basic interests-profit motives of n.e., the economic motivation remained virtually the same. According to that criterion we can not talk about n.e. This does not diminish the need for significant changes in the thematic issue of economic theory, caused by the appropriate dynamization of certain changes in economic reality, created under the direct influence of the n.e. phenomenon, or a series of new economic processes that are innovation-accelerating and improving.

Network business networking significantly reduces the economy, because in principle it uses three factors of production: information (*software*), human knowledge and infrastructure (*hardware*). It increases their mobility, multi-functionality and flexibility. The network economy depends on traditional economic laws, such as the economies of scale, because the value of the network increases with the number of its users. This phenomenon changes the usual representation of the rarity as the ground for usefulness ("value"). On the other hand, the classic trade is exceeded and it modifies traditional concept of the markets, because a large part of sales transactions are electronic, in the virtual expanse. Physical contact is replaced by the digital, increasing information awareness of the exchange participants, asymmetry of information loses its significance in the middle and lower levels. The economy of information differs from the economy of things, in terms of retention and transfer of ownership, possibility of copying, storage costs, and obsolescence.

The economy as business is organizationally, structurally and functionally transformed. And the theory of marginal usefulness is questionable in the case of production and distribution of digital products. Services are no longer the only kind of intangible value. The market, in the true sense of the word, becomes a conversation dominated by the importance of the customer. The buyer highly pays his eventual desire to follow the changes and innovations, which affects his standards. The structure of need, knowledge and value is drastically changing. Although the new theoretical economic paradigm is not yet created, the old paradigm is reviewed and collapsing, even its most general segments. All this happens in a short period of unprecedented polarization and paradox, between marginalization and globalization, individualism and synergism, institutional disintegration and operational integration, freedom and dictatorship, liberalism and protectionism, totalitarianism and democracy, tolerance and intolerance, creativ-

ity and improvisation, construction and destruction, openness and interdependence, competition and monopoly (merged by unical competence), conservative and revolutionary, developmental continuity and discontinuity, rejecting the old and creating new boundaries, rhetoric and reality, economics and politics.

## 2.5 The Characteristics of the New Economy

The term n.e. has appeared in the mid 1980s articles relating to the *information economy* and the *knowledge economy*. D. Bell has created the concept of post-industrial information age, later renamed to Information Society. It involves the society transition from manufacturing to services economy where theoretical knowledge, technology and information would become the main product. Apart from expensive manufacture, its advantage is the cheap reproduction. However, it is believed (Ilic, *Ibid.*) that it formed in the late 20th century. This period coincides with the transition from Third to Fourth scientific and technological revolution, ie. from the industrial to the information economy.

The term n.e. is used in the same sense as the term knowledge economy. In this context, the modern society is called information (due to the domination of information as a new factor of production), the knowledge society, the mega-society, communication society, techno-society, digital society, etc. The basic characteristics of n.e. are:

- information production basis (information becomes the most important factor of production),
- fast-changing products and services,
- flexible production systems,
- network organization of production,
- integration,
- services followed by the products,
- knowledge, skills generalization, and skills
- education, knowledge and talent, as the most important factors for socio-economic growth and development.

Many authors agree that n.e. represents the set of industries characterized by high technological achievements and dominant production of services in the globalized business environment. According to Ilic (*Ibid.*), n.e. is founded on

three principles: *complexity* (emergence, influence, system components, non-linear process, dynamic structure), *chaos* (as an offset of “creative destruction” - J. Shumpeter), and *synergy* (no internal system conflicts; the whole is stronger than the sum of its mechanical parts).

The importance of information in n.e. system is explained by the perception of the organization as a quality of the relationship (not the physical distribution of functions and responsibilities), ie. the ways of establishing links within it. These connections are better if the flow of information between the organization elements, which are faster. Some characteristic manifestations of n.e. are:

- material production requires fewer people employed,
- new and better global communication infrastructure,
- the new products, intelligent work and production tools, applicable in a humane workplace,
- free capital is plentiful and circulates in the world, and
- entrepreneurial spirit.

TABLE 1.1: INDUSTRIAL AND NEW (INFORMATION) ECONOMY

<b>Industrial economy</b>	<b>New information economy</b>
energetically intensive	industrially intensive
standardized	adjusted to the scale
stable product	rapid changes in product
fixed plant and equipment	flexible production systems
automatization	sistemization
individual company	virtual network organization
hierarchical management structure	cooperative management
segmentation into work unit	integration
products are followed by services	servises are followed by products
power and knowledge centralization	power distribution/sharing knowledge
skills and knowledge specialization	skills and knowledge generalization
state ownership and control	state coordination i regulation

According to P. Drucker, characteristics of n.e. are classified into three groups:

- industrial production in terms of cost becomes independent of the raw materials and gets associated mainly with the services (continued decline in raw prices and increasing the share of the service costs in the price of the product since 1977),
- industrial production is realized and increases with continued reduction in the number of production workers which are directly employed (employment focus is shifted from material production to a service sphere), and
- the transformation of global economy from real do symbolic (the amount of capital substantially exceeds the value of total trade).

Competitive advantage depends primarily on the knowledge, skills and skills of employees. Therefore, the education system is one of the key assumptions in transition to n.e. It must respond to the changing and demanding needs of the ICT industry. A. Toffler in his book *The Third Wave* (1980) announces a new culture and civilization, founded on the information. The basic idea of his book is a possibility to divide the complex and contradictory human history according to certain patterns of behavior and characteristics of society. He devised it in a metaphorical waves, carrying a certain civilizational changes in the technological and social sense. The first wave started when the man left nomadic way of life and began to engage in agriculture. The second wave started with the industrial revolution in the 18th century. The third wave marks the transition to the information society (knowledge era). In his book, “*New Rules for the New Economy ...*” K. Kelly (1998) cited three basic features of n.e.:

- global character of the changes,
- operating the intangible resources: ideas and information, and
- overlapping and mutual influence of individual n.e. segments.

According to Hawken (1983), the mass economy has been characterized by industrial age since 1880. The term “mass” has emerged as an economic category, meaning the economy which paradigm was based of two dominant categories: *in production*, on the economies of scale and mass exploitation of energy sources (oil, coal, gas, etc.) and *in consumption*, on the mass consumption of material goods and the accumulation of material wealth, capital (property, money, luxury goods, etc.).

The difference between *mass* and *information* in the economy is reflected in the implementation of the relationship that is built into the product (Hawken, *Ibid.*, p. 35). Mass economy still exists due to the mass consumption of material goods, which are indispensable for human survival. Information economy and the knowledge economy is built on other grounds. It becomes the dominant paradigm of the social growth, all over the world. In addition, the knowledge economy will not replace the mass economy, but will only absorb it to the extent which is necessary and sufficient, and include it in its own evolution. In the economy, there is no clear distinction dividing the *mass* from the *information*. That line is defined by the amount of information embedded in the product (*Ibid.*, p. 37). The products of information economy use intelligent solutions (information and knowledge) and consume much less energy per unit of product.

TABLE 1.2: KNOWLEDGE ECONOMY AND MASSIVE ECONOMY

Knowledge Economy	Massive Economy
<p>New development paradigm of innovation and improvement, forecasting global demand, design, usability, functionality, durability (strength - endurance), <i>knowledge</i> - built into the product, new quality of the products, general education, environmental access to the sustainable growth.</p> <p><i>Long-term:</i> positive economic and non-economic achievements, health, ecology, mobility and sustainability of economic growth and so on.</p>	<p><i>Invasive, expansive strategy:</i> mass consumption, economy of scale, dirty technology, spending large amounts of energy, "welfare" society, the industrialization of agriculture and tourism.</p> <p><i>Long term:</i> negative economic and non-economic achievements, environmental pollution and volatile commodity markets.</p>

Source: adapted from Hawken, 1983, p. 39

M. Castells distinguishes five characteristics of n.e.:

- production increasingly depends on the use of scientific methods and quality of information and management,
- in developed countries, there is a shift of attention from manufacturers and users of material production to information,

- a profound transformation of productive organization (from standardized mass production to atomized and from vertically integrated organization to a horizontal network of mutual relations between the parts),
- the global nature of the economy, where capital, production, management, market, labor, information and technology are organized across national borders, and
- revolutionary character of technological change based on IT.

The IT “shortens” time and space, creating more opportunities for rapid communication between distant businesses. Distance is no longer an obstacle to cooperation, because it enables new communication and direct contact between buyer and seller, simultaneously. Internet provides great opportunities for researching supply, demand and prices. It dramatically reduces transaction costs. Kelly writes that “*communication is no longer a sector of the economy, it is the very economy.*”

D. Tapscott (1999) points out that the new type of society is characterized by the following 12 features:

- orientation to knowledge,
- numerical form of expression,
- virtual nature,
- molecular structure,
- integration and network connectivity,
- eliminating and/or reducing agents,
- convergence,
- innovative nature,
- transformation of manufacturer-consumer relationship,
- great dynamics,
- global scale and
- the existence of contradictions.

## 2.6 Information as a Specific Resource

Information is giving meaning to data. Unlike data, information has meaning, purpose, and relevance. Information is data with context (Amidon, 1997). It has significance and meaning when someone uses the data for the intended

purpose. That meaning can be useful and have value to the recipient (not necessarily). Information moves through organization via existing communications networks. The result of converting data into information adds value and meaning to it. That will improve the quality of decision making. Information has unique features:

- it does not spend during its use, therefore it has multiple use (*“If you and I have one apple each and we exchange them, we will again have one apple each. But if you and I have one idea each and we exchange them we will have two ideas each.”*(B. Show),
- it is used in various forms and in various ways,
- production of it is much more expensive than the reproduction (copying), and in the market there are usually right to buy, not to copy the information,
- it exists independent of space, since both can be located and used in different places,
- it has one-way sale: it can not be recovered by repurchase,
- it can be sold more than once (with accordance to the law), and still be owned by the seller,
- its value decreases rapidly in time, because it becomes old and morally amortized, unlike material goods,
- it exceeds all boundaries and barriers easier than other resources, and afterwards appears as a conductor of the global processes,
- its realization passes through the network structure, having all the characteristics of network goods,
- it represents the social good (Martin, 195, p. 89) because *“everybody can own the same information at the same time, but the existence of information by one individual does not reduce the degree of its ownership for the other”*, and
- huge volume of information (congestion) makes the process of their search and the selection of significant information.

M. Hallgren (2000, pp 55-478) has given a similar interpretation of information as a social good. Of course, this leads to the problem of price formation, allocation, assessment, etc., inherent in all social goods. Information and knowledge are significantly *different* from traditional production resources, especially by its inexhaustibility, limitlessness and the lack of precise measurements of the creating costs of the so-called “information products.” For the purposes of our analysis, we will present some basic differences between information and knowledge (Inozemcev 2000, s. 4):

- Once produced information can become accessible to a wide range of users; adopting the information (receipt and delivery) they do not abridge it to other users; It is different with the knowledge that exists in objectified form, so it is available in only authentic form and only to its creator, and is not alienable; but when being submitted, it changes its original features.
- Information is circulation, it can be copied, and the production cost of each following copy decrease and tend to zero along with technical progress; creating the new knowledge requires all general information, greater effort and higher costs.
- Received information is available and democratic; the knowledge is rare and it is a result of ingenious creativity of individuals of high intellectual level.
- Information may be subject of ownership (*property*), while the knowledge appear as an object of governance (*possession*).
- Information has the characteristics of a public good (Poster, 1996, p. 73), while knowledge is treated as a personalized good (or *customized good* - Gay, 1996, p. 82).

Information minimizes uncertainty and risk. “*Information is a term that is directly opposed to the period of uncertainty,*” (K. Arrow). It provides a reliable planning, increases the quality of decisions and broadens the horizons of market choices (Clark 1985, p. 27). Unlike information, knowledge is a unique attribute, what we remember from the relation of thinking about a problem. It is a result of experience, confirmed by the theories, facts and insights. Information is data (annunciation) of a situation or structure changes or system function, necessary for the operation of any system, especially for the management system. It is a specific product, which has its own usefulness and the market price, linking economic decisions (preceded) with economic activity (action). Today, information has a strategic character. It is involved in the production factors (in addition to labor, capital, entrepreneurship and natural factors). Insufficient information means an entropy of choice, i.e. equal importance of all variants. Additional information reduces entropy, but its loss increases it. Information is available in various forms: documents, reports, analyses, and prognoses (technological, statistical, accounting, financial, operational, planning, etc.) As a factor of production, information is gaining importance, being an important condition for efficient production. It has long been regarded as an important economic resource (Compain 1988, s. 10), because it has as many properties as any other goods or services. In the market, it appears as a supply and demand information, having its own usefulness, price, cost, etc. Timely systematic, scientifically

based information is the basis of economic decision-making quality, because it increases the range of choices and contributes to the reduction of risks and uncertainties.

Information sphere comprises a wide range of different forms of production and application information: communication, education, print, advertising, cinema, television, scientific and technical research, business management, etc. F. Machlup (1962, p. 28) divided all areas related to the production of knowledge into five groups: education, science, means of mass communication and relations, information technology and information services. He has studied different meanings of the term information and found that there are at least 11 requests that are inherent in its various definitions. According to some of these requests, the information should:

- tell something that was previously unknown to the recipient,
- affect the amount and structure of the recipient's knowledge,
- be used in recipient's decision making,
- produce thoughtful, considered, or actually taken action by recipients,
- reduce the uncertainty of the recipient,
- exclude some of the alternative matters of things, and
- change beliefs of the recipient.

Many authors have tried to analyse the issue of identifying information, defining it as data that is processed and organized for a purpose. But process of transforming information exists only if a person understands. Replacing data with information Davis (1993, p. 201) explains as the similarity of relationship between the raw material and finished product. The term information is emerging as a fundamental concept not only in innovation processes, but in theory, such as communications, economics, cybernetics, library and others. However, despite the very frequent use of the term, and its fundamental position in many disciplines, there is a lack of unified theory able to explain the information in a unique and universally accepted way. Multiple meaning of the term information is a result of a multiple theory information:

- probabilistic-statistical (R. Fisher, R. Hartley, C. Shannon, W. Weaver, and others),
- non-statistical-mathematical: pathologic (N. Rashevsky) algorithmic (A. N. Kolmogorov and others),
- semantic (R. Carnap, Bar Hillel J., J. Kemeny, R. Wells, J. Hintikaka) and others.

This multiple meaning is contributed by sidedness, exclusivity and restrictiveness in determining the meaning of the term information. Useful and acceptable definition of information was given by R. Daft (1991, p. 200): "*Information is a data, processed into a form that is important to the recipient and is of real or observable value in the current or prospective actions or decisions.*" Information is essentially different from knowledge. Many scholars still believe that the knowledge as relatively true and accepted by the strict and impartial assessment of the value and relevance of the testimony. Basic characteristics of knowledge are: structure, coherence and relative permanence, unlike the information, which features partiality, fragmentation, temporality and extreme brevity. Quality factors of information are: relevance, correctness, accuracy, precision, completeness, timeliness, usefulness, accessibility, consistency, and confirmation of expectations. These factors must justify the cost of information. The quality of decision depends on the quality of information.

Market information is increasing. It updates daily, so the competition is pretty strong. The price of information determines its uniqueness, attractiveness, usability, relevance, availability, authenticity, completeness, form submission, and the like. Information possess many properties as any other goods or services, a wider selection of market participants and help to reduce their uncertainty. Market economy is characterized by a high degree of uncertainty, even though the principle of rationality is the basis of market theory and market participants behavior. Due to the market uncertainties and risks, expectations of the market participants can often be unrealistic. The quality of the decision depends on the amount of information available. In a market, where information is difficult to obtain, there are agents who collect and sell market information. In the recent years, the importance of the information sector has increased in all countries, regardless of development level. Market information services are developing dynamically, following the growing need for information and the rapid development of information technology, which has enabled remarkable progress of the information exchange.

According to a different criteria, information can be sorted in social, scientific, technical and managing, cognitive and entertaining, and so on. Information may have a short life cycle, but its use brings great benefits (operational control information, weather forecast, etc.). The influence of information on people and society is steadily increasing. Delayed application of modern information causes delays in development in the broadest sense of the word. The market information is often monopolized, which is enabled by a high concentration of production, capital and knowledge. For example, 20 years ago (1992) the largest telecommunication company in the world, American "AT&T" had 320,000 employees,

\$65 billions profit, and it controlled 99% of the total number of international telephone calls (*Delovije ljudi*, journal No. 12/1993). The market is flooded with new contents (products and services), which increase the quantity and value of supply and demand. Thus, for example, the value of information services in 1986 was more than a trillion U.S. dollars, while in 1990 was doubled, although in the meantime the cost of many goods and services, information dropped (*Vestnik of Moscow University*, No. 1/1995, p. 59). These data proved the rapid growth of IT market, where competition is extremely severe (especially in the film industry, television, video and computer production). There is a significant progress in information technologies of various new surface material of the same product information. Good example is the computer information, contained in different types of floppy disks and compact disks. In the information market price is determined by many factors, among which the most important are uniqueness, importance, attractiveness, availability, usability, integrity, originality, form and manner of delivery, the length of the life cycle and so on.

### 3. OLD AND NEW ECONOMY

**I**T leads to rapid and radical changes. They change human relationships in time, space, economy and society. With computer and communication technologies (Internet, etc.) establishment of networks and virtual elements is enabled. That way, information as a non-material factor gains a significant and often a leading role in the production. N.e. conditions the new communications and convergence, which leads to connecting the world and its unification in many areas.

Globalization has generated all the major changes in one strong paradox: people are getting closer in space and time, but they are estranged due to the growing economic and social inequalities. The rise of the information economy is marked by the development of a new organizational logic, associated with a current process of technological change. Interaction between the new technological paradigms and new organizational logic is not a historic backbone of n.e. The dominant knowledge economy feature is the use of information resources, which are significantly different from the traditional ones.

TABLE 1.3: THE DIFFERENCE BETWEEN “OLD” AND “NEW” ECONOMY

ENVIRONMENT		
<p><b>Market dynamics</b>  <i>Level of competition</i>                      Sources of competitive advantage                      Key drivers of growth                      Key technology trends</p>	<p><b>Old economy</b>  <i>Low</i>                      National competition                      Low cost                      Focus differentiation,                      Cheap labor and capital (production factors)                      Mechanization and automation</p>	<p><b>New Economy</b>  <i>High</i>                      Global competition                      Innovation, quality and speed of delivering “total service”                      Knowledge, ideas, innovation, technology infrastructure                      Digital communication and virtualization</p>
COMPANY		
<p>Dominant form of organization                      Organization of production                      Importance of research and knowledge management                      Relationships with other firms</p>	<p>Hierarchical, Bureaucratic                      Mass production                      Low to medium Competition</p>	<p>Entrepreneurship                      Networking                      Flexible production                      Adjusted to the specific requirements of customers                      One of the key sources of competitive ability                      Cooperation through the strategic partnerships</p>

Creating the knowledge economy must precede a national security of the social freedom, good educational system, quality institutional environment, guaranteed rules of running the business, and a reasonable balance between state control and market freedom. The absence of these conditions shows only a simple slogan. These conditions can serve as a good criteria for valuating the real development possibilities of knowledge economy. The economy is characterized by steady share growth of the scientific research in the national cost and private companies, as well as steady capitalization growth of the scientific companies. The research can prove a steady value growth of intellectual capital (registered patents, methods and organizational structure, etc.).

TABLE 1.4: DIFFERENCES BETWEEN THE INDUSTRIAL ECONOMY  
AND THE KNOWLEDGE ECONOMY

Category	Industrial economy	Knowledge economy
<b>Market</b>		
changes	slow	rapid
life cycle of goods and technology	long	short
main driving force of the economy	large industrial companies	entrepreneurial innovation companies based on the knowledge
competition character	local	Global
competition actions	large swallows the small	rapid swallows the slow
<b>Companies</b>		
basis	stability	managing the changes
success indicator	profit	market capitalization
orientation of the production organization	massivity	flexibility and small-series
key growth factor	capital	knowledge, innovation, integration, the creation of new companies, joint investments
key factor of technology development	automatization and mehanization	information and communication technology, electronic business, design and manufacturing computerization
main source of competitive advantage	access to raw materials, cheap labor and working capital, reducing costs through economies of scale	institutional benefits, labor resources, value control, quality management with respect to customer demands, market research
missing resources	financing capital	human capital
decision-making process	vertically	by distribution
innovation processes	periodic, in-line	continuous, systematic
orientation of the production	internal processes	complete value chain
strategic alliances	rare, dominance of the view that acts independently	wide, accessing the additional resources

organizational structure	hierarchical, bureaucratic, pyramidal	interrelated subsystems with delegated authority, the network structure
<b>Management</b>		
managing	vertical	leadership of workers
habits	one-sphered, standardized	multi-sphered, flexible
requirements for education	qualifications, scientific degree	constant learning
relations managers to subordinates	confrontation	cooperation, teamwork
employment	steadily	depending on conjunctures
treatment of workers	cost	investment

To understand the changes in the business environment and training for the new operational models and concepts, we must compare the most basic elements of the new economic realities with corresponding ones in the old economy (Tables 1.3 and 1.4). Identifying the new ideas and categories, contained in the n.e., we can see the differences related to the classical economics. The common thread of these differences is the increasing role of knowledge, information and technology. To understand the difference, between “new” and “old” economy, we must go back to the very beginning, or to the economy offspring (simplification) - transaction. Today, in a complex economy, transactions require different activities that generate costs. Transaction costs depend on:

- the legal system (a system of property rights, the application of property rights, the ability to predict judicial decisions), and
- the political, educational, social and cultural systems. This means that the economic system can not be explained only by the economy. It takes knowledge and other (legal, social, political, psychological, technical, technological, institutional) knowledge to understand the real functioning of economic system.

The level of transaction costs is also influenced by IT. The largest component of transaction costs is the cost of obtaining information. Knowing that IT, in fact, reduces the cost of obtaining information, it reduces the transaction costs. As a result of technological change, IT made significant changes in the economy through the reduction of transaction costs. This topic was analysed by H. Varian (1999, p. 42): “*The new economic concepts have never emerged parallelly with*

*the new economic phenomena. There was a lot of discussion about the growing restitution, the effects of networking, the input costs, etc.. These are hardly the new concepts, these as just been parts of the economic literature for decades. These are very important ideas, but not a great ideas. They explain certain phenomena, but their range is limited. I think the great ideas (when it comes to economic literature) can be found only if we go back and study the work of 'The nature of the firm' (1937)".*

R. Coase (1997, p. 4) disagreed. He found it interesting that this study has become part of the Internet literature. "*Transaction costs are reduced: what are the effects?*" he asked. According to Varian, representatives of n.e. found this idea (category of transaction costs – author's note) very attractive. One of the Internet's advantage is the cheaper communication. This, in turn, reduces transaction costs and changes the company limits. The company would move and reduce the functions that are not necessary and would be carried out more transactions using Internet, rather than sending internal memos. Varian reviewed this observation. He said, "*even though Internet reduces the cost of transactions between companies, it also reduces the cost of communication within the company and thus facilitates organizing and functioning of large companies.*" According to Coase, this was not the end of analysis. Reducing the transaction costs allows the companies to reduce the cost of their essential activities, which can lead to a greater activity, higher production and expending the companies. The essence of the firm and understanding of the market is significantly altered in the n.e. In the era of knowledge economy, economic policy must be based on the following fundamental principles:

- developing the science and technology as the propulsive factor of economic growth,
- creating a favorable investment climate and stimulating the investments in high-tech production,
- creating a flexible institutional environment in all economic segments (institutional pluralism), particularly in the area of national regulation, which must be able to react to market failure, especially in science and education,
- supporting the conditions of competitiveness in part of stimulating innovation and labor productivity,
- training of the working resources for managing the changes, risks and crisis, and
- implementing the stimulative economic, legal, and organizational solutions.

There are two context of the knowledge economy. The first is scientific, which analyze empirical hypothesis, ie. generalization of the trends and characteristics of modern society (knowledge, information, etc.). The second is political, where economy knowledge is viewed as a program goal and a vision of the future. Those contexts are in some way connected to each other through the daily practice through phenomenological elaboration in the literature. However, they seem to operate according to different rules: in the scientific context they function as a hypothesis, and in the political as a statement. For example, scientifically, the knowledge economy is generally interpreted for its growing role of knowledge and information, and politically, focus is on the production and use of information and communication technologies, in the spirit of technological determinism.

The effects of the knowledge economy are amazing. The good example is a case of Russian programmer A. Pajitnov, who earned \$15,000 for creating the popular computer game "Tetris". The Computing Centre of the Russian Academy of Sciences earned four million dollars from it. The transnational corporation "Nintendo" which bought the patent, earned more than one billion dollars. Today, Pajitnov works for "Microsoft", whose main funds are worth 10 billion dollars and the market value of the company is 350-400 billion dollars, with the annual profit of 70 billion dollars. The production of knowledge in the world is very localized. Its consumption is widely and uniformly globalized. Another paradox related to the knowledge economy is this: knowledge is virtually unlimited resources, but the expertly human resource is extremely rare (limited), absolutely and relatively.

### 3.1 Information Asimmetry

All previous analyses show that the actual economic life requires development of the theory that will explain the new economic phenomena. In n.e. theory, the effect of innovation replaces maximization paradigm. Flexibility and learning replace the assumption of rational agent, able to identify the optimal strategy in any situation, without any learning process. Neoclassical economics is silent when it comes to the costs of acquiring the knowledge, required to achieve the optimal choice (alternative choices of the agents) and the effects of new knowledge about the prevailing rules (Pejovich 1998, p. 6). A. Schotter (2003, p. 675) has correctly observed: "*The only institutions that exist (in*

*the neoclassical model – author’s note) are the competitive markets in which all economic information must be transferred through prices, formed in these markets. So, the economy has assumed that there are no social institutions created by the society for better coordination of its economic and social activities through offering information that is not available in competitive prices.”*

Is the neoclassical model approved by the real world? To what extent is it abstract? The main question is: Is the information perfect? The answer is no. Imperfect information prevail in the economy. According to J. Stiglitz (2000, p. 56), it is hard to imagine how the world would look like with perfect information. Obviously, different people know different things: workers know more about their skills than the company, people who buy insurance know more about their health (eg, if they smoke or drink excessively) than the insurance company. The car owner knows more about it than a potential buyer. The company owner knows more about the company than a potential investor. The one that borrows the money knows more about the risk than the one that gives the money.

The main feature of a decentralized market economy is that different people know different things. In this regard, J. Stiglitz (Ibid.) states: *“Economists have long researched the markets with information asymmetries. Its creation and consequences were not analyzed in the early studies. While the scholars stayed focused on the simple situation of information symmetry, the problem of the information imperfection was deepening.”* One can know a little about his health. Insurance company, through a simple search, may be better informed (at least in terms of the relevant aspects, ie. the implications concerning certain expectations). Some of these information asymmetries are inherent: someone certainly knows more about himself than anyone else. Some asymmetries naturally flow from economic processes. Actual employer knows more about the employee than other potential employers. The company can get a lot of information through business. The owner of the car knows weaknesses of his vehicle better than anyone else. These information asymmetries are inevitable, but their effects and scope depend on the methods of structuring the market and understanding the influences on market behavior. An important analysis in this area explains how the information asymmetry leads to a weak market, or even to its dysfunction (Akerlof, 1970).

### 3.2 Transaction Costs and Information

The theory of property rights is separate from neoclassical economics. The exchange and production are the main methods through which people seek to solve the problems that arise in rarities. The tendency for the exchange involves two levels of social activity. The first includes development, modification and specification of institutions. The second is an exchange within the prevailing social arrangements. The first presents the rules of the game, the second is the game itself. The rules of the game are expensive to create and implement. They require transaction costs, which represent all the resources necessary to carry out the exchange (eg. detection, possibility of exchange, negotiation, monitoring and implementation). Also, development, maintenance and protection of institutional structures (such as judiciary, police and armed forces). R. Coase, D. North, S. Pejovich and others underline the importance of transaction costs for the better understanding of the social and economic processes. J. Stiglitz and others discuss the importance of information for understanding the economy. The reason for mistakes is that the system theoretically did not take into account the factor that is essential for economic development, and these are the rules (laws) and a new important resource - information, knowledge, creativity and innovation.

Neoclassical economics is a product of the rationalism era, with its conventional wisdom that the nature has endowed individuals with the ability to identify and to apply rational solutions to existing problems. It sums up the desire for profit, as the main feature of human behavior, generated in the paradigm of maximizing and analyzing the economic results of this behavior in the world of unchallenged dominance of private property and insignificant transaction and information costs. Adjusting the assumptions and limitations, faced by an individual decision maker, neoclassical economics has been able to identify a number of abstract equilibriums. They all represent the idealized statements about how the world would look like without uncertainty and incomplete knowledge. Information is not a free goods. In a world of uncertainty, incomplete and asymmetric information, we need some real resources (including time and money) for collecting, processing and storing the information. Of course, the cost of research can prevent detecting the best alternatives. Customers know that looking around enables the best purchase, but it may not be the most effective solution, taking into account the cost of fuel and time dimension. However, if the price of additional information is reduced, the additional options of exchange would be used and the volume of trade would be increased. This raises an important

question in a new light: the influence of IT on the reduction of transaction costs. In the economy of private ownership and entrepreneurial freedom, resources are used to create and sell information. The cost of negotiation can be substantial. The parties may not know each other. They may not have all the relevant information on goods and services. Goods and services have many attributes that are expensive to establish. The consequences of determining all the attributes would be reduction in the volume of trade. A performance creates cost sharing. D. North and J. Wallis made the first measurement of transaction costs. According to them, the profit from trade is the result of specialization and work distribution. It is implemented through the exchange, which is not free of cost. The transaction costs are limiting factor in economic development. The incentives for effective improvement in the transactional sector are important as well as in the production sector. The question is which institutions (Cost here implies a certain hierarchical procedure) provide incentives for innovation in the transactional sector of the economy. North and Wallis came to the conclusion that transaction costs increase significantly during the research period: from 26.09% in 1870 to 54.71% in 1970 (Pejovich, *Ibid.*, p. 34). They offer three explanations for the expansion regime of resources used in the transactional sector in the growing economy: more exchange in the absence of partners, so impersonal exchange requires collecting more information and follow-up mechanisms for its implementation, production technologies increase incentives in the companies for further growth. It is essential to develop more resources for transactional services within the company.

### 3.3 Information Technology and Economic Performance

Past several years characterized a substantial increase in analyzing the relationship between information, knowledge and economic performance. This was a fundamental transition because direct production of goods and services no longer absorbs the benefits of workers' time. In 1975, the production of goods and services ceased to be the focus of the working class in the United States. Until then, the society has never been so productive, so that the majority of workers had jobs in the sphere of management, sales, office and creative engagement. In 1900, the production of goods and services was performed by 82% of the U.S. workforce. That number has dropped significantly to 64% in 1950 and to 41% in 1999. Managers, professionals and technical personnel,

involved in creative activities, increased participation in the workforce from 10% in 1900 to 17% in 1950, and to 33% in 1999 (Nakamura, 2000, p. 16).

Perfect competition is a central category on which economists rely on when describing a western economy. It is the foundation of A. Smith's theory "Invisible hand", focused on the production processes and parts of information tasks, performed by managers, professionals, officers and workers in sales. The idea of perfect competition was formulated by W. Jevons, L. Walras and C. Menger in the XIX century, when direct production of goods and services was a dominant business. Does it still operate nowadays, when innovation is so important for economic activity? Millions of workers perform creative jobs such as design, innovation and marketing of new products. More economic activities are opened to technical and procedural progress. A. Smith's theory does not explain why the economy changes. The theory by J. Schumpeter, often cited as a creative destruction, is much better idea to explain the n.e.

### 3.4 Analysis of the Differences Between the Old and New Economy

**B**elow are some key points to the differences between "old" and classical, modern economy through analyzing the relationship between local and global, change and continuity of the change, turbulence and stability, specialization and diversity, heterogeneity and homogeneity, motivation and control, market exchange and transaction, competition and cooperation (as complement and substitute), flexibility and economy of scale, stimulation and regulation, target inputs and target outputs.

**Localization vs. globalization.** Economists attach different importance of geographic space in the old and new economy. Standardization of products and production in the old economy reduces the importance of specific regional characteristics. As presented by neoclassical production function, the old economy production is the result of inputs: land, labor and capital (Romer 1992). While these traditional inputs are playing a role in the n.e., the knowledge emerged as the most important factor of production. The recent texts point out that knowledge is fundamentally different from the traditional factors of production. It can not be transferred without cost through geographic space (Krugman 1991; Lucas 1993). That is why geography plays an important role in the n.e. Because

the knowledge is developing in the context of local networks, known as innovation clusters. Empirical data clearly show that research and development (R&D) and other sources of knowledge not only create externalities; also, spreading of such knowledge tends to be geographically link within a region, where the new economic knowledge has been generated (Audretsch and Feldman 1996; Audretsch and Stephan, 1996, Jaffe et al., 1993; Jaffe, 1989). The new economic knowledge can be spread, but it is geographically limited. In fact, the geographical dimension of knowledge remain a local phenomenon, in most cases unaffected by globalization, which allowed free transmission of specific information through geographic space. In the old economy, the traditional factors of production (land, labor and capital) have been the predominant source of competitive advantage, while in the n.e. comparative advantage is based on innovative activities. An important source of innovative activity is the awareness of the knowledge spillover, which can not easily spread through the geographic space.

**Change vs. continuity.** There is an inherent difference between change and continuity. The old economy depends on continuity (Chandler, 1977), the n.e. provokes changes and is based on them. Innovation is present with the changes and continuity. The difference determines a distinction between radical and incremental innovation. Innovations can be considered as incremental when compatible with the general competence and technological trajectory of the company (Teece et al., 1994). Implementation of incremental innovation does not require significant changes in the company. In contrast, radical innovation can be defined as an expansion beyond the limits of competence and technological trajectory of the company. Theoretical studies and empirical data support the thesis that the company is characterized by technological closure. The old economy is shaped so it can absorb the changes within a given technological paradigm. Therefore, the typical company is characterized by incremental innovation. Conversely, the capacity of the n.e. is strengthened to it overcomes the technological closure within the existing paradigm.

**Turbulence vs. stability.** The old economy was characterized by a remarkable stability in terms of homogeneity and durability of the product demand, resulting the constant immobility of the workers. This stability is useful for mass production. Taylorism actually provided marginal mechanism for ensuring the stability and reliability of workers in the production process, since the competition was focused on prices and not necessarily on product differentiation (Chlander, 1977). The n.e. is characterized by high turbulence. It is constantly moving, increasing the number of new companies.

**Variety vs. specialization.** A specialization is a precondition to the neo-classical economics. Diversity has been recommended in the n.e. Recent studies have provided evidence by testing the influence of diversity versus specialization on the regional performance, as measured in terms of development and innovative activity (Feldman and Audretsch, 1999). These studies provide systematic empirical proof that diversity is better for spreading the knowledge and innovation activity than specialization.

**Heterogeneity vs. homogeneity.** There are two dimensions that shape the degree of homogeneity/heterogeneity. The first dimension refers to the genetic characteristics of individuals and their personal experience (Nooteboom, 1999). The second dimension refers to the information. The old economy is based on homogeneity and the n.e. is based on heterogeneity. The world of homogenous economy promotes diffusion, rather than innovation. In the heterogeneous population, each individual has a unique set of information (Olson, 1982). New ideas will likely arise from communication in a heterogeneous, not homogeneous world.

**Motivation vs. controls.** In the industrial era, the work was considered to be unnoticeable in comparison to other inputs. That is why the work input in the production process was reduced to a routine (Chandler, 1990). However, given that the comparative advantage of industrialized countries is based on the new knowledge, access of command and control of the work becomes less effective. It is important to motivate employees to facilitate the discovery and implementation of new ideas. The main feature of today's life and work is dealing with uncertainty, and workers who are ready to handle it are "more valuable" in the n.e. It motivates them to participate in creating and commercializing the new ideas, not only in controlling and regulating its behavior.

**Market exchange vs. company transactions.** In the era of great uncertainty and imperfect information, market exchange is more limited than in the intra-corporate transactions in relation to the market exchange. In the old economy, dominated by a high degree of certainty and information predictability, transactions within the company were more efficient than market exchange. This was elaborated in the works of R. Coase (1937) and O. Williamson (1975), underlining an analytical distinction between exchange markets and transactions within company. Company size is defined by the response to the Coase's (1937, p. 30) question: "*How much are the transaction within the company?*" Coase and Williamson proved that uncertainty and imperfect information increase the cost of transactions in the company.

**Competition and cooperation as a complement vs. competition and cooperation as substitutes.** Models of competition assume that companies behave autonomously and models of cooperation include links between companies. This requires various forms, like joint ventures, strategic alliances, formal and informal networks (Gomes-Casseres, 1996, 1997). In the old economy, competition and cooperation are seen as substitutes, because the companies were vertically integrated and competed primarily in the product markets. Cooperation between companies decreases the number of competitors and the degree mitigate your competition. In the n.e. companies are vertically independent and specialized for the product market. Greater degree of vertical disintegration in the new economy means that collaboration among independent firms changes the internal transactions within a large vertically integrated cooperation. At the same time, there is a greater number of companies, resulting in increased competitiveness and cooperative interface. The likelihood that the company will compete and/or cooperate with another company is higher in the n.e. A new and improved formula leads independent companies together on the new and unexpected paths.

**Flexibility vs volume.** The classic way to reduce the cost per unit of production in the old economy was through expanding the production volume. Large companies had more advantages. This led to concentrated industrial structure (Chandler, 1977). In the n.e., the alternate source to reduce the average cost is flexibility. Teece (1993, p. 218) stated that “... *flexible specialization... and contracting can lead to greater advantage than economy of scale. Industries, in which demand for certain products is constantly changing, require flexible production system that can meet the changing demand. There are four main sources of flexibility: technology, organization, demand and quality. They result in reducing the importance of economy of scale.* “

**Stimulation vs. regulation.** Public policies emerged after World War II, in the era of old economy, dealing with the company in the market, were limited in nature. There were three types of public policies in the business - antitrust (competition policy), regulation, and public ownership. All of these three policy approaches restricted freedom of the company contracting affairs. Although specific approaches were generally more associated with one country, more than with others, such as the U.S. antitrust or public property in France and Sweden, most countries had a common approach to intervention, in order to limit the market power of large companies. Public policies limiting the company freedom has been consistent with what was being created in the theory and empirical evidence. If not controlled, large corporation, which possess market power, will allocate the resources in a way that reduces social welfare. Through

national intervention, the efficiency and the fairness ratio would resolve in a socially satisfactory way. J. K. Galbraith (1956) commented the role of government in the old economy, where national intervention involved social partnership of big business, government and labor unions. This social partnership existed in almost every western economy. The relevant political issue in the n.e. is no longer: "How the government may restrict the company from abusing the market power?", but rather: "*How the government may create an atmosphere that will lead to the success and vitality of the company?*" The main issue of the n.e. has converted from the problem of excess income and abuse of market dominance to international competition, development and employment. It protects the corporations not because of their considerable success and power, but because they are not sufficiently successful. Jorde and Teece (1991) advocated the need to loosen the antitrust laws, allowing U.S. companies to collaborate and compete in as efficient manner as possible in relation to Japan and European companies.

**Target inputs vs target outputs.** Due to the relative certainty in terms of the markets and products in a controlled economy, the appropriate policy response is targeted result and output. Specific industries and certain companies can promote themselves through government programs. Specific target companies in selected industries had represented a successful Japanese politics in the postwar period, which helped it to achieve a competitive advantage in industries such as automobiles and electronic. J. Stiglitz (1996, p. 151) in "*Some lessons from the East Asian miracles*" said that "the national interventions act coordinated." They have contributed, at least in part, the postwar Japanese development miracle. The success of Japanese industrial policy in promoting the performance criteria, which expanded trade performances to economic development, documented in a series of empirical studies (Pugel, 1984; Audretsch, 1989; Noland, 1993; Okuno-Fujiwara, 1991).

**Local vs. national policy.** An important aspect of the difference between the old and n.e. is a political location. In the old economy, the appropriate place for policy-making was at the national or federal level. While targeted recipients of the policy can be localized in one or more regions, the most important political institutions are at the national level. In the n.e., a place of national policy towards business tends to be decentralized and regional.

**High-risk capital vs. low-risk capital.** According to the n.e. traditional funding sources are no longer appropriate. The capital investment in partly risky projects is very important. It is a form of financing of high-risky new forms and informal capital market (Gaston, 1989; Gompers, 1999).

## 4. THE NETWORK ECONOMY

**A** stronger competition is the inevitability of modern economy. It imposes increased demands on companies for fast adaptation and large changes. In the last 15 years, the battle for market is on again, among others, by method of enlarging (mergers and acquisitions). It is the fifth wave of so-called *strategic takeovers* (from 1993 till today). So far, there were monopolies (1897-1904), oligopolies (1916-1929), conglomerates (1966-1974) and non-friendly takeovers (1981-1989). Merger and acquisition (MA) boom peaked in 2000. That wave is already significantly declining and ending. This raises the question: Is there a sixth wave of *virtual connecting* through business networking, which is the essence of network economy?

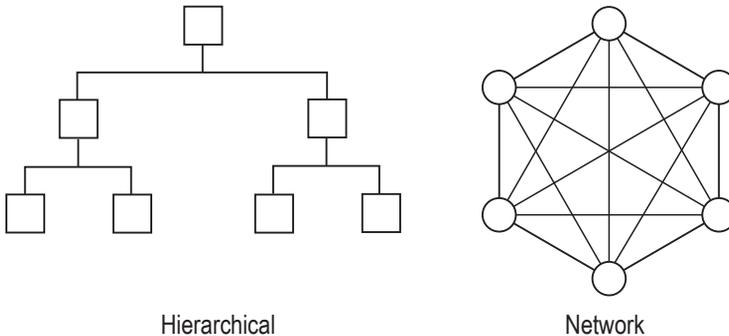
Innovations, increasing level of knowledge and skills, modernization, continuous monitoring of market demands, *know-how* and maximum informativeness were imperative of modern times. But this was not enough for gaining a decisive competitive advantage. The traditional hierarchical-bureaucratic forms of organization and management, with appropriate functional elements of organizational culture, have become a serious obstacle to strategic dynamization of modern companies and organizations. It's a natural aspiration of every business to reduce its costs and realize greater synergic effects. It turned out that, apart from taking strategies, the key knowledge, skills and other advantages valorized in the market as competitive, can be achieved even through networking. Modern business has already established the network economy in strategic, organizational and managerial terms.

The network economy is closely linked to globalization, alternative employment and development of autonomous working forms. It is especially characteristic for global enterprises in the service area. It enabled the boom of information and communication technologies, which have contributed to the market transparency, reducing the information searching costs, deregulating and dominating the customers market. In practice, when multiplied and multivariate communication flows at a distance are enabled, the goal of communication technologies and network systems is realized quickly. Remains only its application and practice training, provided by innovative business. The network economy was conducted simultaneously on two fronts, and in two ways:

- internal (intra-corporate, conducting market mechanisms within the company, developing the entrepreneurial spirit and combining the control methods) and

- external (expanding the cooperative networks with sub-suppliers, customers, similar enterprises and even competitors).

FIGURE 1.2: HIERARCHICAL ORGANIZATION AND NETWORK CONNECTIVITY



The practice has proved that networking of organizational structure, business processes, scientific research and so on, produce a key knowledge, skills, and other benefits, valorized on the market as competitive. The networked partners in business processes increasingly use their *key competencies* for faster, cheaper, more flexible, better quality and greater results, creating a competitive advantage in the global market. The network economy is defined in various ways. Its main goal is to achieve beneficial economic and organizational effects (direct and indirect). It can be explained by its basic principles and functional specifics, consisting in tendency of organizational development and training in order to achieve the greatest success in the market. Essentially, it is a self-managed polycentric economic structure, which is target oriented to specific tasks, and is based on the following principles:

- elitist connecting the competent business partners (Rajss, 1997, p. 94),
- business and partnership anti-bureaucracy and anti-formalism,
- decentralization of authority and responsibility (“*democratic hierarchy*”),
- highly sophisticated communication-informational integration,
- branch character of connection,
- free connecting based on equality and independence, in certain time and on a consensus basis,

- coordination of mutual cooperation, based on clear rules, ambitious goals, and advanced system of controlling,
- vertical and horizontal communication,
- applicability in the dependence of the new problem situation,
- dynamisation of business and organizational strategy by introducing so-called “*internal market*” institutions (of compensatory character), expert knowledge, innovative combination of managing and organizational models, motivating entrepreneurial initiatives, etc.,
- hybrid and non-traditional organizational structures, and
- “unlimited” expansion, ie. deletion of organizational and business boundaries between the companies merged in any way.

On these principles are created new forms of alliances, strategic networks and virtual enterprises, consisted of multiple organizational units with a unique goal to provide a synergistic contribution and increasing the quality of mutual organizational communication and cooperation. From an economic and organizational perspective, the main goal of network economy is to achieve beneficial effects (results). V. Rolf (2003, p. 84) has distinguished the direct and indirect network effects. He believed that direct network effect was characterized by a situation where benefits of the goods directly increased due to the greater use by many people (eg, phone, fax, internet, etc.). The phone itself does not bring any benefit to its user, if he can not communicate with other people, but expanding the circle of users increases the overall benefit for each user.

B. Metcalf has expressed this in equation:  $VM=K^2 - K$ , connecting the lawful value dependence of network amount VM and its users K (Ibid.). For example, if VM for the one network user is €1, applying this network value formula for 10 users is 90€, and for 100 users is €9,900. Also, there are questions of the adaptation period, the adaptation of losses and minimal number of network users. Indirect effects are characterized by daily market situation, where completed products or services (spare parts, service, programs, etc.) become cheaper and more accessible. These effects are achieved when the growth of demands for certain goods increases interchangeability of spare parts, improving service and forming the market standards that stimulate mass production, contribute increasing the quality and reducing the cost of production (Ibid.).

The network economy is a new entrepreneurial organizational process model, which has been developing through the basic elements (information, innovation, communication, new technology, etc.). It significantly changes the performance of international trade and competition in general. The network economy is not a substitute for the traditional hierarchical-bureaucratic orga-

nizational and management structures, but as a new management strategy, and even *paradigm*, used by many of the world (especially global) companies, basing their success on the development and structuring of modern business processes. Networking improves the ability of adapting to changes, innovation, modernization and training in relation to the hierarchical-bureaucratic organizational structure. In addition, the network strategic management enables organizations to reduce costs, increase profits and better respond to changing market conjuncture (M. Draskovic, *Ibid.*, p. 169).

As the network economy is directly linked to information products, when it comes to its effects, we should take into account:

- creation of information products is associated with high fixed costs (original) and low marginal costs (copies),
- technological innovation continuously shorten the life cycle of information products and lead to the “erosion” of prices,
- time has become a strategic factor of success, because the first one who offers a genuine product on the market will have the greatest benefit from an initial high price and will be able to quickly amortize high investments, and
- innovations stimulate the phenomenon of so-called “deferred demand”, because potential buyers wait for the lower prices or new products, for example computers (M. Draskovic, *Ibid.*, s. 86).

In the economy of the industrial society dominated a law of diminishing marginal productivity with negative-feedback effect. According to the classical theory, this contributed to the stabilization and the balance of the productivity through rational use and allocation of resources. But in the economy oriented to information and network, dominate a direct network effects and positive feedback. This is reflected by the growing marginal productivity, as shown in Figure 3. This positive feedback connection has formed and intensified under the influence of four factors (the first two affect the demand, and the other two affect the offer):

- direct network effect on the factor income growth under the influence of the production volume growth,
- growing expectations that the network expansion would affect the consumer’s will to get involved and therefore increase the usefulness,
- dominance of fixed costs and low marginal cost, where manufacturer seeks maximum production volume to compensate high initial fixed costs, and

- training and accumulated experience increase the positive feedback effect (Rolf, *Ibid.*, s. 87).

TABLE 1.5: DIFFERENCE BETWEEN NETWORK AND HIERARCHICAL ORGANIZATIONAL STRUCTURE

<b>Structure Criterion</b>	<b>Hierarchical</b>	<b>Network</b>
connectiveness	vertical, organizational, imposed	horizontal, subsidiary, free
organization structure	uniform	polycentric
hierarchical dependence	large	insignificant
authority and responsibility	centralized	decentralized
nature of partnership	dependent, bureaucratic, formal	independent, antibureacratic, informal
computing	individually	synergistically
flexibility and expanding possibility	limited	unlimited
performance	unique, static	unique, dynamic
work division	large	small
communication	subordinary	multiplied and multivariable
status and position of workers	substitutability, dependence, obedience	information, engagement, loyalty, independence, motivation
beneficial effects	cooperative, individual	synergic
networking	insignificant	branching
partner's group	stable, legally regulated	unstable, agreed
workflow	insignificant	flexible, situate
organizational framework	permanent, homogenous	temporary, loose
influence, power	depends on hierarchical level	depends on knowledge and skills
cooperation possibilities	insignificant	extremely high
main goal	maximization of production volume, profit	profit optimization, quality, competitive advantage, inovation, image

Empirical studies have shown that nothing is ideal, especially in the network economy. For example, Rajss (1997) points out a three specific substitutes of traditional business forms. They appear to be a limiting factors for the success of the network economy. It is about the network culture, mutual dependence and climate of trust. The organizational culture is continuously limiting the growth of transaction costs. Network access insists on strict rules of the game, which, according to Rajss, are an integrator of identification and integration. Clearly, the network organizations, which often have a time-limited project, have no tradition and no time to develop their own organizational culture.

The principle of the mutual dependence, which in traditional organizational structures act as a stabilizer, is not a typical for the complex and temporary network constructions with many newly formed connections and relationships. Similarly, the confidence between the partners is only possible after a “long run”. Usually, it is not the case with a network economy, based on the synergistic linking partners. Often mentioned virtual enterprise is difficult to restrict from conceptual design and module organization. Therefore, it represents the organizational form that has no legal basis. The virtual enterprise is a group of companies, based on common goals and supplying the market of specific goods or services. In economic relations, they are correlated, informatively networked, legally linked, independent, usually without institutionalizing the functions of top management, and with mutually trusting partners. The term “virtual” is primarily related to the creation of timely deposited situational management competencies for fast response to the changes in the environment and the realization of the market goals. It usually involves the allocation of resources, knowledge management, and marketing.

The *idea of virtuality* is simple. It comes from a desire to reduce risk and relativize competition (by increasing the number of networked partners), to obtain competitive advantage and managerial competence. In practice, it manifests in several ways, including: a) creating a foreign branches and joint companies, where large firms delegate certain competences, based on the “encounter movement” of the partners as a form of evolutionary quasi-externalizing, in which the contracts regulate the terms of cooperation, rules of conduct, strategic leader, etc., b) reverse path from the previous one, in which small and medium enterprises offer their competence to the big companies with business image, know-how, information infrastructure, leadership, etc., and c) vertical and horizontal interconnecting the small and the medium-sized enterprises.

FIGURE 1.3: THE DIFFERENCE BETWEEN THE INDUSTRY AND NETWORK ECONOMICS

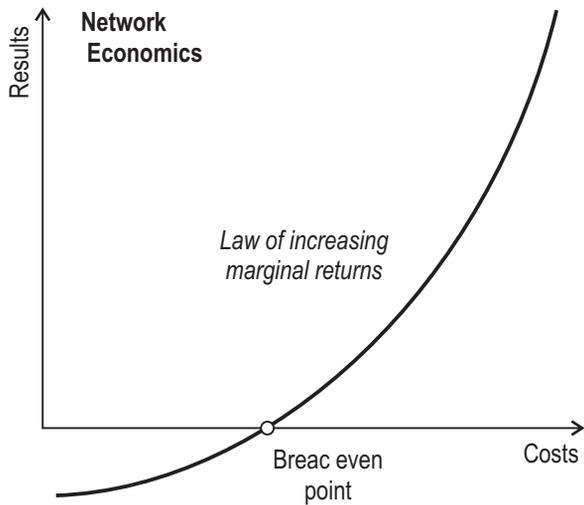
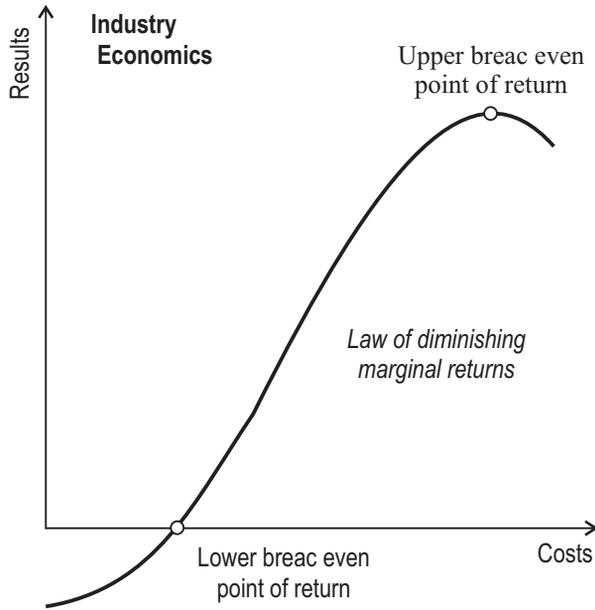
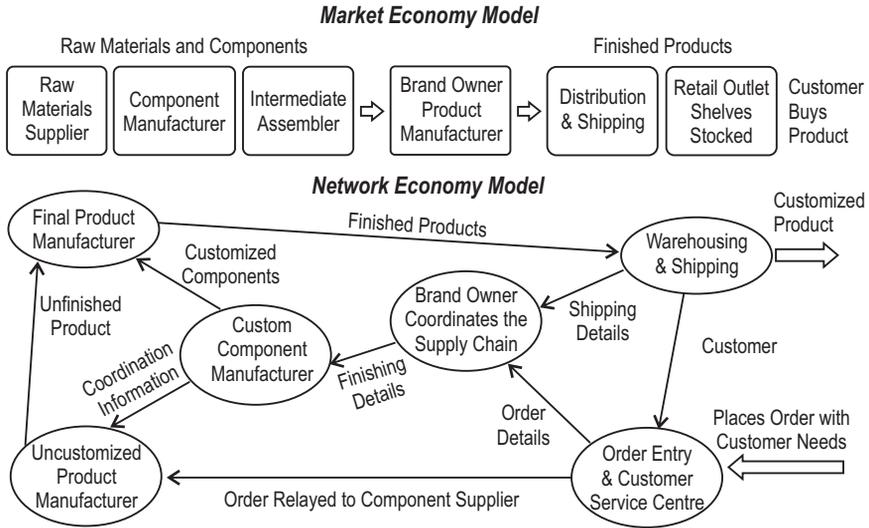


FIGURE 1.4: MARKET EKONOMY MODEL AND NETWORK EKONOMY MODEL



Source: *Creating Value in the Network Economy* by Don Tapscott.

After transiting from the industrial to the “service society”, the traditional hierarchical-bureaucratic organizational and management structure appears to be ineffective in terms of a satisfactory response to the demands and challenges of the faster and bigger changes in the environment and stronger competition. The network economy is not their substitute, but a new economic and management strategy, used by a number of the world (especially global) companies, basing their success and development on modern structuring of the business processes. This connecting process is strategically, functionally and fundamentally different from traditional corporate structures, as it, among others, includes the creation of a new shared values. The “networking” is a revolutionary transition to the new methods of knowledge and organization management. The knowledge and the information, the only unlimited productive resources, are the key factor in developing the network economy. Each new connection to the pool of knowledge multiplies the value of the whole.

The more modes exist in the network, the greater is benefit to each mode of a network. Result is a new rules of competition, a new kind of organization, a new challenges for the management. The new economy requires management decision-making under conditions of network infrastructure and information and communications convergence. Practice has shown that networking improves abilities to adapt to changes, innovation, modernization and training in relation to the hierarchical-bureaucratic organizational structure. In addition, strategic management of the network organizations enables reducing costs, increasing profits and better responding to the changes in the market conjuncture.

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#### **Box 4 - EXPLORING NETWORK ECONOMICS**

*“There is a central difference between the old and new economies: the old industrial economy was driven by economies of scale; the new information economy is driven by economics of network.”*  
C. Shapiro & H. R. Varian

##### *Introduction*

*A central task for investors is to understand what a business will look like in the future, and judge whether or not today’s stock price properly handicaps that outcome. For many companies the past is prologue; companies always strive to get bigger and better, but their fundamental activities don’t change much. These goods and services businesses generally have production-based roots and classic industrial economics effectively address their growth and business model characteristics.*

*In recent years, information technology and networks have merged to create companies with characteristics quite different from their production-based counterparts. These include unprecedented market shares, very high returns on invested capital, and rapid growth. As important, the market doesn’t always anticipate how the fundamentals of these companies unfold, leading to investable opportunities.*

*Networks—canals, railroads, and highways—have been around for a long time and played an important role in global economic development. However, our primary interest is not in physical networks but rather in networks that rely on information technology.*

*Economists have successfully described the economics of both information and networks. These economic principles appear durable. It is the combination of information and network properties that creates opportunities for businesses and investors. Most investors have not internalized these ideas.*

*We believe the importance of information-based networks is increasing in today’s global economy for four reasons:*

- Physical capital needs are lower than they were in the past. Information-based networks require less capital as they grow than physical networks do.*

- *Networks demonstrate increasing returns. Most industries benefit from supply-side increasing returns to scale: higher volume leads to lower unit costs, up to a point. In contrast, successful networks generate increasing returns from the demand-side as users beget users.*

- *Networks can form faster and more frequently than in the past. Because of plummeting communication and computing costs, the barriers to creating a network are declining. But even though the barriers to entry are low, the barriers to success remain high.*

- *Networks can spread globally. Because many networks have high upfront costs and low incremental costs, they can expand rapidly within countries and across borders.*

*This report focuses on how to categorize networks, how they affect economic value, and how they form.*

#### *Networks and Economic Value*

*A company's ability to create shareholder value derives fundamentally from its ability to generate returns on invested capital in excess of the cost of capital for as long as possible. We can express excess returns as the difference between sales and costs (including the opportunity cost of capital) and the duration of excess returns as the result of competitive advantage.*

*In this section, we explore ways networks generate revenues, their cost dynamics, and how they sustain returns. Analysis of these drivers provides a foundation for assessing and judging appropriate valuations for network businesses.*

#### *Sales*

*We need to consider two dimensions of sales: the sources and the growth rate. Both are important, but the rate of growth holds particular interest because it can be nonlinear when strong network effects exist. Since the stock market tends to be poor at discounting nonlinear growth, this may provide opportunities. First, we outline sales sources. Many established networks gather sales from more than one of these categories, and in some instances there are revenue opportunities that developed networks have yet to exploit. More than classifying sales, these categories provide a way to think about potential value creation.*

- *Commerce/transactions. Companies that are a de facto standard or stewards of a network can either sell goods directly or can steer customers to a transaction and collect a fee (indirect). Direct sales are conceptually straightforward and generally easy to track. The success of a company's indirect sales relates to its ability to reduce customer search costs. Large networks that can effectively direct users are very valuable.*

- *Advertising. A large user network attracts advertisers by allowing them to reach users cost effectively. Companies that amassed such groups can monetize them by selling advertising. Since an advertising-based business model is typically only viable for companies with a sizable user base, companies trying to build such a model often discount or give away their product in order to corral users. The give-away is a costly means to a profitable end: becoming an attractive vehicle for advertisers. This currently forms the core of Google's business model.*

*Subscription. Some successful networks can charge users a subscription fee, or dues, for access to a network and its content. Subscription models usually apply for one of two extremes: very specialized networks or very large networks.*

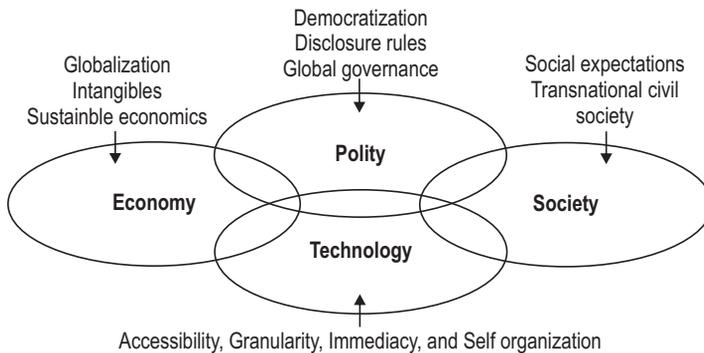
*Data. One of the benefits—and concerns—of the digital age is an unprecedented ability to*

collect information. Companies with large user bases, especially those Internet-based, have a treasure chest of data about their customers that is valuable because it can be sold to third parties. These data can be either aggregated, hence skirting privacy issues, or used to offer specific consumer profiles.

*Incubation.* Once established, a network can “link-and-leverage” its position into new business opportunities. This means transferring a user base to an adjacent technology or product. For example, Microsoft used its strong operating system position to capture adjacent markets in applications and Internet browsers.

Now that we have outlined revenue sources, we can return to the issue of growth rates. To do that, we must introduce and explore the notion of positive feedback—the idea that the strong get stronger and (as necessary corollary) the weak get weaker. We will explore two related facets of positive feedback: winner-take-most outcomes and supply- versus demand-side scale economies. Winner takes most. In the presence of network effects, the value of a good or service increases as more people adopt that good or service. But what happens when multiple products compete in a business subject to network effects? Often one company gathers the vast majority of market share—the winner takes most.

FIGURE B3: POSITIVE FEEDBACK



Source: Shapiro & Varian 1999, p. 177.

Consider the case of the VHS versus Beta video recorder standard-setting battle in the late 1970s and early 1980s. The two technologies competed across a range of features, including product design, picture quality, playing time, and price. While the point is in dispute, the two products were generally viewed as similar in capability.

Notably, the first application for video recorders was to tape shows on TV—there were no prepackaged cassettes. In 1976, Beta had over 60% market share (in units). By 1978, Beta’s share slipped to 40%, but unit sales growth remained strong and the product had a loyal following. Once the studios began to license content, the prerecorded videocassette market was born and network

effects strengthened. VHS had already reached a point of critical mass. Consumers had an incentive to buy a VHS because it had the most complementary content, which spurred more content, and so forth. In 1980 VHS's share climbed to 66%, by 1985 it was 92%, and it was in excess of 99% by 1988. Figure B 1.4 shows the pattern of winner-take-most battles.

Economist W. Brian Arthur says it more bluntly in what we can call Arthur's Law: Of networks, there will be few. In a particular space one network tends to dominate, while the rest fight over the scraps. Network builders understand that anything other than first place is an also-ran. Microsoft and eBay's 90%-plus market shares offer testament to this point. Natural monopolies are the progeny of strong network effects. One important idea here is path dependence, which in general means that history matters. Economists interested in innovation often point to path dependence to show why small events—random choices, luck, a chance meeting—can lead to outcomes unexplained solely by product attributes and features. While some economists doubt the role of path dependence, studies of networks outside of economics suggest that path dependence is an important consideration.

#### *Supply- versus demand-side scale economies*

The difference between a firm's sales and costs (including opportunity cost) determine whether or not it creates value. Fundamentally, a company can create more value by either reducing its costs or increasing the price it receives. Evidence suggests that differences in customer willingness-to-pay account for more of the profit variability among competitors than disparities in cost levels.

Positive feedback as a result of scale economies has been around for a long time. The well-known cost curve shows that as a manufacturing company increases its output, its marginal and average unit costs decline (to a point). For these companies, the positive feedback is supply-side driven. It's all about lowering costs. This is classic increasing returns-to-scale.

However, for manufacturing companies positive feedback tends to dissipate because of bureaucracy, complexity, or input scarcity. This generally happens at a level well before dominance: Market shares in the industrial world rarely top 50%.

For networks, the primary source of positive feedback is network effects. Rather than being supply-side driven, network effects are demand-side driven. This has two implications. First, the value to the users increases sharply once a network passes critical mass. Irrespective of costs, the willingness-to-pay rises.

Second, size does not govern market share for networks based on information. One network can, and often does, become totally dominant. Recognition of networks effects as the primary driver of increasing returns is key.

Source: Mauboussin, M. J. 2004.

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## 4.1 A Network Clustering of the Economy

The range of global competition is rapidly expanding through the modalities, particularly lately evident virtualization of network structures (legal and illegal), operating under the influence of economic and non-economic methods (M. Draskovic, 2006, p. 173). Many authors believe that the rapid development and commercialization of network business structure has been enabled by the boom of e-commerce and communication technologies. They are the foundation of network logistics, business standardization (quality, knowledge, behaviors, applying methods, etc.) and the institutionalization of modern business. Without analysing the various levels, fields, domains and contradictions of globalization, it appears that the clustering of businesses one of its dominant and essential economic determinants. According to E. Toffler, clustering is a “*new wave of capitalism development.*” Regardless of the formation approach obsolescence, ie the achievements of the “mixed society” and “mixed economy”, “knowledge society” and the like., some respective authors continue to force the term capitalism. Therefore is objectively relativised the civilizational theory of society development, that prefers this terminology. The formation of economic blocks (clusters) composed of companies and organizations that unite the human capital and other resources (technological, scientific and other potentials) is to create, maintain and increase their own competitiveness (benefits).

The evolution of modern global markets is based on a completely new behavioral rules (a high degree of interdependence and mutual dependence) and competition. Also, there is a new *paradigm of knowledge*, which is practically manifested through networking and clustering. Following the logic of permanent and almost exponential changes, the innovations (technological, organizational and other) arise as a necessity and a condition of success in networked markets (M. Draskovic, Ibid., S. 174). Business networking is a modern strategic need, a new model of entrepreneurial behavior and global mega-trend, actually based on finding the company competence and organizational-processing network, creating a flexible, synergic and competitive organizational structure (V. Draskovic, 2004, p. 126). This form of modern business clustering network has an increasing importance and role.

Development of clustering was initiated by M. Porter’s study of forming clusters in Arizona. Cluster is a network of independent manufacturing and/or services companies, including suppliers, technology authors and know-how (universities, research institutes, engineering centers, etc.), connecting market

institutions (brokers, consultants, logistics intermediaries etc.) and consumers. All of the above subjects are connected in a single chain of a value creation. As a basis of the cluster structure functioning is taken a “diamond” model of Porter’s “national rhombus”, presenting a concept of a country competitive advantage. It is determined by four factors:

- factor conditions and national position in the production factors (such as skilled labor or infrastructure necessary for a good competition in an specific industry),
- demand conditions (character of a domestic demand for the products or services of specific industry),
- linked or supporting industries, (presence or absence of supplying branches and other industries that are internationally competitive), and
- company strategy, structure and rivalry (how to create and organize the company, and how to manage it) (Porter 1990, p. 77).

In the example of various countries, M. Porter showed a direct correlation between innovation and creating competitive advantage (Ibid., p. 630), and thus improving the overall position of the international company. Related and supporting industries provide implementation of innovation on the line of spare parts and technical equipment. The growth of productivity is very important for stronger competitiveness of clusters. This can be achieved by various innovations in the technological and organizational fields, and by stimulating the new forms of business. That way, the boundaries of the cluster expand. The cross-section of different cluster activities, operating in the same geographical region, give similar results. The cross-section of reciprocal activities is marked with shaded surface. The clusters generate a complex combination of competition and cooperation, existing in various spheres and often are complementary, especially in the innovation processes. Precisely that provides the legislative participation as a unique entity of the network and competition, resisting the destructive wave of global competition. Of course, the above properties of clusters affect the realization of a uniform strategy and innovation policy, based on a significant reduction in transaction costs.

The phenomenon of clustering in developed countries is observed for almost two decades, from the moment when it became a foundation of economic politics, imposing the information-analytical work and coordination of educational programs at all levels, in line with the needs of the cluster. That involves a high level of support for science, innovation, export orientation, building information infrastructure, education and macrologistic. The literature cites the example of Finland, which holds only 0,5% of the world’s timber resource, but exports 10%

of the world's wood-processing, 25% of the paper, 30% of cell-phones, and 40% of the telephones (Ibid., p. 82). The network organizations increasingly implement the *idea of virtuality*, which is enabled by the development of electronic markets and trading operations, virtual goods and virtual organizations. More than a decade ago, W. Davidov and M. Malone (1992) referred to the "virtual corporation" as a new strategy of reorganization that may dominate in the 21st century. It is essentially a flexible and dynamic organizational system (connected to a network and computer) and as such is able to make a selection of the most improved (inhomogeneous and remote) resources and combines them (if necessary, time-limited) with the resources of other companies for better adjustments to the market. Virtual organizations are often based on information resources integration, and therefore are called a quasi-enterprises. But since such organizations integrate and coordinate the various cultures, goals, knowledge, tradition, remote and heterogeneous resources, work experience, habits, etc., they are also called a meta-enterprises. Criteria for distinguishing the virtual enterprises are legal, geographic, economic, system-network, and others.

The role and importance of "virtuality" is becoming greater, as appropriate organization has all the features of traditional, unlike fixed structural, institutional and time frames. It is defined as a voluntary cooperation of horizontally and informatively networked, equal and independent partners (companies, institutions, private individuals, etc.), which function on the basis of mutual trust for optimization of the business processes and mutual benefit, which is shared by the volume of the investments. Although the virtual enterprise has no legal basis, it acts as a unique, dynamic network, thanks to the most advanced information and communication technologies. The function of top management is not institutionalized, and the term "virtual" refers primarily to creating a time-bound situational competency that enables rapid response to changes in the environment and an optimal realization of the market goals. This competency usually involves allocation of resources, knowledge management, and marketing. The future of business belongs to the "virtual organizations", meaning the network of several independent firms (which may be rivals), customers, suppliers, institutes, and other interested organizations. The networking is based on highly sophisticated information systems that enable rapid agreement and cooperation in knowledge distribution, costs, risks, and access to certain markets, although they have no common organization and management. Communication between partners is fast, full, open, without procedures, with great confidence and top investment specialists, and the ability to efficiently perform specific tasks.

The above partnerships have formal and volatile character, lasting only as long as there is a mutual shared interest. The network business collaboration

and cooperation are more efficient means of survival in the market than the competition, where partnership combines the property. The modern virtual team partner “unions”, based on flexible business and organizational systems, represents a reliable and powerful alternative to transnational diversification and vertical integration.

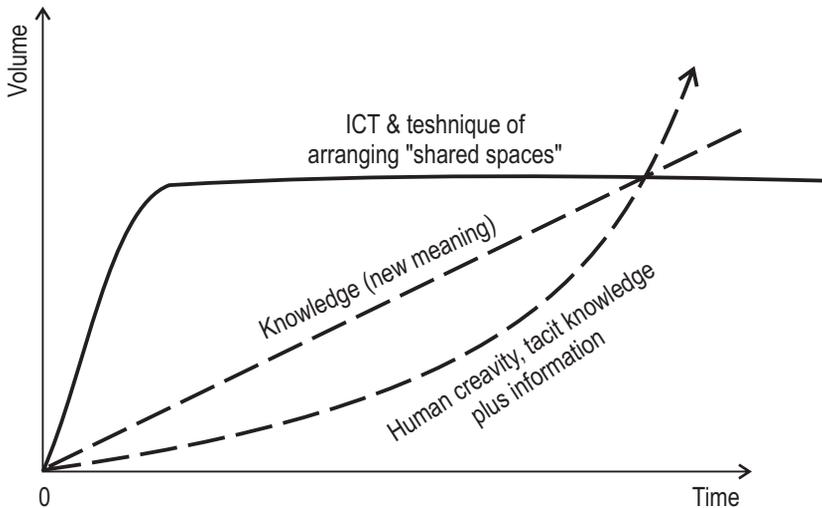
TABLE 1.6: KEI FOR SELECTED COUNTRIES IN 2012.

Rank	Country	KEI	KI	Economic Incentive Regime	Innovation	Education	ICT
1	Sweden	9.43	9.38	9.58	9.74	8.92	9.49
2	Finland	9.33	9.22	9.65	9.66	8.77	9.22
3	Denmark	9.16	9.00	9.63	9.49	8.63	8.88
4	Netherlands	9.11	9.22	8.79	9.46	8.75	9.45
5	Norway	9.11	8.99	9.47	9.01	9.43	8.53
6	New Zealand	8.97	8.93	9.09	8.66	9.81	8.30
7	Canada	8.92	8.72	9.52	9.32	8.61	8.23
8	Germany	8.90	8.83	9.10	9.11	8.20	9.17
9	Australia	8.88	8.98	8.56	8.92	9.71	8.32
10	Switzerland	8.87	8.65	9.54	9.86	6.90	9.20
11	Ireland	8.86	8.73	9.26	9.11	8.87	8.21
12	USA	8.77	8.89	8.41	9.46	8.70	8.51
22	Japan	8.28	8.53	7.55	9.08	8.43	8.07
26	Czech Rep.	8.14	8.00	8.53	7.90	8.15	7.96
27	Hungary	8.02	7.93	8.28	8.15	8.42	7.23
28	Slovenia	8.01	7.91	8.31	8.50	7.42	7.80
32	Lithuania	7.80	7.68	8.15	6.82	8.64	7.59
33	Slovak Rep.	7.64	7.46	8.17	7.30	7.42	7.68
38	Poland	7.41	7.20	8.01	7.16	7.76	6.70
39	Croatia	7.29	7.27	7.35	7.66	6.15	8.00
44	Romania	6.82	6.63	7.39	6.14	7.55	6.19
45	Bulgaria	6.80	6.61	7.35	6.94	6.25	6.66
49	Serbia	6.02	6.61	4.23	6.47	5.98	7.39
55	Russian Fed.	5.78	6.96	2.23	6.93	6.79	7.16
56	Ukraine	5.73	6.33	3.95	5.76	8.26	4.96
57	Macedonia	5.65	5.63	5.73	4.99	5.15	6.74
70	Bosnia and Herz.	5.12	4.97	5.55	4.38	5.77	4.77
82	Albania	4.53	4.48	4.69	3.37	4.81	5.26
84	China	4.37	4.57	3.79	5.99	3.93	3.79
110	India	3.06	2.89	3.57	4.50	2.26	1.90

They provide adaptable synergistic competence of different companies, concentrated in a strong virtual competitor, which brings benefits to everyone. Some believe that the knowledge society is a higher form of information society, elevating the knowledge above information. It has its own logic, because knowledge is still a major development resource, the initiator of change and innovation creator.

Apart from information and communication technology (ICT), in the structure of the knowledge society also participate the education, innovation and economic institutions (economic incentives). These four areas (so-called "pillars") of the knowledge society are, in order to measure the level of development, divided into 109 structural and qualitative indicators, using *The Knowledge Assessment Methodology* for each country.

FIGURE 1.5: MASS PRODUCTION OF KNOWLEDGE: EVOLUTION OF MAIN FACTORS OVER TIME



Source: United Nations 2005, p. 68.

The goal of mankind is a the mass production of knowledge. According to the UN report (2005) people (as carriers of tacit knowledge) and informa-

tion (public knowledge) actively participate in it. Informations are a reflection of human creativity and they lead to creating a “new meaning.” The profit from a revolutionary introduction of ICT is enormous. But the time will come (point A in Figure 1.5) and this rapidly growing trend of this mass production method of knowledge will deplete. From that point, the burden of mass production of knowledge will fall on human creativity. Distance between points A and B will depend on the degree of institutional change and implementation of appropriate institutional arrangements. After point B, the development of knowledge in a “new meaning” of the term will depend solely on the hidden knowledge and information quality.

## 4.2 The Process of Value Chain in the Network Economy

Value chain view of a company helps us to understand the increase of value along the chain of activities in bringing a final offering to stakeholders. Value chain analysis allows us to see where value is added and how it might be increased. It is the tool for maximizing profitability of companies throughout maximizing value at minimum cost by allocating resources to those activities that generate the most value. Value chains always had a limited life in competitive markets, but are now eroding much faster than in the past (see Eustace, 2003). The new factors of differentiation (called “non-priced” factors) become the main force of competition. Therefore, those factors are a dominant source of competitive advantage. Roos (2005) pointed out that “intellectual capital”, creates value when its elements are combined and put into action, and degrades when they remain unused. This suggests that having a resource is not enough to create value. In order to create or leverage value, the resources have to be deployed effectively and efficiently. The effectiveness of knowledge transfers and conversions is the key to value creation Sveiby (2001).

Carlucci et al. (2004) demonstrate that effectiveness and efficiency of performing organizational processes are based on organizational competencies and the generated value is the result of an organization’s ability to manage its business process. Martr (2005) suggested that knowledge assets interact with each other to create competencies and capabilities, and it is often these interactions that provide a competitive advantage because they make these assets difficult for competitor to replicate. These value drivers are bundled together, and the interactions between them are varied, complex and dynamic making difficult to demonstrate the cause and effects relationships and its linkage to value

outcomes. The traditional value chain has been improved with more complex ways of creating value, such as *value shops*, *value networks*, and *value constellations* (Haanes, 2000):

- *Value shops* create value by solving unique problems for customers by using relevant competencies. Examples of companies that create value as ‘shops’ include accountants, academics, physicians, designers, lawyers, investment bankers, business consultants, and consulting engineers.
- *Value networks* create value by making different products and services available to customers. The value is derived from the network giving buyers access to sellers of what they want, and by putting suppliers in contact with customers who want their products. Examples of companies creating value through networks include commercial banks, airlines, postal agencies, insurers, brokers, and stock exchanges, and
- *Value constellations* can be considered to be linked sets of different value networks.

FIGURE 1.6: RESOURCES AND CAPABILITIES OF A FIRM

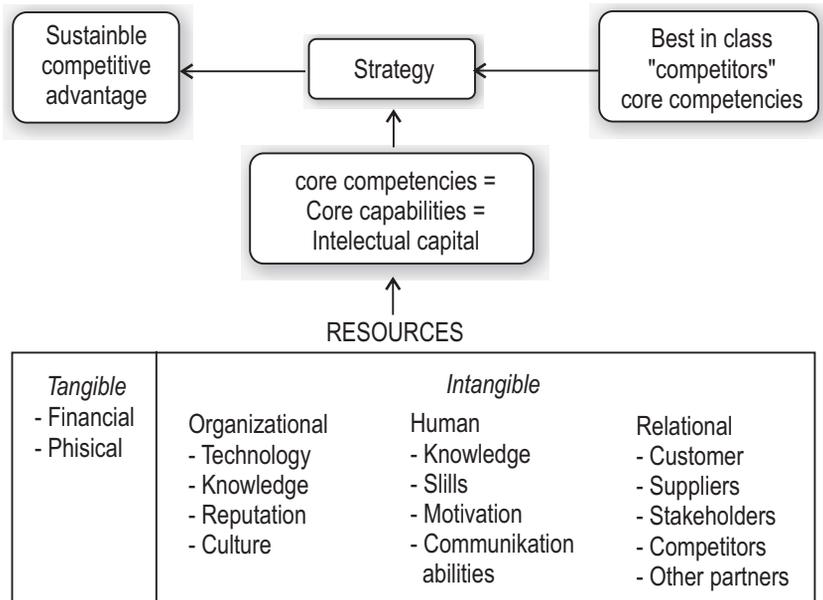
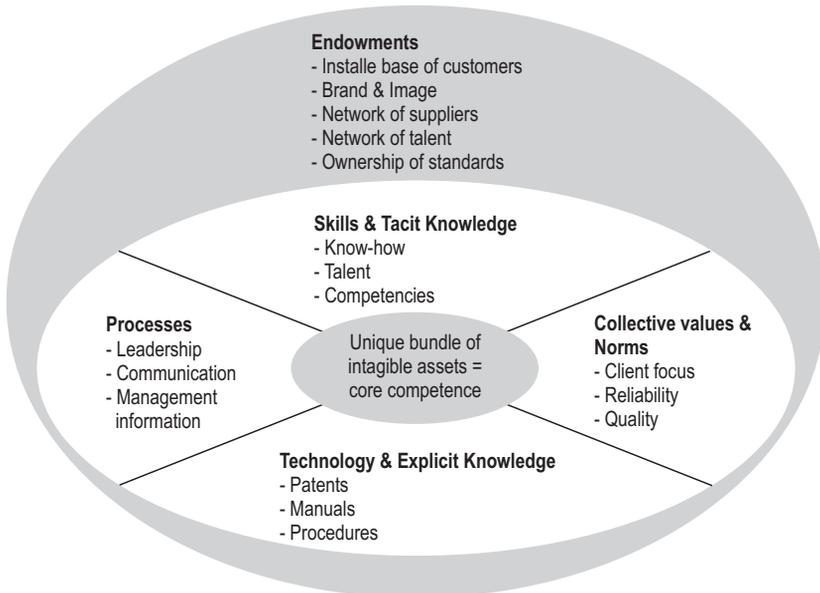


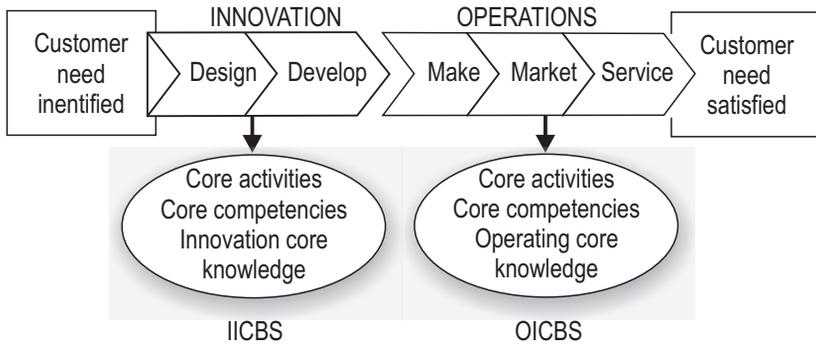
Figure 1.6 summarizes the above discussion on resources and capabilities, and Figure 1.7 shows the major intangible assets within a core competence (Andriessen, 2001). The term “core competencies” refers to a unique bundle of intangible assets that are the basis of the definite, sustainable, competitive advantages. In adopting this perspective, the terms “core competencies” and “core capabilities” are used interchangeably and also the term “intellectual capital” considers to be an equivalent expression. This approach is in agreement with Sullivan (2000, PP. 3-18) who defined intellectual capital as knowledge that can be converted into profits or knowledge that produces value. Figure 1.8 illustrates the business process broken down into two constituent parts. The innovation process points to new products and services through the innovation value chain in which innovation capabilities are basic and fundamental. Core capabilities represent a potential and, therefore, cannot contribute to competitiveness unless they are successfully translated into new processes, products and services. This is the role of innovation management. The Innovation Intellectual Capital Benchmarking System (IICBS) has a specific system for the innovation process.

FIGURE 1.7: A CORE COMPETENCE AS A UNIQUE BUNDLE OF INTANGIBLE ASSETS



Source: Andriessen 2001.

FIGURE 1.8: BUSINESS PROCESS VALUE CHAIN



The operations process, which produces ordinary products and services through the systematic and repetitive operations value chain, also requires core competencies and core capabilities to be competitive. However, these competencies and capabilities will probably be of a different nature from the ones mentioned above in the discussion of the innovation process. ICBS also has a specific process for the operations value - the Operations Intellectual Capital Benchmarking System (OICBS).

### Box 5 - TRANSPARENCY IN THE NETWORKED ECONOMY

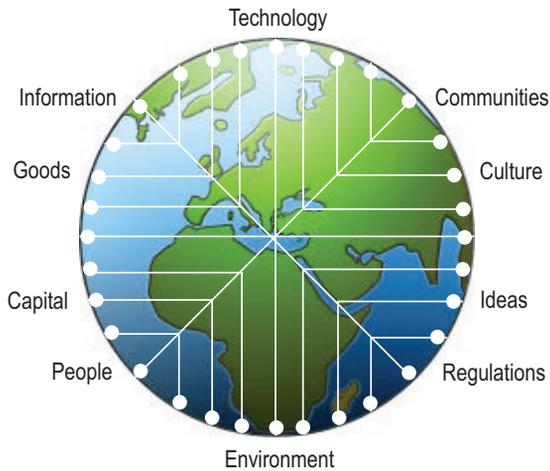
*“The new social order, the network society, increasingly appears to most people as a meta-social disorder. Namely, as an automated, random sequence of events, derived from the uncontrollable logic of markets, technology, geopolitical order or biological determination.”*

M. Castels

*The increasing demand for transparency can be largely attributed to forces and consequences of globalization. To be sure, globalization is not new. As prominent scholars point out, it has been a feature of human civilization for centuries, expanding and retracting, intensifying and declining, throughout history.<sup>5</sup> Never before though, has globalization been so vast, so intense and all-encompassing. Global interdependence has become a defining feature of our time as people, money, technology and ideas relentlessly cross borders in a vast network of transactions and social exchanges.*

*As globalization creates massive transboundary flows that transcend the boundaries of geographically defined nation-states, it tightly binds together the fortunes and relations of people and institutions around the world. In fact, Anthony Giddens, director of the London School of Economics (LSE), defines globalization as “the intensification of worldwide social relations which link distant localities in such a way that local happenings are shaped by events occurring many miles away and vice versa.”<sup>6</sup> In a tightly integrated economy, a financial meltdown in one region can immediately impact the economies on the other side of the world, while investment decisions made on Wall Street, can rapidly shift money, jobs and production from one community to another. The nuclear meltdown in Chernobyl shows that environmental disasters know no national boundaries, just as the flow of drugs, diseases and weapons moves readily from continent to continent. As the world shrinks, we become ever more aware of the multi-leveled ways our fortunes are overlapping. This phenomenon, often referred to as time-space compression, is intensified as the Internet and a global media system not only render the distant more proximate, but also reinforce our consciousness of this interconnectedness.*

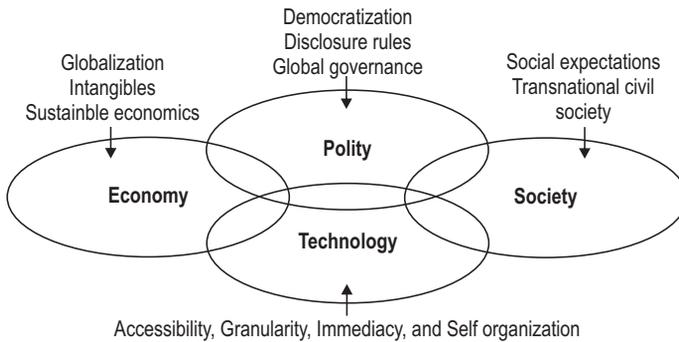
FIGURE B4: NETWORKED ECONOMY



*Time-space compression not only reduces spacial barriers, it also brings into acute awareness the many ways our world is speeding up. Nowhere is the compression of time more evident than in our contemporary systems of production, exchange and consumption. Improved systems of communication coupled with rationalizations in the techniques of distribution (e.g., packaging, shipping and inventory control) made it possible to circulate commodities (legal and illegal) throughout the global market with greater speed. The advent of electronic banking increased the flow of money, while computerized trading systems makes, as the saying has it, “twenty-four hours a very long time” in the global stock markets.*

The combined impact of collapsing spacial barriers and accelerating time is inflicting a deep sense that the world is slipping into disorder. As Manuel Castells, author of *The Network Society*, states, “The new social order, the network society, increasingly appears to most people as a meta-social disorder. Namely, as an automated, random sequence of events, derived from the uncontrollable logic of markets, technology, geopolitical order or biological determination. It is within this context that random events and decisions can have rapid and potentially catastrophic impact on those who were never consulted, or perhaps were not even aware of the stakes in the first place. And it is this state of affairs that makes transparency increasingly salient in our attempts to bring order to the world.

FIGURE B5: TRANSPARENCY IN THE NETWORKED ECONOMY



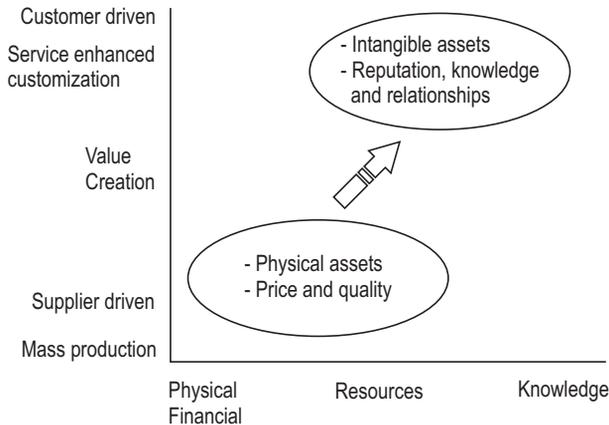
Transparency is a response to time-space compression and the growing awareness of our overlapping collective fortunes. The more we become connected and interdependent as societies the more we want to know about the affairs of others. As Ann Florini says, “Many people are affected by, and thus want to have a say in, what used to be other people’s business.” One country’s development of weapons of mass destruction, for example, becomes a concern for everyone within reach of their devastating capacity. Indeed, it’s not surprising that arms control has become one of the predominant applications of transparency in global politics. Since the end of the Cold War, major world powers have agreed to engage in a highly intrusive regime of mutual scrutiny of one another’s military forces. Similarly, environmental problems that cut across national borders have increased our awareness of our collective dependence on common ecological systems and spawned a wide range of efforts to monitor and report on the state of our environment. A new form of “regulation by revelation” has come into existence in which public websites operated by NGOs shame polluters by disclosing their toxic chemical releases in local communities. The unifying theme in these examples is that new interconnections and increasing levels of interdependence require a commensurate level of trust and transparency to ensure stability in the world.

In the previous sections we talked about the rise of transparency in the context of other major developments that are transforming our world: namely, the rapid expansion of political and eco-

conomic interdependence created by globalization, and the pervasive change of thinking about the relationship of corporations to society. The subsequent section attempts to dig deeper into the key drivers and enablers of transparency, that is, the specific forces that create the social organization, regulatory regimes, technological platforms and economic rationale for greater transparency in the future. In doing so, we provide an analytical framework for understanding the current state and likely trajectory of transparency.

Our investigation of the drivers of transparency is rooted in an analysis of the forces and dynamics at play in Digital 4Sight’s concept of a networked world. A networked world is, by our definition, a world in which the dominant functions and processes of the economies and societies are organized around networks. Leading sociologist and author of *The Network Society*, Manuel Castells, defines networks as “open structures, able to expand without limits, integrating new nodes as long as they are able to communicate within the network, namely, as long as they share the same communication codes (for example, values or performance goals).”

FIGURE B6: CHANGING ECONOMICS OF THE INFORMATION-BASED ECONOMY



As Castells argues, networks are appropriate instruments for most contemporary institutions in society, including “a capitalist economy based on innovation, globalization and decentralized concentration; for work, workers and firms based on flexibility and adaptability; for a culture of endless deconstruction and reconstruction; for a polity geared toward the instant processing of new values and public moods; and for a social organization aiming at the supersession of space and the annihilation of time.” For analytical purposes, we have broken down our concept of the networked world into four key elements: society, polity, economy, and technology. Within these four spheres we see evidence of profound transformations taking place that will continue to amplify the transparency of the business environment.<sup>18</sup> These social, political, economic and technological forces are described briefly below to lay the foundation for an extensive discussion about the implications of

*the transparency phenomenon for stakeholder relationship management, corporate communications, and corporate values.*

*The rise of intangibles as a primary driver of value creation plays an important role in the growth of corporate transparency. Intangibles are factors that affect business and economic outcomes but are not easily recognizable, measurable, or quantifiable in economic terms. They include knowledge, relationships, goodwill, experience, social capital, and brand recognition. It is easy for companies to focus on tangible factors to the exclusion of such intangibles. Indeed, corporate managers focus on questions regarding tangibles primarily (e.g., is revenue going up or down? Have we sold more or fewer products and services? What are our costs per unit? Is productivity improving or declining?). The focus on tangibles, albeit important, can overshadow the intangible dimensions of how value is created in the economy. Recently, however, business literature has begun to broaden our notion of how intangibles affect the performance of business enterprises in the marketplace. This shift in thinking has given rise to new management processes that help cultivate and leverage intangibles, as well as accounting practices that attempt to add them to the balance sheet.*

*The centrality of intangibles is linked to the changing economics of the information-based economy. In an information economy, companies no longer compete solely on the price, quality or availability of their products - although these fundamentals are still important. Firms must provide much higher value at much lower costs to capture and retain the scarce attention of customers. This means they need to compete more on the basis of their ability to create knowledge, sustain relationships and build a reputation as a great company. Increasingly, the ability to compete on these assets is tied to whether the vision, values, ethical stance, and leadership of the company are in alignment with the expectations of a broad set of stakeholders. Until recently, however, the importance transparency in managing intangible assets has been overlooked.*

*Source: Williams 2003.*

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