



Ph D Nataliia Podluzhna

*Department of Management,
State Higher Educational Institution «Donetsk National Technical University»
(Pokrovsk, Ukraine)
nataliia.podluzhna@donntu.edu.ua*

THE ROLE OF ECONOMY OF KNOWLEDGE IN THE POSTINDUSTRIAL ENVIRONMENT

SEAT POSTINDUSTRIALNEJ GOSPODARKI OPARTEJ NA WIEDZY W PRZESTRZENI

РОЛЬ ЭКОНОМИКИ ЗНАНИЙ В ПОСТИНДУСТРИАЛЬНОМ ПРОСТРАНСТВЕ

Abstract

Regularities of the postindustrial economy are determined together with the succession of its types change explaining characteristic features of each of them. The role of the economy of knowledge is specified in the process of changes with the postindustrial economy, besides the use of knowledge by each type of economy is generalized and systematized in time dimension according to their importance and degree. It is substantiated that the establishment of the economy of knowledge must be accompanied by the effect of meliorism thus providing improvement of the world and human progress towards the development of its basic forms.

Keywords: *economy of knowledge, postindustrial economy, knowledge, meliorism, smart economy, programmable economy.*

Streszczenie

Prawidłowości rozwoju gospodarki postindustrialnej i zmienia swoje właściwości sekwencji typy otwarciem każdego z nich. Rola gospodarki opartej na wiedzy w procesie zmian w gospodarkach postindustrialnych, z uogólnione i usystematyzowane w czasowym wymiarze znaczenia i zakresu stosowania każdego rodzaju gospodarki opartej na wiedzy. Jest udowodnione, że rozwój gospodarki opartej na wiedzy musi towarzyszyć efekt melioryzm, a mianowicie poprawy pokoju i postępu ludzkości jest możliwe w kierunku rozwoju swoich podstawowych formach.

Słowa kluczowe: *gospodarka oparta na wiedzy gospodarki postindustrialnej, wiedza melioryzm gospodarka oparta na wiedzy, smart-gospodarka, gospodarka programowalny.*

Аннотация

Определены закономерности развития постиндустриальной экономики и последовательность смены ее типов с раскрытием характерных особенностей каждого из них. Установлена роль экономики знаний в процессе изменения постиндустриальных экономик, при этом обобщено и систематизировано во временном измерении по важности и степени использование знаний каждым типом экономики. Обосновано, что становление экономики знаний должно сопровождаться эффектом мелиоризма, что обуславливает улучшение мира и обеспечения человеческого прогресса в направлении развития основных ее форм.

Ключевые слова: *экономика знаний, постиндустриальная экономика, знания, мелиоризм, smart-экономика, программируемая экономика.*

Introduction. In recent time in Ukraine there appear elements of stimulation of the economy of knowledge the main ones being governmental support of high-technology branches, reforming of education, development of wider opportunities for education of children and adults, possibilities for ideas realization through startups and grants in financial aid obtainment, e-

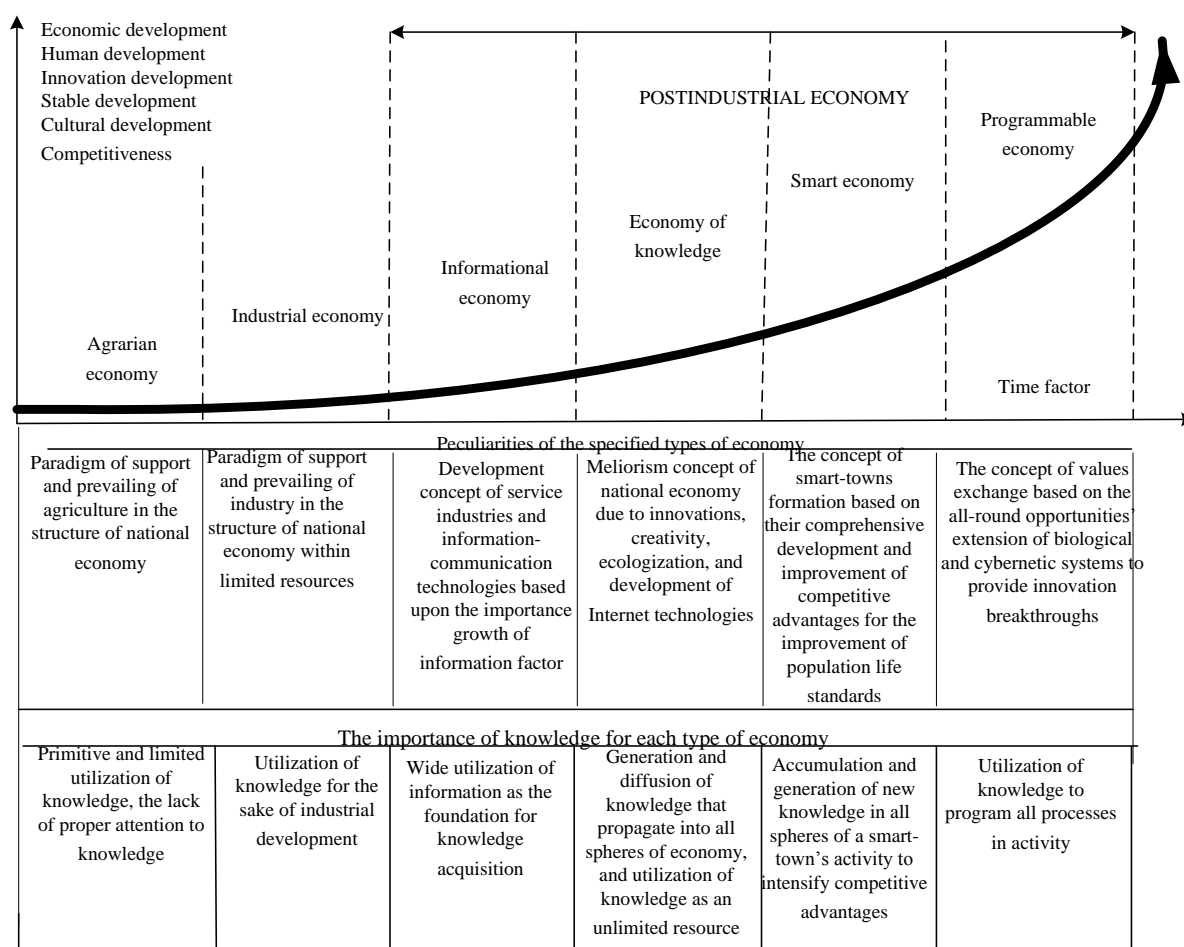
technologies to improve the standards of government control and everyday life of people. This is the necessary development stage of the national postindustrial economy when a country is eager to reach leading positions in economic growth on the ground of innovation and human development in international ratings to form conditions for population's life standards improvement.

All types of the postindustrial economy include a common feature based on the use of human ability to think and to build socially required ideas, to generate, utilize and propagate knowledge for the general good. In this case any country has its own path of development and the rate of social and economic processes operation that would contribute in the transition from one type of economy to another and higher one. On this background the typology of economies by their characteristics is sufficiently widespread and studied separating the three types generalized by theoreticians in economics: agrarian (preindustrial), industrial, and postindustrial economy. While preindustrial and industrial types of economy are well researched and described in scientific papers the pattern of development of the postindustrial economy is not determined thus requiring its further research. Such researches based upon the evolution character of the modern development stage of world countries would allow determination of the sequence of types' changes with the postindustrial economy and characteristic features disclosure of each of them.

It is established that the postindustrial economy is formed by various types of economy that substitute each other stage by stage to reach the highest level of development however the sequence of their changes is not finally specified as well as qualitative transformation characteristics of the economy statuses. The greater number of scientific researches deals with the economy of knowledge (EK) as the postindustrial type of economy that is typical for numerous developed countries but does not represent the final stage of their development path. That is why the object of the research is to determine the place of the economy of knowledge in the sequence of the types' changes with the postindustrial economy, and to disclose characteristic features of each of them.

Standardizing of national economies' development. The study of modern world views conducted on the existing types of the postindustrial development of global countries allowed their generalization, systematization, and ranking in time measurement according to their importance and the degree of knowledge utilization by each type of economy, Fig. 1

Figure 1. Sequence of changes of national economies' types



Source: developed by the author

So, due to generalizations conducted it was established that the first type of economy in the postindustrial environment is the information economy [38] that is transformed into EK [12] followed by the transition to the smart economy [9; 13; 14; 22], and later to the programmable economy [29]. The specified succession of stages with the types of the postindustrial economy is conditional because its structure is based upon the generalized determination of essence and scopes of any of the singled out types of economy. First, the conditionality is connected with the fact that the grounded succession of the economy types' changes is not mandatory for various economies of the world, and each country moving towards knowledge and innovation vector of its development can pass each or some type of economy in parallel or consecutive manner. Second, any country has its specific peculiarities of its national economy's state and development resulting in different duration of a certain type. Consequently, the proposed succession of economy types' change is universal, and thus does not contain qualitative signs with intervals determination in years for each type of economy on the axle of time factor.

Besides, in the course of research it was established that such type of the postindustrial economy as EK in its turn also consists of different types of economy [19, p.51], having special indications, and namely: innovation [17; 36; 25; 24], creative [16; 28; 27; 33], network [21; 20; 11; 7], and green economy [3; 26; 31; 40; 43; 10; 4], see Table 1. In researchers' works there are other names of types of economy however not widely used or generally recognized (for example, knowledge-capacious [6] and intellectual [5] economy) consequently they were not considered in later studies.

Table 1 – Main types of the postindustrial economy

Notions		Authors of notions appearance	First records of notions, year
The Information Economy		Martk Urie Porat	1977
The Economy of Knowledge		Fritz Machlup	1962
Forms of EK:	The Innovation Economy	Joseph Schumpeter Peter Drucker	1911 1985
	The Network Economy	Yochai Benkler	2006
	The Creative Economy	John Hawkins Richard Florida	2001 2002
	The Green Economy	Jeremy Rifkin	2011
		UN Conference on stable development issues (Rio +20)	2012
The Smart-Economy		Seoul Summit of the Group of Twenty	2010
The Programmable Economy		Gartner Research and Consulting Company	2014

Source: [3; 12; 18; 21; 25; 27; 29; 33; 38; 40]

The industrial economy is converted to other types of the postindustrial economy or to an absolutely new economy as it is often called by researchers which is being developed and possesses modern manifestations and characteristics due to multidirectional innovative breakthroughs, concentration of attention at human development and activation of investment injections to science and technology. In order to clear out scopes and main differences between the types of the postindustrial economy one should determine their essence, qualitative characteristics and the way each type contributes in overall development of countries.

The information economy is the first stage opening the epoch of the postindustrial economy. M. Porat focuses attention on the fact that the economy gains the features of information one provided the volume of services in information sector starts to dominate over the volume of production in other sectors of economy [38]. Meanwhile there occurs both spreading out and development of modern information-communication technologies (ICT) and the growth of service sector that becomes the basis for further progress and transformation of the information economy to the economy of knowledge.

Information society is the background for the information economy construction, and its formation is only possible using information-communication technologies on all levels of the economy management. In such conditions the EK development takes place in the society of knowledge which first reference was done by P. Drucker who characterized it as the society “that determines the type of economy in which knowledge plays the key role, and its production becomes the source of development [8]. The notions of “information society”, “the society of knowledge”, and “EK” are closely connected the fact having been substantiated in the National Plan of Development of Poland through the equation as follows: “the society of knowledge = the economy of knowledge + the information society” [1]. In other words, the determined existing interconnections denote that the information economy is the platform and the substance for EK formation.

The economy of knowledge as a type of the postindustrial economy. In modern economic conditions the EK must be accompanied by the effect of meliorism that would increase the quality of comprehensive development of countries. The notion of meliorism (from Latin *melioratio* – improvement) is used in philosophy and sociology, and close to the content of the notion of “melism” (from Latin *melior* – better) originating from the sphere of vocal techniques. Meliorism is the view according to which people’s efforts can improve the world. This term was introduced in the XIX century by the British authoress G. Eliot and French philosopher J. Sully. Partisans of meliorism think that the only way to improve the world is through individual perfection and by means of education [15]. The notion of meliorism is considered to be a tool of melodic improvement in vocal and instrumental music realized out of the soul by a singer or a musician. Meanwhile the modern understanding of the ideas of meliorism provides the progress

of its nature and denotes the opportunity of the world improvement through people's interference in processes. Corresponding political, economic, and moral control as well as motivation would provide the progress of mankind [30]. It means that the processes of meliorism are characteristic for establishment of the economy of knowledge in a country because interference in and improvement of its condition is to take place in various directions followed by indispensable conviction of people in the reasonability of such changes.

Consequently, the processes of the EK establishment shall be accompanied by the effect of meliorism while the improvement of the world and provision of people's advance is possible in the direction of development of its basic forms. Meriorism of the EK shall only occur on the ground of innovation and creative development of national processes, regulation of all phenomena and making managerial decisions, and considering ecologic expediency, spreading of information-communication technologies and network interrelations. Such changes also occur while making people convinced in the suitability of radical revision of life priorities to provide the prosperity of society and acquirement of optimistic view of future. That is why the characteristics of the EK forms from meliorism position are reasonable that is from the viewpoint of people's interference and their conviction for the world amelioration and human progress provision (Table 2)

Table 2 – Diversification of the EK concept manifestation forms

Forms of EK			
The innovation economy	The creative economy	The network economy	The green economy
Realization of the EK through actions manifestation			
Improvement of life through manifestation of actions from ideas development to leading them to innovations	Improvement of life through manifestation of processes novelty, creativity, creative and original approach, free thoughts and thinking	Improvement of life through the openness of knowledge and easy access to it, its unlimited use and spreading in time, space and volume, smoothing asymmetry in knowledge	Manifestation of care for natural environment, elimination of threats to its existence and future steady development
Determination of each type of EK			
Diversified form of the EK based on the usage of human resources' knowledge and talents for development of ideas and their embodiment in new products, services, technologies and business processes on the ground of entrepreneur activity promotion to provide long-term economic development and the growth population's life quality	Diversified form of the EK based on the use of knowledge, creativity, innovations and creation to promote economic development	Diversified form of the EK that is its head tool for generation and spread of knowledge on the ground of wide network opportunities of Internet and information-communication technologies	Diversified form of the EK "directed towards the improvement of welfare and social equality with synchronous substantial reduction of risks for natural environment, and ecologic deficit" [43]
General results and effects typical for all types of economy			
Qualitative growth of national economies Spreading to all sectors of economy Growth of population's culture Overall development of people Making additional jobs including those of social importance Demand for various qualified working force (of both low and high qualification level) Increase of long-term prosperity of population Modification of thinking patterns towards long-dated projections for future generations Increase of wealth due to formation and realization of new ideas Demand for knowledge stipulating their base reserve and permanent update, orientation of education to new guidelines in education based upon the development of skills in making managerial decisions and generation of new ideas, abstract thinking, self-assertion, and respectful attitude to other people Desire of people for new useful knowledge acquisition, accumulation and purpose utilization			

The first form of the EK is the innovation economy that is principally different from its industrial type. Exactly it changes priorities from deficit products in revolution manner that are first of all directed towards optimal price formation, development and distribution of valuable goods, business models, services, and production forms [36]. The first record of the innovation economy could found in the work by J. Schumpeter who in 1911 investigated innovations as the

factor of economic growth [18]. Its content and concretization of peculiarities was specified in studies by P. Drucker in 1985. He fixes characteristics of the innovation economy the basic ones of which being new decisions and continuous innovative changes; activation of small and medium sized business, development of economy due to autonomous decisions by each person of the world, recognition of knowledge to be the priority factor of economic development; intellectualization of labor and intellectual property; orientation towards meta-economics taking into account factors of demography, education, new technologies, ecology, psychology of people, and culture of nations [25].

Innovation becomes the foundation of the innovation economy together with idea or inventiveness that includes the number of transformations. They convert views and thinking, concentrate attention at quality, requirements of consumers, the growth of goods' usefulness and their timeliness. In other words, meliorism of the EK in the form of the innovation economy occurs through forming ideas and leading them to final introduction. Meanwhile these ideas must be useful for improvement of life of people, and are orientated to their needs. The innovation economy is being supported by government maintenance; active investment policy directed towards science, education, research and development; intensification of entrepreneurship in the sphere of innovations. The knowledge that forms the basis of innovations, and without which one cannot create anything unknown earlier but necessary, or cannot restructure something existing with updated characteristics and aspects, is embodied in new products, technologies, and processes. Innovation requires knowledge, inventiveness, and, first of all, concentration of attention at development and efforts. It is innovations that are a powerful tool for economic advance and the progress of society as they form new knowledge allowing their further generation, so the innovation economy operates as one of the forms of the EK.

The next form of the EK is the network economy which notion was generated by Y. Benkler in 2006 [21]. J. Torrent studies symbiotic relations between information-communication technology and knowledge, and states that it is just ICT that is the key factor of appearance of economy and society based upon knowledge [42, p.6]. One of conditions for the EK functioning is the level of ICT utilization in a country that is the product of the network economy. It is by means of ICM that the access to information is getting easier that works as an advantage of the EK. Here users can acquire knowledge and have access to it in any time and from any place they like the fact increasing opportunities for its acquisition, utilization and distribution. Quick adaptation to such changes makes it possible to stimulate innovations and possess a competitive preference [39].

In the work by T. Dziaduk the author discloses differences between industrial and network economies. The change of concentration takes place from forecasted to unpredictable development; from orientation to financial resources to human ones; from negligible relations to extended network ones assisting in integration processes; from stable working processes to flexible and situational ones [7, p. 26].

The network economy presupposes rights equality among all users in networks, neutralizes hierarchic subordination that allows being refractory to anyone, free usage of information resources forming new knowledge and ideas. A wide opportunity appears to form and to enter those network societies that provide useful communication, carry new flows of knowledge and its appearance in discussions allowing processes extension of cognition in new and unknown things. All these processes are associated with the high rate of acquisition and spreading of huge volume of information that requires the presence of critical thinking with networks users to be directed towards the search of reliable and useful information resources. Thus the network economy has no borders in knowledge acquisition and diffusion, it is free of time and territory limits in access to it by means of networks. One could state that it is a useful library with various privileges for users that is unlimited volume of information and space, quick search, twenty-four-hour mode of operation, and communication based upon interests and in accordance with targets put. The network economy destroys inequality and overcomes injustice related to users who want to acquire knowledge.

It is just the network economy as one form of the EK that allows smoothing of knowledge asymmetry representing inequality of information possession among people in any sphere. By means of information in Internet any user is able to fill up the level of knowledge in any subject which is important for him or her in the given moment of time. Thus, the network economy represents the tool for the level of the EK achievement by a country through negotiation of knowledge inequality between people, and has the unlimited potential of knowledge acquisition using network resources.

The network economy also includes wide opportunities for business. It proposes intelligent reconsideration of a new business environment in conditions of the postindustrial epoch [20, p.201]. O. Kravchuk states that “as opposed to the industrial economy that is national by its scale the network economy has a global character which fact substantially extends the number of suppliers, clients, partners and competitors” [11, p.166]. So, the network economy has no borders in business through the infrastructure of ICT and Internet technologies. Changes are appreciable in conditions and rules of business processes. They become many-sided and dynamic thus requiring systematic knowledge updating among entrepreneurs for timely qualified response in making managerial decisions.

High effectiveness of the network economy in business and society as a whole is explained by the theory of network effects or externalities that include those related to the growth of the number of the network users; orientated to products and markets standardizing; obtained on the ground of education in the network making acquaintance with experts' views [42, p.13-17]. The effects under investigation allow additional preferences reception in the EK from the development of the network economy due to development of ICT and Internet.

The next form of the EK is the creative economy which existence was first declared by J. Hawkins in 2001 [33] who in 2013 reissued the results of his study to emphasize that creation is becoming the most rapidly growing business in the world. Those who cultivate basic dominants of the creative economy that include uniqueness, knowledge, imagination, ability to generate new thoughts, and skills for ideas invention and processing become winners and have stable development. Implementation of such dominants can exist only in the conditions of steady progress and acquisition of knowledge received autonomously in the process of communication in the favorable environment, and due to making clear ideas by other people of creative thinking. These characteristics are attributable to people, so clusters and enterprises in the conditions of the creative economy that purposefully attract talented personnel for work and collaboration are successful in business and possess unlimited opportunities in competition advantages. Thus the first position becomes occupied by a talented worker with his or her resources of knowledge and experience being valuable for enterprises, clusters and countries. So, the research conducted specifies such important vectors of the EK as creation and creativity in work, and the necessity of talents upbringing beginning from childhood with further motivating persons for demonstration of products and development.

R. Florida who considers the paradigm of economy of knowledge from the position of creative content realization and the novelty of ideas produced, emphasizes the existence of a creative class in society [27]. According to the results of his investigation the key factor of successive economic development in a town and a region is creative elite. A great role for appearance and cultivation of creation and originality belongs to open and tolerable environment forming conditions for professionals to be more independent in their actions and self-expression. So, the important task for the EK is to develop creativity and, on this ground, to draw ideas followed by their implementation in business that is possible within favorable and motivating environment and communities of collaboration.

Development of the creative economy in the general structure of the EK makes it possible to improve the life quality of mankind, to impregnate its activity with specific value, assist in new jobs appearance through the extension of creative sector, and provide cultural development with long-term economic growth. The creative economy penetrates not only into creative sectors but other branches of economy; it is realized by talents of various levels of qualification. At

industrial enterprises they also require generation of knowledge, managerial problems solution and making efficient administrative decisions. Activation of creativity and innovations in production and service industries provides the growth of salaries and wages, increases labor productivity and gives the necessary impulse for the rise of buying power among workers, and demand stimulation [28].

The next form of diversification of the EK is the green economy which notion was fixed at UN Conference on stable development issues (Rio+20) in 2012 [3] however the event was preceded by numerous measures that contributed in the specification of the term. In modern works realization of a new model is proposed for the stable economic development to combine two paradigms, the EK and the green economy, that is the EK is being shifted towards its ecologization, the green knowledge economy, smart green economy, and smart green digital economy [37; 31; 40].

The paradigm of green economy includes generation of knowledge on the status of the ecosystem of our planet, treats for it, methods of their elimination; diffusion of such knowledge within modern and future generations in order to move attention to reservation or quality improvement of the natural environment and generations' culture upbringing for continuous care of the environment. "Europe-2020" strategy determines leading components of the green economy among which there is a smart development based upon the principles of the knowledge economy formation; stable development that can be achieved through orientation to resource-saving and low-carbonic technologies and competitive values; inclusive development built upon the concept of socially oriented territorially united economy with overcoming unemployment problems and forming socially important jobs [26, p.3].

In implementation of the green EK concept there occurs priorities shift of nonmaterial capital towards natural one, from target guidelines of countries' competitiveness growth towards steady growth, from attention concentration on services sectors and high technologies towards all sectors of economy [32]. Thus the value of the nature shall be taken into account in any managerial decision making and on various levels of management of the economy. Changes in target guidelines of the green EK concept would assist in the steady human development and people's prosperity growth. Orientation to the green economy allows strengthening quality component of countries' development and that of the whole planet providing relations regulation between society and environment.

Programmable, human and smart economy. The next stage of the postindustrial economy after the EK that is diversified in multi-aspect forms of quality manifestation is the smart economy (from English *smart* – reasonable, technologic) exclusively based upon technologies. Yu. Fedotova emphasizes in her work that it is "based on complex modernization and innovative development of all sectors on the ground of modern generation technologies to provide the high value added, power efficiency, formation of protected natural environment, and social stability" [14, p.33]. So, the drivers of the smart economy are new guidelines that are directed towards the benefit of people, and presuppose smart technologies for their life quality improvement.

V. Bilotserkovets emphasizes that the new economy will have fundamental bases for which it is typical to use not ICT but other technologies and industries [2, p.23] thus forming the smart economy. So, the smart economy will utilize technologies that are not yet invented in the modern postindustrial environment.

The smart economy is directed towards the improvement of people's life standards and quality, higher convenience and consistency of all processes in towns and a country a whole. It is exactly designed for development of economy towns, regions, and finally countries that is realized in the development of new concepts for them as well as strategies or roadmaps for smart paradigms introduction. Meanwhile concepts of the EK form foundation for the smart economy that are manifested in its various forms based on innovations, creativity, ICT and interaction with the natural environment. So smart towns are characterized by intellectually coordinated activity of all enterprises and institutions, and will look like a unique smart conglomerate. These urban

transformations are being done in order to solve inhabitants' problems, to improve their welfare, to increase attractiveness of urban life as well as desire to live in towns.

The smart concept of development includes attention paying to technologic innovations, researches and knowledge for all kinds of activity raising the economic value of their utilization, and providing competitive advantages and strategic development of towns [22, p.472]. The smart idea pursues displaying of advantages with territorial units, concentration of efforts on strong sides of their objects' activity, use of internal potential to provide social-economic, cultural, and ecologic development that is possible with the activation of knowledge implementation and development of new effective ideas.

Meanwhile in February 2017 a "Smart Europe" long-term concept and plan was acknowledged on economic advance of European Union according to which roadmaps are to be developed on a new view of Europe for 350 official EU regions [41]. China has the similar concept "China-Internet Plus" orientated to implementation of a smart paradigm of the third industrial revolution [34]. It is the evidence of the fact that countries having the high level of economic development and occupying leading positions in international rating for the EK are active users of tools of the smart economy. For comprehensive progress of Ukraine it is necessary to create favorable conditions for the EK level increase, and for transition to the smart-concept.

The next stage of the postindustrial environment following the smart economy is the programmable economy which notion was first fixed by the leading consulting company Gartner in 2014. The programmable economy is concentrated transformation of traditional concepts of value exchange, extension of rights and abilities of people and smart-machines to determine the value and the rules of its exchange [29]. It includes new technologies' formation that will exceed opportunities of Internet in importance and dimensions.

The programmable economy is not yet investigated in research works, and there is practically the lack of papers on the subject. However on the modern stage of development one could foreknow multiple risks and threats it contains for society and countries. The programmable economy replaces people's work by programmable processes, contributes in cases occurrence of illegal financial activity, leads to the increase of unemployment level due to reduction of jobs with low qualification personnel, and requires its higher level. Regardless of the abovementioned risks the programmable economy is the type of economy in the postindustrial environment that stipulates its complete reconstruction, and new approaches in the processes of management and life.

Here it is necessary the economic progress to contribute in people's development and provide specific consideration of a human factor in the future. That is why there appear scientific theories substantiating the need of the human economy generation. These theories again shift the focus of attention by economists towards a person and its wide opportunities. So, D. Sidman proposed the use of the term of "human economy" [23] because he foresaw a deep economic crisis in the connection with continuously growing priorities in favor of "intelligent machines" and the loss of the importance of people's life. He stated that in spite of the tendency of programmable technologies introduction in processes and spheres of life the market is only worked up by enterprises and strategies based on such human values as creation, passion, the spirit of cooperation, humanism, empathy, and putting one's souls and hearts into execution of duties. No robot, technology, machine or program is able to provide realization of human features that are very important; they cannot displace them especially when they are connected with communications and stipulate the contact in the chain of "person to person".

For example, in Japan having manifestations of the programmable economy they already build programmable towns but encounter the aforesaid threats regardless of the high level of economic development. Comprehensive introduction of robot techniques and objects of artificial intelligence displace people's labor and leads to the increase of the processes of personnel reduction and the absence of demand for people's work [35]. Programming of processes in documents circulation and financial settlements assists in bureaucracy elimination in the state

sector, makes the fund of working time more optimal, reduces working hours spent for papers processing. Consequently, we can observe logical work of the replacement effect that is taken into account while building a curve of the demand for labor force when the cheapest capital forces out a well-paid labor force from the labor market.

Unfortunately, it will be difficult for the human economy to realize itself in the formed e-conditions. Everything characterized by the intensive growth in the economy is connected with e-technologies, e-conferences, e-education, e-regulating, and e-technologies that is impossible to change, or minimize the importance in the modern economic conditions. So, one can predict that the programmable economy is gradually displacing the EK and the smart economy. But a human factor is to be considered in all processes and technologies, and one should remember that any of the types of the postindustrial economy must direct efforts towards the people's benefit, the growth of their life standards and quality, creation of safe and favorable conditions of life for the mankind and future generation all over the world.

Conclusion. The succession is represented on changes among the types of the postindustrial economy that is the list as follows: the information economy, the EK, the smart economy, and the programmable economy. These types of economy are characterized by attention concentration on the value of knowledge resources, by the presence of innovation breakthroughs, focusing on human development, and activation of investment injections to science and technologies. It is substantiated that every type of the postindustrial economy must include implementation of the human economy because the foundation of comprehensive development is orientation of all processes and action to the good of people, increase the standards and the quality of their life, formation of safe and favorable conditions for the existence of the mankind and future generations in the world.

The processes of the EK establishment shall be accompanied by the effect of meliorism that is manifested through innovative and creative development of processes in a country, regulation of all phenomena, making managerial decisions only with consideration of ecologic expediency, spread of ICT and network interconnections. Such changes must also take place in making people convinced in the importance of fundamental revision of life priorities to provide social prosperity and acquirement of optimistic view of the future.

Bibliography

1. Баль-Возняк Т. Причини низького рівня інноваційності польської економіки // Журнал європейської економіки. – Т. 5. – 2006.
2. Білоцерківцев В.В. Нова економіка: зміст, генеза та авангардний характер [Електронний ресурс]: автореф. дис. ... д-ра екон. наук : спец. 008.00.01 "Економічна теорія та історія екон. думки" / М-во освіти і науки України, Держ. вищий навч. закл. "Нац. гірн. ун-т". – Д.: НГУ, 2014.
3. Будущее, которого мы хотим. Решения Конференции ООН зі сталого розвитку. 26 червня 2012 р. [Електронний ресурс]. – Режим доступу: www.un.org/ga
4. Буркинський Б. В. «Зелена» економіка крізь призму трансформаційних зрушень в Україні / Б. В. Буркинський, Т. П. Галушкіна, В. Є. Реутов. – О. : ІПРЕД НАН України; Саки : Фенікс, 2011.
5. Бутнік-Сіверський О. Б. Інноватика та інтелектуальна економіка (теоретико-методологічний аспект) [Електронний ресурс]. – Режим доступу: <http://dspace.nuft.edu.ua/jspui/bitstream/123456789/9802/1/innovatika.pdf>
6. Геєць В.М. Про характер перехідних процесів до економіки знань / Геєць В.М. // Економіка знань: виклики глобалізації та Україна / під заг. ред. А.П. Гальчинського, С.В. Львовичкіна, В.Л. Семиноженка. – Г.: Влада, 2004.
7. Дзячук Т. В. Мережева економіка як елемент формування сучасної світової господарської системи [Електронний ресурс]. – Режим доступу: http://www.economy.in.ua/pdf/7_2008/9.pdf
8. Друкер П. Ф. Энциклопедия менеджмента: Весь Питер Друкер в одной книге: лучшие работы по менеджменту, написанные за 60 лет / Пер. с англ. О. Л. Пелявского. – М.; СПб.; К.: Изд. дом «Вильямс», 2004. – 421с.
9. Замлелый А.Ю. Формирование smart (интеллектуальной) экономики: теория и практика / А.Ю. Замлелый // Современные проблемы науки и образования. – 2012. – № 4.
10. Кваша Т.К. Вимірювання зеленого зростання в Україні: концепції, системи індикаторів, досвід формування та перспективи застосування: Монографія / Т.К. Кваша, Л.А. Мусіна, за заг. ред. Мусіної Л.А. – К.: УкрІНТЕІ, 2015. – 280 с.
11. Кравчук О. І. Мережева економіка — домінанта розвитку економічних і соціально-трудових відносин / О. І. Кравчук // Соціально-трудові відносини: теорія та практика. – 2016. – № 2.
12. Махлуп Ф. Производство и распространение знаний в США: пер. с англ. – М.: Прогресс, 1966.
13. Омарова Н.Ю. На пути к Smart-обществу: технология будущего осмысления 2.0: [Електронний ресурс]. – Режим доступу: <http://www.gosbook.ru/node/69879>.

14. Федотова Ю.В. Теоретичні засади реалізації принципів смарт-економіки шляхом формування високотехнологічних кластерів / Ю.В. Федотова // Глобальні та національні проблеми економіки. – 2015. – №4.
15. Философский словарь / Под ред. И.Т. Фролова. – 4-е изд.-М.: Политиздат, 1981.
16. Хокинс Дж. Креативная экономика. Как превратить идеи в деньги/ Дж. Хокинс: [пер. с англ. И. Щербаковой] М.: Издательский дом "Классика-XXI", 2011.
17. Шумпетер Й. А. Теория экономического развития. Капитализм, социализм и демократия: пер. с нем. и англ. / Й. А. Шумпетер. – М.: Эксмо, 2007.
18. Шумпетер Й.А. Теория экономического развития : Исследование предпринимательской прибыли , капитала , кредита, процента и цикла конъюнктуры/Й.А.Шумпетер -М.: Прогресс, 1982.
19. Araya D. Rethinking US Education Policy. Paradigms of the Knowledge Economy / D. Araya. – New York: Palgrave Macmillan, 2015.
20. Barabási A.-L. Network Economy [Електронний ресурс]. – Режим доступу: <http://barabasi.com/f/634.pdf>
21. Benkler, Yochai. The Wealth of Networks: How Social Production Transforms Markets and Freedom. — New Haven, Conn: Yale University Press, 2006.
22. Bruneckienė J. Sumaniosios ekonomikos koncepcija ekonominės vertės kūrimo mieste kontekste / J. Bruneckienė // Public Policy and Administration. – 2014. – №3. – Том 13. – С. 469-482. [Електронний ресурс]. – Режим доступу: <https://www3.mruni.eu/ojs/public-policy-and-administration/article/view/3965/3722>
23. Dov Seidman From the Knowledge Economy to the From the Knowledge Economy to the Human Economy [Електронний ресурс]. – Режим доступу: <https://hbr.org/2014/11/from-the-knowledge-economy-to-the-human-economy>
24. Drucker P. F. The Discipline of Innovation // Harvard Business Review. – 2002. [Електронний ресурс]. – Режим доступу: <https://hbr.org/2002/08/the-discipline-of-innovation#comment-section>
25. Drucker, P. F. Innovation and entrepreneurship / P. F. Drucker. – New York.: Harper & Row, Publishers, 1985. – 278 p. [Електронний ресурс]. – Режим доступу: http://www.untag-smd.ac.id/files/Perpustakaan_Digital_1/ENTREPRENEURSHIP%20Innovation%20and%20entrepreneurship.PDF
26. European Commission. EUROPE 2020. A strategy for smart, sustainable and inclusive growth /COM (2010) 2020 Brussels, 3.3.2010.
27. Florida R. The Rise of the Creative Class: And How It's Transforming Work, Leisure and Everyday Life. N.Y.: Basic Books, 2002.
28. Florida R. Creativity Is the New Economy [Електронний ресурс]. – Режим доступу: http://www.huffingtonpost.com/richard-florida/creativity-is-the-new-eco_b_1608363.html
29. Gartner Says the Programmable Economy Has the Potential to Disrupt Every Facet of the Global Economy // [Електронний ресурс]. – Режим доступу: <http://www.gartner.com/newsroom/id/3146018>
30. Graebner A. The Limits of Meliorism In Foreign Affairs / A. Graebner // VQR. – 2000. – №1 – Том 76. [Електронний ресурс]. – Режим доступу: <http://www.vqronline.org/essay/limits-meliorism-foreign-affairs>.
31. HEC4Climate: "We are heading towards a smart green digital economy" Jeremy Rifkin [Електронний ресурс]. – Режим доступу: <http://www.hec.edu/Knowledge/News/HEC4Climate-We-are-heading-towards-a-smart-green-digital-economy-Jeremy-Rifkin>
32. Hephworth M. (2009) The Green Knowledge Economy / M. Hephworth.. [Електронний ресурс]. – Режим доступу: <http://www.ied.co.uk/pdf/bournemouth/Mark%20Hephworth.ppt>
33. Howkins J. The Creative Economy: How People Make Money from Ideas. L.: Penguin, 2001.
34. Internet plus: china's official strategy for the uberisation of the economy [Електронний ресурс]. – Режим доступу: <http://www.innovationiseverywhere.com/internet-plus-chinas-official-strategy-for-the-uberisation-of-the-economy/>
35. Japanese company replaces office workers with artificial intelligence // [Електронний ресурс]. – Режим доступу: https://www.theguardian.com/technology/2017/jan/05/japanese-company-replaces-office-workers-artificial-intelligence-ai-fukoku-mutual-life-insurance?utm_content=bufferf2fa6&utm_medium=social&utm_source=facebook.com&utm_campaign=buffer
36. McKinney P. Understanding the Innovation Economy and Its Impact on Our World / P. McKinney [Електронний ресурс]. – Режим доступу: <http://philmmckinney.com/understanding-innovation-economy-impact-world/>
37. Newton A. The Green Knowledge Economy /A. Newton // Geoeconomics. – 2010. – №3. [Електронний ресурс]. – Режим доступу: <http://www.geoeconomics.com/>
38. Porat, Mark Uri. 1977. The Information Economy: Definition and Measurement. // Washington: Office of Telecommunications, U.S. Department of Commerce // [Електронний ресурс]. – Режим доступу: <http://files.eric.ed.gov/fulltext/ED142205.pdf>
39. Revolution in Progress: The Networked Economy [Електронний ресурс]. – Режим доступу: <https://www.technologyreview.com/s/530241/revolution-in-progress-the-networked-economy/>
40. Rifkin J. How the Third Industrial Revolution Will Create a Green Economy / J. Rifkin [Електронний ресурс]. – Режим доступу: http://www.huffingtonpost.com/jeremy-rifkin/third-industrial-revolution-green-economy_b_8286142.html
41. The foundation on economic trends. The office of Jeremy Rifkin. About Jeremy Rifkin [Електронний ресурс]. – Режим доступу: <http://www.foet.org/JeremyRifkin.htm>
42. Torrent J. Knowledge, networks and economic activity. Revisiting the network effects in the knowledge economy / J. Torrent// e-Journal on the Knowledge Societe. – 2009. – 9. [Електронний ресурс]. – Режим доступу: <http://www.uoc.edu/uocpapers/8/dt/eng/torrent.pdf>.
43. Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication. UNEP, 2011 [Електронний ресурс]. – Режим доступу: www.unep.org