ИНСТИТУТ ЗА ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ ПРИ БАН

ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ

ECONOMIC STUDIES

TOWARDS HOLISTIC THEORY OF MONEY

INVESTMENT IN INTANGIBLE ASSETS IN BULGARIA

INNOVATION INFRASTRUCTURE IN UKRAINE

ОЦЕНКА НА АГРЕГИРАНАТА ПРОИЗВОДСТВЕНА ФУНКЦИЯ

ОБРАЗОВАНИЕ И ИКОНОМИЧЕСКИ РАСТЕЖ: КОИНТЕГРАЦИОНЕН МОДЕЛ ЗА БЪЛГАРИЯ

THE ROLE OF FINANCIAL STRESS IN MONETARY POLICY

LABOR MARKET IN UKRAINE

БРАНДИРАНЕ НА ЗЕМЕДЕЛСКИ ПРОДУКТИ

ГОДИНА XXIV, 2015, КНИГА 4

Списание „Икономически изследвания“ има SCImago Journal Rank (SJR).
Списание „Икономически изследвания“ се индексира и реферира от ***Journal of Economic Literature/EconLit,*** издания на ***Американската икономическа асоциация (АИА)***, както и ***RePEc***, ***EBSCO***, ***SCOPUS***.
Списание „Икономически изследвания“ и всички негови статии са включени в каталога на електронната библиотека CEEOL на www.ceeol.com.

Адрес: Институт за икономически изследвания – БАН, ул. „Аксаков“ № 3, София 1040
Главен редактор: (02) 8104018, e-mail: m.dimitrov@iki.bas.bg
Секретар: (02) 8104019, e-mail: econ.studies@iki.bas.bg

ISSN 0205-3292

ИНСТИТУТ ЗА ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
ПРИ БЪЛГАРСКАТА АКАДЕМИЯ НА НАУКИТЕ

Година XXIV

ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ

ИНСТИТУТ ЗА ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ НА БЪЛГАРСКАТА АКАДЕМИЯ НА НАУКИТЕ

ECONOMIC STUDIES

Книга 4, 2015 година

СЪДЪРЖАНИЕ

Gancho Ganchev – Towards Holistic Theory of Money: Overcoming Twentieth Century Neoclassical Monetary Paradigm 3

Todor Gradev, Lubomir Dimitrov, Spartak Keremidchiev – Investment in Intangible Assets in Bulgaria 25

Igor Britchenko, Anna Kniazevych – The Bases of Functioning and Development of Innovative Infrastructure of Ukraine 43

Иван Тодоров – Два подхода за оценка на агрегираната производствена функция на България 67

Мария Нейчева – Ефекти на средното и висше образование върху икономическия растеж: коинтеграционен модел за България 82

Ozge Kandemir Kocaaslan – On the Role of Financial Stress in the Transmission of Monetary Policy 107

Marianna Oliskevych – Hysteresis, Structural Shocks and Common Trends in Labor Market: Consequence for Ukraine 120

Любомир Любенов – Брандиране на земеделски продукти 138

Резюмета на английски език 160

ECONOMIC RESEARCH INSTITUTE AT BAS

ECONOMIC STUDIES
Volume XXIV
2015, Number 4

CONTENTS

Gancho Ganchev – Towards Holistic Theory of Money: Overcoming Twentieth Century Neoclassical Monetary Paradigm 3

Todor Gradev, Lubomir Dimitrov, Spartak Keremidchiev – Investment in Intangible Assets in Bulgaria 25

Igor Britchenko, Anna Kniazevych – The Bases of Functioning and Development of Innovative Infrastructure of Ukraine 43

Ivan Todorov – Two Approaches for Evaluating the Aggregated Production Function of Bulgaria 67

Mariya Neycheva – Impact of Secondary and Tertiary Education on Economic Growth: a Co-integration Model for Bulgaria 82

Ozge Kandemir Kocaaslan – On the Role of Financial Stress in the Transmission of Monetary Policy 107

Marianna Oliskevych – Hysteresis, Structural Shocks and Common Trends in Labor Market: Consequence for Ukraine 120

Lubomir Lubenov – Branding Agricultural Products 138

Summaries in English 160

The papers should be sent by e-mail, in Word format, in black and white colors, in volume of 40 standard pages (1800 characters with spaces), including tables and figures. References should be listed at the end of the paper, with referring in the text (Harvard style of referencing). The papers should be accompanied by ½ page of summary and JEL classification codes. The papers should also include contact information of the author (address, phone, fax, e-mail).
All papers are "double-blind" peer reviewed by two reviewers.
Economic Studies has a SCImago Journal Rank (SJR).
Economic Studies is indexed and abstracted by ***Journal of Economic Literature/EconLit, RePEc, EBSCO, SCOPUS***.
All papers are included in CEEOL library at http://www.ceeol.com.

Address: Economic Research Institute at BAS, Aksakov 3, Sofia 1040, Bulgaria
Chief Editor: +359-2-8104018, e-mail: m.dimitrov@iki.bas.bg
Secretary: +359-2-8104019, e-mail: econ.studies@iki.bas.bg

ISSN 0205-3292

ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
ECONOMIC STUDIES

ГОДИНА XXIV, 2015, 4

Igor Britchenko[1]
Anna Kniazevych[2]

THE BASES OF FUNCTIONING AND DEVELOPMENT OF INNOVATIVE INFRASTRUCTURE OF UKRAINE

The preconditions and features of the formation of post-industrial society are defined in the article. The distinctive role of active innovation infrastructure of the country in integrating into the European community and society based on knowledge are proved. The characteristic features of the economy of post-industrial society are the increasing role of intangible resources in ensuring social reproduction, "softization" and "servization" the subjects of innovation infrastructure. The essence of economic category "innovation infrastructure" is defined in the article. It is a dynamic self-regulating system of markets and subjects that entering these markets in certain economic relations and it provides the necessary conditions for implementation of the innovation processes. Mechanism of functioning of the constituent elements of innovation infrastructure in market economy is proposed, relationships between them are defined.
JEL: O10; O31; O32

Globalization, the transformation of the planet into a single economic market and association of Ukraine with the EU imposes extremely high demands on the competitiveness of the national economy. The world economy is a combination of national economies of different countries, which due to the globalization of markets are interconnected within the system of international division of labor, industrial, commercial, financial, scientific and technical ties.The strategy of transition to the knowledge economy in each country is determined by the peculiarities of its historical development, current economic, social and political status.

The share of new knowledge, that was embodied in innovative products, technologies, equipment and organization of innovative production in developed countries, makes from 70 to 85% of GDP growth. By the definition the Organization for Economic Cooperation and Development, now the humanity is rather fastly moving to an economy based on knowledge.

[1] *Igor Britchenko is Professor, Doctor of Economic Science, The Head of Finance and Economics Department at Uzhgorod Trade and Economic Institute Kyiv National University of Trade and Economics, Ukraine, phone: +38-095-005-0102, e-mail: ibritchenko@gmail.com.*
[2] *Anna Kniazevych is Associate Professor, Candidate of Economic Sciences, Professor of the Department of Management, Rivne State Humanities University, Ukraine, phone: +38-097-485-6555, e-mail: kniazevich@mail.ru.*

The concept of the knowledge economy or intellectual economy has widely spread in the world literature, as a reflection of the recognition of the fact, that scientific knowledge and intellectual property are recognized as a major source and a key factor of innovation production, which should ensure sustainable economic growth. Priority scientific and technical knowledge and intellectual property in the the system of social and economic relations is a methodological prerequisite for building an innovation paradigm as a set of fundamental scientific settings, views and terms, that are accepted by the scientific community as the only essential foundations of modern socio-economic development.

A significant amount of scientific works are devoted to the research of problems of development of innovation infrastructure, including D. Bell (Bell, 2004), T. Burmenko (Burmenko, 2011), A. Horn (Horn, 2009), D. Dorzhieva (Dorzhieva, 2009), N. Ivanova (Ivanova, 2002), N. Kalenskaya (Kalenskaya, 2010), R. Nurkse (Nurkse, 2009), P. Rosenstain-Rodan (Rosenstain-Rodan, 1961), V. Semynozhenko (Semynozhenko, 2012), V. Solovyov (Solovyov, 2006), L. Fedulova (Fedulova, 2009), A. Hirschman (Hirschman, 1945), J. Schumpeter (Schumpeter, 2007) and others. Modern scientific literature proposes various approaches to understanding the concept of "innovation infrastructure", its nature, composition and specific impact on innovative processes in the national innovation system.

The aim of this research is to study the impact of market mechanisms on the processes of forming, organization, management and self-development of innovation infrastructure of the country. These processes can provide effective work and interaction between all participants of the innovation process that based on mutual commercial interest.

Innovative production is the process of emanation of scientific knowledge, results of intellectual and creative search, new technologies, know-how, new organization and management structures, that are being introduced into production and implemented in innovative products allow better satisfy the needs of consumers and thus receive various kinds of competitive advantage.

The transition to the innovative production means spreading the use of intellectual potential of scientists and manufacturers to achieve certain social and economic objectives. Knowledge acts as the intangible intellectual and creative production resource. It consists of intellectual capital in the form of qualification, knowledge, experience, skills, abilities of workers of certain economic structure and potential creative energy sufficient for its implementation. The development of innovative ideas and their manufacturing along with material resources also require the increase of intellectual and creative resources. New knowledge is beginning to act as a source of value (knowledge value) of innovative products.

The book of famous American sociologist Daniel Bell's "Future postindustrial society. Sample social forecasting", which was first published in the USA in 1973, provides a historical foresight: "By the end of this century, the United States, Japan, Western Europe and the Soviet Union will acquire several features of post-industrial society and will have to face the problem of managing these new qualities" (Bell, 2004). D. Bell believed that "..postindustrial society means the emergence of new axial structures and new axial principles: transition from commodity production to the information society or knowledge society" (Bell, 2004), in which science is transformed into a direct productive force.

The production of basic, scientific and applied knowledge becomes a source of economic growth and innovative development of national economies both leading and developing countries. The term "knowledge economy" and "economy based on knowledge" becomes wide-spread.

Within the economy of knowledge production priorities move from the desire of producers to increase the volumes making traditional products to the widespread use of new scientific ideas, scientific and technical offers for continuous improvement and implementation manufacture of innovative products and services thatbetter satisfy the needs of consumers. New knowledge produced and widely implemented in production allows enterprises to produce modern, high technology, better quality products and obtain substantial advantages over competitors. In the conditions of globalization of the world economy, these benefits contribute to provide the competitiveness of national products on the domestic and international markets. Intangible resources, as new scientific knowledge, scientific and technical proposals are a major factor in the further development of production, providing sustainable innovation growth of the national economy in the future.

Post-industrial society is a society, where in economy the priority has moved from preferred production of goods to production of services, research, organization of the system of education and improving life quality. The class of technical specialists has become the leading professional group and, most importantly, where the introduction of innovations increasingly depends on the achievements of theoretical knowledge. Post-industrial society suggests the emergence of the intellectual class, whose representatives at political level act as the consultants, experts or technocrats (Bell, 2004; Fedulova, 2009).

Scientific and technological progress and evolutionary growth of the productive forces of society marks a transition of production to a higher rung of economic development. In modern conditions the balance of the ecosystem "nature (the environment) – man – science – technology" is a necessary condition for ensuring growth of productive forces of society. Man, his knowledge, creative and intellectual potential, combined with the intensive development of science are the driving force of intensification of innovative production in the knowledge economy.

In modern conditions specific approaches and diverse measures to enhance the role of intellectual capital, the ability to self-development entrepreneurs, all subjects of the innovation infrastructure, opening of creative abilities of employees are the only way to compensate for lack of financial support for research and innovation activities.

According to the data of the World Bank, the national wealth of the developed countries only on 5 % consists of the natural resources, 18 % – the capital, and 77 % – the knowledge and skills to use them.

The process of becoming a knowledge economy, that will implement these 77% of the national wealth, should be main theoretical and practical principles for the further development of the national economy,they have found their reflection in the project national concept of economic development of Ukraine, published under the title "The doctrine of the knowledge economy" (Semynozhenko, 2012). As a programming document, the doctrine reflects the basic provisions for the Ukrainian strategy, which is

aimed at "European choice" and responds the objectives of "Strategies for sustainable development and structural and innovation reorganization of Ukrainian economy (2004-2015 years)". The doctrine of the knowledge economy determines the imperative of further innovative development of national economy of Ukraine. Formation of system "science – education – technology – innovation – production" is the cornerstone of post-industrial societies and the only way to improve the competitiveness and the dynamics of progress of Ukraine (Semynozhenko, 2012).

The doctrine identifies the key principles of becoming a knowledge economy:

1) affordable, high-quality, continuous education of scientists, business representatives, all segments of the population;
2) economic incentive and institutional regime that encourages the active use of the most advanced national and international scientific and technological achievements, innovative proposals in all sectors of the economy;
3) efficient innovation system that integrates into a single complex economic, scientific, academic and research centers;
4) active innovation infrastructure that offers innovation active enterprises a wide spectrum of services at all stages of the innovation process and connects elements of innovation system between themselves and with the environment;
5) state serving as the initiator and institutional coordinator of processes of building the knowledge economy.

The emergence of the knowledge economy, according to a British sociologist E.Giddens (Giddens, 2004), has fundamentally changed the laws of economic development. The countries, that until recently were on the stage mainly of agricultural development, can literally "jump" in the knowledge economy, bypassing the stage of industrialization.

The inability of the country to implement structural adjustment of the national economy according to the requirements of the new technological paradigm or delay in carrying out such structural changes not only inhibits its development, but also leads to economic degradation (Heyets, 2006).

So, from one side, the current stagnation of the economy of Ukraine most of all is connected with political instability and strained military situation. Under conditions of decrease in credit ratings and forecasting world financial organizations decline GDP of Ukraine by 5%, strategy investors in most cases reduced to the withdrawal of capital from the country or position of mode. From the other side, now in Ukraine there are considerable quantities of attractive investment and innovation projects with high growth potential and the level of profitability on investment. It should be noted such positive trends as:

- activation of cooperation with international financial organizations the level of the International Monetary Fund, the World Bank and the European Bank for Reconstruction and Development;
- integration of Ukraine into the EU;

- decline in value of assets in Ukraine.

The actions, which are directed to the termination of further stagnation, with the necessary condition of formation of favorable investment and innovation climate, have become the realization of the postulates of "Doctrine of the knowledge economy" (Semynozhenko, 2012) to stimulate infrastructure processes and complex social and economic development of country which include:

- deepening integration of educational and scientific infrastructure subjects;
- stimulating the creation of "Academic Innovation girdle" (Fedulova, 2009) around the National Academy of Sciences of Ukraine and its regional centers;
- providing "local preferences" to enterprises that implement innovations;
- introduction of statistical criteria for evaluating the innovative development of the country and national economy;
- the development of unified standards and methodology of integrated assessment performance of innovation development using the EU approach;
- promoting the development and implementation of regional programs of innovative policy in Ukraine.

The formation of the knowledge economy in the post-industrial society requires further research of mechanisms of formation and functioning of innovative infrastructure of the country in conditions when scientific and technical information and new knowledge are becoming the dominant production resources.

Features of formation and problems of management of innovation infrastructure in post-industrial society, their transformation in conditions of knowledge economy are not sufficiently defined. There is a need for scientific substantiation and development of mechanisms of formation and functioning of subjects of innovative infrastructure in the knowledge economy, as the sphere of information support of innovation active enterprises.

Globalization and innovative way of development of the world economy in the twenty-first century are crucial factors that define and direct ways of further development of national economies and their national innovation systems.The key condition for acceleration of social and economic development, industries and enterprises is the need to find energetically and quickly implement the most effective innovative proposals in producing. Creating these conditions ensures the implementation of the innovation process, which ultimate goal is the implementation of priority of fundamental and applied scientific research works, new advanced technologies, forms of work organization and management, based on scientific and technological progress.The current business environment every year is becoming more dynamic, the competition is becoming more global.

Highly developed foreign countries with market economies have worked out effective administrative and economic mechanisms to stimulate innovation activities which are based on the following principles:

- clear definition of the types of achievements (novations) of scientific, technical, social and technological progress, which should be regarded as a key priority at this time;
- legislated economic and political system of innovation support by the government;
- use of special state innovation policy measures to support the national innovation system.

The innovative economy appeared in the 50-60-s of the last century that is during the greatest prosperity of industrial society. The famous American futurist E. Toffler (Toffler, 2008) dates the emergence of innovative economy in the USA to 1956. Formation and development of a new type of economy is impossible without adequate infrastructure support, because innovation infrastructure is formed simultaneously with the development of innovative economy. In 1987 K. Frimanis introduced the concept of the national innovation system. This is a network of institutions of public and private sectors, action and interaction of which allows initiating, adapting, modifying and transferring of new technologies (Freeman, 1987). Innovation infrastructure is an important component of this system.

Since the 80s of the XX century an intense surge of innovative activity at the international level has formed national innovation system. In this context, one of the fundamental achievements of modern economic science is the creation of the concept of national innovation systems.

The basic methodological principles of concept are (Ivanova, 2002):

- basing on the ideas of Schumpeter (Shumpeter, 2007);
- analysis of the institutional context of innovative activity as its substantial component;
- recognition of the special role of knowledge in economic development.

National innovation system includes:

- network of institutions of public and private sector, which creating, adapting, import and propose innovations;
- infrastructure which helps implement new scientific and technical ideas, offers and convert them on innovation products, goods, services;
- information support of enterprises in search of innovation offers and following innovative activities, including advisory services, consulting and coaching;
- public and private organizations and enterprises that are aimed at innovative development;
- organization of managing the innovation process at the national level.

The primary task of the state is the creation of national innovation system, designed to provide a favorable innovation climate in the country, create conditions and incentives for the implementation of mechanisms of management of innovative development.

It is necessarary to say that the basic elements of the national innovation system of Ukraine function in isolation from each other, without any balance in the system, which causes inefficiency of its action.

The effectiveness of implementation of innovations depends on many factors, the main of which is the speed of innovation, which largely can be characterized by such economic category as "innovation lag". The period after registration a novation ready for implementation of scientific and technical proposal and the beginning of its implementation in practical activity is commonly called innovation lag. "Lag" is an indicator that reflects time retardation of one phenomenon from another associated with it, in this case – novation from innovation.

If we consider the role of innovation lag in the innovation process, it can be defined as low or even completely unproductive loss of time. During the innovation lag enterprises receive information about a useful for them novation, prepared and designed by scientists for practical implementation.Then some time is spent for reflection, hesitation, awareness of feasibility and profitability, and sometimes economic, political or social necessity of introduction of innovations. At this stage innovators are seeking answers to the following questions: "Is this innovation necessary?", "What will its result be?", "How much will cost its implementation, or withstand a load of enterprise budget?". After it is implemented economic, technological and organizational research of opportunities of implementation of novations and feasibility of their implementation in practical activities of enterprises defines the positive and negative consequences of novations. As a result of economic calculations and thorough scientific substantiation, novation is accepted in the form of project for further implementation and thus, goes to another level that is it becomes an innovation.

The diffusion of innovations is a process of cumulative increasing number of imitators (followers) that implement innovation behind the innovators, expecting higher profits (Shumpeter, 2007).

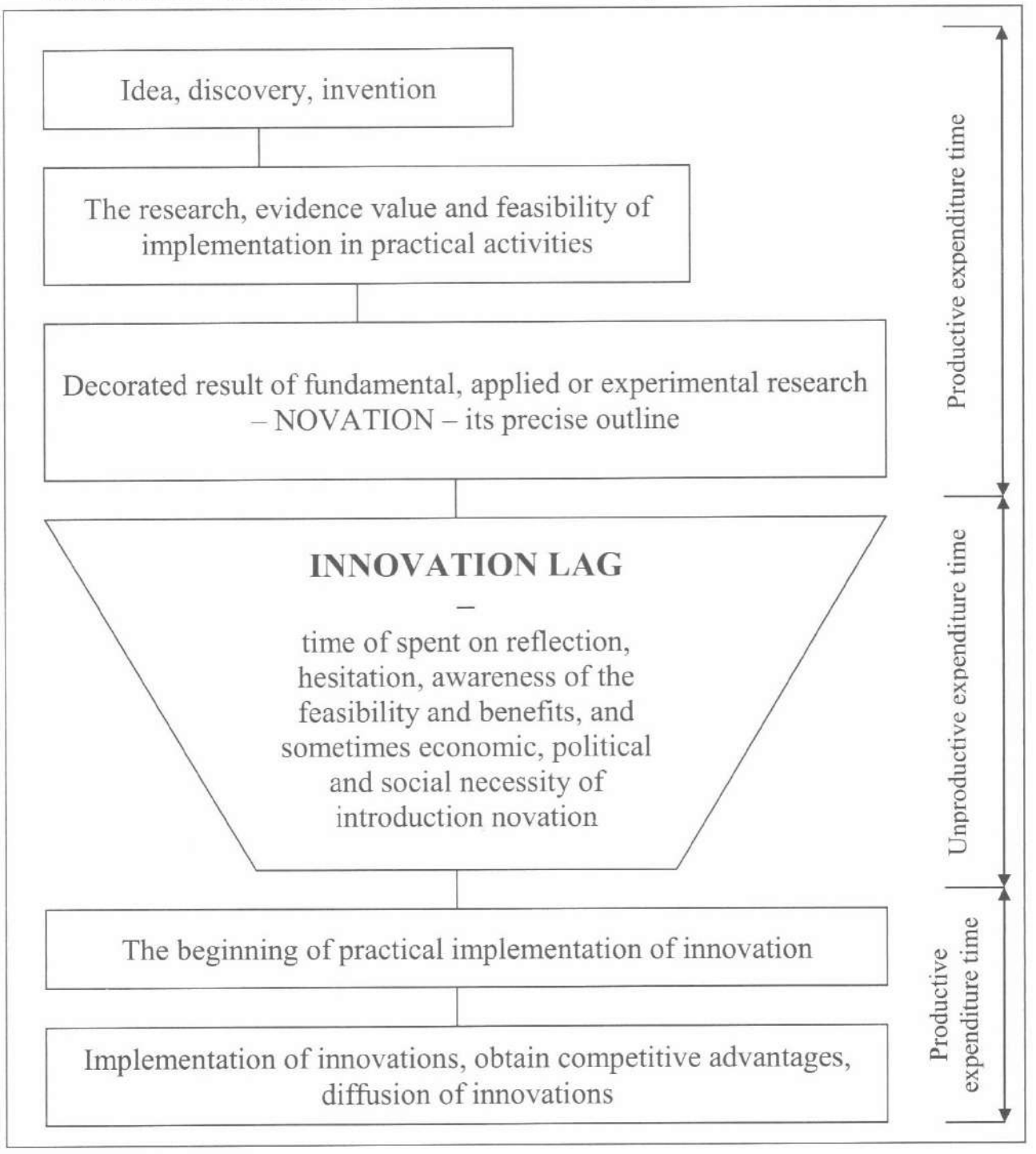
The main goal of management of innovative development of enterprises is the introduction of scientifically substantiated innovation. The effectiveness of management innovative activity is manifested in the process of reducing the innovation lag and wide diffusion of innovation activity in all enterprises of a certainindustry. Average duration of innovation lag, as an indicator of the speed of response to an innovation proposals, can be used as a comparative assessment of the innovation potential of enterprises in particular, and the country as a whole (figure 1).

Thus, innovation lag is an essential component of the innovation process, which is positioned in the zone of low productivity expenditures of time, but which is largely dependent on the dynamics and speed of its implementation. Dynamically changed internal and external environment of the modern enterprise leads to a significant increase in the rate of development and implementation of innovations; it needs to reduce the time of

implementation of all the constituent elements of the innovation process and, above all, innovation lag duration (Kniazevych, 2010).

Figure1

The scheme of realization of innovative process taking into account expenses of time



Source: author's own development.

Dissemination of innovation is firstly an information process, forms and methods of which depend on the communication channels, ability of business entities to accept this information and use it practically.

It is established, that in some industries nearly 80% increase of volume in turnover and nearly 90% of profit growth are achieved with the help of products that did not exist five years ago.That is, from one side, increasing innovation activity of enterprises, on the other side – significantly reduced the product life cycle (Fedulova, 2009).

The dynamics of implementation of innovations largely depends on the stage of the life cycle, in which the researched sectors of national economy are positioned. The "young" industries, which have appeared relatively recently and are quickly developing, are expected to show the appearance of substantial, radical novation proposals, which can give the whole complex of innovations and will lead to their further rapid development. In these industries there is a considerable wave of innovation, and innovation lag length through fierce competition is significantly reduced, for example, the innovative use of optical fibers in the electronics industry, information technique and technology. Japanese corporation Matsushita Electric, one of the world's leading productions of consumer electronics, which produces modern digital video and audio equipment, and has its own scientific and research centers, reached a record reduction of innovation lag to 4.7 months.

In the "old" industries, such as agriculture, forest, carboniferous industries and others, it is unlikely to wait for a radical innovation. In these industries, most innovations are aimed at increasing of production of goods, improving production technology. The longer enterprise managers speculate and hesitate in implementing novations, the greater the duration of innovative lag is.

There arises socio-psychological explanation of factors that influence the duration of the innovation lag in various industries. During this lag the novation, which is ready for practical implementation, is delivered as innovative project, scientific goods, to market producers. Producers estimate their capabilities and benefits of implementing future innovations. If the analysis shows significant benefits, the struggle for the reduction of the innovation lag begins, gets privileges in competitive struggle due to the possibility to monopolize the market and get more profit.

Innovation lag is a time from the moment the novation is prepared, executed by scientists as a proposal to the beginning of its practical implementation in an innovative project. Lag can be attributed to the low productivity time expenditures in the innovation process. Reducing the innovation lag increases the speed of the innovation process and allows the enterprise to get more competitive advantage, become for a while a monopoly on manufacturing modern products, while other producers are at the stage of hesitation and waiting for the results of the "pioneer" venture firms.

Duration of innovation lag and diffusion of innovation processes can largely characterize the innovative potential of enterprise, sectors of the economy, national innovation system as a whole.The practice shows that the stronger the innovation potential of the enterprise, the closer his contact with scientists, and the less is duration the innovation lag in implementing innovation.In reduction of duration of innovative lag may influence as professional, specialized advisory systems, consulting and coaching. These infrastructure components of national innovation systems not only provide direct interconnection between the producer of innovations and consumer, but also contribute to the coordination of their

interests, and accumulate knowledge that provide the opportunity generalization, systematization and identify patterns of development of innovative economy of Ukraine.

Comparative analysis of national innovation systems of different countries (Cornell University, INSEAD, and WIPO, 2014) indicates that Ukraine occupies the 63rd place out of 143 in the global rankings on the effectiveness of innovation on various factors influence. The top ten countries with the highest ratings in 2014 included: Switzerland (which has an absolute maximum score – 64.78), followed by the UK, Sweden, Finland, the Netherlands, the USA, Singapore, Denmark, Luxembourg, Hong Kong (China).

One of the main factors influencing value of global innovation index for a particular country in the world is its innovative infrastructure. By this criterion, Ukraine takes the 107th place out of 143 possible.

The innovative infrastructure is designed to implement active support of innovation processes, which occur in various sectors of the national economy on the way to the realization of a system of measures to creation and practical implementation of new scientific, technical and socio-organizational proposals to better satisfaction of commercial, social, and economic needs of society.

Domestic enterprises which are carrying out innovation activity in the modern stage of socio-economic development, have problems with investing innovative projects, highly skilled personnel, quality and affordable consulting services, experience of promoting innovative products for international markets and the like. Establishing of the effectively operating innovation infrastructure is one of the most important steps in the way of becoming an innovative type of economy.

During the research of the essence and specifics of functioning of innovation infrastructure we consider it as a complex, multifaceted economic category.The term "infrastructure" originated from the linguistic content of Latin words "infra" – lower and "structura" – building, structure, relative position, which may be interpreted as a foundation. It was borrowed from the military lexicon, where in the early XX century that word determined a complex of rear structures that provided the action of armed forces (stocks material means, military bases, polygons). The relationship of term is traced with the construction, its identification with the foundations of buildings under construction. Structure is a relative placement and interrelation of the components, whole internal structure.The structure can also refer to the order or organization of anything. Infrastructure is a complex of industries of national economy (the sphere of material and non-material production), which services the industry and agriculture.

So, first used in the early XX century to describe the objects and military structures, the term "infrastructure" in the 40s began to be used as a combination of industries that serve the normal functioning of material production as well in peacetime. There are different approaches to the interpretation of the etymology of the term. Regarding the economy, it is foundation, internal structure of the economic system. Infrastructure is defined as a complex of general conditions that ensure the development of private entrepreneurship in the sectors of economy and satisfy the basic needs of the population.

The problem of the relationship of production with its servicing industries emerged long before the appearance of term "infrastructure", some scholars, namely R. Nurkse (Nurkse, 2009), P. Rosenstain-Rodan (Rosenstain-Rodan, 1961), A. Hirschman (Hirschman, 1945) and others paid attention to it. Directly, the term "infrastructure" was first applied in the research of the western economists. In economic literature of the former USSR, the exploration of problems of infrastructure began only in the 70s of XX century. Researchers recognize that infrastructure is a required component of any integrated economic system, at the same time they emphasize its diversity and breadth of spectrum of fundamental services that they provide at different stages of the innovation process (Soloha, 2009).

The content of the term "infrastructure" is extremely broad, basic types and organizational forms depend on the destination. In a general sense, infrastructure is a combination of installations, systems and services, buildings, systems and services that are essential to the functioning of sectors of material production and ensure the conditions of vital functions of society. Sometimes, the term "infrastructure" covers a complex of infrastructure sectors of the economy (transport, communications, education, health, etc.).

Infrastructure in a market economy is a specific system of interconnected institutions; its objective function is a creation of the general conditions for the economic subjects on various markets.This understanding of infrastructure allows considering it in general as a complex of institutional, innovation, credit and financial, industrial, commercial, information, ecological and social infrastructures.

During the 1990s in Ukraine the sphere of economic and social infrastructure was in a state deep crisis.For its overcoming it was necessary to implement radical economic transformations in industry and agriculture, restore social norms of savings and accumulation of necessary funds for technical upgrading of infrastructure industries. On the modern stage of development of subjects of infrastructure complex, to the existing from the first years of independence problems, "the worst scenarios" associated with the tense military and, therefore, the economic situation in the country were added.

The essence of innovation infrastructure as an economic category defines its role and importance at the macro and micro level. At the macro level innovation infrastructure is the basis for the development of innovation and investment activity and national economy as a whole. Ultimately innovative infrastructure allows providing conditions for the formation of stable financial situation of enterprises and industries and obtaining by them maximum profit.The essence of the proposed statements once again emphasizes the role and importance of such an institution at the micro level.

So firstly, innovation infrastructure is an artificially created environment that is designed to stimulate of innovation activities. Secondly, innovation infrastructure is a dynamic self-regulating system of markets and subjects that entering these markets in certain economic relations within the limits stipulated by laws and normative legal acts of Ukraine and provides the necessary conditions for expanded production and marketing of innovative products, technologies and services.

The main objective of the formation and functioning of innovative infrastructure of the country is providing a complex of innovation activities, conservation and development of

scientific and technical potential of the country in the public interest, including overcoming the decline of production, its restructuring, changes in nomenclature of products, creating of new products, new production processes.

The process of forming of innovation infrastructure is being implemented in order to ensure active support of enterprises-innovators and help the creation and practical implementation of new scientific, technical, industrial, managerial, social and organizational proposals for better satisfaction of commercial, social and economic needs of society. The market essence of innovation infrastructure is disclosed in the system of specific features of its constituent elements and their impact on innovation processes.

Innovative infrastructure integrates different types of organizations: firms, investors, intermediaries, scientific and government institutions, which cover the whole innovation cycle from generating scientific and technical ideas to implementation of it in the form of new product, new technology, new services, and new management organization.

The implementations of innovative ideas, direct implementation of innovative process are the sequence of executable, difficult enough, often risky operations. At the condition of formation aggregate of favorable factors of external environment for enterprises-innovators at different stages of the innovation process it is possible to hope for successful execution of certain innovative projects. Innovation infrastructure is a chain of various kinds of support services, which cover all stages of the innovation process from the appearance of scientific ideas and proposals up to its implementation in the form of new industrial products, goods or services.

Innovative entrepreneurship is a zone of high economic risk. Implement of innovation of enterprises is hampered by:

- high innovation expenses without the guarantee of a speedy recoupment;
- insufficiency of funds, information, qualified personnel;
- fierce competition on many markets;
- uncertain demand for innovative goods or services;
- complexity of the organization of process of continuoussearch for new ideas to produce innovative products or services.

Theoretical and methodological approaches to the study of processes of functioning subjects and objects of innovative infrastructure should take into account their specific features:

- high levels of uncertainty and riskiness results of innovative activity;
- commercial interest of all subjects of innovation infrastructureand, consequently, the possibility of using of market mechanisms to intensify their activities;
- wide range of services offered by infrastructure subjects at all stages of the innovation process;

- availability of services provided by the subjects of innovation infrastructure;
- systemic character of functioning of innovation infrastructure objects, which determined by a combination of their activities in the process of consistent service provision at all stages of the innovation process from the birth of innovation idea to the finished goods or product;
- dynamic, continuous development, improvement of forms and methods of activities of subjects of innovation infrastructure;
- creativity of innovation processes is required the emergence of creative approaches for offers and implementation services;
- professionalism of services, narrow specialization in separate phases, stages of the innovation process;
- need to provide special legal status of subjects of innovation infrastructure, recognizing the priority of their activity at the legislative level;
- social responsibility and corporate ethics subjects of innovation infrastructure.

Release of innovative products is always associated with additional financing, heightened entrepreneurial risk. The enterprise's external environment entails significant impact on the the successful implementation of the innovation project, much of which is determined by the efficiency of action of existing in this region innovation infrastructure.

External environment of enterprises is a system that consists of direct and indirect actions factors, innovative infrastructure of company (at the micro level) and innovative infrastructure that has developed in the country, industry, region (at the macro level). According to the theory of systems, external environment is a totality of interrelated elements that are constantly interacting, determine its character. Infrastructure is considered as auxiliary system that acts in immediate surroundings of the company. If the external environment contains elements that promote introduction of innovations then the mechanisms of stimulation operate; the system takes an innovative character and innovative infrastructure is a decisive, motivating factor for the further development of enterprises. Innovative microenvironment is defined by innovative enterprise culture, the presence of sufficiently strong innovative capacity, leadership ability and propensity to introduction of innovations that provide competitive advantages. Innovative macroenvironment appears in the formation and direct functioning of innovation infrastructure of the country (region, sector of the economy).

Certain infrastructure as a factor in the external environment of the organization has always existed. It is a combination of enterprises, organizations, institutions, their unions, associations of any form of ownership that provide services to maintenance of innovation activity.

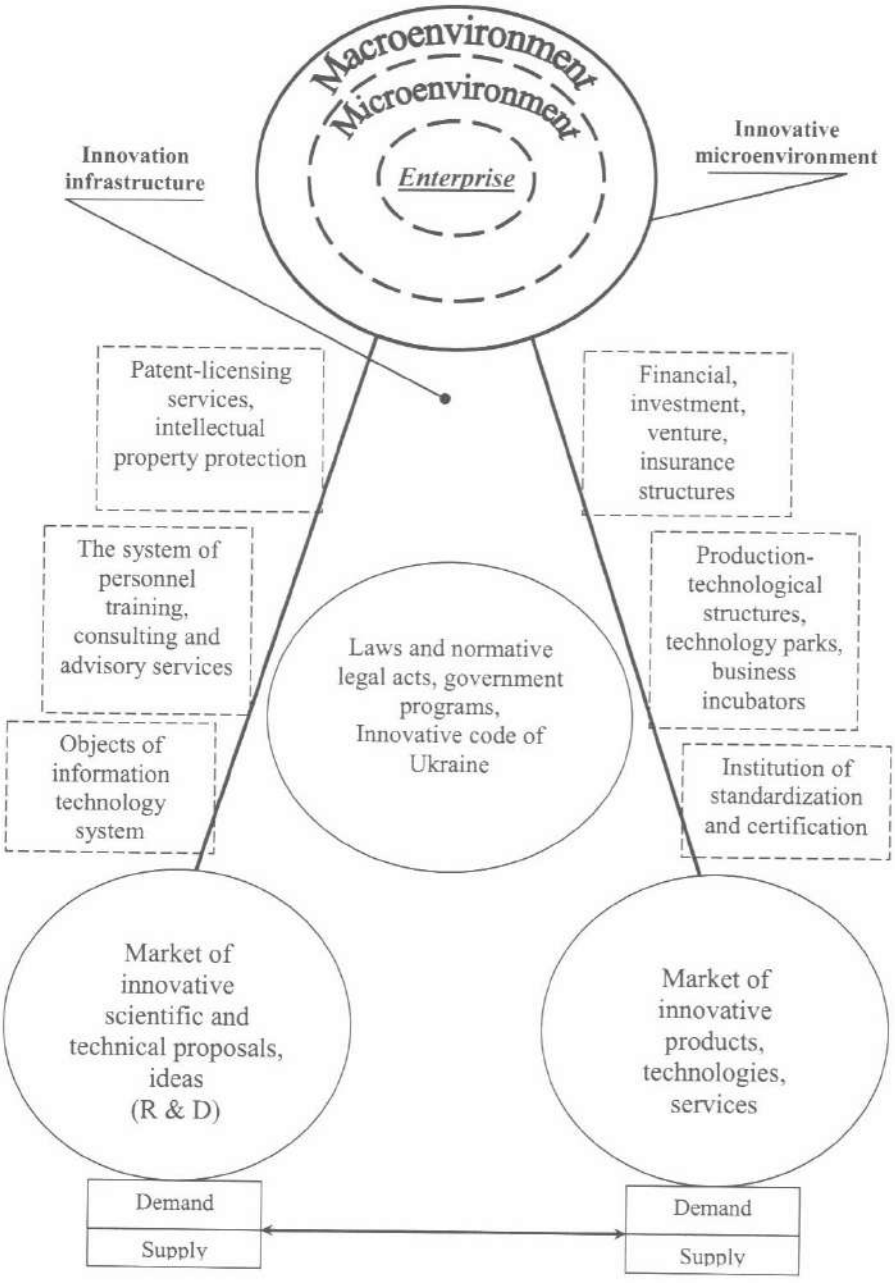
Achieving and improving the optimal balance of all operating factors of external environment, including constituent elements of innovation infrastructure at the macro and micro levels, will form a special, more favorable conditions for the creation and promotion

of innovative entrepreneurship, active introduction and implementation of innovative projects, increase in volumes of domestic and foreign investment. In conditions of globalization of the world economy to create effective infrastructure conducive to the implementation of innovative forms of business refers to the main tasks of the national innovation system.

Thus there is a need for the possibility of internal (microenvironment that was formed during the previous activities of the enterprise) and external (macroenvironment) infrastructure (figure 2).

Figure 2

The mechanism of functioning of constituent elements of innovation infrastructure in market conditions



Source: author's own development.

Total innovation infrastructure can be defined for the enterprise as a factor of external environment indirect action that promotes innovative changes in management, improvement or modification of products, technologies and services to better satisfy the demand of a certain segment of the market. In strategic planning of innovation activity it is necessary to consider the impact and promote the external environment (at the macro and micro levels) for processes of introduction of innovations.

Model of interaction between constituent elements of the mechanism of innovation infrastructure is divided into two directions: scientific and production (from the market of innovative proposals to the enterprise), production and market (from the company to sales market of products) branches.

Scientific and production branch is formed by the action of scientific and technical proposals, information about which can come to the enterprise by means of information and technology sector. At this stage during operation of subjects of infrastructure with personnel training and retraining, consulting agencies and by advisory services, enterprise can receive information about methods of manufacturing of innovative products, which is necessary for this technology, equipment, introduction of scientific and technical offers and training opportunities experts-performers. New scientific and technical proposals are usually objects of intellectual property and for their use registration and purchase of appropriate licenses, patents or permits are necessary.

Production and market branch of infrastructure is designed to facilitate the process of searching sources of financing of innovative projects, analysis of financial opportunities and investment proposals from financial institutions in the region. After solving the problems of financing innovation project there is the possibility of payment and the involvement services of specialized production and technological structures, technology parks, business incubators, etc. In case of successful development and manufacturing of innovative products standardization and certification become necessary. Only after that innovative products are aimed at sales markets.

The enterprise as a key subject of the innovation process, analyzes the needs of the sales markets in order to identify necessaty of production of innovative products, which in this period of time has an increased demand. Then the stage of strategic planning and evaluation of existing innovation potential of enterprise, innovative micro and macroenvironment begins. One of the key factors, that allow the enterprise to expect to reap the benefits of innovation activity, is the availability and consideration of opportunities provided by innovative infrastructure of state and specific region.

The interaction between all participants of the innovation process is carried out in accordance with the laws and normative legal acts of Ukraine. By their changes and adjustments determined by the state's influence on the formation and development of innovation infrastructure. A key role in the process of state regulation of innovative entrepreneurship plays a direction of legislative institutions in creating Innovative code of Ukraine. The quality of innovation infrastructure, essential functions for enhancing of innovation activity will depend on its adoption in the future. This is impossible without a detailed and securing definition of the content its basic concepts, types, components, stages

of formation, methods of regulating and stimulating in the appropriate regulatory and legal framework.

The content of economic category "innovation" carries in itself idea of market harnessing new scientific developments and achievements. The central figure in the market of innovation is the entrepreneur who buys the scientific and technical ideas and implements scientific and technological progress in the form of finished products, goods, services, supplies them to sales markets of finished innovative products. Innovation and favorable for their implementation innovation infrastructure of country are basic concepts of modern innovative economy. Innovation infrastructure, the level of its development and efficiency of action are basic components of the national innovation system that helps enterprises perform innovative projects and successfully implement innovative products in domestic and foreign sales markets.

Ukraine's economy can develop effectively only on condition of widespread introduction of scientific and technological innovation offers, new products, technologies and services into production. But introduction of innovations is associated with a variety of factors that are characterized by additional expenses of innovators, process complexity, and uncertainty of results, significant increase in the level of risk. Formation of effectively operating supporting infrastructure that specializes in overcoming these negative trends is one of the main factors required to stimulate and innovation development of the national economy.

In a global economy the service sector is a significant part of it, which includes providing various types of services carried out on a commercial basis. During the era of scientific and technical progress, mechanization and automation of physical labor, highly intellectual services sector is a key sector of the economy, especially the development and value gets intellectual work in the processes associated with the introduction of the production of new scientific proposals. Industrial enterprise for implementation of innovation projects, scientific ideas should be or composed of highly qualified experts, or seek the help of professional consultants, specialists in economy, technique, technologies that offer their services acting as a part of the innovation infrastructure of the country or its region. The distribution of intellectual work in the way of "scientific idea – new products" creates the need to attract highly specialized professionals who can unite and create juridical or individual subjects of innovation infrastructure.

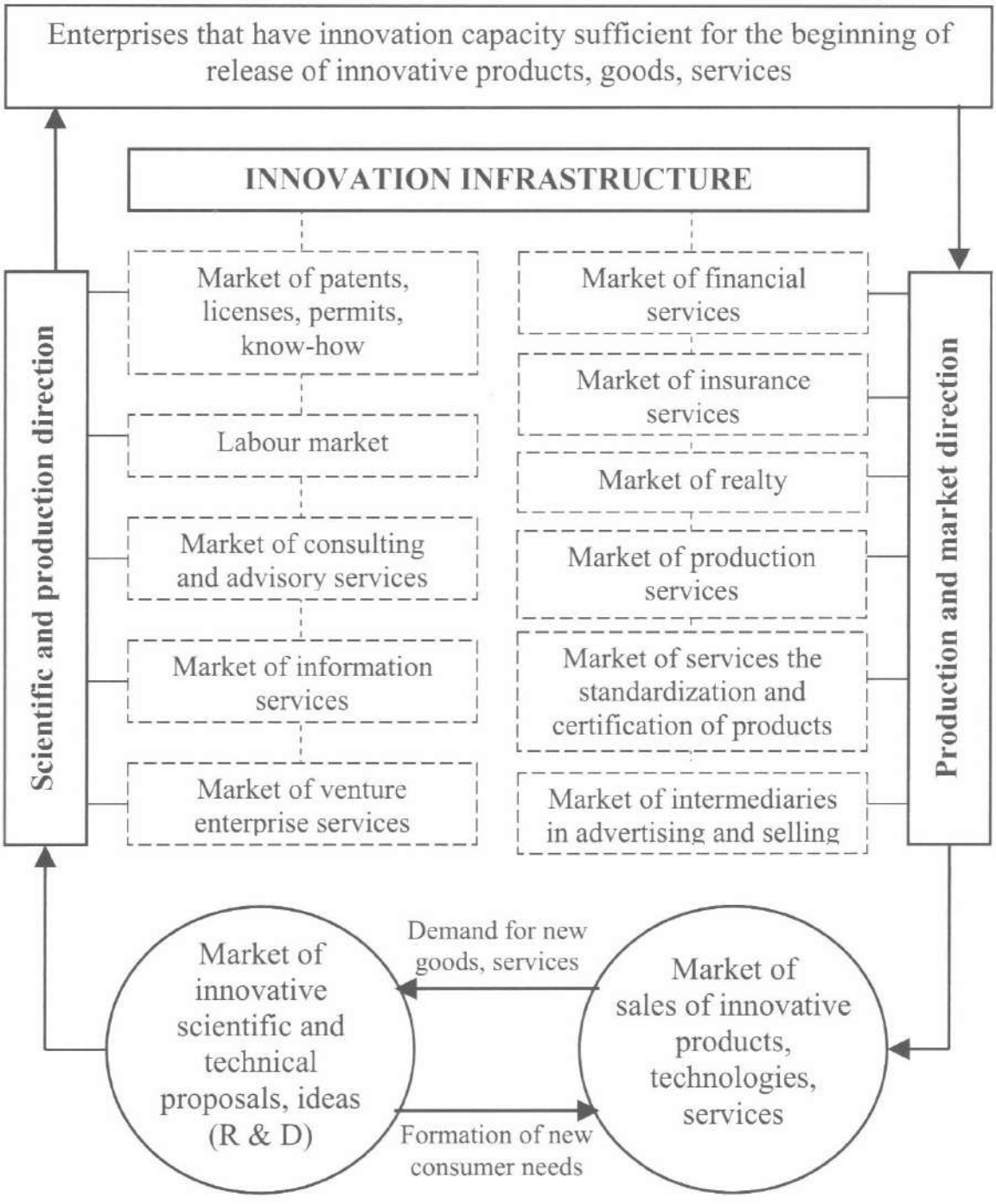
The main active subject of the innovation process is enterprise which directly creates a new product. In its activities, it is oriented to demand that arises on the sales markets of innovation products and proposals that put forward in the market of scientific and technical ideas. Between the main subjects of innovative activity occurs a system of markets of auxillary services that specialize in provision of innovation process in two directions (figure 3):

- scientific and production direction contributes to the flow of innovative ideas from scientists, inventors, generators of innovative proposals to the enterprise, able to implement this idea into a new product, goods and services;

- production and market direction is directly help the enterprise develop new products and deliver it to the sales market.

Figure 3

The mechanism of interaction of markets services in the framework innovation infrastructure



Source: author's own development.

Commercial activities and commercial operations are carried out in the process of interaction of entrepreneurs with subjects of innovation infrastructure in specialized

markets of innovative services and products. They enter into relations, which main goal is an effective commodity-money exchange in the form of buying and selling. Goods in specialized markets of innovation infrastructure may be in the form of patents, know-how, research, experimental or industrial design, information, equipment, technology, apparatus, production facilities, etc.

Market mechanism of commercial activity allows producers and consumers of innovative products implement buying and selling scientific proposals, ideas, new goods, technologies or services with the use of classical instruments of market economy such as consumer demand, supply and competition producers.The main active subject of this process is the enterprise- producer of innovative products and main markets is a market of proposals scientific ideas, know-how, R&D and sales market of innovative products.

Let us consider the innovation infrastructure as a background of promoting innovation processfrom applied scientific ideas, R&D to producer of innovative products and then in the form of finished goods on sales market (see figure 1). The new idea, as the subject of intellectual property, remains an idea until a certain time when it is included into economic turnover as goods. The innovative proposal is fixed in a special certificate or patent, which establishes ownership of author of this idea. Since then, the idea goes into the category of product and innovation infrastructure subjects begin to offer their services to help the various stages of implementation innovation process. Entrepreneurs turn to the services markets, operating under the innovation infrastructure, only in those cases and the problems that can not be independently decided or believe their own solution impractical. In this context, entrepreneurs are legal entities, including firms, enterprises and organizations that take on the risks associated with the practical implementation of innovative ideas, new projects, new services and hope to get through this significant economic benefit, win in the competition, improve production technology, improve the properties of products, etc.

In connection with that the innovative business is a zone of high risk; it can not exist without the constant support from the state institutions. The state creates institutions, laws, legal and regulatory foundations of entrepreneurial activity, conducts investment and innovation policy aimed at supporting enterprises that are engaged in the development, introduction and implementation of innovative projects. State participation in the management and regulation of the commercial relations of subjects of innovation infrastructure should be aimed at supporting and improving market mechanisms, based on consumer demand, offers scientists and producers of innovative products in a competitive environment.

The current state of the markets of innovative services in Ukraine and especially their further development are determined by the following factors:

1) the need to further expand the number of subjects and objects of infrastructure, increasing the volume and quality of services offered to them;
2) problems of economic development, filling state and local budgets make it impossible optimal financial support of subjects and objects of innovation infrastructure;
3) the possibility of setting up effective functioning ofservice economic formationson a commercial basisas a part of innovation infrastructure;

4) the formation of innovation infrastructure is objectively defined as the growth needs of subjects of innovation activitiesin the services that it provided, and the level of development of national scientific and technical sphere, the presence of R & D that can be commercialized;

5) further development of innovation infrastructure possible only withsoftizationand deepen of service model action of its subjects.

Evolutionary development of productive forces of modern social production is the result of continuous development of fundamental and applied science and spread of its influence on the improvement of technics, technology, organization of innovation production, increase of its efficiency. In the economy of post-industrial society productive priorities move from emptive desire to production of goods and products to advance provide knowledge based services, the dominant industrial resource is information and knowledge. Formed trend of increased use of intangible resources in production processes, qualitative and quantitative growth of indexes of functioning non-production sphere, that specializes in providing various services related to the promotion and help of innovation entrepreneurship.

On the modern stage of socio-economic development, intellectual work in the processes related to the implementation of the production of new scientific ideas, innovative proposals, know-how is of particular importance and value. For realization of innovation projects, scientific ideas industrial enterprises should be composed of highly qualified experts, or appeal for advice from professional consultants, experts in various sectors of the economy, technique and technology that offer their services acting individually or jointly, as subjects of innovation infrastructure of the country, region and so on.The distribution of intellectual work on the path "scientific idea – new products" creates the need to attract highly specialized professionals who can form certain associations and act as part of subjects of innovation infrastructure of country.

Innovation infrastructure is conventionally divided into "soft", "semi-rigid" and "rigid". "Soft" infrastructure involves activities of subjects that are associated with the provision of information services, consulting, financial and insurance coverage, acquisition of intellectual property. "Semi-rigid" infrastructure refers to providing customers technologies, equipment, devices that required to implement innovations. "Hard" infrastructure includes proposals for use of engineering communications, structurs, working areas, buildings, and so on.

Innovative production is a specific form of industrial activity, where central role is given to the practical use of new knowledge and implementation of scientific and technical proposals. These intangible resources enable the implementation of innovative processes by the way of their subsequent realization in the form of new goods, products, services and technologies. New knowledge is embedded in production, allowing enterprises to produce more high-quality, advanced science-intensive products and receive certain advantages over competitors. In conditions of globalization of the world economy, these benefits help to ensure the competitiveness of national products in international markets, and intangible resources as new scientific knowledge and scientific and technical proposals are the main source and a key factor in the subsequent development of material production. Knowledge,

as intangible resources, combined with the material begins to act as the most efficient factor that becomes a source of innovation and driving force of the economy.

The post-industrial society is characterized by principally new features of development (Burmenko, 2011):

firstly, it is objectively conditioned by the phenomenon of softization;

secondly, the shift to a service economy model.

The processes of change in the structure of resource support economic development in the direction of increasing its intangible component defines the term "softization". Softization is a process of transformation intangible resources (services, intellectual capacity of enterprises, industry, national economy, society, distinct personality) in an important factor in economic development (Burmenko, 2011).

These features and trends of economic development are related, especially, of innovation infrastructure as sphere of realization of knowledge-intensive services. Softization of innovation infrastructure can be defined as a process that ensures the formation and development of innovative economy based on knowledge, use of knowledge, that is intangible resources as an important factor necessary for the "materialization" of production high-tech, innovative, competitive products. Softization is considered a broader concept, which includes as an essential component the process servization.

The economic development is a complex and multifactorial phenomenon. Softization stands as one of the most effective factors of modern economic development, promoting the emergence of innovative targets and motives in entrepreneurial activity, sets new values of the economic activity. As the process of enhancing the role and importance of knowledge, effect of softization is manifested in the provision of information that is needed for making management decisions, development of energy, resource saving, information and communication technologies and in innovation activities, where new scientific proposals and know-how are defined as the main intangible factors necessary for the production of new goods, products, services.

Intellectual capacity, knowledge and skills of scientists, researchers, inventors, and entrepreneurs provide formation and effective functioning of innovation infrastructure of country. Softization of modern economy would increase productivity by increasing use in the production of intangible resources, which along with material is able to provide innovative activity of enterprises. The main purpose of the innovation infrastructure objects lies in full-scale ensuring the processes of softization, providing a wide range of intangible services to enterprises and organizations that implement innovation, realize the innovative projects. Softization is the direct result of the impact of scientific and technological progress on the structure of resource support of innovation development.

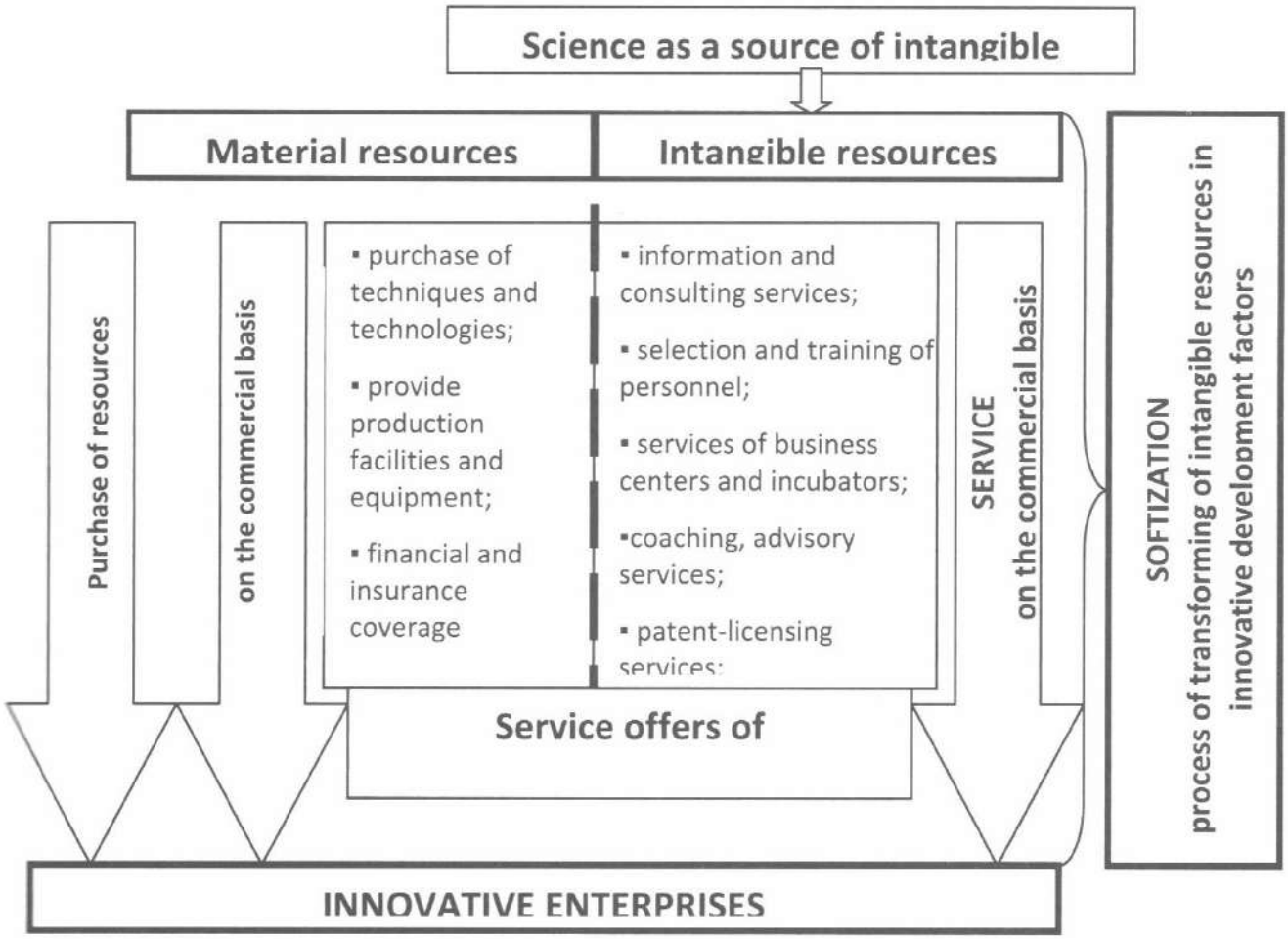
In the economy based on knowledge, the most important component of softization is servization. It is the process of transferring intangible resources (spread services), created by scientists, researchers, inventors for their practical use in innovation activity. These features and directions of development of innovative economy are related primarily to its infrastructure as the sphere of ensuring intangible resources processes implementing

innovative projects by sales service, providing knowledge-intensive services. The phenomenon of softization is manifested in the activity of subjects of innovation infrastructure by distributing service offers at all stages of the innovation process.

The model of interaction processes of softization and servization in the chain "science – innovation infrastructure – innovative production" and their role in ensuring of enterprises of intangible resources is presented in the figure 4.

Figure 4

Model of interaction processes of softization and servization in the chain "science – innovation infrastructure – innovative production"



Source: author's own development.

The growing role of sphere of services in the economy of post-industrial society led to the emergence of term "service economy". The development of the service economy is usually associated with positive dynamics of the service sector in the overall structure economy and, ultimately, leads to the dominance of services in volume of GDP. Thus, in the early 1980s in the USA and Western European countries GDP interpersonal services surpassed gross product created in the material production in France 2 times, in the USA and Germany – 6 times, in England – 30 times. During this period the concept of a service and information economy formed (Gorn, 2009).

It is observed the growing and significant impact of those industries, whuch are not engaged in the production of goods, but are engaged in the production of services. Services act as the object of buying and selling, the main production resources are information and knowledge. Knowledge ceases to be a relatively independent object of economic development, which is traditionally limited to R&D. Today knowledge penetrates into all spheres and stages of the economic process and it is too difficult to separate it from product or service (Fedulova, 2009). The infrastructure of the industrial society is converted into infrastructure of knowledge economy through substantial spread of processes of softization and servization in it (Kniazevych, 2014). In the post-industrial society the content and range of services provided by the subjects of innovation infrastructure is much deeper, more attention is given to ensuring effective provision of high-tech services, innovative service.

The subjects of innovation infrastructure are playing a key role in ensuring processes of softization and servization of economy. The phenomenon of softization is the characteristic of post-industrial society, a direct result of the impact of scientific and technological progress on the structure of the whole economy, including intersectoral collaboration. Softization and servization of innovation infrastructure are defined by the increasing role and place of intangible factors and services in the development of the national innovation system, the related costs are classified as transactional. For understanding overall regularities of formation of socio-economic mechanism of market development in innovative services that operate within the innovation infrastructure in Ukraine, it is necessary to research the specific of its servization. Great importance for the theory and methodology of servization of innovation infrastructure takes its division into its constituent parts for the intended purpose and value of services, without which innovative processes in the national innovation system will be impossible or ineffective.

Through strengthening the role of information, information and communication technologies and processes of softization and servization, infrastructure of industrial society turns to innovation and information infrastructure of the knowledge economy of post-industrial society.

Today the mechanisms of economic evaluation of the use of intellectual and creative potential of enterprises has not been fully worked out it is an important economic resource of modern organizations. This is especially important for Ukrainian high-tech (knowledge based) enterprises that have in most cases great intellectual and negligible material and financial resources.

Conclusion

The development of the knowledge economy in Ukraine is a requirement of modern stage of socio-economic development of the world society. A necessary condition for this is the formation of flexible, active current innovation infrastructure that can support business entities in the process of implementation of new knowledge, research proposals, research and inventions. Science in the knowledge society turns into a direct productive force, but

only on condition of presence of the corresponding infrastructure, which serves as a connecting link between science and industry. In its absence or fragmented formation, scientific knowledge is potentially a virtual force that is unable to become productive.

The importance of formation of modern innovation infrastructure significantly increases due to the signing of the Ukraine's association agreement with the EU and with participation in the Framework Programme for Research and Innovation "Horizon 2020". It is a unique potential possibility to overcome the stagnation processes in the economy, increasing investment attractiveness for foreign investors, implementation of integration and specialization within the European Economic Community.

As part of the innovation infrastructure, there are a number of markets of specialized services, which on a commercial basis provide support to enterprises that perform innovative projects at all stages of the innovation process. Further development of innovation activities is only possible when interaction of all subjects of innovation infrastructure is activated by strengthening their commercial interest of using market mechanisms of management, gradual increase of demand and supply on the markets innovative services. Improving market mechanisms of management of innovation infrastructure will contribute to a more complete disclosure of the innovative capacity of the state.

Knowledge economy and its innovative infrastructure determine the next stage of development of the national innovation system based on a combination of intellectual potential of Ukrainian society with global economic demands and diffusion of knowledge at the international and national levels.

References

Bell, D. (2004). Future Post-Industrial Society. Experience in Social Forecasting. 2nd ed. Moscow: Academia.

Burmenko, T. D. (2011). Softization and Servization – Features of a Modern Type and the Main Landmarks of Economy of the Russian Modernization. – Izvestiya ISEA Journal, 6, p. 23-26.

Dorzhieva, D. D. (2009). Innovative Infrastructure as a Factor of Socio-Economic Development of the Region. Ulan-Ude: East Siberian State Technological University.

Fedulova, L. I. (2009). Knowledge Economy. Institute for Economics and Forecasting Ukrainian National Academy of Science, Kyiv.

Freeman, C. (1987). Technology Policy and Economic Performance: Lessons from Japan. London and New York: Frances Printer Publishers.

Giddens, Je. (2004). Escaping World. How Globalization is Changing Our Lives. Moscow: The Whole World.

Gorn, A. P. (2009). Development of the Market of Intellectual and Creative Services (Theory and Methodology). Samara: Samara State University of Economics.

Heyets, V. M. (2006). Ukraine in the Framework of Knowledge Economy. Kyiv: Osnova.

Hirschman, A. O. (1945). National Power and the Structure of Foreign Trade. Berkeley, Los Angeles and London, University of California Press.

Ivanova, N. I. (2002). National Innovation Systems. Moscow: Nauka.

Kalenskaya, N. V. (2010). Methodology of Formation of Infrastructural Maintenance of Innovative Development of Industrial Enterprises. Kazan: Kazan State Technological University.

Kniazevych, A. O. (2010). Innovation Lag and Its Role in the Innovation Process. – Actual Problems of Economics, 6, p. 26-30.

Kniazevych, A. O. (2014). Softization and Servization of the Innovation Infrastructure of Country. – Journal "Ekonomika ta derzhava", 4, p. 23-27.

Kuzheliev, M. O. (2012). Conceptual Foundations of Corporate Relations. Donetsk: TOV "Skhidnyj vydavnychyj dim".

Momot, O. M. and Britchenko, I. H. (2008). Integrated Banking Services and Competitiveness of the Banking System. Poltava: Poltava University of Consumer Cooperatives in Ukraine.

Nurkse, R. (2009). Trade and Development. – In: Kattel, R., Kregel, J. A. and Reinert, E. S. (eds.). Anthem, London and New York.

Organisation for Economic Cooperation and Development (2015). Available at: http://www.oecd.org.

Rosenstain-Rodan, P. N. (1961). The Notes of the Theory of the "Big Bush" in Economic Development for Latin America. London, New York.

Semynozhenko, V. P. (2012). The Doctrine of the Knowledge Economy: The Project. [doc]. Kyiv. Available at: http://www.semynozhenko.net/ufv/files/ec_znan.doc.

Shumpeter, J. A. (2007). Theory of Economic Development. Moscow: JeKSMO.

Soloha, M. A. (2009). The Existing Concept of Infrastructural Support Activities of the Organization. – Omsk Scientific Bulletin, 4(79), p. 70-73.

Solovyov, V. P. (2006). Innovation Activity as a System Process in a Competitive Economy (Synergistic Effects of Innovation). Kyiv: Feniks.

The Global Innovation Index 2014: The Human Factor in Innovation. (2014). Fontainebleau, Ithaca and Geneva, Cornell University, INSEAD and WIPO.

The Law of Ukraine "On innovation activity". (2002). – Bulletin of the Verkhovna Rada of Ukraine, 36, p. 266.

The World Bank. (2015). Available at: http://www.worldbank.org.

Toffler, Je. and Toffler, H. (2008). Revolutionary Wealth. Moscow: ACT.

Igor Britchenko
Anna Kniazevych

THE BASES OF FUNCTIONING AND DEVELOPMENT OF INNOVATIVE INFRASTRUCTURE OF UKRAINE

The preconditions and features of the formation of post-industrial society are defined in the article. The distinctive role of active innovation infrastructure of the country in integrating into the European community and society based on knowledge are proved. The characteristic features of the economy of post-industrial society are the increasing role of intangible resources in ensuring social reproduction, "softization" and "servization" the subjects of innovation infrastructure. The essence of economic category "innovation infrastructure" is defined in the article. It is a dynamic self-regulating system of markets and subjects that entering these markets in certain economic relations and it provides the necessary conditions for implementation of the innovation processes. Mechanism of functioning of the constituent elements of innovation infrastructure in market economy is proposed, relationships between them are defined.
JEL: O10; O31; O32

Ivan Todorov

TWO APPROACHES FOR EVALUATING THE AGGREGATED PRODUCTION FUNCTION OF BULGARIA

The objective of this study is to identify the main supply-side determinants of Bulgaria's economic growth in the period of the currency board arrangement. In order to achieve the objective of the study, the aggregate production function of the Bulgarian economy has been estimated by two methods – least squares and growth accounting.
JEL: O47

Mariya Neycheva

IMPACT OF SECONDARY AND TERTIARY EDUCATION ON ECONOMIC GROWTH: A CO-INTEGRATION MODEL FOR BULGARIA

The purpose of this study is twofold. First, it tries to check the hypothesis that human capital stimulates growth of the contemporary economies. Second, it estimates the effects of both secondary and tertiary education on the aggregate activity in the Bulgarian economy over the period 2000-2013. The co-integrating models with a structural break are based on the neoclassical approach to growth. The negative impact of secondary education is clearly expressed. A positive statistically significant result has not been found for tertiary education as well. Moreover, in conformity with the real patterns of development the results confirm that the main drivers of Bulgaria's growth path are foreign direct investments and export which keeps its crucial role for the post-crisis development. The unfavorable outcome with regard to education might be explained in light of both the vertical qualification mismatch and the quality of human capital. When the latter is measured by foreign language proficiency, a stronger impact on real GDP per capita in comparison with that for the human capital's quantity has been derived.
JEL: O40; O57; J24; C32; I20

ISSN 0205-3292

КЪМ ЧИТАТЕЛИТЕ И АВТОРИТЕ

Списание ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ се издава от Института за икономически изследвания при БАН. В четири книжки годишно се публикуват резултати от научни изследвания, посветени на важни и интересни съвременни икономически проблеми. Списанието публикува и студии на английски език. Всички студии се рецензират анонимно от двама рецензенти.

От началото на 2001 г. студиите се индексират и реферират в *Journal of Economic Literature/EconLit*, издания на *Американската икономическа асоциация (АИА)*, както и в CEEOL, *RePEc*, *EBSCO*, *SCOPUS*.

Задължителни изисквания към студиите:

- Представяне в редакцията - ПО ЕЛ. ПОЩА.
- Формат - Office WORD.
- Обем - до 40 стандартни страници (по 1800 знака с разстоянията), вкл. таблиците и фигурите.
- Текстът и всички таблици и фигури трябва да са портретно ориентирани.
- Текстът и всички таблици и фигури трябва да са ЧЕРНО-БЕЛИ.
- Библиографски данни - на края на студията, с препратки в текста (ХАРВАРД СТИЛ на цитиране).
- РЕЗЮМЕ до 1/2 страница на български и английски език.
- Кодове на JEL класификация.
- Информация за КОНТАКТ с автора (адрес, телефон, факс, ел. поща).

Изпращането на ръкописа в редакцията предполага, че той не е публикуван другаде. Студията или части от нея не може да бъде публикувана в други издания без писменото съгласие на редколегията.

Годишен абонамент - 48 лв.

Списание "Икономически изследвания" (кат. № 1317) е включено в Каталога за периодични издания.

Цена 12 лв.