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INNOVATIVE MODEL OF UKRAINE'S ECONOMY DEVELOPMENT: PROBLEMS AND PROSPECTS

Abstract: The article explores the innovative model of Ukraine's economic development, which at the present stage of the economy development is characterized by a significant number of problems and a decrease in the importance of the Global Competitiveness Index and the Human Development Index. The authors proposed the formation of three main components of the innovation economy: knowledge, resources and innovation and social development. Since these components make it possible to ensure sustainable development at the present stage. Innovation contributes not only to the creation of new jobs, but also to the rational and efficient use of all available resources. It is suggested to strengthen the interrelation between the main factors (education, production, science, international cooperation) that ensure sustainable development and international specialists with integrated indicators.

Keywords: innovative model, technology transfer, index, rating, sustainable development.

JEL Classification: O11, O33.

Introduction. The formation of an innovative model for the development of the Ukrainian economy has been taking place for a long time and remains

an open question and still remains. Globalization and internationalization, a high level of competition, an increase in the number of energy problems, an aggravation of internal structural problems in the Ukrainian economy necessitates the search for ways not only to solve pressing problems, but also to activate the innovative component of the economy. This allowed not only to ensure the prerequisites for sustainable social and economic development, but would also allow the formation of a modern model for the development of the Ukrainian economy, taking into account the requirements of the present. As at the present stage the role of not technological innovations, but of knowledge, is growing. They are the basis of the modern knowledge economy, which is formed in the world practice of management. Its peculiarity is that everyday and specialized knowledge becomes a source of growth. The application of such knowledge together with natural resources, capital and labor makes the processes of their accumulation and use the dominant factor, as a result of which the competitiveness of the economy is growing [1].

This creates new challenges for institutional innovation in Ukraine. The main vector of the development of the Ukrainian economy should be "anticipatory accumulation in the non-material sphere, especially in the man himself, his mind, knowledge, science, education, culture, without which one cannot rely on GDP growth, improving efficiency in material and non-material production" [2, c . 134; 3, p. 16 - 17], that is, the result of innovative development should be sustainable development of the economy.

At the beginning of the XXI century. the following trends in the development of the innovation sphere are observed: not only the importance but also the responsibility of science and education grows, the share of investments in education and personal development in the GDP structure increases; changes in the structure of budget expenditures in favor of human sciences and society and life sciences, the rise of inventive activity, the expansion of the market for intellectual products; building entrepreneurial potential of innovative activity, increasing investment in innovative renewal of fixed capital [4]. At the same time, the results of the foresight evaluation of innovative technologies of the 21st century in the EU, USA and Japan made it possible to distinguish four of their priority sectors: 1) nanotechnology - new materials (11 technologies) 2) information society technology (12 technologies) 3) life science technology , genomics and biotechnology (8 technologies) 4) sustainable development technologies, global climate change and ecosystem (9 technologies) [5]. This is all reflected in events and programs at the international level.

Then, when in Ukraine, even the process of an innovative model of Ukraine's development forming is reflected in the following normative documents: "Strategies for the sustainable development of Ukraine to 2020", the Concept for the Development of the National Innovation System until 2025

and the National Report "Innovative Ukraine 2020", the draft Strategy for Development high-tech industries until 2025, the draft Law of Ukraine "On Support and Development of Innovation Activities". The presence of a significant number of normative legal documents does not ensure the creation of an effective mechanism for the formation of an innovative model for the development of the Ukrainian economy. Since the innovation model can be implemented only in the conditions of scientifically based state innovation policy, it needs to specify and take into account the requirements of the current economic situation.

Last decades, Ukraine is characterized by the fact that in the process of developing and implementing of an innovation strategy there is no single vector of development. In European practice, the innovation model includes four basic elements: education, production, science and international cooperation. They allow developing innovative activities and ensuring the competitiveness of the national economy at the international level of any country. And it is reflected in international development programs. At the present stage innovative development of the countries of the European Union is taking place within the framework of the "Europe-2020" development strategy.

The priorities of the Europe-2020 development strategy are: intellectual growth - the development of a knowledge-based economy; sustainable growth - moving forward towards a more resource-efficient, environmentally friendly and competitive economy; socially integrated growth - assistance to an economy with a high level of employment, ensures social and territorial cohesion [6, p. 118]. This is achieved through the implementation of the EU's eighth framework program for research and innovation, which brings together the Framework Program for Research and Innovative Development (RP), the Competitiveness Framework and Innovation (SID) and the European Institute for Innovation and Technology (EIT). It is approved for 2014-2020 and is called Horizon 2020, which concentrates funding on three different, but complementary, key areas: 1. Excellent Education. 2. Industrial Leadership. 3. Social challenges (Societal Challenges). Other areas of the program: 1. Dissemination of quality and expansion of the circle of participants. 2. Science "with" society and "for" society [7].

As Ukraine signed an association agreement with the EU, it became possible to take advantage of the Horizon 2020. According to the agreements reached, Ukraine received an unprecedented high 95% discount on the financial contribution, which as a result amounted to 35,579,782.09 euros over the next 2015-2020. Its payment will begin in 2016 (The payment of Ukraine's first installment for 2015, which is 5002 872.87 euros, was postponed to the next period by dividing this amount for subsequent years). Thus, this program has the potential to improve not only its economic performance, but also to raise the level of innovation activity.

Ukraine is the last in terms of innovation, the fourth, a group of "countries catching up". Compared with other EU countries, Ukraine's lag is: from "the leading countries" - about three times (Sweden - 0.68), from "followers" - twice (the UK - 0.48), from the countries - "Moderate innovators" - 1.6 times (Norway - 0.35). From the point of view of innovative development of Ukraine is at the level of Russia and Bulgaria [8, p.94]. The reasons for this situation are a number of negative factors.

According to the results of the research on the implementation of innovations at Ukrainian enterprises in 2010-2015, the following negative factors were identified: lack of own funds (83%), low level of financial support of the state (56.6%), high costs for innovations (55.9%), high economic risk (38.8%), imperfect legislative base (37.7%), long payback period of innovations (34.6%), lack of funds from customers (31.7%), lack of information on new technologies (19.5%), lack of opportunities for cooperation with other enterprises and (18.3%), lack of information on sales markets (18.3%), lack of qualified personnel (17.2%), lack of demand for products (16%), unfavorable enterprises for innovations (14.5%) [9].

Therefore, we believe that the basis for an innovative model for the development of the national economy should reflect the three main components: economic, social and environmental (Fig. 1), which will ensure social development.

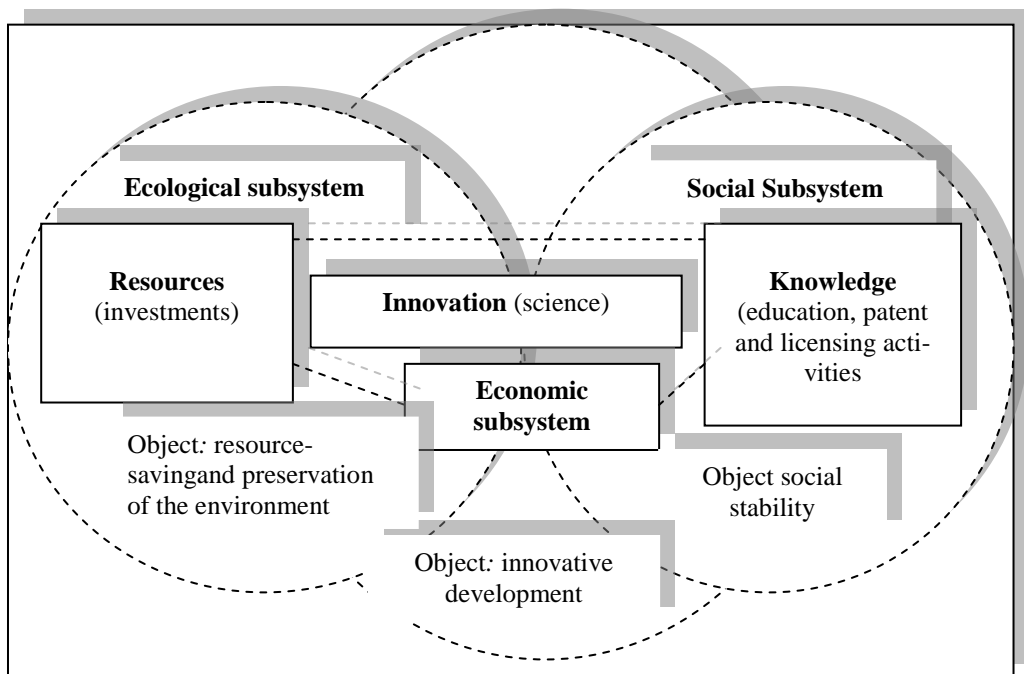


Figure 1. The main components of the model of economic development in the context of providing sustainable innovation development

Source: O. V. Bondar-Podgurska

This is due to the fact that these components are reflected in the international integral indicators (Table 1), which allow a comprehensive assessment of the quality of innovative development of the Ukrainian economy.

Table 1. Indicators of evaluation of education, science, technology and international cooperation of Ukraine used in the international ratings

| The main component | Indicator | Explanation |
|--------------------|--|--|
| Education | Human Development Index [11] 2010 - 69th place 2014 - 83th place 2015 - 81 place 2016 -84th place | This is the 84th place among 188 countries and territories. The index is calculated on the basis of three main measurements of the level of development of a country: long and healthy life; access to quality education; a decent standard of living. Ukraine's results remain below the average of the countries belonging to the group with a high level of human development and lower than the average for the countries of Europe and Central Asia. |
| | Education index 2011 - 0,81 2015 -0,80 | The Education Index is an integral part of the Human Development Index. In 2015 its value for Ukraine has increased by 0,1% compared with 2011. |
| | Global talent index: 2007 - 17th place; 2011 - 43th place. 2015 - 42th place. | Global talent index counts «The Economist Intelligence Unit» in conjunction with «Heidrick & Struggles» — ne of the leading companies in the world in the field of selection of management personnel. Seven independent indicators are used to assess the GIT of each country: demography, the quality of the compulsory education system, the quality of education at universities and business schools, the quality of the workforce, the quality of the environment for the training of skilled personnel, the mobility and relative openness of the labor market, the tendency to attract foreign investments and international experts. |
| | Global Talent Competitiveness Index[12] 2015 - 2016 - 66th place | An annual study by INSEAD International Business School in partnership with Adecco Group and the Institute for Human Capital Leadership (HCLI) in Singapore. It is calculated on the basis of: market and regulatory conditions in the labor market; chances for career growth; the index of attraction of talent; index of talent keeping; production skills of employees; global knowledge. From the rating of 118 countries surveyed, Ukraine occupied 66th place in 2015-2016. |
| Production | Global Innovation Index 2013 - 71th place 2014 -63 place 2015 - 64th place | The Global Innovation Index is compiled by the World Intellectual Property Organization, Cornell University and the Insead International Business School. In total 143 countries are represented in the rating. |
| | Technology Readiness Index 2014 - 85th place 2015 - 86th place | The Technology Readiness Index counts the World Economic Forum. The rating was determined in 2015 from 140 countries, in 2014 - from 144 countries. |
| | Index of Innovation Efficiency 2010 - 54th place 2014 - 14th place 2015 - 15th place | The index of innovative efficiency characterizes the creation of special conditions for the promotion of innovative performance. |
| Science | The number of applications for patents in the amount of 1 billion GDP 2010 - 10th place The number of applications for patents in the amount of 1 million research and development costs 2010 - 5th place | In 2010, the absolute value of the number of applications for patents in the amount of 1 billion GDP, Ukraine's lagging behind the leader (Republic of Korea) was more than 11 times. In 2010, the absolute value of the number of applications for patents, calculated on the 1 million cost of fundamental and applied research, lagging Ukraine from the leader (Republic of Korea) was more than 2 times. |

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|---------------------------|---|--|
| | Number of patents received in 2010 - 20th place. | In terms of the number of patents received, Ukraine was in the TOP-20 countries in 2010, but its lag in the absolute number of patents received from the leader (Japan) was 57.5 times. In terms of the number of patents received, Ukraine was in the TOP-20 countries in 2010, but its lag in the absolute number of patents received from the leader (Japan) was 57.5 times. |
| International cooperation | The share of projects with participation of Ukraine in the total number of projects of the Seventh Framework Program of the EU: 2009 - 0.85%; 2010 - 0.58%; 2011 - 0.51%. | In 2011, the share of projects with participation of Ukraine in the total number of projects of the Seventh Framework Program of the EU, compared with 2009, decreased by 1.7 times. |
| | The share of Ukraine in total financing of the Seventh EU Framework Program: 2009 - 0.07%; 2010 - 0.05%; 2011 - 0.07%. | Since 2009, Ukraine's share in the total funding of the Seventh EU Framework Program remained unstable and averaged over the period of participation in the program was only 0.06%. |
| Social development | Global Services Location Index 2015 - 41th place 2016 - 24th place | The outsourcing attractiveness rating is based on AT Kearney's consulting firm based on the following categories: financial attractiveness, business environment, skills and availability of workforce. |
| | The quality of life rating 2014 - 124th place 2015 - 132th place. | In the world ranking of quality of life in 140 cities of the world Global Liveability Ranking for 2015 by the British research company Economist Intelligence Unit, the Ukrainian capital has worsened its performance. The rating consisted of 30 factors that include security, economy, stability, health, education, infrastructure, ecology, affordability of housing, and climate. |
| | The rating of prosperity 2014 - 63th place 2015 - 70th place. | Every year, the British analytical center Legatum Institute conducts social surveys of citizens in 8 categories: state of the economy, social sphere, power, entrepreneurship, health care and personal freedom. Our neighbors for prosperity were Indonesia and Azerbaijan. |
| | Investment attractiveness rating 2014 - 109th place 2015 - 89th place | The global ranking of the investment attractiveness of the International Business Compass is made by the Hamburg Institute of the World Economy on the basis of the study of economic, legislative, political, and socio-cultural conditions in the country. |
| | Global Competitiveness Rating 2014-2015 - 76th place 2015-2016 -79 place | According to the World Economic Forum's Global Competitiveness Report 2015-2016 rating, our country ranked 79th among 140 countries in its competitiveness, with Ukraine losing three positions, dropping from the 76th place in a year. Formation of the rating takes into account 12 factors - quality of infrastructure, macroeconomic stability, innovative potential, level of technological development, development of finery, quality of education and others. |

Source: Summarized and supplemented on the basis of: Human Development Index, The Global Talent Competitiveness Index, Odotyuk, I. V., Ministry of Education and Science of Ukraine

Over the past ten years, and especially in the past two years, the value of the Human Development Index, the Global Competitiveness Index of Ukraine is deteriorating. This brings up the issue not only the creation of an effective institutional environment, but also the formation of legislation on the transfer of technology. Since this process allows, at the level of the en-

terprise and the region, and at the state level, to formulate an innovative policy that will ensure competitiveness in the long term.

Today, technology transfer involves not only the transfer of knowledge, but also their transformation into an innovative technology with the active participation of both the source of this technology / invention, the recipient / user, and the end user of the product produced with the said innovation. At the same time, technology transfer involves the participation of at least two important actors of this process, the presence of which is an indispensable condition for its existence - sources and recipients of technology. In particular, the Asian countries (Chile, Thailand, South Korea, Hong Kong and other countries) in the process of organizing innovation activities that do not have fundamental ideas in their cycle and are focused on the export of high-tech products actively use technology transfer, which allows "a critical mass of innovations", which ensure the competitiveness of not only the enterprise, but also the economy. Due to the skillful state policy, South Korea and Finland, in carrying out market reforms and using the possibilities of international technology transfer, ensured the gradual growth of technology exports and took the leading place in the world market of high-tech products and provided leading positions in the market. For Ukraine, which seeks to improve not only the technological balance, but also to improve its international ratings and competitiveness. For Ukraine, which seeks to improve not only the technological balance, but also to raise its international ratings and competitiveness, it is necessary to solve a significant number of tasks. First, it is the development of an integration model for the innovative development of the Ukrainian economy on the basis of strengthening the relationship between education, production and international cooperation. Secondly, consideration in the process of developing modern documents on the innovative development of technology transfer. Third, the definition of a single management body, will develop documentation support and monitor the achievement of the set goals. And the last, taking into account in the process of innovation policy development the concept of sustainable development.

Conclusion

Thus, an innovative model of Ukraine's economic development requires efficient management of knowledge, innovations and resources that will satisfy the vital interests of the majority of the country's population today and in the future.

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