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## ORGANISATIONAL AND ECONOMIC MECHANISM OF IMPROVING THE INNOVATIVE ACTIVITY OF INDUSTRIAL SECTOR IN UKRAINE

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The main trends in modernization of the industrial complex innovative development mechanism are considered. It is proved that the innovative activity stimulation should be aimed at increasing the efficiency and competitiveness of local businesses through the interaction of three components: science, the system of generating new knowledge and the real economy.

Key words: innovations, innovative development, organizational and economic mechanism, industry

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## ОРГАНІЗАЦІЙНО-ЕКОНОМІЧНИЙ МЕХАНІЗМ ПІДВИЩЕННЯ ІННОВАЦІЙНОЇ АКТИВНОСТІ ПРОМИСЛОВОГО СЕКТОРУ УКРАЇНИ

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Розглянуто основні напрями сучасної модернізації механізму інноваційного розвитку промислового комплексу. Визначено, що стимулювання інноваційної діяльності має бути спрямоване на підвищення ефективності та конкурентоспроможності вітчизняних суб'єктів господарювання через взаємодію трьох компонент: науки, системи генерації нових знань та реального сектору.

Ключові слова: інновації, інноваційний розвиток, організаційно-економічний механізм, промисловість.

### Problem statement

The successful functioning and development of the economy of Ukraine is largely dependent exactly on its fast reorientation from the raw materials type to the economy of innovative character with extensive innovation infrastructure in which the main role is led by the innovation-oriented businesses supported by the effective tools of public administration. Therefore, the use of scientific and technological potential in the real economy now is an important factor of acceleration of the innovation process in the country. In the appropriate format to ensure the effective realization of innovative reorientation appears relevant the forming of organizational and economic mechanism of increasing innovation activity of local industrial enterprises.

### **Analysis of recent research and publications**

Lots of works of local and foreign scholars, such as: Bazhal Y. M., Hejets' V. M., Glazyev S. Y., Yefimenko T. I., Onyshko S. V., Osipov Y. S., Semynozhenko V. P., Fatkhutdinov R. A., Fedulova L. I. – were dedicated to the problems of innovative development and conceptions of building the innovative model of development concerning separation of the factors and finding mechanisms of improving the competitiveness and activation of innovative processes.

The results of studies of the abovementioned scholars are scientifically significant and practically valuable. However, nowadays global civilizing transformations of economic development cause the search of new ideas, approaches, creative thinking and adoption of certain solutions regarding improving innovative activity of businesses in real economy.

Thus, we faced a relevant task concerning investigation of the mechanisms of activation of innovative processes in the context of the reorientation on the innovative model of development.

### **Objectives**

Due to the abovementioned, the purpose of the article is forming and justifying of organizational and economic mechanism of improving innovative activity of industrial sector as the necessary ground for reorienting the economy of Ukraine on the new vector of development.

Goal achieving led to the formulation of the following aims: to identify and describe the structural elements of the impact of government regulation on innovational processes in the industrial complex; to formulate the basic principles of functioning of the organizational and economic mechanism of activation of innovative processes in the industry.

### **Materials**

According to the report of the World Economic Forum about global competitiveness in 2012–2013 Ukraine ranked 73-rd place among the 144 countries. Despite performed in Ukraine economic reforms there remain weak institutional system (132-th), inefficient goods and services market (117-th) and disuse of opportunities of innovative potential. Thus the rating of Ukraine under subindex “innovation” in 2012–2013 corresponds the 71-st place, and innovation and sophistication factor of business – 79-th position. By the indicator “innovative capacity” Ukraine has moved down by 16 positions because local enterprises increasingly use foreign technology through licensing, rather than its own inventions and researches. And by such indicators as infrastructure Ukraine occupies 65-th place, the macroeconomic environment – 90-th, health and primary education – 62-nd, higher education and training - 47, goods market efficiency – 117-th, labor market efficiency – 62-nd, financial market development – 114-th, technological readiness – 81-st.

Contemporary marks of international organizations are backed by local realities. Thus 95 % of production in Ukraine is made at enterprises of 3-rd and 4-th technological mode, while in developed countries of the world maintain 5-th and 6th technological modes (bioengineering, genetic engineering, artificial intelligence systems, global information networks, integrated hi-speed transport systems, etc.), where growth rates of respective industries account for 20–100 % per year, the degree of depreciation of main means of production totaled more than fifty percent with annual deal of update of less than one percent (in the leading countries with developed mechanical engineering it is more than ten percent) and the share of sales of innovative production in industrial range in 2013 was 3.3 %.

Relevant trends indicate inefficiency of state regulation tools of innovative processes in the country and determine the search of innovation approaches for mechanism of managing and fostering innovation activity in the local industrial complex.

Let us note that the in references the concept of mechanism has many definitions. Thus in Greek it means a “tool” or a “machine”. In Great explanatory dictionary of modern Ukrainian [1] by mechanism stands a device which transmits the movement; an inner structure, a system of something; the sum of states and processes which contain a specific physical, chemical or other phenomenon.

At the same time the term “mechanism” took a root and modern economic researches are replete with such concepts as “financial mechanism”, “management mechanism”, “economical mechanism”, “the mechanism of social and economic development”, etc. Moreover, in some cases by the same term is

understood a complex of states of a system, e.g. “the mechanism of social and economic development” (a set of social and economic conditions and processes of an economic system); and in other cases the term means the main engine of development (the main element of the structure of the system, especially in its interaction with other elements, etc.) [2, p. 136].

It can be noted that the economic literature has already formed a certain scientific approach to the analysis of the mechanism of innovative development. Thus Nikolskyj P. [3], Ohorodnik S. [4], Krupka M. [5] are supporters of finance-credit mechanism. Latter of the scientists notes that the effectiveness of innovations in the economy of innovative type depends on the use of regulative functions of finance-credit mechanism justifying the fact that a developed economic can effectively function only by conditions of well-adjusted credit system irrespective of whether these credits are external or internal [5, p. 44]. Also Krupka M. shares the theoretical approach to the term determination with the idea of ukrainian economist Oparin V. who notes that the finance-credit mechanism appears to be a set of techniques and forms, tools and leverages influencing the economic and social development of society [6, p. 17–18] and marks finance-credit methods, forms, levers as the main components of finance-credit mechanism of innovative development; normative support; information.

Researcher Sheko P. [7] among the main factors of financial-credit mechanism of innovative development, which are necessary for sustainable economic growth, marks: the level of knowledge, innovative financial resources, the range, subjects and objects of innovative activity, innovation climate and innovative entrepreneurship.

Leuvochkin S. [8], Vasylyk O., Pavl’uk O. [9] Senhachova V. [10], Onyshko S. [2] stress the importance and multifoldness of exactly financial mechanism. Especially, Onyshko S. considers the initiative moment while researching the issues of innovations is investigation of the financial resources accumulation processes as economical basis for financial support of innovative way of development, and notes that at the practical level the financial mechanism is a compound of the economic mechanism, which shows to be an interconnected set of financial stimuli, levers, instruments, forms and ways of regulating the economic processes and relations. By the elements of financial mechanism the researcher considers financial relations, financial levers, financial methods, law support and information-methodical support of financial administration [2, p. 145].

Fedulova I. [11, p. 19] notes the importance of the economic management mechanism, which is the management functions, economic levers and instruments that are interconnected and form the solid body.

Simultaneously, in our opinion, to improve the innovative activity and stable development of the industry a more detail analysis and representation requires the factors of organizational and administrating, economical and strategic vectors. Exactly from the way of linking all components of innovative process, highlighting the innovative potential from every resource element, depends the efficiency, rate and quality of the innovative development. In particular aspect we center on the organizational and economical way of mechanism realization concerning that first does not need great financial, material, energetic and other types of expenses, while second is the constant of economic suitability and efficiency. Constructing of the abovementioned organizational and economical mechanism should be aimed at ensuring the output of innovative production, development of innovative processes, development of the innovative activity infrastructure, assignment of additional advantages, preferences, other ways of indirect subsidizing.

In particular process a prominent place should hold determined strategic guides and principles of innovation politics regulation on the basis of which the structural elements of influence on the businesses in local industrial complex and interconnected systems of functioning measure.

Basing on analysis, formalization method and expert evaluations the structural elements were distinguished and grouped as that, which fulfil the complex approach to effective cooperation and interaction of three compound elements of improving the innovative activity of the industrial complex (the industry sector, the education, the new knowledge generation system).

Considering the abovementioned the organizational and economical mechanism schematically would look as on fig. 1.

Let us more precisely take a view at the logic of importance and the principles of highlighting every structural element in the mechanism.

**Innovation forecast.** The market of scientific and high technology production is distinguished in first place by high level dynamics, diversity of options for realization innovative projects and significant

risk in their implementation. Since, taking the solution about introduction of technological innovation and coming out with it on the market grounds on serious analytical work of forecasting and choosing alternative variants of their introduction (the level of demand on an innovative product, vectoral and segment analysis of product locating, etc.). A mistake taken at this stage can cause large-scale expenses at other phases.

**Innovation projecting.** The complexity of this process depends on a number of factors that must be considered in the initial stages. One of the main tasks is the evaluation of the effects of the project realization and the efficiency of its implementation. That is why in conditions of structural rebuilding, world financial crises and globalizing tendencies important is the evaluation of efficiency of innovative project by the state, investor or interested subjects. Among different ways, methods and techniques of evaluation of innovative activity most of local and foreign scientists prefer economic effect calculation during the whole period of using the innovation.

**Financial support of innovative projects.** Any innovative project cannot be done without proper financing. In our opinion, one of the main levers of innovative development is the financial aspect. It is the money supply growth in the developed countries provide financial and GDP growth and the ability of the state to perform its functions, promoting welfare. As foreign experience attests, the activation of innovative activity in the country starts with the expenditure of 0.9 % of GDP directed at financing innovation sphere, and for sustainable development it – of at least 3 %. By now in average in Ukraine this indicator varies within 0.4–0.6 %, with 1.7 % of legally prescribed. Therefore in these conditions it is important to ensure the implementation of legally binding rules and to find other sources of investment, among which, in our opinion, one of the most attractive directions is the development of venture financing.

**Innovation activity participants' stimulation.** Supporting of innovators, research institutes, innovation centers, etc. is essential to the activation of innovative processes at the enterprise, region and the country. It is fair to note that the implementation of innovative activity is one of the most risky types of economic activity. According to Zavlin P., only 5 % of basic research carried out on a global scale, have positive result. The percentage of success is growing with the level of implementation of the applied researches and of developmental-constructive works. In particular, approximately 85–90 % of those researches fit for further practical applications [12, p. 8–9]. Therefore, the issue of encouragement and stimulation of participants in the innovation process take on special significance. To implement the strategic policy of building an innovative economy and to accelerate innovative activity at enterprises it is need to clearly understand the role of the state at initial stages of forming demand for innovative product. Coordination of public policies (fiscal, monetary, innovation, investment, etc.). Fundamentally new approach to education system, promotion of the profession of scientist should be operational state course priorities.

**Innovative processes realization management and stuff support.** In our opinion, one of the main structural elements on which depends the effective functioning of other directions of innovative activity. In managing innovative processes it is need to clearly distinguish two aspects of rules of the game at innovation market which are defined by the state. On the one hand, it is the government regulation implemented by legislative and executive authorities at national, regional, local and international levels, on the other - the management, development and implementation of innovative projects and programs.

Public authorities at both national and regional level provide the legal regulation of innovative activity, define its strategic direction and carry out the control. To promote the ensuring of economic transition to an innovative way of development it is necessary to enhance the status of departments of the ministries responsible for the scientific, technological and innovative directions; and policy documents on science and innovative activity as an obligatory separate section of government programs for economic and social development of the country carrying out the provisions of which the regular report is expected. It is also necessary to make a thorough analysis of the existing management system in scientific, technological and innovative activity, to develop proposals for its improvement. On developing and implementing the innovative projects and programs this course requires a complex approach and specific research performed by specialists-researchers and practitioners working in this area. But now there is a trend of scientific inefficiency of upbringing highly qualified personnel and of distancing the scientific process from production. Most graduates do not work according to their specialty education, while the state spends money on useless public procurement in certain areas. So the important thing in this process is the control over proper use of public funds and improving procurement procedures for the appropriate specialists for the state.

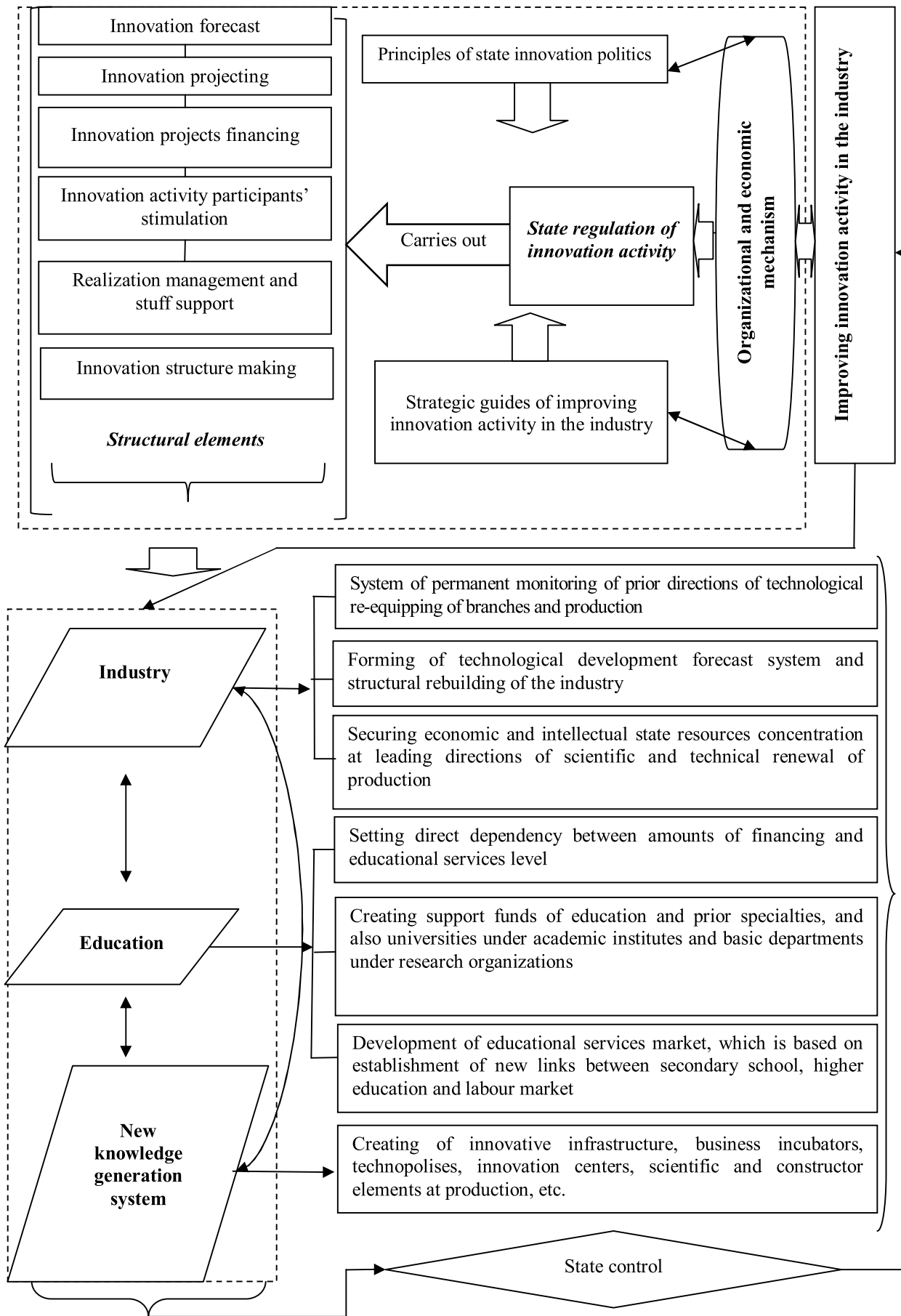


Fig. 1. Organizational and economic mechanism of improving innovative activity of industrial sector

**Innovation structure making.** By now only if the construction of an extensive infrastructure of innovative institutions is done the efficient management system of scientific-technological and innovation process, aimed at obtaining outcomes, rather than activity, that reflect a specific set of functions, can be built. We agree with the position of academics Hejets' V. and Semynozhenko V. who note that "... the institutions of the economics of knowledge, without which it cannot exist, form in Ukraine too slow, and those, which have formed without performing their inherent features, do not provide realization of nowadays social and economic development goal..." [13, p. 181].

All it demands creation and improving the innovation infrastructure of Ukrainian economy, which is an important element of the innovative environment. In particular, the state innovation policy should focus on building technopolises (areas of scientific and technological development), HiTech Cities, technology parks (research, technological, industrial, etc.), scientific and technological alliances, innovation centers (technological, regional and sectoral), business incubators (innovative and technological), special economic zones, consulting firms and companies, etc.

The relevant structural elements affecting the relevant sectors (industry, education, new knowledge generation system) determine the economic, social and institutional relations of modern production and evolutionary progress of the state in the plane of innovative development. Each of the designated units should ensure solution of several objectives to reach an optimal effect (see fig. 1).

### **Conclusion**

Summing up the abovementioned, we note that the organizational and economic mechanism of improving the innovative activity of industrial enterprises is based on the principles of the state innovation policy and strategic guides for enhancing the innovative activity of local industrial enterprises, which determine the structural elements of the state regulation of innovation activity. Using structural elements the mutual influence of the three sectors, that combine industry, education and new knowledge generation system, is carried out. Only on the basis of fruitful interaction of relevant systems the implementation of innovative processes at industrial enterprises is possible.

Coordination of relevant sectors could solve the issue:

- of continuous monitoring of prior directions of the technological upgrading of sectors and production;
- of forecasting of technological development and structural rebuilding of industry;
- of ensuring the concentration of economic and intellectual resources of the state at the leading areas of scientific and technological renovation of production;
- of establishing direct relationship between the amount of financing and the level of educational services;
- of framing the funds of support the education and prior specialties, as well as universities under academic institutions and basic departments under research organizations;
- of development of the education services market based on establishing new links between general-education, universities and the labor market;
- of creation of innovation infrastructure, business incubators, technopolises, innovation centers, engineering units at production, etc.

Establishment of the appropriate innovations should be on strict control of public authorities: the Ministry of Industrial Policy of Ukraine, the State Agency on Science, Innovations and Informatization, the State Agency for Investment and National Projects of Ukraine, the State Tax Service of Ukraine, the Antimonopoly Committee and other departments. After a while, an analysis should be carried out and decision on expediency of introducing of changes and adjustments in a particular stage of the process should be made.

### **Prospects for future research**

In further research for the effective use of organizational and economic mechanism of increasing the innovative activity of the industrial sector it should focus on improving the regulatory and legal framework support for innovation processes.

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