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INNOVATIVE DEVELOPMENT OF INDUSTRY ENTERPRISES

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In terms of overcoming the Ukrainian economy on the path of European integration and the formation of a «knowledge economy» is particularly important task is to enhance the competitiveness of domestic industries. The most suitable way to achieve this goal is an innovative development direction. Because by upgrading the technological base of production, the raw materials orientation of the domestic industry, improves the quality of products, their distinguishing features from competitors' products may reach the level of growth and competitiveness of the domestic industry as a whole housekeeper. This article is devoted to the study of the feasibility, challenges and prospects of innovative development of industrial enterprises in Ukraine.

Key words: innovation, diversification, science-intensive technologies, cluster, business incubator.

ИННОВАЦИОННОЕ РАЗВИТИЕ ПРОМЫШЛЕННЫХ ПРЕДПРИЯТИЙ

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В условиях выхода экономики Украины на путь евроинтеграции и формирования «экономики знаний» особенно важной задачей становится повышение конкурентоспособности продукции отечественных промышленных предприятий. Наиболее рациональным методом достижения этой цели является инновационное направление развития. Ведь за счет модернизации

технологической базы производства, преодоления сырьевой ориентации отечественной промышленности, улучшения качества продукции, обеспечения ее отличительных особенностей от продукции конкурентов возможно достигнуть роста уровня конкурентоспособности отечественной промышленности и экономики в целом. Данная статья посвящена изучению целесообразности, основных проблем и перспектив инновационного развития промышленных предприятий Украины.

Ключевые слова: инновации, диверсификация, наукоемкие технологии, кластер, бизнес-инкубатор.

THE RELEVANCE OF ARTICLE. Nowadays the actual task is not only to find the ways of survival under the conditions of the financial and economic crisis but also to determine the ways to increase the competitiveness of the industrial enterprises in general. One of the ways of these problems solving is the diversification of the innovative development of industry.

MATERIAL AND RESEARCH RESULTS. In the crisis the strategy of the economic activity diversification can solve some problems faced by the enterprises. Before, the main orientation of the industry reforming was to change the external environment of the enterprises functioning but now the issue of the enterprises reforming is in the limelight. The crisis forces the entrepreneurs to offer to the customers the new kinds of high-quality products which will have lower cost price, to provide them with distinctive features, to improve their consumer quality in comparison with the competitors' products, to expand the markets and to satisfy the consumers' requirements.

The diversification of the innovative development of industry will give an opportunity to overcome its orientation on the raw material export, to modernize the technological base of the production, to form an effective model of the national industrial system that will promote the increase of the domestic economy competitiveness. Due to the diversification it is possible to solve these three tasks of the interests:

- of the society – growing competition and therefore the increase of the market system efficiency;
- of the business entities – decrease of risk and increase of the financial stability;
- of the consumers – increase in number of the purchase alternatives and expanding of the range of satisfied needs.

Indeed, in general the diversification is a process that includes organizational, economic and legal changes at enterprises and aims to increase the production efficiency, to reduce the number of bankruptcies, to respond promptly to the changes of the economic market conditions for providing the profitability through the use of the market opportunities and establishment of the competitive advantages, to strengthen the position of the enterprise in a market segment.

The main principle of the diversification of the industry innovative activity is a search for new ways to satisfy the customers' demands. The key prerequisites of their

implementation are the innovative scientific and technical development and its manufacturing application.

The production diversification provides the increase of the efficiency of the industrial enterprises functioning not only now or in the near future, but for the long term, risk decreasing that will stabilize the financial situation, expand the range of activity, particularly using the synergy and flexibility of the response to the changes in a market demand. Efficiency of the diversification directly depends on timely orientation on the types of goods, works that have demand and are competitive. That's why more and more Ukrainian enterprises should choose the diversification as the main strategic direction of their development.

The basic prerequisites of the development of the process of economic diversification include: the competition development and growing of the consumers' demands; increase of the intensification of the use of production and financial resources; an aspiration for smoothing of the market fluctuations; increase of an inequality of the investments distribution between branches of industry and attracting of the foreign investments; the harmonization of the state regulators of the industry development.

The priority of the diversification of the innovative development is caused not only by the internal factors but also by the global ones – by the expansion of the international competition in the markets of industrial products, by the differentiation of the consumer preferences and demands under the conditions of dynamic scientific and technical development, by the innovative character of the modern reproductive process, by the recurrence of the process of the global market conditions development.

For fixing the problem of the innovative activity activation in industry at first it is possible to form large scientific and innovative structures with the decentralized administrative systems of the innovative activity management in the sphere of industrial capital.

The success of the innovation introduction in the enterprise depends on the latest scientific achievements first of all in Ukraine, on the development of its scientific potential and determination of the national strategic priorities in the innovative activity using the experience of the industrialized countries.

So, the successful introduction of the new idea into the economic practice requires five categories of the resources: scientific development, material base, financial capital, regulatory system and information.

The perspective aims of the diversification of the innovative development of industry first of all are the organizational and technological priorities: technological modernization of the branches of industry by attracting the investment resources for innovations introduction; formation of new innovation centers; upgrade of the production potential and reduce of the level of its physical and moral deterioration; providing the necessary level of the industrial products quality; modernization of the infrastructure, etc.

Thus, the diversification of the innovative development of industry is oriented on that a considerable part of its structure belongs to the high-tech competitive industries

due to:

- an increase of the efficiency and competitiveness of economy without a substantial increase of the production resources. The focus should be on the increase of the productivity and energy efficiency;

- high innovative activity of the enterprises connected with updating of the products range, mastering of new technologies, creation of new forms of business management, new markets development. The share of the industrial enterprises which introduce the technological innovations and new production should be increased;

- activation of the fundamental and applied researches and developments at the cardinal increase of their effectiveness. The internal costs for researches and developments should be increased;

- an improvement of human capital and an increase of its efficiency that is characterized by the advanced increase of a wage of the skilled workers.

The reasons that induce the enterprises to the decision-making about the diversification can be:

- *technical and technological* – upgrade of the production capabilities, increase of the level of the productive capacity use, determination of the most progressive way to use the resources, introduction of new scientific and technical achievements;

- *economic* – transfer of the capital between industries, search for new ways of investments, expansion and new markets penetration, increase of the economic feasibility in the use of resources;

- *financial* – distribution of risks between the fields of the production activity and production volume, financial stabilization at the enterprises;

- *social* – saving and creation of new workplaces, training and retraining of highly-skilled personnel.

In its turn the diversification of the innovative development of industry will contribute to optimize the structure of industrial production with strengthening of the internal market role and accelerated development of science intensive and high-technological kinds of industrial activity; to innovative technological production modernization with an increase of a share of industrial productions of the newest technological modes with the deep processing and production output of the final consumption; to realization of energy-saving model of development with extended use of alternative and renewable energy sources; to the diversification of energy supply and development of the efficient structure of power generating facilities; to introduction of the environmentally safe technological processes.

The necessity of the diversification of innovative development of industry is caused by that nowadays the technological structure of industry does not meet modern requirements that's why its simple reconstruction can't provide Ukraine with economic growth and increase of the production competitiveness. Structural deformations are caused first of all by the considerable share of power-intensive industries, in particular metallurgy, fuel and chemical industries. There is also the tendency of high level of costs in industrial production and low level of its innovation.

Structural changes in industry should focus on improving of the proportions of the

industrial production and forming of the structure of industrial output that will meet the needs of the domestic market and balance of the production capacities of industry. They should be done due to stimulation of the innovative development of industries not below the fourth technological mode, forming of innovation-oriented industries for production of new and substantially improved industrial products based on the energy efficient technologies and equipment, expansion of the industrial products ranges, especially in the industries that form the proposal of the consumer market [1].

The basis of the improvement of technological condition of industry is the intensification of technological and product innovations in the process of the production diversification. Development of the most important basic integrated technologies (macrotechnologies) is also of great importance as they have a significant impact on increase of the production efficiency, product quality, increase of export potential and provide a transition to a new technological mode (products designing from the composites, highly efficient separation of the mixtures, the technologies of the substances with special and anomalous properties, nanotechnologies).

One of the priorities of the diversification of the innovative development is a decrease of the role of energy-intensive industries through the development of knowledge-intensive branches of industry and productions with low energy intensity and material capacity. So the factor of energy saving is one of the most important as it influences on the efficiency of functioning and competitiveness of industry.

The most efficient and scale ways of energy-saving are: introduction of new energy-saving technologies and equipment; improvement of existing technologies and equipment; reduction of energy losses; increase of product quality, improvement and loss reduction of raw materials; replacement and selection of the most efficient energy carriers.

As a result there are important questions connected with introduction of the energy efficient technologies and equipment in all branches of national economy (the total number of energy-saving projects applied in industry is very insignificant). Increasing of the prices for energy carriers makes it impossible to function efficiently and to develop many enterprises without significant efforts which would aim at reducing of the energy costs in the cost price and providing of the efficient use of energy resources.

The basis for reducing of product energy-intensity in all sectors of the economy is formation of the efficient system of the state power-saving management. This will give an opportunity to improve the structure of the final energy consumption by replacement of the scarce kinds of fuel with simultaneous increase of the production efficiency.

At the same time it is necessary to step up the introduction of energy efficient technologies that will help to decrease the needs in energy carriers per a unit of output. For this purpose it is necessary to audit the development of the domestic scientists and take the decisions at the state level toward their support and widespread introduction, and to systematically for the most efficient foreign developments. Special attention should be paid to the involvement of the secondary resources and

local sources of energy to the energy balance.

Solving of this problem can be based on use of the economic mechanism of stimulation – cheap credits, benefits from paying the VAT, exemption from taxation of the profit that was got thanks to introduction of the energy efficient and energy saving technologies, exemption from payment of the import duty for materials, equipment and components imported into Ukraine and used for production of the equipment running on the alternative energy sources.

As nowadays there is unfavorable situation in the fuel, chemical and petrochemical industries caused by the reduction in demand for their products first of all in the foreign market, it is important to overcome the technological backwardness of the productions compared to the foreign enterprises of these industries.

Development of engineering is important for technical re-equipment of all industries, so it is necessary to increase its share in the total structure of industry. But it is necessary to carry out mainly by increasing its innovation level. If the decrease of the share of high-technological products in the engineering structure is not stopped, so in the near future it will be necessary to solve domestic problems through the purchase of equipment and technologies that causes a long-term technological dependence on external sources.

The strategic ways of the development of engineering should be a production of the complex home appliances and equipment for providing the innovative update of all other sectors of economy, especially agricultural production, metallurgy, fuel energy and petrochemical industries.

The priority industries that determine the level of technological engineering, are: rocket-space and aviation industry, shipbuilding, automotive, agricultural engineering, production of the means implementing resource and energy saving technologies, production of the technological equipment for modernization of industry [1].

Taking into account aforesaid, it should be noted that the development of aviation industry is the prospect for a country and further progress in the aviation industry is possible if to reform the structure of the aviation industry management, to attract the investors and modernize the enterprises of this industry [2].

The attention should be paid on those machine-building enterprises that are focused on the products exports.

State Research and Production Enterprise «Elektronmash» should provide the creation and introduction a number of intelligent parallel computers based on the modern multi-core microprocessors for solving the most difficult tasks; a number of educational information systems of new generation for the educational institutions; a number of protected computers, workstations on their base and protected workplaces with guarding; control systems for modern wind power plants with the capacity up to 2 – 5 MW; power electronic equipment for electrical transport, high-voltage converters for railway carriages with the centralized power supply; multifunctional computer-based system of energy resource (gas, electricity, cold and hot water, heat carriers); multifunctional security system and management of elevators [3].

Experts consider that the listed ways of research and production activities of this

company are extremely important for Ukraine because their realization will help to use efficiently the energy resources and money appropriated by the state to create the newest, highly intellectual developments in all sectors of economy of Ukraine [3].

The basis for the diversification of the innovative development of industry is also increase of the production efficiency of metallurgy, chemical industry and their active policy of the import substitution.

The development of mining and metallurgical industry should be realized by its technical and technological re-equipment based on resource saving environmentally appropriate technologies. Much attention should be paid on mastering of a production of new kinds of metallurgical products. It is necessary to provide the metallurgy with the opportunity for the intensive development of powder and non-ferrous metallurgy, in particular smelting of aluminum and titanium alloys, introduction of the processes of continuous casting of steel, adjustment of the production of an automotive high quality sheet and corrosion-resistant steel for gas pipelines, production of extremely strong oil and gas pipe grades. The priority of its development is the technological upgrading of the basic processes of metallurgical processing based on the resource saving environmentally appropriate technologies.

It is necessary to create the conditions for the diversification of production and optimization of its structure by increasing the range of new products, including: electrical casting steel production, production of special steel and alloys, titanium alloys and rolling, aluminum foil, creation of new kinds of zirconium products of high demand, particularly, for the power plants with direct conversion of fuel energy into electricity, expansion of production of the economic kinds of rolling and pipes with anticorrosion coating, drawn steel, flexible profiles etc. The focus in the development of heavy industries has to be not on increasing amounts, but on the products quality on the basis of the innovative technologies [4]. So it is necessary to restructure coal, chemical industries and power system only on the basis of the innovative diversification.

The transformations in petrochemical industry should be aimed at increasing of the share of high technology and chemical productions and technological renovation of production of the basic kinds of chemicals. In the food industry it is necessary to increase the use of high-biotechnologies.

The strategic priority of the development of light industry should become a significant production growth with a focus on the domestic consumers by ordering raw material base and enhance of the protection of domestic producers. In the fields of wood industry it is necessary to take steps to ensure their competitiveness due to the replacement of the fixed production assets and implementation of new organizational forms of business [5].

The priority of the development of the furniture industry is the accelerated development of production of advanced structural materials and finished products, improving of the export and import structures.

At the same time a number of negative tendencies connected with the diversification can be noticed. Among them there are: low innovative activity of the industrial enterprises; exhausted volume of the science-intensive technologies,

developed in times of the administrative-command system of management; undeveloped innovation market; substantial investments of resources in short-term low-risk investment projects; increase of the lag from developed countries because of low technological level of production, which prevents the increase of competitiveness of the domestic enterprises.

The task of the improving the structure of production remains a priority of reforming the economy. For providing the diversification of the innovative development of industry the process of the innovation diffusion has to be changed from the central to the local one, when certain regions due to the local innovative processes grown into the “points of the innovation growth” of the national economy. However, the international practice shows that any successful example of the regional innovations is impossible without state support on local, regional and national level.

The state support of the priority industries under the principle of equal competitive environment for all market participants is necessary for successful diversification of the innovative development of industry. The need in development and conducting of the organizational innovative strategies has appeared for activation of the innovative activity, using of the internal organizational potential of the industrial enterprises in the diversification of their activity, creation of the conditions for the development of all industries based on distribution and realization of innovations.

The diversification of the innovative development of industry demands the organized infrastructure (technology parks, incubators of business, regional innovation funds and venture enterprises) that should combine “science-technology-production”, developed mechanisms of commercialization of the results of new scientific and technological developments and their introduction into the production sphere. The main purpose of the infrastructure should be the promotion of the innovation technologies formation and their efficient use.

The regional authorities should be the initiators for creation of the innovative infrastructure that will facilitate the commercialization of technologies. But they don't have enough resources and skilled administrative personnel to implement the mechanisms of the innovation activity stimulation, commercialization and technological development. Regional authorities have neither the experience nor the appropriate power concerning management and efficient cooperation with the scientific institution located on their territory.

The innovative infrastructure in Ukraine is functionally incomplete and underdeveloped as it doesn't have all components of the innovative process. A mechanism to stimulate its creation is not defined yet. The disadvantages of the modern infrastructure concerning the support of the innovation development include: in most cases lack of the organizational structures for the innovation management at the regional level; the low quality of their services; uneven distribution of available objects of the infrastructure of the entrepreneurial innovation activity outside the regions of Ukraine; underdeveloped infrastructure of the financial market; imperfection of the institutions for the intellectual property protection; unresolved issues about attracting of additional investments to modernize on the innovation basis the export-oriented and structural types of the economic activities in the regions;

insufficient level of information and consulting support, etc.

The basis of the innovative development of the industry is scientific, research and educational sectors if the economy that have to make a significant contribution in creation of new knowledge, development of science and applied areas. Science plays important role in the formation of new innovative technologies, but this requires further expansion and efficient use of the scientific potential. That's why it is necessary to create the appropriate conditions and financial support of the efficient work of the research and production units for support of new innovative ideas and projects, to patent new inventions, to improve the system of the intellectual property system, to improve the information services and its providing and to get antimonopoly regulation.

A clear program of actions on the infrastructure providing of the innovative development is not developed yet at the state level. Till recently not all regions of Ukraine had regional centers of the innovations which form the innovative infrastructure. Thus they are created on the initiative of the local authorities and perform different functions without taking into account the regional differences. With the purpose to support the innovative enterprises it is necessary to create the conditions for formation of new innovative centers that will attract skilled personnel. It is also important to provide an enabling environment for stimulation and encouraging of the technology transfer from laboratories to the industrial sphere of the economy.

The functions of the regional innovative center should include the analysis and estimation of possible competitive advantages of the economy of the region as a result of the innovative activity by the entities. Based on the received data it is important to develop the programs and plans of the industrial restructuring concerning development of the competitive advantages by providing a development priority to the high technological activities.

For the last decades the most popular and the most efficient mechanisms of the support of the innovative development have become the centers of promoting of knowledge transfer and commercialization in the form of the technology parks, business incubators and more.

The state support of the development of the technological parks should be renewed in full because today they are almost the only efficiently functioning innovative structures that provide the connection of science with production and give the complex of the infrastructural services through a special regime of innovation projects realization. It is important to intensify the process of creating of the technology parks in different regions of Ukraine where it is in an initial stage. Further development of the technological parks should be aimed at solving the main task in formation of the industry competitiveness based on strengthening of the connections of science with production, introduction of modern technologies, increase of the productivity in industry and, consequently, production of high technological and competitive products.

Modern business incubators are one of the most potentially powerful economic tools of acceleration of technical and economic development. The main emphasis in

the activity of the business incubators should be done on stimulation of the economic development and job creation.

Important role for the diversification of the innovative development have also the innovative clusters. However, not every region of Ukraine can create the efficient model of the development of the industrial production, able to generate new technologies, know-how, inventions and also to be able to adapt to new processes, technologies and good developed in other countries. Difficulties of the innovative industrial clusters in the regions depend on the level of the development of the production factors, strategy, competitive advantages, demand and human capital.

Most clusters belong to the type “generators of new technologies” as their activity is characterized by the radical innovation process in other words by creation of the global innovations. Creation of clusters promotes the innovative processes and created the competitive advantages in the world markets. Unfortunately, their number increases very slowly. The development of the information technologies, bioengineering, production of new materials that are in the basis of the clusters create the conditions for innovations and changes almost in every industry.

Nowadays clusters exist objectively all over the world. They have the obvious advantages in costs while settlement of transaction in comparison with other integrated territorial production systems. They can improve the solution of many problems because not the individual enterprises compete in the market but whole complexes that reduce the costs for production due to joint technological cooperation of the enterprises. Within the clusters the innovative capacities are created and also close connections are established between the enterprises and organizations that belong to them.

The cluster models in the new conditions of globalization and rapid development of new technologies give an opportunity to use diversification of the industries to accelerate the development of the industry and to restore its ability to produce competitive products.

The important role for providing the innovative activity plays the providing of the information services which give the information component to the innovation infrastructure. The information network of innovations as an information retrieval system is aimed at providing of the innovative activity. It concentrates the scientific, technical, patent, economic and regulatory information and is the mediator between the production of innovative product and its consumption.

One of the conditions of providing and promoting the diversification of the innovative development is formation of the production ties between the enterprises, country and between the enterprises from different countries. This will give an opportunity to increase the efficiency and to provide the appropriate level of the innovative development of domestic production, to respond more flexibly to changes in demands of the times and to enter into new markets. Feasibility of production and financial ties explain the importance of the technological providing of production sphere of the region. The production technologies of the Ukrainian enterprises in most cases lag behind those used by the advanced countries.

For increasing of the level of innovative production of the region it is important to

create the transnational corporations, as they are the main carriers of the product and technological innovations. The activity of the corporations is basically based on a wide implementation of new technologies with improved performance characteristics, reduced power and resources capacity of production, all-round automation, mechanization and information of the production processes, significant increase in productivity and social welfare for workers.

CONCLUSIONS. In general, the diversification of the innovative development of industry will give the opportunity:

to provide the transition of the regional economy to the innovative model of development;

to reconstruct and improve the competitiveness of the industrial production;

to increase the share of high technology products;

to create jobs and to activate the innovation enterprise;

to provide the flow of investments into the sphere of implementation of the scientific developments and development of the market of innovative products;

to provide free access of the business to science information in the latest scientific developments.

Thus, in view of the integration aspirations of Ukraine, the further development of industry is of great importance. The main engine in industry is information, knowledge, research and development. All this gives an opportunity to achieve high socioeconomic results. It is necessary to emphasize that diversification in a competitive environment is one of the factors of survival or achieving of competitive advantages and can contribute to successful economic development of industry.

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ІННОВАЦІЙНИЙ РОЗВИТОК ПРОМИСЛОВИХ ПІДПРИЄМСТВ

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В умовах виходу економіки України на шлях євроінтеграції та формування «економіки знань» особливо важливим завданням стає підвищення конкурентоспроможності продукції вітчизняних промислових підприємств. Найбільш раціональним методом досягнення цієї мети є інноваційний напрямок розвитку. Адже за рахунок модернізації технологічної бази виробництва, подолання сировинної орієнтації вітчизняної промисловості, поліпшення якості продукції, забезпечення її відмінних особливостей від продукції конкурентів можливо досягти зростання рівня конкурентоспроможності вітчизняної промисловості та економіки в цілому. Дана стаття присвячена вивченню доцільності, основних проблем і перспектив інноваційного розвитку промислових підприємств України.

Ключові слова: інновації, диверсифікація, наукомісткі технології, кластер, бізнес-інкубатор.

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