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**THE CONSEQUENCES OF DIVERSITY OF INDUSTRIAL INNOVATIVE DEVELOPMENT****O. Maslak**

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A variety of innovative activity implies the distribution of efforts and investments of a contractor to implement various innovative projects unrelated to each other. Further development direction of innovative industrial activity should include progressive diversity based on the widening of its branches and production with both the great part of added value in the price of the goods produced and the great part of innovation goods. Implementation of such progressive diverse strategy requires prerequisites for more dynamic growth of production and export of high-tech products, and services to be created. The author in this work aims to study the characteristics of such investment, as well as the ways of its efficient management.

**НАСЛІДКИ РІЗНОМАНІТТЯ ІННОВАЦІЙНОГО РОЗВИТКУ ПРОМИСЛОВОСТІ****O. I. Маслак**

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Розглянуті та вивчені характеристики різноманітного інвестування та ефективного управління ним, оскільки різноманітність інноваційної діяльності полягає в розподілі зусиль та інвестицій підрядника для реалізації різних інноваційних проєктів, які не пов'язані один з одним. Напрямом подальшого розвитку інноваційної діяльності галузі має стати прогресивна різноманітність, що базується на розширенні галузей і виробництв з великою частиною доданої вартості в ціні товарів, що виробляються, і з великою частиною інновації товарів. Така реалізація прогресивної стратегії різноманітності передбачає створення передумов для більш динамічного зростання виробництва та експорту високотехнологічної продукції, послуг тощо.

**Ключові слова:** різноманітне інвестування, інноваційна діяльність, додана вартість, високотехнологічна продукція.

**PROBLEM STATEMENT.** It is a common fact that if high economic growth is not followed by the diversity of economy, rapid development of human capital, so the economic growth efficiency appears understated [1].

Unfortunately, the innovation activity prevailing in Ukraine lately and nowadays follows the one main direction that lies in the adoption of new technological means with the purpose to increase the range of goods, while the process of new technologies elaboration at an enterprise is considered to be of secondary importance. This results in negative consequences, namely in decrease of long-range innovation development, loss of their quality and novelty level, also it leads to the breach of proportions between the present scientific and technological industrial potentials and insufficient innovation level of the economic entities. It is significant that the Ukrainian commodity producers, when buying such scientific and technical achievements as the licenses for the use of subjects of industrial property, prefer native elaborations due to their lower price.

Thus, evidently the diversity of industrial innovation development may have positive direction but various consequences for the economy, nature and population.

Contradictions between the necessity of the innovation development and its negative influence on the economic system happen quite often. The diversity is a common reason for change of the economic unbalance type, which resulted in a traditions failure of the current industrial system and structure of contacts.

**EXPERIMENTAL PART AND RESULTS OB-**

**TAINED.** According to remarks of scientists, globalization of the world economy has brought the considerable corrections into the processes of the innovation activity diversity. There is certain "overlay" of the processes and, therefore, of contradictions of diversity and globalization because of international competition sharpening [2]. Thus, nowadays it is necessary to search for new ways for the industrial development in Ukraine that does not conflict with economic or innovation processes taking place in the global economy. The main problem of the Ukrainian industry is persistence of its technological structure and weak diversity, which is a handicap to estimate the social-economic consequences of further development of the processes of innovation development diversity. The further trends of the industrial innovation activity development should involve the progressive diversity based on the widening of its branches and production with the great part of added value in the price of goods produced and innovation goods. Such implementation of the progressive diversity strategy implies creation of prerequisites for more dynamic growth of production and export of high-tech products, services etc. This is a positive consequence for the whole industrial system of national economy as it provides the competitive positions for Ukraine at the global market of high technologies, gets over orientation on the raw materials export, helps to increase a number of elaborations and innovative introductions into the industry, as well as a number of patents and inventions etc.

The diversity of innovation activity is one of the ways to reduce the innovation risk. It lies in distribu-

tion of a contractor's efforts and capital investments for implementation of different and separate innovative projects. In the case one of the projects is unprofitable through the unforeseen circumstances others can be successful and make a profit. As practice shows, the diversity can not only reduce but also increase the risks of innovation activity, if an entrepreneur invests in the project directed to the sphere of activity where his knowledge and management skills are limited [3].

It is important that the diversity of the industrial innovation development provides for concentration of the capital on the leading directions of innovation activity. As a result of such commitment to the long-range innovation directions in the industry, one may wait for a new progressive structure of the industry with predominance of new technological modes etc. The basic techniques to achieve the diversity objects is a versatile and multilevel development of industrial and manufacturing branches, innovative reorganization of new spheres and scopes of activity, modernization of the management structure and new technologies involvement. The most successful results can stem from the diversity in related fields of activities sharing best practices, resources, technologies etc. that cooperatively provide its synergetic effect.

In our opinion, the process of the innovation development diversity can have positive dynamics under such conditions:

1. The priorities of innovation activity of the industry are well-defined.
2. Measures for new technologies introduction are provided, including high-skilled personnel training and support of engineering and innovations processes.
3. The system of innovations marketing and management in the industry is well-organized.
4. The monitoring system for the innovation development in the industry is created.
5. The access to the informational resources as for existing innovations and elaborations is provided.
6. Specific organizational forms of innovation activity are created, which are the pilots in efficiency estimation of the introduced innovations.
7. Appropriate intellectual property registration and protection procedures are available.

As M.P. Postaluk and T.M. Postaluk mentioned, during the diversity in social-economic system the multiple-valued system bifurcation consequences take place. In the process of dynamic diversity the traditions, innovations and institutions simultaneously form and destroy the national economic system. On the one hand, under their influence, the positive technological, structural, managerial and other system improvements occur at all levels and spheres of business, authority and society. The positive component of these improvements consists in consolidation of the national economic system and its traditional relations as the fundamental innovations, making and developing the leading institutes of the postindustrial economy, where under the innovative influence an integration of different spheres of science into the one productive force takes place [4].

On the other hand, the interaction of traditions and innovations destroys the fractal properties of the national economy. It inspires the change of the types of economic unbalance and, as a result, a breach of the current system traditions and structure of connections. These disruptive actions of innovations are accompanied by serious system changes in the structure of business institutes, authorities and society. That make it difficult for the functioning of the national economic system, and sometimes even leads to its destruction. According to scientists, this is the reason why there is a necessity to develop the mechanisms of institutional support of stimulation and protection of the creative features of defined processes, innovations especially, and prevention and minimization of their disruptive system effects [4].

According to A.V. Buhvalov and V.S. Katkalo, the diversity is not profitable for some companies because of additional costs connected to the management of different types of businesses [5]. The same is true for innovation directions of industrial activity, where the implementation risks of the innovation projects of diversity appear.

The negative consequences of the diversity of industrial innovation development can be the ineffective no-profile diversity of an industrial company (e.g. the Xerox company) [5].

Besides, the positive consequences of the diversity of innovation development for the economy lies in great de-risking of innovation activity because of the capital distribution between different innovation spheres. That allows concentrating on the business activity, that would be brand-new, bursting and immensely long-range one. This is the way new kinds of activity and technologies appear: nothing but opposite to spontaneously and chaotically. One of the instruments determining the long-range and promising diversity innovative activities is Foresight – the technological forecasting. As is well-known the demand for some industrial goods has a cyclical behaviour, and conjunctive instability at the mineral market is the case in point, which is the most active at the time of financial crisis because of exchange fluctuations. The diversity of industrial innovation development gives an opportunity to compensate the competitive positions at one markets, if their loose at another ones. The bounded diversity (that implies development of some innovative directions of industrial activity, in other words, that uses the same or concurrent technologies, the markets of goods and services etc.) has especially high potential of positive consequences for the economy (industry in particular).

T. I. Yurkova, who has been researching the diversity in non-ferrous metallurgy, distinguishes two general directions of the diversity that can be estimated as positive ones in the context of industrial development. The first one is connected to the use of some advantages during the diversity, which a company has achieved in some traditional sphere (in the same time the existent technologies, resources, productive capacities, distribution channels, marketing etc. are used for

the diversity). Such direction is known as synergetic diversity. Another direction is a conglomerate diversity, in this case a company change some business activity to another one, which implies new technologies and meet the market needs [6]. The difference between these two directions is, to our opinion, in the purpose of the diversity that the company makes for itself. For the purpose of development and improvement of the profile kind of industrial activity the synergetic diversity is used but for getting more profit and for minimization of the entrepreneurial risks it is good to develop the conglomerate diversity. The conglomerate diversity gives an opportunity to the company not only to manage new risks of the industrial goods sale due to new directions but also to activate the innovation process.

Thus two natures of the diversity motives are reflected in the scientific literature:

1) protective (distribution of risks; decrease of the cyclic instability; change of the activity category, that is on wane of the production; protection from the competitors etc.);

2) offensive (the aggressive growth; negotiation of the limits; new market penetration; achievement of synergetic effects; competitors removal etc.) [7].

For the economy the diversity of the innovation development of the industry gives the impulse for the development of new ways of production, activates the innovation activity, raises the competitiveness, minimizes the risks of the industrial activity that in its turn helps to form new workplaces and provides the firmness of the industry in crisis periods.

The positive aspect of the diversity of the innovation development for social sphere is the diversity of scientific potential that is reflected first of all in the prerequisites formation for further development and improvement the quality of population life.

It is necessary to mention one more positive directivity of the industry diversity that supposes the change from the raw materials orientation of the native economy, from old technologies of the third technological mode to the development of processing industry using new technologies, that in future will bring to the formation of the basis for the economy of knowledge that is, to our mind, is not too much dematerialized.

Thus, there are positive changes in the social-economic system as the result of the diversity: number of new workplaces is increased, the competitiveness of the industry is raised (especially export part), new quality of people capital is provided, effective management is formed etc.

It is significant that we have researched the diversity of the innovation development of the industry. The factors and motives of the diversity, in addition to those described above, are the innovations: strengthening and widening of the innovation kinds of activity in the industry. These processes are uninterrupted: the development of traditions and innovations constantly changes the orientations of the investment flows during the diversity. The scientists have proved the existing of the threshold value for the degree, depth and width of the innovation diversity for every economic system and

its structures outside which the efficiency of the innovative diversity descends [9].

Ignoring and missing of specified risks can lead the negative social-economic consequences.

Except of the positive moments of the diversity process it is necessary to mention some risks and possible disadvantages, threats to the social-economic system that the diversity brings. The impartial fact is that the diversity foresees the presence of certain resources, first of all, of the financial one. It is known that deficient investment activity doesn't give an opportunity to modernize and to diversity the economy.

The important moment in the realization of the diversity is to prepare well-qualified personnel that is oriented on innovation introduction, has high level of training for getting new information, technologies etc. for the purpose of providing the structural diversity and innovation development.

At present some financial, institutional and infrastructural barriers prevent greatly the modernization and diversity of the native industry based on the innovations.

The financial aspect of the diversity realization is very important. Under high fund depreciation of the industry of Ukraine the diversity needs considerable financial costs. Withdrawing of such financial resources, in the scientists' opinion, will lead to the huge strain of whole economy in area and time [7]. Even if the costs for innovation activity are increased from the state budget while it has low filling and if there are crisis manifestation in the industry development, the diversity of the innovation sphere is very complicated topic. But the diversity of the innovation development of the industry is the one way to increase the competitiveness and to provide the stable development of the economy.

The negative consequence of the diversity can be the high risk to loose the invested resources in the innovation projects under the condition of their limiting. In spite of this, only the diversity is the one form to realize the innovations and investments. We consider that the one opportunity to avoid the negative consequences and holes is the active practice of the technological foresight policy – Foresight. Together with this it is necessary to assist the formation of the national innovation system, economic and institutional mechanisms which stimulate knowledge creation, distribution and using.

The crisis situation in Ukraine creates the prerequisites for the long-range diversity, at what it is necessary to work already now. The crisis ought to be used as the certain jumping-off place for important structural changes in the industry of Ukraine towards the development of the innovation ways of activity based on the use of nano-, cell and other advanced technologies etc.

Besides, use of the branch-wise diversity in the industry even within the limits gives the opportunity to reduce greatly the level of economic risks. So the strategy of the diversity within a certain group of branches of industry is efficient only under the favorable forecast of the conjuncture of the certain goods markets.

The least risky is, to the scientists' opinion, the diversity of the groups of the branches that are not connected with each other, and this gives the opportunity to develop the alternative kinds of activity.

So the process of the diversity has as positive consequences for reducing the risks of the innovation activity in the industry, increases its stability, so sometimes the exceeding of the limited value of the diversity characteristics leads to the negative consequences.

Research of the native and foreign practice to realize the strategy of the diversity gives us the opportunity to methodize the main negative consequences for the social-economic system:

- 1) steep expectations while choosing the ways of the diversity which entail big material losses;
- 2) complication of the organizational-managerial structure in the companies;
- 3) distribution of the financial run-the-business resources between different directions of the innovation activity in the industry;
- 4) the barriers for restructuring of the native industry;
- 5) inconsistency between the industrial and innovation policy;
- 6) the possibility of the industrial disasters, worsening of the ecologic situation;
- 7) disappearance of the unique technologies under the guise of the "diversity" because of their insufficient protection by the patents and licenses;
- 8) lack of well-qualified personnel;
- 9) time of the diversity realization etc.

The main drawbacks in the realization of the diversity are:

- 1) lack of necessary knowledge, experience and skills (technological skills) for new activity realization;
- 2) the disadvantage is that lack of attention pay on behavioral aspects of the diversity that causes the problems of the social character (inefficient management);
- 3) the result from the diversity can be just in long-term plan;
- 4) necessity of considerable financial resources;
- 5) displacement of the tendency of the diversity strategy realization;
- 6) difficulties in the search for appropriate direction for the diversity.

The negative consequences for the social-economic system, listed by us, are not the full list. But we have concentrated the attention on the general negative moments under the development of the native industry under the economic ambiguity.

So the diversity success in many cases depends on making of the innovation-industrial policy, with the state support of the system bursting projects, especially within the state-private partnership. With the purpose of providing the positive consequences of the innovation development diversity it is necessary to create the institutional forms of the innovation activity support (innovation clusters that are necessary to realize the priority directions of the innovation activity, they can be that original form of the diversity realization in the industry of the region). Approval of the national development strategy including as strategic task of the in-

dustry diversity will help to realize the efficient diversity. Unfortunately, the matter of the strategy of the innovation development of Ukraine has no positions about the diversity in general and the diversity of the innovation development of the Ukrainian industry in particular.

Also the system approach about creation of the mechanisms of the youth attraction to the sphere of science and workings out which suppose the system of the state grant support of young scientists etc, will help to develop the innovation and for the industrial diversity. This will diminish the outflow of the clever people abroad and will provide the uninterrupted development of the innovation economy.

The formation of the system of annual monitoring of the diversity results makes impossible to get the negative consequences from the diversity of the innovation development in the industry, will help to provide the flexibility to the industrial companies and will give the opportunity to trace the international trends in the development of science and technologies.

The specification of the diversity priorities is possible on the basis of making the forecast of the technological development – Foresight. Formation of the priorities is necessary to connect with real competitive advantages of the native industry and demands about providing the national safety.

The concentration of the financial resources on the bursting directions will help to make the diversity in long-range for the native industry spheres. Besides, it is important to use more active the venture capital for the diversity realization as it can minimize the risks under unsuccessful forms of the industrial diversity. The insurance of the innovation risks has also great potential for the elimination of negative sides of the diversity etc.

The important condition for the efficient diversity of the industry innovation development is an entrepreneurial activity. So the main task for the diversity realization is the clearance of that what is an obstacle to the entrepreneurial activity: simplification of the managerial permissions for the beginning of new business, transparency of the procedures of the state monitoring of the entrepreneurial activity; efficient production infrastructure that supposes the system of planning of land use, transport etc.

The entrepreneurial activity in small-scale business is the important factor of the diversity of the economy, because the small-scale enterprises work in general in the industries that are not raw material but use the technologies of the innovation kind and are flexible under the economic ambiguity.

**CONCLUSIONS.** So the simultaneous development of all kinds of industry needs the concentration of huge resources: financial and intellectual capitals, which are a problem for the enterprises of the native industry. That's why the most expedient way to renew the industry based on the innovation development diversity is the connected diversity of the production, that is the development of the kinds of industry that are connected with each other and the goods and services diversification within one enterprise.

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**ПОСЛЕДСТВИЯ РАЗНООБРАЗНОГО ИННОВАЦИОННОГО РАЗВИТИЯ ПРОМЫШЛЕННОСТИ**

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Рассмотрены характеристики разнообразного инвестирования и эффективного управления ним, поскольку разнообразие инновационной деятельности заключается в распределении усилий и инвестиций подрядчика для реализации различных инновационных проектов, не связанных друг с другом. Направлением дальнейшего развития инновационной деятельности отрасли должно стать прогрессивное разнообразие, основанное на расширении отраслей и производств с большей частью добавленной стоимости в цене производимых товаров и с большей частью инновационных товаров. Такая реализация прогрессивной стратегии разнообразия предусматривает создание предпосылок для более динамичного роста производства и экспорта высокотехнологичной продукции, услуг и т.п.

**Ключевые слова:** разнообразное инвестирование, инновационная деятельность, добавленная стоимость, высокотехнологическая продукция.

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