ISSN Print 2414-0287
ISSN Online 2707-8426

UDC 330.341.1:658
DOI https://doi.org/10.26661/2414-0287-2021-2-50-03

RETROSPECTIVE AND PERSPECTIVE ANALYSIS OF INNOVATIVE DEVELOPMENT OF ENTERPRISES

Cherep A.V., *Chernikova N.M.
Zaporizhzhia National University
Ukraine, 69600, Zaporizhzhia, Zhukovsky Street, 66
**Poltava State Agrarian Academy*
Ukraine, 36003, Poltava, Skovoroda Street, 1/3
cherep.av.znu@gmail.com, chernikova76@ukr.net
ORCID ID: 0000-0001-5253-7481

Key words:
innovations, innovative development, innovative development of enterprises, retrospective and perspective analysis, priority directions, strategies of innovative development.

The article presents the results of retrospective and prospective analysis of innovative development of enterprises. This research was conducted to study past experience on the selected theme and predict, on this basis, the further development of innovations. In particular, the theoretical issues of innovative development of enterprises, the state of the legal framework in this area, the interpretation of this definition by domestic and foreign scientists of different times are studied. Prerequisites for effective innovative development of enterprises are established. An analysis of the main indicators of innovative development of enterprises is performed, which shows a negative trend over the past ten years, both in terms of the number of researchers and innovation-active enterprises, the level of their funding, and the number of implemented innovative products and processes. The discrepancy between the actual indicators of innovative development of enterprises and planned in the Strategy of Innovative Development of Ukraine for the period 2013–2020 has been established. The peculiarities, obligatory conditions and priority directions of innovative development of enterprises in modern conditions are determined. The experience of developed countries is studied in supporting and stimulating business to actively implement innovations and a set of measures on the prospects of such development in Ukraine is given. The interrelation of innovative development of enterprises with the main directions of digitalization is established. The main elements of the strategy of innovative development of enterprises are revealed and its perspective directions are offered. Based on the existing opportunities and obstacles to the innovative development of enterprises, a conclusion is made about the need and importance of this issue in modern business conditions.

РЕТРОСПЕКТИВНИЙ І ПЕРСПЕКТИВНИЙ АНАЛІЗ ІННОВАЦІЙНОГО РОЗВИТКУ ПІДПРИЄМСТВА

Череп А.В., *Чернікова Н.М.
Запорізький національний університет
Україна, 69600, м. Запоріжжя, вул. Жуковського, 66
**Полтавська державна аграрна академія*
Україна, 36003, м. Полтава, вул. Сковороди, 1/3
cherep.av.znu@gmail.com, chernikova76@ukr.net
ORCID ID: 0000-0001-5253-7481

Ключові слова:
інновації, інноваційний розвиток, інноваційний розвиток підприємств, ретроспективний та перспективний аналіз, пріоритетні напрямки, стратегії інноваційного розвитку.

У статті представлені результати ретроспективного та перспективного аналізу інноваційного розвитку підприємств. Це дослідження було проведене для вивчення минулого досвіду з обраної теми та прогнозування на цій основі подальшого розвитку інновацій. Зокрема, вивчаються теоретичні питання інноваційного розвитку підприємств, стан законодавчої бази в цій галузі, тлумачення цього визначення вітчизняними та зарубіжними вченими різних часів. Встановлено передумови для ефективного інноваційного розвитку підприємств. Проведено аналіз основних показників інноваційного розвитку підприємств, який показує негативну тенденцію за останні десять років як

ISSN Print 2414-0287
ISSN Online 2707-8426

за кількістю дослідників, так і за інноваційно активними підприємствами, рівнем їх фінансування та кількістю впроваджених інноваційні продукти та процеси. Встановлено розбіжність між фактичними показниками інноваційного розвитку підприємств та запланованими у Стратегії інноваційного розвитку України на період 2013–2020 років. Визначено особливості, обов'язкові умови та пріоритетні напрями інноваційного розвитку підприємств у сучасних умовах. Вивчається досвід розвинутих країн щодо підтримки та стимулювання бізнесу до активного впровадження інновацій та наводиться комплекс заходів щодо перспектив такого розвитку в Україні. Встановлено взаємозв'язок інноваційного розвитку підприємств з основними напрямками цифровізації. Розкрито основні елементи стратегії інноваційного розвитку підприємств та запропоновано її перспективні напрямки. На основі існуючих можливостей та перешкод для інноваційного розвитку підприємств робиться висновок про необхідність та важливість цього питання в сучасних умовах ведення бізнесу.

Formulation of the problem

What prevents domestic enterprises from becoming more innovative? Why does the innovation component remain very low nationwide? Today, many domestic scientists and practitioners are trying to find answers to these and other questions. And, in fact, the importance of innovative direction of enterprise development to increase its efficiency has already been proven by science and practice. However, considering the innovative development of enterprises as a result of innovation, we understand that it depends on the environment in which transformations take place, namely, on the factors of political, social, economic, legal, international, market, demographic nature, which are constantly changing. In the conditions of fleeting changes, it is difficult to make forecasts, but the retrospective and perspective analysis of innovative development of enterprises will help to understand the available opportunities and obstacles of such development, to predict further events based on past and present experience.

Purpose formulation

The purpose of the article is to establish promising ways of innovative development of enterprises on the basis of a retrospective analysis on this issue.

Analysis of recent researches and publications

Many scientific works of both domestic and foreign scientists are devoted to the innovative development of enterprises, namely: J. Schumpeter, M. Tugan-Baranovsky, M. Kondratiev, G. Mensha, M. Dyba, K. Freeman, D. Clark and L. Soete, L. Kobryn, L. Voloshchuk, E. Kuznetsov and others. The authors pay a lot of attention to the world experience on this issue; explore the theoretical, legal and methodological aspects of innovative activity. Such researches have been going on for decades, but remain relevant to this day, because the level of innovative development of enterprises is an important prerequisite for their success. Countries that implement actively innovations have long been ahead in economic development and, consequently, in social security. However, the meaning of the concept of innovative development undergoes the refinements and changes over time, in accordance with the transformations taking place in the economy of the country, regions and individual enterprises. The study is devoted to identifying opportunities and challenges for innovative development of enterprises on the basis of retrospective and perspective analysis of this issue.

Presentation of the main research material

The innovative development of enterprises is the basis of their sustainable development and strengthening the competitive position of the state in the world market. Therefore, it is very important to forecast such developments, to invent new approaches and to set new requirements for solving the implementation of innovation policy in real time. But the prediction of innovation development processes is based on the study of theoretical and legal aspects on this issue, the analysis of the dynamics of key indicators, establishing patterns and relationships between them.

The study of scientific works and ideas of researchers of the processes of innovation development has shown that, firstly, the innovation is the basis for increasing efficiency and competitiveness and, secondly, it arises usually when there is a downturn in the economy. Thus, J. Schumpeter considered the main principal of the theory of innovative development of enterprises the fact that innovation is the basis of economic growth and the engine of progress [13]. In M. Kondratiev's theory, which is a continuation of M. Tugan-Baranovsky's idea, the determining factor in restoring economic equilibrium is the time, namely, the cyclical regularities of socio-economic development. His provisions also coincide with the research of the American scientist Marquette, who proved the cyclical nature of innovative economic development. K. Freeman, D. Clark and L. Soete first proved that the rate of economic growth depends on the formation, development and aging of technological systems [14]. According to these authors, the process of dissemination of innovations is seen as a mechanism for the development of the technological system, and most of the innovations are realized in a period of deteriorating market conditions.

L. Kobryn suggests that innovative development should be understood as a structured process of qualitatively

ISSN Print 2414-0287
ISSN Online 2707-8426

new changes related to the introduction of economic, organizational, technical, technological and other innovations [2]. L. Voloshchuk considers the innovative growth as a dynamic development by means of the formed system of own resources and thanks to use of the available or possible complex of concrete actions in time directed on development, effective introduction and the further modification of innovations. [1]

G. Mensch and A. Kleinknecht link the active introduction of innovations with the deterioration of enterprises as they move from a strategy of maximizing profits to a strategy of minimizing costs and risk. B. Twiss considered the innovative development as a process in which a scientific idea acquires economic meaning [15].

Kuznetsov E.A. identified three stages of development of innovation theory in his scientific works:

1. Formation of the fundamental foundations of the theory, the period of basic innovations in the field of scientific knowledge (1910–1930).

2. Development and detailing of basic innovative ideas of the previous period (1940–1960).

3. A new theoretical breakthrough associated with the development and spread of technological structure, a wave of epoch-making basic innovations in the period of post-industrial society (from the mid-70's to our time) [3].

According to the author, the third stage should cover the first decades of the XXI century, but we believe that innovative development of enterprises in modern business conditions has a new digital format, and therefore we propose to supplement this periodization with the fourth stage, when the development and implementation of innovations cannot be imagined without use of modern digital technologies.

A detailed analysis of the domestic legal framework in the domain of innovative activity of enterprises was conducted by M.I. Dyba, on the basis of research he stated that a legislative field has been formed in Ukraine, which determines the legal basis for the development of scientific, scientific-technical and innovative activities. But the author notes that the competitiveness of individual enterprises, industries and the entire national economy, the improving the welfare of the population depend on choosing the optimal strategy for attracting innovation at the state and micro levels, on the efficient infrastructure and the speed of creating a single center for the management of creative processes, the developing incentives for the use of innovations for business entities [11].

Studies of theoretical issues of innovative development of enterprises prove that the prerequisites for its success are:

– compliance of innovative development of enterprises with global and national strategies of socio-economic development;

– structural restructuring of the economy, which lays the foundations and determines the directions of such development;

– compliance with modern trends in the development of sectors and industries;

– the level of the investment component and the level of providing individual enterprises and the state as a whole with scientific and innovative potential;

– quality of material and technical and information support of these processes;

– state of development of domestic innovation infrastructure and international scientific and technical cooperation;

– ensuring the protection of intellectual property, the legal regulation of other issues related to innovation and enterprise development.

According to the Strategy of Innovative Development of Ukraine for the period 2013–2020, it was planned to move the country pursuant to a complex indicator of innovative development, defined by the European innovation scoreboard, from the group of "modest innovators" to at least the group of "moderate innovators" and under the best conditions – to the group of "follower countries". Such displacement should ensure the sustainable economic development, the increase of productivity, the return from the use of available natural resources and human potential, the competitiveness of domestic products and the improve the level and quality of life on this basis. This Strategy also provided two scenarios of the country's development:

– inertial (GDP growth forecast up to 5.2%);

– investment-active (GDP growth forecast to 6.5%) [7].

However, such growth did not occur because of many factors (transformation of the state into a raw material appendage, low investment attractiveness of the country, dependence on foreign loans, armed conflict in the Eastern Ukraine, pandemic, etc.). Growth is observed only in nominal GDP, due to higher actual prices, while real GDP (in comparative prices in 2010) continues to decline. In general, in terms of even nominal GDP, Ukraine moved from 48th place in 2014 to 56th place in 2019 [6].

In 2019, according to the Global Innovation Index, the leading countries of innovation are Singapore, South Korea, Switzerland, Iceland, Ireland, Hong Kong, Finland, the USA, Japan and Sweden. Ukraine in keeping with this index took 47th place in the same year.

The role of the state is indisputable in determining the priority ways of innovative development, creating an appropriate climate, supporting breakthrough innovative technologies. Examples of countries that have actively stimulated the innovative activity include the United States, the Great Britain, Germany, Italy, France, Japan, Canada, Brazil, and Australia. In the early 90's of last century, government support for innovation was the impetus for the development of modern and competitive business in these countries [10]. The most common government measures to support innovation in these countries at the time were:

– preferential taxation for enterprises that were actively engaged in research, acquired advanced technologies, implemented risky projects;

– subsidizing and providing dotation to small and medium-sized businesses, industrial enterprises for the reorganization of business processes;

– preferential lending to knowledge-intensive industries, as well as enterprises that have mastered the production of new products, new technologies, invested in the rational use of energy resources and business modernization;

– credit insurance;

ISSN Print 2414-0287
ISSN Online 2707-8426

– support for venture enterprises (Japan and the United States) by providing soft loans, insurance of funds provided by venture firms, reduction of income tax, as well as the return of funds invested in the venture business.

While innovation-active countries stimulated the development and implementation of innovations, the outflow of personnel abroad, reduction of scientific developments, aging of fixed assets, etc. continued in Ukraine.

In modern economic conditions, the innovation policy of both individual enterprises and the state as a whole, the growth of their stability and competitiveness should be based on the use of scientific potential. But the dynamics of the main indicators of economic innovation indicates the degradation of innovation potential. In recent years, there has been a reduction in the number of researchers in Ukraine, as well as innovative enterprises. The amount of funding for innovation and the number of implemented innovative products is declining, as evidenced by Table 1.

Without promoting the development of knowledge-intensive activities, it will be impossible to make the transition from low-tech (resource) to high-tech (innovative) economy. In turn, improving the level of innovative development of enterprises requires a scientific approach, which involves assessing the factors influencing the innovation climate, analysis of trends in innovation development etc. In today's market, innovation is a key engine of enterprises and industries, ensuring their sustainable development, strong competitive position, increasing efficiency. Among the factors that will determine the success of innovation should be noted: the formation of innovative development strategy, finding new opportunities for business development, expanding innovation infrastructure, development and implementation of innovation management systems, evolution of innovation culture.

Today the priority of innovative development of enterprises is the operation and implementation of modern advanced technologies, focusing on greening and resource saving production. Today, human creativity and intelligence are becoming no less important factor in the innovative development of enterprises than the provision of the necessary means of production.

Perspective analysis of innovative development of enterprises involves the development of a strategy for such development and should contain the following elements:

– definition of the general strategy of development of the enterprises;

– identification of "weaknesses" and outdated techniques, technologies and methods;

– establishment of the subject of innovative development at the enterprise;

– development of the plan of innovative development of the enterprise;

– assessment of the effectiveness of the plan and possible consequences.

The Strategy of Innovative Development of the State until 2030, approved by the Cabinet of Ministers of Ukraine, provides for a set of measures to:

– stimulating and supporting the creation of innovations at the legislative level;

– solving problems of development of startups, entering serial production;

– legal protection of intellectual property;

– establishing links between domestic innovators and partners (representatives of business, the state);

– financial and personnel support for the implementation of the strategy.

The purpose of the Strategy is to build a national innovation ecosystem to ensure rapid and high-quality transformation of creative ideas into innovative products and services, increase the level of innovation of the national economy, creating favorable conditions for innovation, increasing the number of implemented developments, increasing economic return, attracting investment in innovation [8].

Modern directions of innovative development of enterprises, both in Ukraine and in the world are determined by the level of informatization of society, automation of production processes, digitalization of the economy in general. In the context of digitalization of the economy, innovation becomes the basis of efficiency by reducing jobs and accelerating processes. The introduction of digital technologies contributes to the formation of new business models. The relationship of innovative development of enterprises with the main directions of digitalization is presented in the report of O. Pyshchulina about trends, risks and social determinants of the digital economy. According to this study, the following areas are:

1. Blockchain mechanism, which is based on innovative ways to accelerate the transmission of information and its closure in certain types of internal protocols of information systems.

2. Digital banking creates new methods of transfer and payment, the use of mobile applications with specialized digital coding.

Table 1 – The main indicators of innovation of Ukraine for the period from 2010 to 2019

Indexes	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1. Number of researchers, thousand people	133,7	130,4	122,1	115,8	101,4	90,2	63,7	59,4	57,6	51,1
2. Number of innovation-active enterprises, units	1462	1679	1758	1715	1609	824	834	759	777	782
3. Number of implemented innovative – types of products, units, technological processes, units.	2408 2045	3238 2504	3403 2188	3138 1576	3661 1743	3136 1217	4139 3489	2387 1831	3843 2002	2148 2318
4. Volume of financing of innovative activity, million UAH	8045,5	14333,9	11480,6	9562,6	7695,9	13813,7	23229	9117,5	12180,1	14220,9

Source: compiled by the author on the basis of [5; 9]

ISSN Print 2414-0287
ISSN Online 2707-8426

3. Internet of things, which operates through the connection and computerization of various systems and their full automation of the Internet.

4. Digitalization of business and production processes is possible under the conditions of innovative developments in the field of informatization.

5. Approaches in the work of Big Data are associated with the development of innovative analytical tools in various fields, as well as the automation of mechanisms for planning and forecasting of different economic indicators [12].

In general, the use of digital technologies in the innovative development of enterprises, gives them a competitive advantage by reducing costs due to the avoidance of intermediaries in providing the necessary logistics and services, product sales, improving the communication component, transition to electronic documentation, accelerating rapid response to adverse changes in the activities of enterprises, increasing productivity through the introduction of automated systems, etc.

Conclusions

Studies have shown that the innovative development of domestic enterprises is in decline. On the one hand, the country has all the opportunities to carry out such activities, in particular, a fairly well-formed legal framework, the experience of developed countries in this matter, their own developments and readiness to conduct further developments and innovations. But, along with the available opportunities, there are a number of obstacles, such as the lack of government incentives for business to be more innovative, very low financial support for startups, insufficiency and constant reduction of scientific staff and more. But the modern world, despite all the opportunities and obstacles, requires companies to fully or partially replace production processes, business models, and management methods by others that will meet modern trends, market demands, ensure competitiveness and efficiency.

References

1. Voloshchuk L.O. Innovative development of an industrial enterprise: essence and problems of analytical support in the conditions of indicative management. *Business Inform*. 2014. № 11. pp. 75–79
2. Kobryn L.J. Diagnosis of factors of innovative development of the enterprise. *Scientific notes: scientific and technical collection*. 2016. № 1(52). Pp. 152–157.
3. Kovtunenko K.V., Maslennikov E.I., Kuznetsov E.A., Safonov Y.M., Filippova S.V. and others Innovative economics: theoretical and practical aspects : monograph. Vol. 2 / ed. Doctor of Economics, Assoc. Kovtunenko K.V., Doctor of Economics, Assoc. Ye.I. Maslennikov. Kherson : Grin D.S., 2017. 906 p.
4. Kraus N.M. Innovative economy in the globalized world: institutional basis of formation and trajectory of development: monograph. Kyiv : Agrar Media Group, 2019. 492 p.
5. Official site of the State Statistics Service of Ukraine. URL: http://www.ukrstat.gov.ua
6. Official site of the Ministry of Finance of Ukraine. URL: http://mof.gov.ua
7. Prospects for innovative development of Ukraine (analytical report). URL: http://old.niss.gov.ua
8. On approval of the Strategy of Innovative Development of Ukraine until 2030 / order of the Cabinet of Ministers of Ukraine dated July 10, 2019 № 526-r. URL: http://zakon.rada.gov.ua
9. Statistical collection: Scientific and innovative activity of Ukraine / Responsible for the issue O.O. Karmazina. State Statistics Service of Ukraine, 2018. 141 p.
10. Strategy of innovative development of Ukraine for 2010–2020 in the context of globalization challenges. URL: http://zakon.rada.gov.ua
11. Financial support of innovative development of Ukraine F 59 [Electronic edition] : monograph / [M.I. Dyba, O.M. Yurkevich, T.V. Mayorova, I.V. Vlasova and others]; for order. Doctor of Economics, Prof. M.I. Dyba and Ph.D., Assoc. O.M. Yurkevych. Kyiv : KHEY, 2013. 425, [7] c.
12. Digital Economy: Trends, Risks and Social Determinants/ Kyiv : Zapovit Publishing House, 2020. pp. 81–117. URL: http://razumkov.org.ua/uploads/article/2020_digitalization.pdf
13. Schumpeter J.A. Theory of economic development. Research of profits, capital, credit, interest and economic cycle / J.A. Schumpeter; translated from English. Kyiv : Kyiv-Mohyla Academy Publishing House, 2011. 242 p.
14. Freeman C., Soete L. The Economics of Industrial Innovation. London and Washington : Pinter Publishers, 1997. 470 p.
15. Mensh G. Stalemate Technology: Innobaition Overcome the Depression. Cambridge, Masp., 1979. 256 p.