KEY INDICATORS OF INNOVATION ACTIVITY OF RUSSIA (FROM 2011 TO 2017)

Kseniya Evgenievna Kovalenko, Altai State University
Sergey Yurevich Bakhvalov, Kazan Federal University
Angelina Olegovna Zekiy, I.M. Sechenov First Moscow State Medical University
Valeria Vladimirovna Vikulina, Nosov Magnitogorsk State Technical University
Sergey Anatolevich Tinkov, Plekhanov Russian University of Economics
Tatiana Vladimirovna Tkacheva, Yugra State University

ABSTRACT

Innovation as a priority for development Russia's economy became relevant relatively recently. Management of innovation processes federal and regional level requires knowledge of their patterns, problems and the specifics of innovation in Russia, as well as the problems and specifics of the innovation activities of enterprises in the context of economic activities. Official federal statistics contain extremely limited number of indicators characterizing innovative processes in business.

The innovation sphere is currently the subject of a study of various branches of scientific knowledge and is actualized in numerous scientific publications. However, they do not have common conceptual foundations, and for the most part they have only economic content.
In the literature there is no single definition of the concept of "innovation", we tried to give a single comprehensive definition of the concept of "innovation", consider different points of view, identified two main approaches to the definition of the concept of innovation. In the article we tried to analyze the basic indicators of the innovative development of the Russian Federation over the past 7 years.

Keywords: Basic Indicators, Innovation, Large Companies, Business.

INTRODUCTION

The innovation sphere is currently the subject of a study of various branches of scientific knowledge and is actualized in numerous scientific publications. However, they do not have common conceptual foundations, and for the most part they have only economic content. Today, the initial terminological base of the subject studied is exclusively in the economics, where numerous attempts are being made to define the concepts of "*innovation*" and "*innovative activity*".

In addition to economics, the greatest achievements in the study of innovations belong to philosophy and sociology, whose representatives consider innovation and related phenomena as

a social phenomenon, analyze the perception of innovation and the attitude towards them of various social groups at different stages of the innovation process (De Propris, 2019; Hilorme et al., 2018; Kang et al., 2016). The aggregate achievements of these sciences consist in the compilation of a certain terminological apparatus, the creation of a general theory of innovations and the classification of the latter, which can be considered as a certain methodological basis, the basic prerequisites for further and above all legal scientific research of innovations (Engel, 2015; Lukyanov, 2008; Nemtsev & Kozlov, 2015; Votchel et al., 2015).

METHODOLOGY

The theoretical and methodological basis of the study consists of domestic and foreign articles in innovation sphere, including monographs, articles and analytical reviews.

The study is based on general methods, such as methods of control theory, expert analysis, statistical analysis and comparative analysis, a systematic approach, methods of structural and functional analysis, synthesis, expert assessments, methods of visualization of tabular data.

As a result of the study, the data of the Federal State Statistics Service were analyzed in the direction of "*key indicators of innovation activity in the Russian Federation*".

Criteria that were used as a basis for comparison:

1. Innovative activity of organizations (the proportion of organizations that carried out technological, organizational, marketing innovations in the reporting year, in the total number of organizations surveyed).
2. The proportion of organizations implementing technological innovations in the reporting year in the total number of surveyed organizations.
3. Shipped goods of own production, completed works and services on their own including innovative products, works, services.
4. The proportion of innovative products, works, services in the total volume of goods shipped, work performed, services.
5. The proportion of organizations implementing organizational innovations in the reporting year in the total number of surveyed organizations.

LITERATURE REVIEW

The term "*innovation*" comes from the Latin "*innovatio*"-"*update*" or "*improvement*", so innovation is usually associated with the creation of new knowledge, solutions, products, significant changes, and modernization. This term is often considered as a synonym for the term "*novation*". Innovations are generalized by the concepts: new knowledge, new phenomena and methods, inventions, new order, new rules. You can also analyze innovation as a direction, a motion vector, i.e., "*in*" and "*novatio*"-in a new, new way. Therefore, researchers most often interpret "*innovation*" as a process, that is, a set of consecutive actions aimed at bringing the advanced scientific idea to the stage of its practical application and obtaining economic benefits (Akhmetshin et al., 2018).

Prigogine defines innovation as a purposeful change, noting that in many purposeful changes there are innovations as an organizational mechanism, i.e., it is from innovations that genuine changes consist.

"*First, the goals of change are determined, innovation is developed, if necessary, it is tested, then it is mastered and distributed, and finally, it "dies out", exhausted morally or physically*" (Prigogine, 1989).

Brue use the concepts of "*innovation*" and "*innovation*" as synonyms, implying the launch of a new product into production, the introduction of a new production method, or the use of a new form of business organization (McConnell & Brue, 1997).

Kotler et al. (2000) defines innovation as an idea, product or technology, launched in mass production and presented on the market, which the consumer perceives as completely new or possessing some unique properties.

The analysis of the above shows that in economics there are two main approaches to the definition of the concept of innovation:

1. As to the process of introducing innovations.
2. How to the result of human activity in the form of new products, technologies, methods, etc. (Aydalot & Keeble, 2018).

RESULTS & DISCUSSION

The concept of "*innovation activity*" is closely related to the concept of innovation. The generalization of economic sources leads to the conclusion that innovative activity is the process of creating a new product from formulating its idea to mastering production, producing, implementing and obtaining a commercial effect (Clarysse et al., 2014; Sople, 2016).

In the Main directions of the policy of the Russian Federation in the field of development of the innovation system for the period up to 2010, a broader approach to determining the essence of innovation activity is reflected, reflecting its focus not only on developing goods with new consumer properties or its production technology, but also on financial, economic, personnel, informational and other innovations (innovations) in the production and marketing of products (goods, works, services) that provide cost savings or create giving conditions for such savings. At the same time, the innovation activity itself is considered not as a process, but as the execution of works or the provision of services (Table 1).

Table-1
KEY INDICATORS OF INNOVATIVE ACTIVITIES IN RUSSIAN FEDERATION

№	Name of the indicator	unit of measurement	2011	2012	2013	2014	2015	2016	2017
1	"*Innovative activity of organizations (the proportion of organizations that carried out technological, organizational, marketing innovations in the reporting year, in the total number of organizations surveyed)*"	percent	10.4	10.3	10.1	9.9	9.3	8.4	8.5
2	The proportion of organizations implementing technological innovations in the reporting year in the total number of surveyed organizations	percent	8.9	9.1	8.9	8.8	8.3	7.3	7.5
3	Shipped goods of own production, completed works and services on their own	trillion rubles	33.4	35.9	38.3	41.2	45.5	51.3	57.6
	including innovative products, works, services		2.1	2.8	3.5	3.5	3.8	4.3	4.1
4	The proportion of innovative products, works, services in the total volume of goods shipped, work performed, services	percent	6.3	8.0	9.2	8.7	8.4	8.5	7.2
5	The proportion of organizations implementing organizational innovations in the reporting year in the total number of surveyed organizations	percent	3.3	3.0	2.9	2.8	2.7	2.4	2.3

On the basis of the data presented, we formulate the following conclusions: 1. innovation processes in the Russian economy are rather sluggish. The share of innovative activity of industry organizations decreases every year (Bernal et al., 2019; Pieroni et al., 2019). In 2011-10.4, and in 2016-8.4. However, in 2017, progress is visible 8.5. The proportion of employees of enterprises engaged in research and development over the past 7 years was greater in 2012. In 2017, it fell by 1.6 percent. Since 2011, the share of innovative products has increased by 2,4204024.4 million rubles.

Innovation processes take place mainly at the largest Russian enterprises. This conclusion unambiguously follows from the relationship:

1. The proportion of innovation-active enterprises and the proportion of the products of these enterprises in the total volume of production. It is obvious that such relationships are possible only if the majority of the largest enterprises in Russia are among the innovation-active enterprises. The implications of this conclusion.
2. The largest enterprises are more interested in innovation activity and its reflection in statistical reporting due to economic, political or image reasons.
3. The largest enterprises have the necessary financial resources for this.
4. Innovative processes in the economy of Russia and its regions are very unstable: the cessation of innovation in one or several large enterprises can lead and leads to a significant drop in innovation

indicators at the regional or country level. There can be several reasons for the excessive concentration of innovation activity in the largest and large enterprises.

5. Unwillingness of medium and small enterprises to show the innovation activity, they are actually carrying out due to the lack of tax incentives.
6. The legacy of the Soviet economy - the predominant largest enterprises and a small number of medium-sized enterprises.

The indicators of the latter are incomparable with the indicators of largest enterprises, and the competition between medium-sized enterprises, focused on the sale of products on their territory (in the regions where they are located), turns out to be very weak and does not stimulate their innovative activities (Cumming et al., 2016; Kita & Šimberová, 2018; Lalkaka, 2002); lack of financial resources for innovation in small and medium enterprises. This feature of the Russian economy must be taken into account when regulating innovation activities. In the current situation, a dual approach to regulation should be used:

1. Stimulation of innovation processes in large enterprises, since there is currently no alternative replacement for them.
2. Increase by several times the number of innovatively active medium and small enterprises.

In recent years, Russia has managed to significantly improve its position in the leading international rankings of innovation activity (Sharafutdinov et al., 2018; Nagimov et al., 2018; Ercan, 2019; Rekonen & Björklund, 2016). Thus, the country's position has significantly strengthened in the global competitiveness rating of the Global Competitiveness Index: Russia has risen from 63 in 2010 to 38th place in 2017, the growth rate for the year amounted to +5 positions. Over the past eight years, Russia has gained 19 positions in the Global Innovation Index innovation development rating, where, by the end of 2017, it ranked 45th. And in the Doing Business rating, Russia only rose by 16 positions last year-to 35th place.

CONCLUSION

Innovation is a complex and diversified activity with many interacting components. Determining its composition is difficult because most products and, of course, the processes during which they are created are complex systems. Innovations determine changes in the properties and performance characteristics of a product in general, and changes in the components of the product that increase its effectiveness, including the nature of the services it provides.

Thus, the interpretation of the term "*innovation*" should reflect: firstly, the essence and content of this category-change based on new knowledge; secondly, the target orientation of change is consumer orientation; thirdly, the completeness and effectiveness of the change process - a new product or a new process (Gribanov, 2014).

It is obvious that "*innovation activity*" as a legal concept should be dependent on the concept of innovation and, in fact, differ from the latter only by a process approach, that is, by a system of actions aimed at turning knowledge into a useful product. But "*innovation*" is a complex concept, it includes a set of legal facts (recorded new useful knowledge, introduced into

production or licensed knowledge, ready for sale or sold product, etc.), and therefore innovative activity covers any actions (of course, legally significant), which are aimed at innovation. This entails an important distinction: innovation implies an end result, and therefore there is completed innovation activity, and innovation activity is not necessarily an activity aimed at an end result, i.e., actions to achieve any outcome, including an intermediate one, and regardless of its availability (Gribanov, 2014).

It is necessary to introduce innovations everywhere in all sectors of the economy, the purpose of which will be to build capacity for future development. Most industrialized countries pin their hopes on long-term stable economic growth with the transition to an innovative development path. That is why increasing the innovation susceptibility of the economy is one of the main tasks of the modern industrially developed state.

REFERENCES

Akhmetshin, E.M., Vasilev, V.L., Mironov, D.S., Yumashev, A.V., Puryaev, A.S., & Lvov, V.V. (2018). Innovation process and control function in management. *European Research Studies Journal, 21*(1), 663-674.

Aydalot, P., & Keeble, D. (2018). *High technology industry and innovative environments: The European experience*. Routledge.

Bernal, P., Maicas, J.P., & Vargas, P. (2019). Exploration, exploitation and innovation performance: Disentangling the evolution of industry. *Industry and innovation, 26*(3), 295-320.

Clarysse, B., Wright, M., Bruneel, J., & Mahajan, A. (2014). Creating value in ecosystems: Crossing the chasm between knowledge and business ecosystems. *Research Policy, 43*(7), 1164-1176.

Cumming, D., Henriques, I., & Sadorsky, P. (2016). 'Cleantech'venture capital around the world. *International Review of Financial Analysis, 44*, 86-97.

De Propris, L. (2019). Local clusters in global value chains: Linking actors and territories through manufacturing and innovation. *Regional studies, 53*(4), 615-616.

Engel, J.S. (2015). Global clusters of innovation: Lessons from silicon valley. *California Management Review, 57*(2), 36-65.

Ercan, T. (2019). New three-part model of innovation activity in construction companies. *Journal of Construction Engineering and Management, 145*(5).

Gribanov, D.V. (2014). *Legal foundations of a national innovation system: The dissertation*. Doctors of Law: 12.00.01. Yekaterinburg.

Hilorme, T., Nazarenko, I., Okulicz-Kozaryn, W., Getman, O. & Drobyazko, S. (2018). Innovative model of economic behavior of agents in the sphere of energy conservation. *Academy of Entrepreneurship Journal, 24*(3).

Kang, N., Ren, Y., Feinberg, F.M., & Papalambros, P.Y. (2016). Public investment and electric vehicle design: A model-based market analysis framework with application to a USA–China comparison study. *Design Science, 2*.

Kita, P., & Šimberová, I. (2018). An overview of business models in the Czech chemical industry: A sustainable multiple value creation perspective, *Entrepreneurship and Sustainability Issues, 6*(2), 662-676.

Klepper, S. (2010). The origin and growth of industry clusters: The making of Silicon Valley and Detroit. *Journal of Urban Economics, 67*(1), 15-32.

Kotler, F., Armstrong, G., Saunders, D., & Wong, V. (2000). *Basics of Marketing*. SPb.

Lalkaka, R. (2002). Technology business incubators to help build an innovation-based economy. *Journal of Change Management, 3*(2), 167-176.

Lukyanov, S.I. (2008). Scientific and innovative activity of MSTU. Approaches and solutions. *Bulletin of Magnitogorsk State Technical University, 1*(21), 16-21.

McConnell, C.R. & Brue, S.L. (1997). *Economics: Principles, problems, and politics*. Moscow.

Nagimov, A.R., Akhmetshin, E.M., Slanov, V.P., Shpakova, R.N., Solomonov, M.P., & Il'yaschenko, D.P. (2018). Foresight technologies in the formation of a sustainable regional development strategy. *European Research Studies Journal, 21*(2), 741-752.

Nemtsev, V.N. & Kozlov, A.A. (2015). Theoretical and methodological aspects of innovation risk. *Corporate Economics, 1*(1), 4-18.

Pieroni, M.P., McAloone, T.C., & Pigosso, D.A. (2019). Business model innovation for circular economy and sustainability: A review of approaches. *Journal of Cleaner Production, 215, 789-798.*

Prigogine, A.I. (1989). *Innovations: Incentives and obstacles (social problems of innovation).* Moscow, Politizdat.

Rekonen, S., & Björklund, T.A. (2016). Adapting to the changing needs of managing innovative projects. *European Journal of Innovation Management, 19*(1), 111-132.

Sharafutdinov, R.I., Gerasimov, V.O., Akhmetshin, E.M., Yumashev, A.V., Pavlyuk, A.V., & Luzina, T.V. (2018). Inclusive growth index assessment in the regions of the Volga Federal District of the Russian federation. *Paper presented at the Proceedings of the 31st International Business Information Management Association Conference, IBIMA 2018: Innovation Management and Education Excellence through Vision 2020.*

Sople, V.V. (2016). *Managing intellectual property: The strategic imperative*. PHI Learning Pvt. Ltd.

Votchel, L.M. & Vikulina, V.V. (2017). On the development of innovative activity of Russian entrepreneurship. *Corporate Economics, 4*(12), 20-24.