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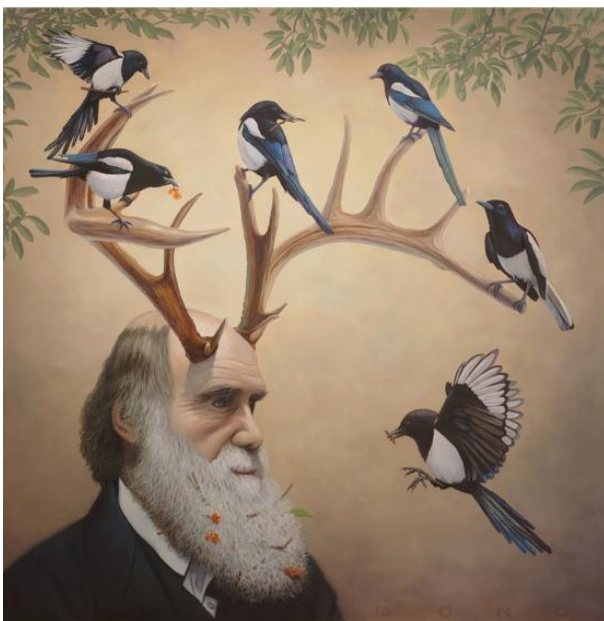
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Functioning and support of small innovative enterprises affiliated with universities in Russia

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Abstract

The paper addresses the practical problems of development of small innovative enterprises at universities and analyzes the problems of state support of the small business. A new model of a strategic innovation partnership is described. The authors show the relation between the Russian economy modernization and the development of small innovative entrepreneurship. In conclusion, innovative activity is resource-intensive and requires expensive investments. The solution of the social and economic problems of small business, which commercializes the intellectual products of the university, must be entrusted to the state.

Keywords: Higher Education, Institution, Infrastructure, Innovations.

Funcionamiento y respaldo de empresas pequeñas innovadoras vinculadas a universidades en Rusia

Resumen

El documento aborda los problemas prácticos del desarrollo de empresas pequeñas innovadoras en las universidades y analiza los problemas del apoyo estatal a las pequeñas empresas. Se describe un nuevo modelo de asociación estratégica de innovación. Los autores muestran la relación entre la modernización de la economía rusa y el desarrollo de pequeños emprendimientos innovadores. En conclusión, la actividad innovadora requiere muchos recursos y requiere inversiones costosas. La solución de los problemas sociales y económicos de las pequeñas empresas, que comercializan los productos intelectuales de la universidad, debe ser confiada al estado.

Palabras clave: Centro Docente, Superior, Infraestructura, Innovaciones.

1. INTRODUCTION

One of the main tasks of state regulation is strict selective stimulating investments in the most effective and innovative programs and projects. The most successful innovation activity takes place in those countries where the government pays much attention to the development of science and scientific and technological progress, where the priority of public policy is the sustainable development of the innovation system (ZAKHAROV, BOVKUN and VASILIEV, 2017). The innovative strategy is focused on the formation and development of an innovative economy and the maintenance of stable economic growth.

The purpose of the state innovation policy is the formation and effective use of innovative opportunities in the economy, the introduction of scientific developments and the results of intellectual activity to increase the output of import-substituting and competitive goods, improve the level and quality of life of the population. Small businesses are more attractive in this process as during the implementation of innovative projects, they have undeniable advantages. This is due to the following circumstances:

- 1) Small businesses are closer to consumers and suppliers, flexible and adapt quickly to the needs of the population and provide services of a specific nature;
- 2) Small enterprises can serve as a launching pad for the creation of large enterprises on their basis, their innovation being the most important condition for the efficiency of economic activity;

The dynamics of innovative development depends on the effectiveness of the processes used in the creation and organization of functioning SIEs. Here, universities play an important role in their innovative infrastructure and joint agreements with enterprises that provide a synergistic effect (KALININA & CHERNITSOVA, 2017). Small innovative entrepreneurship at universities is a major element of the modernization of the Russian economy and plays a leading role in the commercialization of innovative research, the creation of the intellectual elite of the state, the involvement of students and graduate

students in the creative work and business process (KOLESNIKOV, 2012).

CHALENKO (2010) suggested recommendations on strengthening the interaction between science and business structures, stimulating the commercialization of the results of research and development activity conducted at universities, and improving the policy of forming small innovative entrepreneurship in Russia in general. In his work, CHALENKO (2010) identifies the priorities of active SIEs in the choice of innovations. The author proves that technological innovations are the most popular, the next priority is given to product innovations, while organizational and marketing ones occupy the last step of all the innovations that are being implemented.

2. LITERATURE REVIEW

A review of scientific economic literature devoted to the issues of innovation has shown that there are hundreds of interpretations of innovative concepts. The concept of innovation was introduced in economic science by Schumpeter. He viewed innovation as a means of overcoming economic crises. The researcher attributed to innovation the following components: the introduction of a new product unknown to consumers, or a new type of existing product, the introduction of a new production method, a new organizational structure in an industry, the opening of a new market, a new source of raw materials.

Most researchers define innovations as the result of innovative activity, which is represented in the form of an introduced innovation. In international literature on economics, innovations are interpreted as the transformation of potential scientific and technological progress into a real one, embodied in new products and technologies. A number of researchers (ZAKHAROV ET AL., 2017) note that it is small enterprises that play a leading role in technological changes. Other authors KASPINA, YERINA & FILIPPOVA (2014) define small innovative enterprises as small business entities, whose activity is aimed primarily at the commercialization of an innovative product. In this sense, innovation is a combination of production, technical and commercial activity that lead to the emergence of new and improved industrial processes and equipment on the market.

3. MATERIALS AND METHODS

The present paper analyzes the current state and potential problems that are associated with the existing small business, higher education, and academic research, and offers political recommendations for improving practices, research skills and the business environment at universities. Finding solutions to the problems that emerge in the course of the formation and functioning of SIEs is a long process, but it is necessary and inevitable. The solution of these problems is possible only if the efforts of the country, business and representatives of science and education are combined (LUO, LI, PENG, & FAN, 2018).

The creation of SIEs under universities is defined by Federal Law No. 217-FZ of August 15, 2009, On Amendments to Legislative Acts of the Russian Federation on the Establishment of Economic Societies by Budgetary Scientific and Educational Institutions for the Purpose of Practical Application of the Results of Intellectual Activity. This law has defined the legal basis for innovative enterprises that have been set up at universities and budgetary scientific institutions and has removed the multiple barriers that hampered the commercialization of innovative products created at universities and research institutes and their introduction into the real sector of the economy. The most important function of law No. 217-FZ is the establishment of active communication and interaction between universities and business (AL-RABAANI, 2018; ALWAHDANI, 2019).

Federal Law No. 217-FZ is aimed at creating the necessary preconditions for the formation of the backbone of the knowledge economy, an innovative business, without which the construction of a national innovation system is impossible because high-tech enterprises are the future of the Russian innovation economy. Prior to the release of the above-mentioned law, scientific and educational organizations had no opportunity to independently implement their developments in production. This law has opened a number of opportunities for Russian universities, in particular, and for the economy as a whole:

- 1) For universities, there has emerged a new mechanism that is able to promote new knowledge and scientific results of

intellectual activity on the market and participate in managing the profits of organizations created with their participation;

2) The creation of new innovative enterprises has opened new opportunities for the realization of ideas and developments by students, graduate students and young scientists, as well as for finding a job in their specialty;

4. RESULTS

Ensuring sustainable development of the economy largely depends on the creation of small business entities, which makes it possible to more effectively use the entrepreneurial potential in a new form – in the form of innovative activity at universities (FAGERBERG, MARTIN & VERSPAGEN, 2010). Small business at universities of the Russian Federation is able to develop both the educational institution itself and the whole system of higher education by developing scientific innovation projects within the university, developing the physical infrastructure and technical capacity of the university, improving the quality of the educational process, and internships of students in other regions or states.

Ultimately, the implementation of innovation infrastructure should pursue the goal of implementing competitive high-tech entrepreneurial activity and the development of an innovation system. It is aimed at developing Russia's economic potential, stimulating the

growth in the number of new jobs, and ensuring the development of commodity and production competition (IODA & IODA, 2015). To assess the degree of implementation of the program for the development of innovation activity of the University, the following key indicators should be used:

1. The scope of work and services performed on the basis of the innovative infrastructure of the university;
2. An effective system of registering and recording the results of intellectual activity;

At the same time, universities are related to enterprises as a source of a new product and the ability to use scientific research and receive innovative support. The mechanism for managing the attainment of the common goals of the university and the enterprise that produces high-tech products faces significant practical problems. All the problems can be divided into two groups. The first group of problems is related to the creation of SIEs, the equity of which contains the results of intellectual activity. The second group of problems is associated with small enterprises; whose capital contains the rights to use scientific assets.

- Universities can contribute equipment, cash and other assets to the statutory capital of the SIE, but the law prohibits budget institutions from channeling profits from entrepreneurial activities to the creation of enterprises. In this case, the statutory capital of the enterprise by 1/3

should consist of the finances of the university (KOLESNIKOV, 2012);

- Universities simply do not have the resources and good equipment for scientific and technological research and development;

The study has shown that small innovative business at universities is currently making a minor contribution to the innovative development of Russia. The main reason for this is the low activity of entrepreneurs in the innovation sector. In this regard, the main task of the state is the creation of an effective mechanism that will primarily support the interests of entrepreneurs in the development of innovative products. The study of small innovative business in Russia has shown that its level of development is much lower than in developed countries, nevertheless, a positive trend of innovative activity of SIEs has been observed since 2009. Table 1 provides an overview of SIEs in a number of universities in Russia.

Table 1. Number of small innovative enterprises at universities in Russia

No.	University	Number of SIEs
1.	V.G. Shukhov Belgorod state technological university (BSTU)	83
2.	Kazan Federal University	37
3.	Tomsk State University of Control Systems and Radioelectronics	25
4.	N.P. Ogarev Mordovia State University	27
5.	Bauman Moscow State Technical University (National Research University of Technology)	23
6.	A.N. Tupolev Kazan National Scientific and	22

	Technical University	
7.	Southern Federal University	17
8.	St. Petersburg State University	16
9.	Saint-Petersburg Electrotechnical University LETI (ETU)	13
10.	Tambov State Technical University	13
11.	Lomonosov Moscow State University	9

The Central Federal District, the Siberian Federal District and the Volga Federal District are leaders in investing in innovative products (Figure 1).

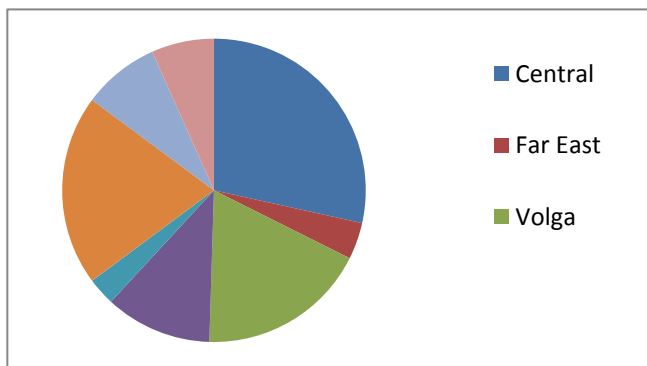


Fig. 1: Distribution of small innovative enterprises

As for other federal districts, there is a high level of innovative goods produced by small enterprises in the South and the Northwest Federal Districts. The level of production of innovative goods in these areas is much higher, mainly because of the availability of highly

qualified specialists and high-tech developments in various sectors of the economy.

5. DISCUSSION

The analysis of the functioning and development of SIEs established under Russian universities, conducted during this study, has revealed the following main practical problems. The successful functioning of SIEs at universities requires, first of all, the presence of two interrelated conditions. These are benefits and investments. These conditions, in our opinion, should be guaranteed by the state at the initial stage of the SIE's operation, since the investor will not want to invest funds in a high-risk project. Thus, it is necessary to develop financing through venture funds (ZAKHAROV ET AL., 2017). The implemented state projects for the development of small enterprises are not aimed at supporting projects of the zero cycle. The existing SIE support funds provide very small amounts of funding.

To date, financial support of SIEs in Russia leaves much to be desired. It is implemented through partner banks and support infrastructure organizations. The financial support of the state is particularly relevant for enterprises that are at the initial stages of development, since they do not have sufficient commercial confirmation of the success of their future product. The high level of risk associated with the introduction of an innovative product to the

market makes the project unattractive for private investors (BELETSKAYA, 2013).

The state's activity is undoubtedly positive. Finally, the government has made a meaningful attempt to commercialize science, making universities take the initiative and find investors. But the result will be obtained only if the authorities remove the obstacles that impede the SIEs' functioning process (BELETSKAYA, 2013). For the effective functioning of SIEs, universities need an appropriate innovative infrastructure. An important factor in the operation of the SIEs should certainly be the possibility of using the university infrastructure on a non-refundable basis. If universities are allowed to enter the statutory capital with property, then this problem needs to be resolved. In addition, preferential terms for renting premises are needed.

Business incubators and technology parks should be created on the basis of universities. The main goal of this measure is to ensure all conditions for the organization and effective activity of SIEs and scientific and innovation communities (VLASOV, 2012). When, a few years ago, universities were ordered to form small innovative enterprises, no one asked whether employees, administration, teaching staff, students and graduate students were ready to engage in entrepreneurial activity. As a result, the lack of practice and experience led to problems and questioned the very idea of the transition of science to innovative activity (KALININA & CHERNITSOVA, 2017).

The system of state regulation of SIEs in Russia should also thoroughly consider the possibility of privatizing the results of intellectual activity by small enterprises, whose capital contains the rights to use scientific assets (MECHANNEK, 2011). Thus, in the innovation sphere, small enterprises have advantages and can contribute to the active development of the country's innovative economy; therefore, the support of the SIEs should become one of the priority directions of state policy.

The analysis of the innovative activity of SIEs at Russian universities has made it possible to propose the following measures that can provide a favorable innovative climate for Russian SIEs:

1. Creation of unified centers for the examination of innovative projects carried out on the basis of universities, aimed at identifying the relevance of projects and scientific ideas at an early stage. This will lead to a significant reduction in the share of unrequired and inefficient projects.
2. Establishment of transfer technology centers at Russian universities with clearly defined powers in establishing relationships with partner enterprises, forming and maintaining a client base at the earliest stage of SIE development. To date, SIEs at Russian universities have to do that themselves.

3. Establishment of holding centers at Russian universities that can streamline and coordinate the activity of the structures that support enterprises engaged in innovation activity.

4. Creation of large research laboratories at Russian universities, the main purpose of which is the implementation and active maintenance of communication in the chain university - small innovative firm.

6. CONCLUSION

The creation of SIEs at universities is a unique phenomenon and is a serious technological breakthrough both for universities and for the country's economy. SIEs at universities are capable of motivating the development of not only universities and the education system, but also promote the effective development of the Russian economy as a whole by means of innovative stimulation. SIEs at universities is an effective mechanism for involving students, graduate students, young scientists in science and business, thereby forming the intellectual elite of the country, without which the present modernization of the economy is impossible.

The share of innovative business in the structure of the small business, despite the measures taken by the state, remains very low. The main problems that hamper the development of small innovative enterprises, especially in the manufacturing sector are the

incompleteness of the legal framework for the functioning of small innovative businesses; mistrust to the results of its activities; insufficient use of existing experience and positive components of the Russian mentality. Besides, innovative activity is resource-intensive and requires expensive investments. The solution of the social and economic problems of small business, which commercializes the intellectual products of the university, must be entrusted to the state. The ultimate goal of state policy in the development of an innovative economy is to create an attractive investment climate in the country.

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