

Incentives for Innovative Activity of Young Scientists on the Basis of Higher Educational Institutions in Russia. Experience of Belgorod State Technological University Named After V.G. Shukhov*

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Abstract: The article deals with current issues of innovative activity on the basis of higher educational institutions in Russia. The paper studies the strategy of innovative development of the Russian Federation for the period up to 2020 considers the objective of enhanced research and innovation on the basis of universities, features of an innovative society, objects of infrastructure support of innovation activity, active involvements of the university in the formation of university-based innovative infrastructure. The paper analyzes positive experience of Belgorod State Technological University named after V.G. Shukhov, where an effective model of educational research and innovation complex is dynamically developing, providing incentives for innovation activities of young scientists and commercialization of university intellectual property. Results of the study the organization of youth innovative activities may be of interest to both Russian and foreign entities and partners.

Key words: Innovative activity • Educational research and innovation complex • Innovation and Technology Center • A business incubator • Small innovative companies • Innovation belt • Higher educational institutions • Young scientists • Prototype model • Technology • International technology park

INTRODUCTION

The economic recovery and positive changes in the economic structure of a state is primarily associated with the large scale use of achievements of scientific and technological progress [1, 2, 3].

Today, Russia is experiencing an important stage in its economic, political and social development. The Russian youth should be and, actually, is becoming the main participant in this process [4]. This is the youth, which represents the most active part of a civil society: the young are better adapted to the implementation of innovative projects and technologies in various fields, they are concentrating fundamentally new knowledge and ideas, they are mobile and full of energy to arrange their life. By their self-assessment, the younger generation positions itself as the main factor in the stability of development in Russia and most of them - as the driving

force for fundamental changes in the society. The Russian youth is the main ordering party for the future they deserve, the main strategic resource of the country [5].

Today more and more young scientists are involved in innovate activities carried out on the basis of higher educational institutions. Thus, on the basis of Belgorod State Technological University named after V.G. Shukhov more than 80 small innovative enterprises with the participation of young people have been registered. At the same time, in Russia, there is a significant number of higher education institutions, which have not established any small innovative enterprises on their basis.

Timeliness of the research is that in order to enhance research and innovation activity on the basis of higher education and research institutions within the education system of the Russian Federation it is necessary to improve the state regulation in the field of innovative activity and implementation mechanisms.

Achieving sustainable economic growth and improving national competitiveness is a complex task, the success of which is determined by the development of economic institutions and creation of new competitive advantages. In the new century, sustained economic growth depends on the development and implementation of strategies for the active use of knowledge as a basis for the development process. The most competitive economy is the economy in which the knowledge and innovation are created, distributed and used in an efficient way.

The strategy of innovative development of the Russian Federation for the period up to 2020 puts forward the following goals: to provide a high level of human well-being, strengthening the country's geopolitical role as one of the global leaders in defining the global political agenda. The only possible way to achieve these goals is to move the economy towards an innovative socially-oriented model of development [6].

Today more and more young scientists are carrying out innovate activities on the basis of higher educational institutions. Among the main features of an innovative society occupies a special position is given to higher education. In the unity of the state, universities and business the higher education is given the decisive role in conditions of knowledge economy: generation, storage and dissemination of new knowledge, research and development in the interests of business and the transfer of new technologies, establishing innovation networks of small science-intensive firms and their systematic reproduction within the university environment; specialists training best meeting the needs of a new and dynamic economy, formation of Creative youth environment; active international cooperation in education and science. That is an incomplete view of universities as the main factors of development.

The recent studies of foreign and Russian scientists conducted during the last years, have shown that the management of public and private higher educational institutions consider infrastructure support of youth innovative activities, as a means of stimulating regional economic development [7-12].

Thus, university facilities for infrastructure support of innovative activities perform a wide range of functions, the most important of which are the development of various forms of cooperation between universities, research laboratories, industry and business, as well as assistance to firms in bringing new ideas to commercialization.

In Russia university-based seed stage entities tend to occur in order to commercialize innovative technologies

developed in universities. Institutions of higher learning are legal owners of the results of intellectual activity (RIA). For educational institutions conducting research in many respects with the state budget support, the legal environment of commercialization RIA is of critical importance. It should be noted that the Federal Law N 217-FL of August 2, 2009 "Concerning Amendments to Certain Legislative Acts of the Russian Federation on establishing business entities with a view to practical application (implementation) of the results of intellectual activity in state-funded educational and research institutions" and N 209 - Federal Law of 24 July 2007 "Concerning development of small and medium-sized enterprises in the Russian Federation" have actively promoted the growth of small innovative enterprises. The main purpose of these laws is to promote the real implementation of RIA created in the production sphere, exclusive rights for which are owned by state-funded institutions of science and education.

At present, Russia there is a number of universities, successfully developing innovative activity and implementing various incentive mechanisms for innovation. Among them is Belgorod State Technological University named after V.G. Shukhov (BSTU), which occupies a leading position in terms of innovation activities of young scientists.

The University is actively involved in the formation of the university-based innovative infrastructure. The purpose of the implementation of this concept is the creation of a unified educational scientific and innovative space aiming at involving young people into innovative activities [4]. Thus, a rapidly developing efficient model for educational research and innovation complex has been formed, resulting in significant intensification in undergraduates', graduates' and research staff activities.

As a result, research and educational innovation platforms, including a department, research laboratories and small innovative enterprises, established with the participation of scientists, as well as graduate and doctoral students become the basic university element. Therefore, research and education innovation platform provides a full cycle of training highly-qualified specialists, generates new knowledge, innovation, release of innovative products (Figure 1).

The major role in implementing pattern of research and innovative activity at the university is performed by two innovation belts, actively interacting between each other, which allowed to successfully fulfill the goals and objectives set forth.

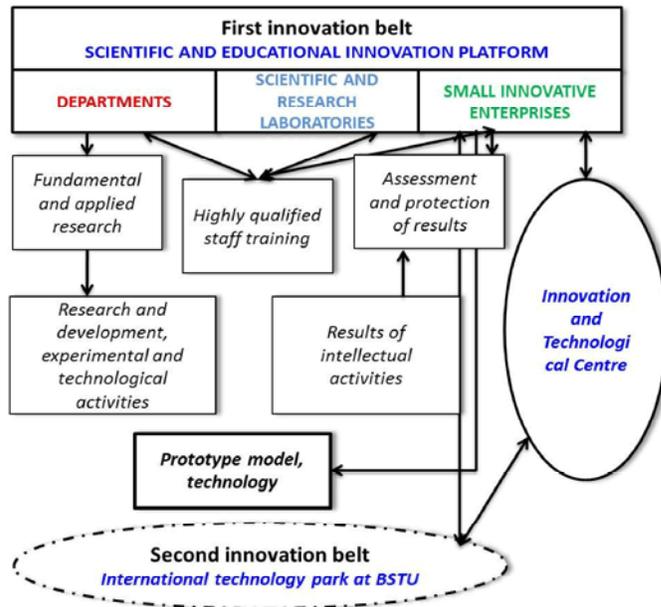


Fig. 1: Mechanism of implementing research and innovative activity at BSTU

The first innovation belt represents scientific and educational innovation platforms (20 such platforms have been set up at the University), it serves as a site for infrastructure support to small, innovative companies in the early stages of their development - innovation and technology center. The latter carries out a set of projects: "Innovative Business Incubator", "Business Center", "School of entrepreneurship education in the field of high technology."

Today, 84 small innovative enterprises, including 58 under the Federal Law 217-FZ are using the services of "Innovative Business Incubator". The registered capital of these enterprises includes the right to use the intellectual property of the university: inventions, utility models and software. These companies operate in the field of energy saving, information technology, nanotechnology, new materials and equipment: "Innovative technologies and machine building equipment", "Rostechceram", "Recycle-Intech", "NTC Modern integrated automation techniques," "BetonProekt", LLC "Modern corporate systems", "FIT-Intellect", "BelSilica", "Center for Energy Saving Technologies", "Building Complex" and others.

Innovative small businesses receive scientific and consulting support in the framework of "Business Center" project and learn the basics of innovative entrepreneurship in the "School of entrepreneurship education in the field of high technology."

In 2012 "Innovative Entrepreneurship", the author's course was first introduced for all fourth and fifth year

students, which culminates in the preparation and protection of a business plan for an innovative idea. The best students projects selected have received financial and scientific consulting support from the university in establishing youth innovative enterprises. Thus, the students who have completed the above author's course established the first 18 small innovative enterprises in the framework of 217 - FL, which received funding from the university in the amount of 25 thousand rubles for the reimbursement of costs related to the organization of enterprises. The project can be called a pilot project in Russia by its integrity, set of goals, problems to be solved and the efficiency.

The second innovation belt is represented by BSTU International Technology Park, bringing together about 200 leading manufacturing companies and business in Russia and abroad. It provides support for scientists in introducing innovations in the industry, facilitates the transfer of technology from the university science into the industrial sector.

As a result of active implementation of the mechanism of development of educational research and innovation complex in 2012 the university implemented 84 projects through innovative structures (compared to 14 in 2008), 428 students were involved in innovative projects (130 in 2008), 58 licensing agreements were concluded with enterprises (in 2008 - 6), 428 university-based jobs for young scientists and students have been created.

CONCLUSION

Thus Belgorod State Technological University named after V.G Shukhov has become a basic element of regional and international innovation system. According to the rating of Russian Ministry of education and science over the years BSTU is strongly holding the top position among architectural and construction universities in Russia. According to the results of an independent monitoring institutions the University is in the top sixteen best Russian universities by the quality of training, the demand for graduates and their career development.

Findings: Under current conditions support to scientific and technical creativity of the youth, creating the conditions for new ideas and, most importantly, their subsequent practical application, that is, for commercialization has become particularly urgent. This paper presents a positive experience, successfully implementing the incentives pattern for innovation activities of young scientists and commercialization of university intellectual property.

In our view, the experience BSTU, one of the leading universities of the Russian Federation, may be of interest to both Russian and foreign organizations and partners.

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