

Chapter 43

Technology Entrepreneurship in the Concept of Development of the Innovative System of a Technical University

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ABSTRACT

Issues of scientific and technological development of economy determine the need for changes to the management system in the organizations of scientific and educational services, including higher education. Scientific, technical, educational, and innovative activities of technical universities are designed to promote the development of students' technological entrepreneurship. The chapter examines different (institutional, mental, interuniversity, etc.) student entrepreneurship development barriers. It identifies the key stakeholders (their role and motivation), in accordance with the levels of their involvement in the process of promotion of entrepreneurship in the university environment. It presents the approaches to the formation of a system of stimulation and a complex of activities, which are held at the platform of the technical university.

BACKGROUND

Entrepreneurship is one of the important factors of the economic development of the country. The entrepreneurs ensure the development of new technologies, promote the emergence of new industries, and increase competition. Scientific works of foreign authors show that technological entrepreneurship gives a greater social and economic contribution to the development of the innovative potential of a country than other forms of business (Mosey, Guerrero, & Greenman, 2016). This is due to the rapid growth of

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small innovative companies, especially in high-tech industries. Russia occupied the 49th place out of 143 on the level of innovation development in 2014 (The Global Innovation Index, 2014).

As for the activity of technological entrepreneurship, it remains quite low: only about 10.2% of small business enterprises in Russia belonged to technology companies in 2013. Now in Russia the total number of micro-enterprises is at the level of 1.8 million, without a noticeable upward trend of this indicator over the last few years. More than 60% of micro-enterprises operate in the field of wholesale and retail trade as well as various real estate transactions (Verhovskaya, Dorohina, & Sergeeva, 2013). Thus, the statistics show the need to increase the proportion of technological entrepreneurship in Russia.

Ongoing research studies have confirmed the special role that universities can play as the basis for the creation of new technology companies. The creation of new companies based on university research and development results has become an important part of ongoing innovation policy in most countries (Wright, Clarysse, Mustar, & Lockett, 2007). Despite the high expectations, the results of the universities in this regard do not always reach the target values (Harrison & Leitch, 2010; Siegel & Wright, 2015). Universities such as Massachusetts Institute of Technology (MIT) and Stanford occupy a special place in this sphere, but the number of successful start-ups is limited for the majority of the scientific and educational organizations (Mustar, Wright, & Clarysse, 2008).

During 2011 to 2016, 2,450 small innovative companies were created in Russian universities and research institutes. In 2014 in the United States and other countries 3,000 companies were founded and operated by graduates of MIT (4.6 million employees with total annual revenues of 1.9 trillion U.S. dollars). In the UK 2.6 million new start-ups were created during 2011 to 2015. A quarter of the students start their own companies or join an existing start-up; student start-ups generate annual revenues of over 475 million pounds.

BASIC METHODS

Solving the problem of increasing the effectiveness of the role of universities in business development can be achieved in the following areas: providing a signal to society from the government of an understanding of the importance of entrepreneurship; demonstrating readiness for its full support and development; organizing an integrated system of development commercialization and realization of business ideas by students and young scientists; and providing the growth of entrepreneurial culture and competencies, as well as generating a stable flow of new business projects, including startups, creating a “critical mass” of technology companies entering the “innovation funnel” through the development of entrepreneurial competences and skills among students and young scientists.

The level of entrepreneurship development in universities is usually estimated by the following criteria (Bayes-Brown, 2015; RVC, 2015):

- The presence of a university document focused on the support of business development (such as a mission, a strategy, development programs of universities, roadmaps).
- The share of employees and students combining work and training with an entrepreneurship activity or their own business.

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