

Yelena Mychko
Uwe Amthor
Alexandra S. Zylko

**ON INTERNATIONAL
INNOVATION COOPERATION
AT MODERN UNIVERSITIES**

This article analyses the role of innovations at higher educational institutions, gives a definition of innovation, explores the features of international cooperation in the sphere of innovations, and focuses on the forms of innovative interaction between Russian and German higher education institutions.

Key words: innovations, higher vocational training, international cooperation.



Over the last years, the system of higher education has undergone significant changes pertaining to the transformation of socioeconomic and political situation in the world, which required the adjustment of educational standards, the level and quality of training, the range of fields of study, and training meeting the modern requirements.

The Strategy for the development of science and innovations in the Russian Federation until 2015 emphasises that modern universities should not only conduct basic and applied research, but also be engaged in research and development, design new equipment and technologies, organise financing, commercialise the results of research carried out by the university's professors and students, and ensure the transfer of produce to the end-user [1]. However, at the beginning of the new century, due to the underestimation of the role of marketing and business planning in solving the problems of commercialisation of results of research and academic, it was difficult to receive necessary resources for further development.

The understanding of innovation mission by Russian Universities has taken place over the last decade, as the process of reforming the Soviet system of education started to develop. At the same time, reforms were triggered by a number of sustainable trends in the world development, the change in the socioeconomic framework, and the understanding of the need for a transition to anthropoeconomics, as well as the development of a new value and content characteristic of education [3].

In today's Russian special attention is paid to international innovative cooperation, since science per se is international and technologies cannot develop in isolation, without taking into account the contemporary conditions. Throughout the world, innovations are becoming a strategic factor and a major driving force behind development, which creates competitive advantages. The basic structure element generating new technology supply within economy is the field of research and development. It is this sphere where research and staff potential of innovative system is formed, the creation and dissemination of new technologies takes place, the foundations of new technological systems are laid, and the balance of powers is determined.

Innovation is a new development in the field of technology, labour organisation, or management based on the use of research results and

advanced practices. It is the ultimate result of innovative activity implemented in the form of:

- a new or enhanced product available in the market;
- a new or enhanced practically applicable technological process [2, p. 8].

In order to be able to implement innovations, a university requires a set of conditions (organisational, methodological, and resource-related ones) ensuring [1]:

- generation of ideas, functional and research studies, patent acquisition;
- organisation of applied research, research and development, creation of engineering samples of new equipment and technologies;
- manufacturing of innovative products, marketing studies, introduction of the produce into the market, diffusion of innovations;
- introduction of innovations into the training process.

Article 33 of the Russian federal law on higher and postgraduate education describes in detail the implementation of international cooperation in the field of higher and postgraduate education [4].

Today, higher education institutions are becoming full participants within global trends manifested in mass processes and their repercussions, the influence of new communication technologies, the increase in professional mobility, etc. These trends determined the development of global connections between universities, increasing commercialisation, the establishment of multinational structure within the world system of higher education. The internationalisation of higher education is supported by the state in a number of countries. For example, at the end of the 19th century, Germany became the largest industrial power in Europe, to a great degree, as a result of reaching top international level in the field of research and technology. Comparisons based on the analysis of development of technological systems in different national economies show that the innovative nature of German economy retained in the course of transition to the stage of information and communication technologies.

German strategy within international innovative cooperation is determined by the following objectives [2]:

- 1) improvement of the research framework for advanced industries;
- 2) creation of a research framework for future technologies;
- 3) dissemination of local achievements in the traditional fields of physics and technology and sharing expenses pertaining to fundamental projects with partners;
- 4) development of small and medium enterprises on the basis of advanced technologies, export of effective mass production technologies.

An indicator of the international research standing of Germany is the number of research publications. According to international statistics, Germany ranks third worldwide by the number of scientific and technical articles published in the English language [2].

The increase in works co-authored by international scholars signifies the remarkable degree of openness of science and German involvement in international cooperation. Co-authored publications are, as a rule, a result of a long-term partnership in research and development.

An important field of German innovative policy is support for fundamental research. Higher education institutions account for a significant

percent of fundamental research. More than 90% of research in the field of higher education is state financed; universities conduct and increasing volume of research.

Moreover, the German legal framework for higher education stipulates that higher education institutions should facilitate internationalisation, in particular, European cooperation, in the field of education, as well as academic exchange between German and international higher education institutions. They are also expected to meet specific requirements of international students [5, p. 319].

The activity of German institutions in scientific and technical exchange with Russia concentrates in the following fields [2]:

- participation in joint applied research projects and technology development and implementation. Joint ventures are often established with a prospect of selling innovative technologies in Russian or European markets;
- export of means of production and engineering services, as well as franchising in case of small and medium enterprises;
- participation in subcontracting and cost distribution (mostly, in space exploration);
- employment of Russian researchers (predominantly, in the field of electronics);
- investment in technology modernisation in the partner state.

Thus, innovative development of a university is a process of systemic (integrated, coordinated, harmonised) implementation of innovations in all spheres of university activity — research, education, management, finances, and academic staff training. The development of a university is innovative if innovations account for a greater part of increase in university indicators.

Of course, each university has its own way of creating a organisational structure, the formation and functioning of which depends on both the situation in the country and region and the actions of administration aimed at the transformation of their university in accordance with external requirements.

However, it is widely acknowledged today that scientific and technical ideas and developments, advanced technologies and high technology products, intellectual and educational potential of staff becomes the main driving force behind sustainable economic growth. The experience of many countries shows that the leading role in ensuring a transition to an efficient knowledge-based economy is played, to a significant degree, by universities.

References

1. Djatchenko, L., Tarabaeva, V. 2008. *Vysshee obrazovanie v Rossii*, №5, p. 13—18.
2. Rjadinskij, V. Ju., Kokareva, N. V. 2007. *Mezhdunarodnoe sotrudnichestvo v innovacionnoj sfere*. Tjumen'.
3. *Upravlenie v vysshej shkole: opyt, tendencii, perspektivy: analiticheskij doklad / ruk. avt. kol. V. M. Filippov*. 2005. Moscow.
4. *O vysshem i poslevuzovskom professional'nom obrazovanii: federal'nyj zakon*. 2004. Moscow.
5. *Fiapshev, B. H., Fiapsheva, T. A., Fiapshev, A. B.* 2007. *Dialektika rossijskogo obrazovanija*. Part. 2. Rostov n/D.



About authors

Prof. Yelena I. Mychko, head of the Department of Education Technologies, Institute of Modern Education Technologies, Immanuel Kant Baltic Federal University.

E-mail: mychko.elena@yandex.ru

Uwe Amthor, lecturer, Christian Albrecht University of Kiel (Germany).

E-mail: uwe.privat@t-online.de

Alexandra S. Zolko, PhD student, Department of Education Technologies, Immanuel Kant Baltic Federal University.

E-mail: zelko@inbox.ru