ISSN 0869-3617 (Print), ISSN 2072-0459 (Online) http://vovr.elpub.ru

Project Innovative Activity in the Higher Education System of the Russian Federation

Обзорная статья
DOI: 10.31992/0869-3617-2024-33-6-104-123

Daria Y. Mironova – Cand. Sci. (Economics), Associate Professor of the Educational Center "Energy Efficient Engineering Systems", Director of Project Management and Commercialization Center, ORCID: 0000-0001-9594-7691, Researcher ID: HTL-8919-2023, mironova@itmo.ru

Evgeniya A. Pashkova – Lecturer of the Educational Center "Energy Efficient Engineering Systems", Manager of Project Management and Commercialization Center, ORCID: 0009-0003-9474-1415, Researcher ID: KLZ-6829-2024, eatravina@itmo.ru

Igor V. Baranov – Dr. Sci. (Technical Sciences), Professor, Director of Educational Center "Energy Efficient Engineering Systems", ORCID: 0000-0003-0595-368X, Researcher ID: A-7558-2018, ivbaranov@itmo.ru

Alexander G. Budrin – Dr. Sci. (Economics), Professor, Faculty of Technology Management and Innovation, ORCID: 0000-0002-1035-2689, Researcher ID: A-4999-2017, agbudrin@itmo.ru
ITMO University, St. Petersburg, Russia
Address: 49, Kronverksky pr., St. Petersburg, Russian Federation, 197101

Vijayakumar Varadarajan – EAI Fellow, PhD (Computer Science and Engineering), International Division, Ajeenkya D Y Patil University, Pune, India, Professor at Swiss School of Business and Management, ORCID: 0000-0003-3752-7220, Researcher ID: K-8007-2017, vijayakumar.varadarajan@gmail.com
Ajeenkya D Y Patil University, Pune, India and Swiss School of Business and Management, Geneva, Switzerland
Address: D Y Patil Knowledge City, Lohegaun, Pune, Maharashtra, India 412105

Stephen Afrifa – MEng in Information and Communication Engineering, PhD Candidate in Information and Communication Engineering, School of Electrical and Information Engineering, ORCID: 0000-0002-9308-3137, Researcher ID: ADO-6807-2022, afrifastephen@tju.edu.cn
Tianjin University, Tianjin, China
Address: Tianjin University, No. 92 Weijin Road, Nankai District, Tianjin, 300072

Abstract. A serious transformation of methods for implementing innovative activities, which is happening today in Russia, is difficult without improvement of the processes for managing project innovation activities of universities. This issue is not widely studied in the scientific community despite its relevance and significance. The purpose of this work is to study the theoretical foundations of project innovation activities of universities in the Russian Federation, as well as to analyze the demand for project innovation activities of domestic universities. The work presents a map of con-

Контент доступен под лицензией Creative Commons Attribution 4.0 License.
This work is licensed under a Creative Commons Attribution 4.0 License.
© D.Y. Mironova, E.A. Pashkova, I.V. Baranov, A.G. Budrin, V. Varadarajan, S. Afrifa, 2024.
CC BY 4.0

cepts in the innovation sphere, which depicts the relationship between such concepts as: innovation, project, innovation activity, project activity, innovation infrastructure, design-innovation activity, innovative developments and innovative project. The paper examines key problems and trends in project innovation activities of universities in the Russian Federation, as well as the factors without which successful implementation of this activity can't be possible. Owing to the current study, it is obvious that the development of a new approach to innovation activities project management in universities is required, taking into account current trends in the country's socio-economic development and the geopolitical situation.

Keywords: innovations, innovative activities of universities, project innovative activities of universities, innovative developments, commercialization, Russia

Cite as: Mironova, D.Y., Pashkova, E.A., Baranov, I.V., Budrin, A.G., Varadarajan, V., Afrifa, S. (2024). Project Innovative Activity in the Higher Education System of the Russian Federation. *Vysshee obrazovanie v Rossii= Higher Education in Russia.* Vol. 33, no. 6, pp. 104-123, doi: 10.31992/0869-3617-2024-33-6-104-123

Introduction

Innovative activities play a key role in Russia's economic policy, as achieving leadership on the world stage requires improving the country's competitiveness [1]. The role of higher educational institutions (HEIs) in the innovative development of Russia is significant [2]. According to Deputy Chairman of the Government of the Russian Federation Dmitry Chernyshenko, "Universities should become a driver for the development of innovation in the regions, ensure the development of human resources and technological independence of Russia"[1]. However, at the current situation, domestic universities have to modify their activities in sphere of education, science and innovation because of the serious transformation of Russian Federation economy and technological sovereignty orientation. The state has to push domestic universities to generate and realize innovative types of collaboration with the different types of potential partners such as business representatives, authorities and others in order to ensure an adequate influx of funding for promising research and development with the subsequent goal of creating perspective innovative university technologies and their further application in industrial sector.

The priorities of domestic business were seriously affected by the crisis in the international economic system, which caused a serious transformation of the economy and the implementation of the Russian Federation's import substitution policy under the influence of anti-Russian sanctions, which led to the modernization of logistics routes and the formation of new cooperation ties. Adaptation to new realities associated with the chosen state strategy, both in the field of import substitution and in the transition to a circular economy, still forces the industry to continue investing in innovation and looking for new innovative business models to improve the economic, environmental and energy efficiency. Thus, on the one hand, the private sector is forced to independently initiate innovative projects and invest in them, or carry out innovative activities in cooperation with partners. On the other hand, industrial partners, in order to reduce financial costs, can contact universities and research institutes and participate in joint competitions and grants with government funding.

In turn, universities need to initiate new mechanisms allowing to provide the formation and management of project innovation activities

[1] Address by Deputy Chairman of the Government of the Russian Federation D.N. Chernyshenko at the fifth Professorial Forum "Science and Education in the Context of Global Challenges" (November 22–24, 2022). Moscow. Official website of the Decade of Science and Technology in Russia. URL: https://minobrnauki.gov.ru/press-center/news/novosti-ministerstva/61292/ (accessed: 22.01.2024).

in order to meet the needs of business in solving current problems and respond to the challenges facing the country. Studies devoted to the innovative development model of modern universities say that leading universities have the following features: high innovative activity of teaching staff and administrative and managerial staff, readiness for active cooperation with partners in the field of science, business, education, finance, the presence of an entrepreneurial culture and developed research and innovation infrastructure, participation in professional scientific and business communities as a member or creator, as well as the involvement of promising talented young specialists in project innovation activities of the university, etc. [3; 4]. For Russia, that is still at the beginning of the path to building an innovative economy, compared to developed countries, the commercialization of university innovative developments is a relatively new phenomenon. As a result, at the moment, an optimal and well-functioning mechanism for managing the project innovation activities of a university, including a mechanism for transferring university technologies, that could be replicated has not yet been formed.

Statement of problems, goals and objectives of the study

Today, many Russian and foreign higher education institutions (HEIs) face a serious problem related to the fact that when developing university innovations (innovation projects), insufficient attention is paid to market demands and the study of modern technological trends. Research groups focus on the existing scientific background without conducting marketing and foresight research [5]. Due to the underdevelopment of cooperation processes in the innovation sector, there is a weak orientation of universities towards the implementation of scientific achievements in the field of production. The lack of proper attention to project management in innovation activities at universities leads to difficulties in turning the results of intellectual work of domestic project groups into commercially successful products. Discussion of several aspects in sphere of management of project innovation activities of universities, presented in various scientific studies, however, needs for constant updates due to transformation of science, education, and business. This in turn leads to the necessity of continuous analysis of methods improving the mechanisms related to the university developments management [6; 7].

This article is aimed at study of the theoretical foundations of project innovation activities of universities, setting the key goal to analyze the term "project innovation activity" and study its applicability and relevance in domestic universities. Among the objectives of the study are the formation of a map of concepts in the field of project innovative activity, determination of the place of project innovative activity among various areas of university activity, as well as identification of the main problems and trends in project innovative activity of universities in the Russian Federation.

Research methodology

The research methodology encompasses various stages including conducting a literature review within the relevant field of study, analyzing the regulatory landscape, studying publication activity in the area of project innovation activities of universities through platforms such as *Elibrary* and *Google Scholar*, forming the author's perspective on key trends and future prospects for the development of project innovation activities of universities amidst high economic volatility and policies geared towards technological sovereignty. The synthesis of findings and derivation of conclusions are based on the results of the study. The theoretical foundation of the research draws upon an examination of publications from diverse scholars, both domestic and international, as well as the authors' own research endeavors.

Literature review

Terminological research in the field of innovation has been carried out by various authors, so there are various scientific works devoted to this topic [8]. This study presents definitions of

such concepts as: innovation, project, innovation infrastructure, innovation activity, project activity, design-innovation activity, innovative developments and innovative project, and further defines the relationship between them.

Separate definitions of the term "innovation", confirming their important role in the activities of organizations, can be found in various sources, from 1911 [9] to the present day [10]. The term "innovation" was initially introduced by Joseph Schumpeter at the beginning of the 20th century to denote changes aimed at the introduction and utilization of novel consumer goods, new production and transportation methods, markets, and organizational forms within the industry. According to the Federal Law "On Science and State Scientific and Technical Policy" dated August 23, 1996, No. 127-FZ (as amended on July 21, 2011), innovation is defined as the introduction of new or significantly improved products or processes, as well as new sales or organizational methods in business practices, workplace organization, or external relations. It can be inferred that innovation involves the commercialization of scientific and technical products. Furthermore, the concept of innovation is multidimensional, encompassing not only new or enhanced market products, but also novel processes (technologies) implemented in the industry yielding practical outcomes.

For a university, innovative products are graduates with the required set of competencies, as well as scientific and technical developments. Innovations by T. I. Makarova represent the generation and synthesis of new concepts, the creation of new theories, the development of new models and their implementation. They also include investments in the economy that contribute to the renewal of equipment and technologies resulting from scientific and technological progress.

To summarize the above, we can conclude that innovation is the result of a complex process consisting of the creation, development, commercial use and dissemination of an innovation that satisfies a specific social need. As a result, innovation becomes a certain kind of product and acts as an object on the market.

Next, we would like to dwell on the concept of "project" and "project activity". Organizations that are customer-oriented and need to take into account the needs of their clients require an efficient process or mechanism for quickly resolving any issues that may arise. A project should become such a mechanism, in view of the fact that it serves, in a certain sense, as a lens through which an organization or an individual can "focus" resources and capabilities to achieve a set goal." Phil Bagewley, one of the well-known and respected researchers in the field of project management, argued that thanks to the dissemination of project activities on a wide scale, it is possible to achieve a new level of understanding of the significance of projects that provide the opportunity to create something new and use existing resources in the most effective way [12].

Studying modern literature allows you to get acquainted with a wide range of meanings and definitions of the concept "project", so let's move on to their consideration. So, *a project* can be understood as:

1) a set of sequential interconnected events aimed at achieving a unique specific result that occur within a specified limited period of time (Phil Baguley);

2) a temporary enterprise necessary to create unique results, products or services (PMBoK body of knowledge for project management, developed by the Project Management Institute, USA) [13];

3) purposeful activity of a temporary nature intended to create a unique product or service (International Project Management Association (IPMA))[2];

4) a separate enterprise with specific goals, often including requirements for time, cost and

[2] Project Excellence Baseline (IPMA ICB). Version 1.0 .2016. URL: https://products.ipma.world/wp-content/uploads/2016/02/IPMA_PEB_1_0.pdf (accessed: 22.01.2024).

quality of results achieved (English Association of Project Managers, UK)[3];

5) the process of achieving a set goal-task within the framework of a specific set of conditions. (ISO 9000:2000 Quality Management Systems – Fundamental and Vocabulary) [14].

Having analyzed the above concepts, we can identify some common features inherent in the project: limited time or resources, focus and uniqueness. Different types of projects can be carried out within the same organization. These can be both projects with the main goal of obtaining a financial result, and socially significant projects implemented to attract attention to various problems of society, innovative and investment projects, etc.

Project activity is a complex organized system of interaction between subjects of the educational process, which is functionally connected with planning, production and management systems [15]. Project activities involve time-limited activities, presented in the form of various kinds of activities aimed at solving certain problems/tasks and achieving a certain goal, which involves obtaining expected results by solving these tasks/problems, provided with the necessary resources and managed on the basis of constant monitoring of activities and their results taking into account possible risks.

Following this, we will delve into even more *innovative developments* that were first introduced into the Russian legal landscape in 1998. There are several treaties concerning innovative development in which the fact is divided that this "development"[4] (including scientific, organizational, technological, commercial and financial well-being), focused on the implementation of innovative projects and the formation of innovative infrastructure for their implementation"[5]. Moreover, the innovative decade can be considered in terms of the perspective of applying and commercializing the results of research and design work to expand and improve the quality indicators of the products (goods, services) obtained, as well as the necessity of using technological processes for their production and subsequent implementation. As a rule, innovative determinism is linked to the effective implementation of competitive scientific and technical products on the market, and includes changing various military disciplines, leading to innovations, including scientific, technological, organizational, commercial and other [17].

The interpretations of *innovative activities* discussed do not take into account the initiation of R&D and the processes of support and coordination of intellectual activities, with the focus being on commercializing the results of R&D. Therefore, innovative activities include processes aimed at creating, developing, promoting, and commercializing new knowledge, products, and services created by teams in various fields of activity. Also important is the modernization and improvement of existing results of intellectual activities with the support of specialized structural units that provide comprehensive support to authors and their work.

Next, we will dwell on the concept of an *innovative project*, which is the main form of implementation of innovative activities of a university [18; 19]. So, an innovative project can be understood as:

• a set of project documentation for the implementation of research, development, production, financial, commercial, organizational and other activities interconnected in terms of timing, goals, resources and performers, con-

[3] Association for Project Management. Official website. 5 – 6 June 2024 URL: https://www.apm.org.uk (accessed: 24.01.2024).

[4] Decree of the Government of the Russian Federation of July 24, 1998. No. 832 // "On the Concept of Innovation Policy of the Russian Federation for 1998 – 2000" // SPS Garant. URL: https://base.garant.ru/179112/ (accessed: 22.01.2024).

[5] Federal Law "On Science and State Scientific and Technical Policy" dated August 23, 1996. No. 127-FZ /. as amended on July 21, 2011 . URL : https://www.consultant.ru/document/cons_doc_LAW_11507/ (accessed: 19.01.2024).

tributing to the effective solution of a specific scientific and technical problem leading to innovation (Gorfinkel V.Ya., Shvandar V.A.) [20];

- a complex of research, development, production, organizational, financial, commercial and other works with the participation of an educational institution [21];
- "a set of measures aimed at achieving economic effect for the implementation of innovations, including the commercialization of scientific and (or) research and technical results" (according to Russian legislation)[5].

University innovative projects can be implemented in all areas of activity (not only educational and scientific areas, but also the social and international sphere, for example). It is important to pay attention to the types of results/innovations obtained (radical, improving, etc. [22]) that are planned to be commercialized. University innovative developments can be defined as a set of research activities undertaken by individuals or collaborative teams consisting of academic staff and students, which lead to the creation of intellectual property assets. These assets may include inventions, utility models, industrial designs, trademarks, and service marks, among others, with the potential for commercialization and revenue generation [23].

Managing the innovation activities of a university is a targeted impact on the innovation cycle implemented at the university in order to obtain economic, social, environmental and other effects [24]. As a rule, the productivity of a university's innovative activities depends on how effectively the *innovation infrastructure* of a scientific and educational organization functions, which is the link between the results of the intellectual activity of scientists by business and the state. Innovation infrastructure is "a set of objects of innovation activity and the relationships between them, as a result of which new knowledge and innovative developments are formed, which are subsequently transformed into new products and services that are successfully introduced to the market"[5]. Some authors believe that "innovation infrastructure is a set of organizational, legal, economic institutions, technologies and organizations that contribute to the creation of conditions for the development of relationships between all participants in innovation activities and successful innovative development" [25].

The final concept that is proposed to be considered in this study is the term "*project innovation activity*". This term is rarely used in scientific literature and is a symbiosis of all the above concepts. On the one hand, project activities are implemented in any field (scientific, educational, international, etc.), that is innovative activities can be part of project activities. At the same time, the innovative approach can also be applied in various fields, including in project activities. Consequently, the definition of design and innovation activity implies activities to organize comprehensive support for projects at all stages of the life cycle. To supervise this activity, it is necessary to have a separate structural unit at the university within the established innovation infrastructure or outside it. Thus, by project innovation activity, in relation to universities, we will understand activities supervised by a structural (service) unit within the innovation infrastructure or outside it, aimed at identifying, initiating, evaluating, accompaniment, support, promotion and commercialization of innovative projects of all types, both for the internal university target audience, and for the external one.

Research results

Formation of a concept map for project innovation activities at a university

The authors of the article, as part of working with the conceptual apparatus, managed to summarize different concepts in the field of innovation in the form of a concept map in figure 1, which considers a map of basic concepts in the innovation sphere, which presents the relationship between such concepts as: innovation, project, innovation infrastructure, innovation activity, project activity, design and innovation activities, innovative developments and innovative projects.

The illustration reflects that all activities of the university converge on the concept of

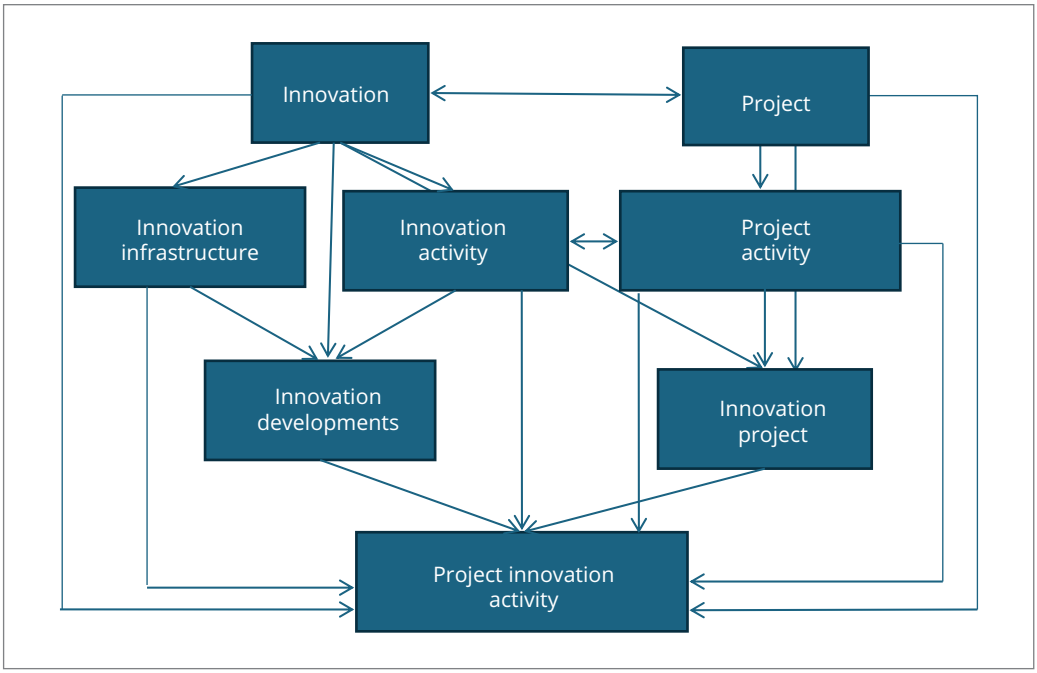

Fig. 1. Formation of project innovation activities at a university: concept map

project-based innovative activity, which is recognized as the central concept in this study. Innovations are initiated and developed by individual authors and teams within the framework of implementing innovative projects. Innovations are initiated and created by individual authors and teams of authors as part of the implementation of innovative activities and with the support of service units – elements of the innovation infrastructure. As a result of working on various projects and carrying out project activities, project teams can use innovative approaches and mechanisms in various fields, thereby initiating the creation of innovative projects. Project innovation activities allow authors to achieve the most effective results in the commercialization and promotion of their results of intellectual activity (RIA) to the market.

The diagram in figure 2 describes the distribution of various types of university activities between external and internal target audiences.

The authors suggest considering the following key types of activities, which, on the one hand, belong to different levels of classification, and on the other hand, correspond to the highest priority areas of university development:

- educational;
- scientific;
- administrative and economic;
- social;
- international;
- organizational and managerial;
- project (and design-innovative as part of innovation).

Also we should add that innovation activity stands separately, the approaches and mechanisms of which can be applied to all of the above types of activities. Project innovation activity, being part of innovation activity, stimulates the initiation of innovative projects in educational, scientific, international and other spheres. The authors of the article believe that this type of activity, unfortunately, is not given enough attention both between top management of universities and in the research environment, despite its importance. As a rule, to carry out each of the above types of activities, the rector of the

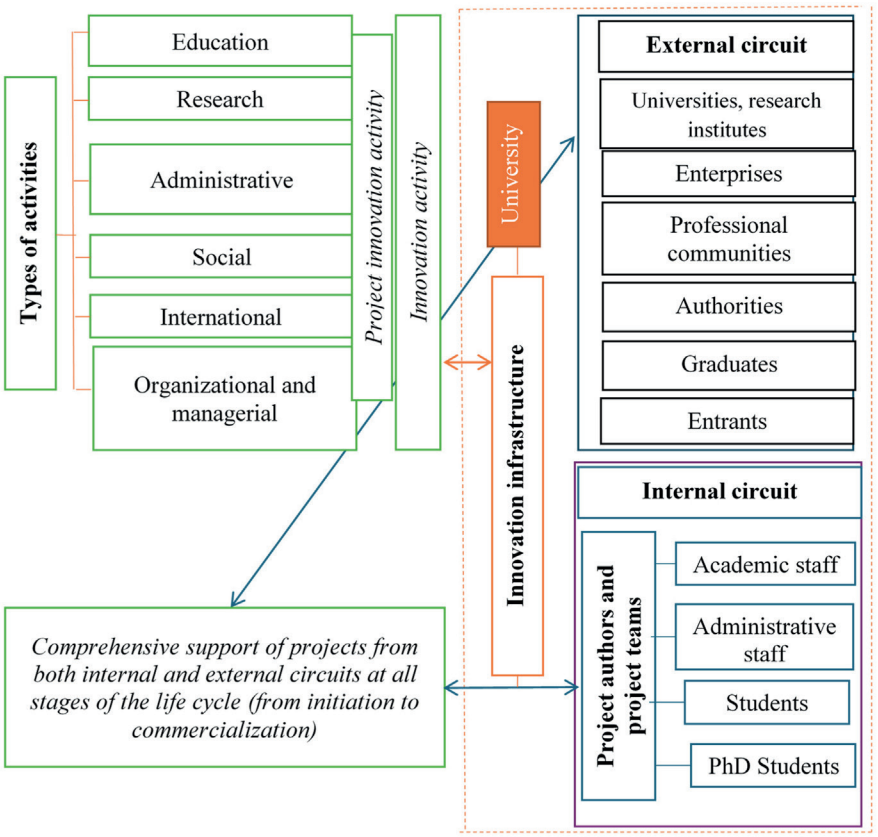

Fig. 2. Place of project innovation activity in a university with an innovation infrastructure

university appoints the corresponding vice-rector or a head of the department (corresponding service unit)[6].

Most Russian universities have positions such as vice-rectors for: educational and methodological work, scientific work; organizational and administrative work; economic issues, educational work and social development, as well as other vice-rectors (including project activity development vice-rectors). In accordance with statistical data on the number of vice-rectors and the structure of their positions in universities subordinate to the Ministry of Education and Science of the Russian Federation, back in 2018 [26], the number of project activity development vice-rectors was less than 4.6% of the number of all vice-rectors, which confirms the authors' hypothesis about the underdevelopment of project activities in universities and the need to consider this issue in more detail within the framework of this study.

To improve innovation (and design-innovation) activities, many universities have an innovation infrastructure that can provide support in the initiation, implementation and commercialization of innovative projects for external and internal target audiences of the university.

[6] Resolution of the Government of the Russian Federation dated April 05, 2001. No. 264 (as amended on 17.01.2006) "On approval of the Model Regulations on an educational institution of higher professional education (higher educational institution) of the Russian Federation" URL: https://www.consultant.ru/document/cons_doc_LAW_31097/0375dbfec53a5229e652b504fb60fe440c233433/ (accessed: 01.02.2024).

Target Audience	
External	Internal
• universities, research institutes • enterprises • professional communities • authorities • graduates • applicants	• teaching staff • administrative and management personnel (AUP) • students • graduate students

Interdisciplinary project teams can include both representatives of the teaching staff and representatives of the AUP. University departments whose functionality includes providing support for the development of project innovation activities should usually help teams of authors in completing such teams with missing team members, as well as attracting business partners and investors for enhancing of innovation commercialization.

Returning to the issue raised above of the lack of attention paid to the research of project innovation activities in the scientific literature, the authors of this scientific article carried out an analysis of publication activity in the field of project innovation activities of universities.

Study of publication activity in the field of project innovation activities of universities

Analyzing the publication activity of Russian research in the *Elibrary* (National Electronic Library System) using the keywords: "project innovation activity of the university", "project innovation activity of the university", "project innovation activity of the university", "project innovation activity", "project innovation activity".

The study is based on a multidimensional search query, including the criteria "publication title", "abstract", "keywords". Scientific materials of various types were considered: "journal articles", "dissertations", "books", "conference materials". The request was compiled in Russian using keywords, and the data presented in Annex 1 was obtained.

It is obvious that at present, interest in the scientific community in the application of design and innovation activities in universities is just emerging. As part of the analysis, it was revealed that scientific publications on the topics under study were recorded in the *Elibrary* system only in 2011. Accordingly, the number of scientific publications on project innovation activities (128 publications on project innovation activities, including only 3 publications on project innovation activities of universities) over the past 12 years suggests that this scientific area is poorly studied in Russia. Besides this, insufficient attention is also paid to the issues of project and innovative activities of universities in the scientific literature (338 publications on the project activities of the university and 329 publications on the innovative activities of the university were found over the past 12 years).

In addition, the authors carried out an analysis of publication activity in the field of project innovation activities of universities in the *Google Scholar* scientific publication system (Annex 2). The study was based on the English language search query with a time filter limiting results to publications issued between 2011 and 2023.

According to the *Google Scholar* search database, it is clear that, despite the high demand abroad for such concepts as "university project activities" (17,300 publications over 12 years) and "university innovation activities" (33,600 publications over 12 years), the term "project innovation activity of a university" can rarely be encountered in the scientific literature. At the same time, in foreign literature, much more attention is paid to the study of issues of formation, development and management of project and innovation activities of universities than in Russia.

Problems of development of project-based innovative activities in domestic universities

There are different obstacles hindering the development of project-based innovative activities in Russian universities. The emergence, expansion and management of project innovation activities in universities are associated with a number of problems, which we will consider below.

1. The central aspect for discussion is the paucity of development of project innovation activities in higher educational institutions due to the lack of experience in its implementation and insufficient coverage of this issue in the scientific literature [27]. Today, most universities do not have an effective project management system; project management mechanisms do not work like in enterprises, since research teams, as a rule, do not have the experience and time to work in project management information systems [28]. Thus, project management of scientific teams in university service departments is hindered by a lack of information on the current projects of researchers and their development. This creates obstacles for effective servicing and support of scientific projects.

2. *Identification of project teams capable of fulfilling business contracts* is another separate problem, since in the case of an invitation to work on a project proposed by a company, a research team that does not have practical experience working with industrial partners, the university takes upon itself reputational risks, risks of non-fulfillment or poor quality of work on the project [29].

To build an effective mechanism for working with research teams and integrating the scientific and business communities, it is important to develop a list of tasks and functions of the university's specialized service department and offer an optimal set of service functions that will improve the efficiency of project activities and attract large amounts of extra-budgetary funding [30].

3. The next problem we need to pay attention today: universities encourage research teams to attract custom R&D, while when assessing the cost of work, scientists must take into account the need to include taxes and overhead costs in the cost of work, which leads to an increase in the cost of work by at least 50%. Thus, the offers of universities may not be competitive in comparison with the offers of other organizations.

Carrying out business agreements through a legal entity created by a university (tailored specifically for the tasks of technology transfer) [31] is an unusual and rarely used practice today, since for universities one of the criteria for the for the success of their activities is the volume of attracted extra-budgetary funding.

4. Many researchers discuss *the problem of the insufficient degree of development of a culture of project innovation management*, which, of course, complicates effective project management in universities. In particular, in a number of works by S.N. Apenko [32; 33] talks about the need for clear regulations on project management in universities, along with a clearly defined corporate culture approved at enterprises. It is important not only the presence of such a document, but also its large-scale implementation in the work of the university, the communication of regulations for managing project activities to all departments and divisions, and monitoring its implementation.

5. *Insufficient financial support for project innovation activities in universities* [38]. Despite the fact that Russian universities are actively engaged in innovative activities, they often lack financial resources for its development.

Due to the limited financial resources required for investment, the rate of progress in the development of innovative projects may be reduced, which could potentially negatively affect their level of quality. This may also have a negative impact on attracting highly qualified specialists and developing the research base of universities.

6. *Insufficient number of qualified personnel capable of conducting project innovation activities in universities*. Highly qualified personnel are needed with the necessary knowledge, as well as practical experience in

the field of innovation and project management [34].

The authors believe that universities do not have enough specialists with the appropriate qualifications to successfully implement innovative projects. This is due to the fact that the development of the innovation sector in Russia is not happening as quickly as we would like, and it is often impossible to attract talented specialists due to insufficient wages and lack of prospects for career growth.

7. *Ineffective use of the results of intellectual activity (RIA) of individual authors and research teams*. In particular, quite often there is no real opportunity to transform ideas and developments into successful business projects [35].

The presence of an effective innovation project management system is one of the key success factors in the innovation activities of universities. However, it is not always possible to create a system that would be adapted to the peculiarities of work in universities.

8. *Weak interaction between universities and enterprises is a separate problem*. The lack of established connections between universities and industry is a hindrance to the commercialization of university RIAs.

Some universities do not have an effective system for commercializing research, which leads to a low level of investment attraction and a decrease in interest from potential investors [36]. Enterprises need personnel and solutions to local problems, while some of them have their own design bureaus, and the key task of universities is to attract applicants with a good secondary education and train undergraduate and graduate students in accordance with the approved curriculum.

Trends in project innovation activities of Russian universities

In the field of project innovation activities in Russian universities, certain trends are observed that indicate the gradual development of this area.

1. *Increasing the volume of innovative projects in universities*. Russian universities are becoming increasingly active participants in project innovation activities due to the state-implemented import substitution policy and the country's transition to technological sovereignty. Universities and research institutes are allowed to take part in various programs and competitions on an equal basis with enterprises[7].

2. *Development and expansion of research*. As part of project innovation activities in universities, promising research, which leads to the creation of new innovative products and services, deserve more attention and support service[8].

3. *Development of new solutions in the field of technological entrepreneurship*. Universities are taking initiatives to create innovative mechanisms for the development and support of technology startups and enterprises created on the basis of the university[9].

4. *Search for new mechanisms to stimulate cooperation between universities and enterpris-*

[7] Decree of the Government of the Russian Federation 208 of February 18, 2022. "On the provision of subsidies from the federal budget to the autonomous non-profit organization "Agency for Technological Development" to support projects involving the development of design documentation for components necessary for industries" URL: http://publication.pravo.gov.ru/Document/View/0001202202220039 (accessed: 01.02.2024).

[8] Competition for the creation of technology transfer centers. News portal of the Ministry of Science and Higher Education of the Russian Federation. 2024. URL: https://minobrnauki.gov.ru/press-center/announcements/63770/ (accessed: 10.03.2024).

[9] Krzhanovsky S. Focus on universities: how technological entrepreneurship is being developed in Russia // Interview with Sergei Krzhanovsky, Vice President for Grants, Expertise and Tender Activities, Managing Director of the Skolkovo Foundation. June 2023. URL: https://www.comnews.ru/content/226362/2023-06-05/2023-w23/stavka-vuzy-kak-rossii-razvivayut-tekhnologicheskoe-predprinimatelstvo (accessed: 21.02.2024).

es. It is becoming increasingly important to establish and strengthen connections between universities and industry, which makes it possible to increase the efficiency of commercialization of the results of innovative activities [38].

5. *Development of digital technologies and stimulation of project innovation activities in this area*[10]. Universities are actively developing areas related to digital technologies, such as artificial intelligence, Internet of things (IoT), blockchain and others, which are key to the effective economy [39].

6. *Focus on solving social problems and developing initiatives and innovative social entrepreneurship projects*. Russian universities are increasingly focused on developing innovative products and services that help solve social problems, such as environmental, medical, educational and others [40].

7. *Support and development of startup communities in universities*[11]. Universities actively support the creation and development of startup communities and hold events to encourage students to create their own business projects, as well as create service units aimed at providing information and consulting support to startups.

8. *Training according to the "project-oriented training" model*. Universities are increasingly moving to a "project-oriented learning" model, which allows students to gain knowledge and experience in carrying out project-based innovation activities in a real environment [41].

Thus, as a result of this research, it is important mention that traditional project management today cannot fully allow the university's innovative ecosystem to develop effectively. Often, elements of a university's infrastructure have difficulties with communication, which results in duplication of functions among various service departments. In addition, due to the low level of activity of these departments, scientists and students cannot receive the necessary level of project service support, proper support and funding, as a result of which research work is slowed down. In addition, not all the universities are striving to introduce changes that are so necessary in the context of transformation of scientific, educational activities, as well as industry.

In order to effectively organize the functioning of project innovation activities in Russian universities, an integrated approach is required (work is currently underway on it) including the following aspects:

- attention to the formation and development of an effective innovation and technological infrastructure, improving the skills of employees, attracting funding, and creating all the necessary conditions for involving talented youth in work on innovative projects [42];
- support from the state, including through various programs and financial instruments that will stimulate innovative activities in Russian universities [43];
- attention to the formation and development of interdisciplinary cooperation between participants in the innovation process and the creation of platforms within which it is possible to effectively establish interaction and exchange experience and knowledge [44];
- introduction of a system for assessing the success (KPI) of the functioning of service departments of the university, which are responsible for the implementation of project innovation activities and the commercialization of university developments, is a necessary element for improvement of the quality of service functions provided by such departments to project authors and project teams [45].

Conclusions

As a result of research, the authors of the article considered issues exploring the specifics and essence of such a concept as project-based

[10] A question of survival: how Russian universities are undergoing digital transformation. January 18, 2022. Interfax news portal. URL: https://www.interfax.ru/digital/816040 (accessed: 17.02.2024).

[11] This year, 1.5 billion rubles will be allocated to create 15 pilot university startup studios. // News portal of the Ministry of Science and Higher Education of the Russian Federation. 2022. URL: https://minobrnauki.gov.ru/press-center/news/novosti-ministerstva/55136/ (accessed: 20.02.2024).

innovative activities of Russian universities; an analysis of the conceptual apparatus was carried out, within the framework of which concepts such as innovation, innovative project, innovative activity, innovative developments, innovative infrastructure were considered and a number of others. The authors developed a concept map that allows us to see the connections between the terms presented above. The author's definition of project-based innovative activities of universities is proposed.

Among the limitations to the development of project innovation activities both inside and outside universities, it should be noted, first of all, the underdevelopment of project innovation activities themselves, the poor elaboration of this issue in various scientific studies, the lack of rich experience in this area (including among senior management and mid-level universities); the underdevelopment of cooperation processes between universities and business, and, as a consequence, the frequent inconsistency of research conducted by universities with the needs of the real sector of the economy [48]; weak state support for project-based innovative activities of universities – insufficient number of competitions and grants focused on the commercialization of university developments in comparison with competitions/grants for conducting fundamental and applied research; a small number of researchers interested and motivated to commercialize their developments. An analysis of problems in the field of project innovation activities of universities allowed us to make the assumption, that without an effective and comprehensive system for project innovation activities management, it is difficult to promote university developments to the end user, and there are also difficulties in establishing communication with industrial partners due to the lack of interest on the part of business in university innovation activity.

Having considered the existing problems in the field of project-based innovative activities of universities, we note that the main trends in this area include the expansion of the direction of research, an increase of the number of innovative projects, improvement of the mechanisms of technological entrepreneurship, digital technologies, the desire to strengthen ties between universities and industry in various areas, active integration of the "project-oriented learning" model into the educational process, etc. [46]. One of the main trends in the management of project innovation activities at universities is the development of network structures and partnerships between universities, scientific organizations and industry with the participation of the state.

Authors of this research consider the possible list of tasks that an innovation-oriented modern university performs, acting as an innovation, knowledge and technological hub for external and internal circuits, including the following:

- accumulation and transfer of knowledge;
- training and development of highly qualified professionals;
- creation of promising innovations;
- replication of knowledge, technologies and experience in implementing unique programs and projects;
- carrying out expert assessment of various types of projects and programs in priority scientific fields for the university;
- generation and implementation of new competitive infrastructure projects;
- communication with professional communities, government and business representatives to identify their needs and tasks and to assist in solving them.

It is thanks to such a wide range of tasks that universities undertake that the authors of this scientific article propose to consider universities as potential drivers for the development of the country's innovative potential, giving the best of them the opportunity to take a new role in creating cooperative ties with partners from government, industrial and scientific-educational communities. A serious transformation of methods for implementing innovative activity is difficult without improvement of the innovation activities management process in the university. Besides, this issue is not studied widely enough

in the scientific community despite its relevance and significance and requires the development of a new methodology connected to project innovation activities management in universities, taking into account current trends in the development of state-run economic regulation and the implementation of policies in the social sphere and the geopolitical situation.

References

1. Cherkasskij, O.I., Samojlyuk, T.A. (2022). Modern Trends in the Development of Innovation Activity in the Russian Federation. *Interekspo Geo-Sibir' = Interexpo GEO-Siberia*. Vol. 7, no. 2, pp. 111-116. Available at: https://www.elibrary.ru/download/elibrary_49395979_13412301.pdf (accessed: 12.02.2024). (In Russ., abstract in Eng.).
2. Vasil'eva, Yu.S., Smirnova, V.R. (2021). About the Role of Universities on Innovative Development of Russian Regions. *Innovacii = Innovations*. Vol. 10, pp. 26-34, doi: 10.26310/2071-3010.2021.276.10.005 (In Russ., abstract in Eng.).
3. Efremova, P.V. (2018). Improving the Innovation Management System at the University by Forming an Innovative Infrastructure. *Voprosy innova*tsionnoy *ekonomiki = Russian Journal of Innovation Economics*. Vol. 8, no. 2, pp. 311-326, doi: 10.18334/vinec.8.2.39002 (In Russ., abstract in Eng.).
4. Lavikka, R., Seppдnen, O., Peltokorpi, A., Lehtovaara, J. (2020). Fostering Process Innovations in Construction Through Industry – University Consortium. *Construction Innovation*. Vol. 20, no. 4, pp. 569-586, doi: 10.1108/CI-08-2019-0081
5. Ruoslahti, H. (2020). Complexity in Project Co-Creation of Knowledge for Innovation. *Journal of Innovation & Knowledge*. Vol. 5, no. 4, pp. 228-235, doi: 10.1016/j.jik.2019.12.004
6. Virgüez, J.E.B., Lievano, J.A.B., Daza, S.P.C. (2023). Leadership and Innovation in Higher Education: a Characterization of Managerial Activities in the University. *International Journal of Professional Business Review*. Vol. 8, no. 12, pp. 1-26, doi: 10.26668/businessreview/2023.v8i12.3941
7. Lawson, B., Samson, D. (2001). Developing Innovation Capability in Organisations: A Dynamic Capabilities Approach. *International Journal of Innovation Management*. Vol. 5, no. 3, pp. 377-400, doi: 10.1142/S1363919601000427
8. Kotsemir, M., Abroskin, A., Meissner, D. (2013). Innovation Concepts and Typology – an Evolutionary Discussion. *Higher School of Economics Research Paper*. Vol. 5, no. 3, pp. 377-400, doi: 10.1142/S1363919601000427
9. Schumpeter, J.A. (1926). *Theorie der wirtschaftlichen Entwicklung*. München und Leipzig, Duncker und Humblot. (Russian translation: Moscow: Progress, 1982. 455 p.).
10. Adamov, N.A. (2015). *Mirovaya industriya: ekonomicheskie i innovacionnye aspekty: kollektivnaya monografiya*. [Global Industry: Economic and Innovative Aspects: A Collective Monograph]. Moscow: Professor, 339 p. ISBN: 978-5-9907298-4-1. (In Russ.).
11. Grishchenkov, A.I., Dmitrieva, E.A., Legchenko, M.A. (2014). Innovations – Definition, Classification, Stages. *Vestnik Bryanskogo gosudarstvennogo universiteta = The Bryansk State University Herald*. Vol. 3, pp. 182-188. Available at: https://www.elibrary.ru/download/download/elibrary_23131235_82844521.pdf (accessed: 12.02.2024). (In Russ., abstract in Eng.).
12. Baguley, P. (1999). *Project Management*. London, UK: Hodder Education 210 p. (Russian Translation by Petrashek V., Moscow: FAIR-PRESS, 2002. 203 p.).
13. Archibal'd, R.D. (1976). *Managing High-Technology Programs and Projects*. New York: Wiley, 278 p. (Russian Translation, Moscow: DMK Press Gorod, 2010. 465 p.).
14. Kolesov, K.I. (2017). *Finansirovanie innovacionnyh proektov* [Financing of Innovative Projects]. N. Novgorod: Nizhny Novgorod State Technical University n.a. R.E. Alexeyev, 127 p. (In Russ.).

15. Sidorenko, V.F. (1984). Genezis proektnoi kultury [The Genesis of Project Culture.] *Voprosy filosofii* [Questions of philosophy]. Vol. 10, pp. 87-99. (In Russ., abstract in Eng.).
16. Kuznetsov, A.A., Telegin, E.N. (2009). *Kompleksnaia ekspertiza innovatsionnogo proekta* [Comprehensive Expertise of an Innovative Project]. *Pravovaya garantiya* [Legal Guarantee]. Vol. 1, pp. 12-13. Available at: https://sibadvokat.ru/magazine/sovety-advokata/kompleksnaya-ekspertiza-innovatsionno?ysclid=lxqphczl4k726845284 (accessed: 12.02.2024). (In Russ.).
17. Gol'dshtejn, G.Ya. (2002). *Strategicheskij innovacionnyj menedzhment* [Strategic Innovation Management]. Taganrog: TRTU, 267 p. Available at: http://www.aup.ru/books/m78/?ysclid=lxqpar3lsc327654924 (accessed: 12.02.2024). (In Russ.).
18. Reznik, S.D., Filippov V.M. (2010). *Upravlenie vysshim uchebnym zavedeniem* [Management of a Higher Education Institution]. Moscow: INFRA-M, 768 p. ISBN: 978-5-16-003722-6 (In Russ.).
19. Tidd, J., Bessant, J. (2018). Innovation Management Challenges: From Fads to Fundamentals. *International Journal of Innovation Management*. Vol. 22, no. 5, pp. 1-12, doi: 10.1142/S1363919618400078.
20. Romanov, A.N., Gorfinkel', V.Ya., Avrashkov, L.Ya., Grafov, A.V. (2008). *Ekonomika predpriyatiya*: 5 ed. [Enterprise Economics]. Moscow: UNITY-DANA, 670 p. (In Russ.).
21. Dragun, E.A. (2014). [Implementation of Innovative Projects in the SSAU]. In: *Materialy Mezhdunarodnoj nauchnoj konferencii "XL Gagarinskie chteniya"* [International Scientific Conference "XL Gagarin Readings"]. Vol. 8, no. 164, pp. 129-131. Available at: https://www.elibrary.ru/download/download/elibrary_23131235_82844521.pdf (accessed: 12.02.2024). (In Russ.).
22. Agarkov, S.A., Kuznetsova, E.S., Gryaznova, M.O. (2011). *Innovacionnyj menedzhment i gosudarstvennaya innovacionnaya politika* [Innovation Management and State Innovation Policy]. Moscow: Akademia Estestvoznaniia, 370 p. ISBN: 978-5-91327-137-2 (In Russ.).
23. Mironova, D.Yu. (2013). *Formirovanie novogo podkhoda v upravlenii innovatsionnoi deiatelnostiiu vuzov s tseliu kommertsializatsii vysokotekhnologichnykh razrabotok* [Formation of a New Approach in the Management of Innovation Activities of Universities in Order to Commercialize High-Tech Developments]: Cand. Sci. dissertation, St. Peterb. nac. issled. un-t informac. tekhnologii, mekhaniki i optiki. Available at: https://viewer.rsl.ru/ru/rsl01005533235?page=1&rotate=0&theme=white (accessed: 12.02.2024). (In Russ).
24. Zborovskij, G.E. (2000). Obrazovanie: nauchnye podkhody k issledovaniyu [Education: Scientific Approaches to Research]. *Sotsiologicheskie issledovaniya = Sociological Studies*. No. 6, pp. 21-29. Available at: https://www.isras.ru/files/File/Socis/06-2000/004.ZBOROVSKIY.pdf (accessed: 12.02.2024). (In Russ.).
25. Sokolov, D.S., Tomilina, N.S. (2016). Innovatsionnaia infrastruktura v sovremennoi Rossii: poniatie, soderzhanie, osobennosti [Innovative Infrastructure in Modern Russia: Concept, Content, Features] *Innovacionnaya nauka = Innovation Science*. No. 1-1, pp. 172-177. Available at: https://www.elibrary.ru/download/download/elibrary_27807827_91349313.pdf (accessed: 12.02.2024). (In Russ.).
26. Reznik, S.D., Sazykina, O.A. (2020). Russian University Pro-Rectors: Sociological Portrait and Structural Changes. *Universitetskoe upravlenie: praktika i analiz = Journal University Management: Practice and Analysis*. Vol. 24, no. 1, pp. 119-132, doi: 10.15826/umpa.2020.01.009 (In Russ., abstract in Eng.).
27. Smirnova, N.V. (2020). Innovacionnaya aktivnost' rossijskih vuzov: problemy i vozmozhnosti [Innovative Activity of Russian Higher Educational Establishments: Problems and Opportunities]. *Vestnik Instituta ekonomiki Rossijskoj akademii nauk = Bulletin of the Institute of Economics of the Russian Academy of Sciences*. No. 2, pp. 109-120, doi: 10.24411/2073-6487-2020-10019 (accessed: 12.02.2024). (In Russ, abstract in Eng.).

28. Polevoj, S.A., Chalova, A.V. (2019). Problematic Issues of Project Activities in Higher Education Institutions. *Problemy sovremennogo obrazovaniya = Problems of Modern Education*. Vol. 4, pp. 136-143. Available at: https://www.elibrary.ru/download/download/elibrary_41097431_60223672.pdf (accessed: 12.02.2024). (In Russ., abstract in Eng.).
29. Reznik, S.D., Yudina, T.A. (2023). Reputational Risks of the University in the New Conditions for the Development of Russian Higher Education. *Universitetskoe upravlenie: praktika i analiz = Journal University Management: Practice and Analysis*. Vol. 27, no. 2, pp. 127-142, doi: 10.15826/umpa.2023.02.018 (In Russ., abstract in Eng.).
30. Rei, A.I. (2016). Competition in Research and R&D-Intensive Industries. *Rossia i Amerika v 21 veke = Russia and America in the 21st Century*. Vol. 2, doi: 10.18254/S207054760012460-3 (In Russ., abstract in Eng.).
31. Abdulai, A.F., Murphy, L.,Thomas, B. (2020). University Knowledge Transfer and Innovation Performance in Firms: The Ghanaian Experience. *International Journal of Innovation Management*. Vol. 24, no. 03, article no. 2050023, doi: 10.1142/S1363919620500231
32. Kudinova, O.S., Skul'movskaya, L.G. (2018). Project Activities in the University as a Basis of Innovation. *Sovremennye problemy nauki i obrazovaniya = Modern Problems of Science and Education*. Vol. 4, pp. 104, doi: 10.4018/978-1-5225-3856-1 (In Russ., abstract in Eng.).
33. Risin, I.E., Kozub, L.A. (2019). Increase of Investment Attractiveness of Higher Schools in the Region: Factors, Results, Constraints. *Region: sistemy, ekonomika, upravlenie = Region: Systems, Economics, Management*. Vol. 45, no. 2, pp. 60-65. Available at: https://www.elibrary.ru/download/download/elibrary_39243827_99578072.pdf (accessed: 12.02.2024). (In Russ., abstract in Eng.).
34. Nekhoda, A.G. (2022). Vliianie effektivnogo ispolzovania ob'ektov intellektualnoi sobstvennosti na konkurentosposobnost' predpriiatia [The Impact of the Effective Use of Intellectual Property on the Competitiveness of an Enterprise]. In: *Ekonomika glazami molodykh: Materialy Mezhdunarodnoi konferentsii studentov, aspirantov i molodykh uchenykh* [Economy Through the Eyes of Young: Proc. Of International Conference of Students, PhD Students and Young Scientists]. Pp. 182-185. Available at: https://www.elibrary.ru/download/download/elibrary_50226811_59486215.pdf (accessed: 12.02.2024). (In Russ.).
35. Puffal, D.P., Ruffoni, J., Spricigo, G. (2021). Empirical Evidence for Brazilian Firms in Terms of University–Industry Interaction, Public Funding and Innovation Outcome. *International Journal of Innovation Management*. Vol. 25, no. 04, article no. 2150040, doi: 10.1142/S1363919621500407 (In Russ., abstract in Eng.).
36. Brochner, J., Lagerqvist, O. (2016). From Ideas to Construction Innovations: Firms and Universities Collaborating. *Construction Economics and Building*. Vol. 16, no. 1, pp. 76-89, doi: 10.5130/AJCEB.v16i1.4668
37. Krzhanovskij, S. (2023). Stavka na vuzy: kak v Rossii razvivaiut tekhnologicheskoe predprinimatelstvo [The Bet on Universities: How Technological Entrepreneurship Is Being Developed in Russia]. Platforma universitetskogo tekhnologicheskogo predprinimatelstva [Platform for University Technology Entrepreneurship], June 5, 2023. Available at: https://univertechpred.ru/novosti/2023-06-05-stavka-na-vuzy-kak-v-rossii-razvivayut-tekhnologicheskoe-predprinimatelstvo/?ysclid=lxrzjuefd6771655509 (accessed: 12.02.2024). (In Russ.).
38. Mironova, D.Yu., Kiseleva, P.S., Baranov, I.V. (2023). Cooperation of Universities and Enterprises in the Context of New Challenges of Modern Engineering Education. *Vestnik Omskogo universiteta. Seriya: Ekonomika = Herald of Omsk University. Series: Economics*. Vol. 21, no. 1, pp. 60-70, doi: 10.24147/1812-3988.2023.21(1) (In Russ., abstract in Eng.).
39. Larionov, V.G., Sheremet'eva, E.N., Gorshkova, L.A. (2021). Digital Transformation of Higher Education: Technologies and Digital Competencies. *Vestnik Astrahanskogo gosudarstvennogo*

tekhnicheskogo universiteta. Seriya: Ekonomika = Vestnik of Astrakhan State Technical University. Series: Economics. Vol. 2, pp. 61-69, doi: 10.24143/2073-5537-2021-2-61-69 (In Russ., abstract in Eng.).
40. Zemlina, E.M. (2019). The Formation of Entrepreneurial Competencies of the Federal University Students as a Condition for the Implementation of Innovations in the Social Sphere. *Izvestiya Dagestanskogo gosudarstvennogo pedagogicheskogo universiteta. Psihologo-pedagogicheskie nauki = Dagestan State Pedagogical University Journal. Psychological and Pedagogical Sciences*. Vol. 13, no. 2, pp. 15-20, doi: 10.31161/1995-0659-2019-13-2-15-20 (In Russ., abstract in Eng.).
41. Mironova, D.Y. (2022). Project-Interdisciplinary Approach to Learning as a Driver for the Project Activities Development at the University. *Innovacii = Innovations*. Vol. 281, no. 3, pp. 43-50, doi: 10.26310/2071-3010.2022.281.3.006 (In Russ., abstract in Eng.).
42. Furin, A.G. (2015). Issue on the State Support of Innovation Activities in the Education System. *Vestnik evrazijskoj nauki = The Eurasian Scientific Journal*. Vol. 7, no. 3 (28), pp. 1-14, doi: 10.15862/101EVN315 (In Russ., abstract in Eng.).
43. Labzina, P.G., Men'shenina, S.G. (2021). Interdisciplinarity as a Means for Students' Soft Skills Development. *Vestnik Mininskogo universiteta = Vestnik of Minin University*. Vol. 9, no. 2, p. 2, doi: 10.26795/2307-1281-2021-9-2-2 (In Russ., abstract in Eng.).
44. Romanov, E.V. (2021). Evaluation of the Efficiency of Russian Universities: Do We Need to Change the Paradigm? *The Education and Science Journal*. Vol. 23, no. 6, pp. 84-125, doi: 10.17853/1994-5639-2021-6-83-125
45. Lara, G., Llach, J., Arbussa, A. (2020). Innovation Performance of the Firms That Have Cooperated with Universities and Research Institutes in Spain. *International Journal of Innovation Management*. Vol. 24, no. 6, article no. 2050053, doi: 10.1142/S136391962050053X
46. Matthew, D.R. (2023). Learning Research: Theory Building and Theory Testing in Educational Technology Innovation and Beyond. *Prometheus: Critical Studies in Innovation*. Vol. 39, no. 1, pp. 28-50, doi: 10.13169/prometheus.39.1.0028

The paper was submitted 02.03.2024
Accepted for publication 06.06.2024

Annex 1

Study of publication activity in the field of project innovation activities in the Elibrary National Electronic Library System[12]

Keywords	Number of publications, total	Name of journals, collections	Title of the article (examples)	Authors	Period under study
Project innovative activity of the university" [«проектная инновационная деятельность вуза» – in Russian]	3	The World of University Science: Culture, Education	Project activity as an innovative technology in the educational paradigm of a maritime university	Bogdanova N.A., Ilyina N.V.	2012–2023
		Prospects for Science and Education	Project activity as an innovative component in the humanitarian block of the educational process of a technical university	Starchikova I.Yu., Shakurova E.S., Moshchenok G.B.	
"Design and innovation activities of the university" [«проектно-инновационная деятельность вуза» – in Russian]	0				2012–2023
"Project innovative activity of the university" [«проектная инновационная деятельность университета» – in Russian]	0				2015–2023
"Project innovation activity" [«проектная инновационная деятельность» – in Russian]	125	Science and Education	Project activity is an innovative form of organizing student learning	Strukova R.A., Shchukin R.A.	2011–2023
		Modern continuous education and innovative development. Proc. of the IV All-Russian Scientific and Practical Conference. Serpukhov	Project activity as an innovative component of one of the organizational forms of training	Aplekaev O.A., Bugakov I.A.	
"Design and innovation activity" [«проектно-инновационная деятельность» – in Russian]	24	Innovations in professional and vocational pedagogical education. Proc. of the 27th International Scientific and Practical Conference. Ekaterinburg	Innovative activities in the process of teaching bachelors	Arkharova L.I., Egorova O.L.	2011–2023
		Secondary Vocational Education	Competencies of design and innovation activities of a bachelor in education	Boldyrev E.V., Skamnitsky A.A.	

[12] The parameters of the search query are as follows: the search was carried out using keywords in the same wording as presented in the table: "in the title of the publication", "in the abstract", "in keywords"; type of publications – "magazine articles"; publication period: 2012-2023, 2011-2023; the field of science within which the publication was prepared was not taken into account. (Accessed: 20.02.2024).

Continuation of Annex 1

Keywords	Number of publications, total	Name of journals, collections	Title of the article (examples)	Authors	Period under study
"University project activities" [«проектная деятельность вуза» – in Russian]	338	Bulletin of the Shadrinsk State Pedagogical Institute	Project activity as a method of social and pedagogical support for organizing volunteer activities of university students	Ryumina Yu.N., Chuikova I.V.	2011-2023
		Scientific Perspective	Project activity as an opportunity to train future students of a technical university	Kharybina I.N.	
"Innovative activities of the university" [«инновационная деятельность вуза» – in Russian]	329	Problems of Modern Economy. Novosibirsk	Innovative activities of the university	Khavin D.V., Tabunov I.V.	2011-2023
		Bulletin of Saratov State Socio-Economic University	Scientific and innovative activities of economic universities in modern conditions	Naumov S.Yu., Yashin N.S., Mendel A.V., Petrov A.M.	

Annex 2

Study of publication activity in the field of project innovation activities in the scientific publication system Google Scholar

Key words	Number of publications, total	Name of journals, collections	Title of the article (examples)	Authors	Period under study
"Project innovation activity"	42	Frontier Materials & Technologies	Innovation project: Discussion in the field of conceptual framework	Profatilov D.A.	2011–2023
		Accounting and Economics	Incentives for innovation and centralized versus delegated capital budgeting	Dutta S., Fan Q.	
"Project innovation activity", "university"	29	Proc. of International correspondence scientific and practical conference	International cooperation of cherkasy institute of fire safety named after chornobyl heroes with higher educational institutions of poland: history and perspectives	Chubina T.D.	2011–2023
		Business Strategy and the Environment	Examining the interaction of sustainable innovation activity and the life cycle of small hightech enterprises	Vaisman E.D., Podshivalova M.V., Alola A.A.	

Continuation of Annex 2

Key words	Number of publications, total	Name of journals, collections	Title of the article (examples)	Authors	Period under study
"Project innovation activity", "higher education"	8	Current problems of social stratification and transformation in modern conditions	Innovative design in an organization's management system	Zyablikova O.A	2011-2023
		Discussion	Risks of innovation activity at industrial enterprises	Yurieva L.V., Marfitsyna M.S.	
"Project activity","university"	17300	Mathematical Problems in Engineering	Research on the influence of industry-university-research cooperation innovation network characteristics on subject innovation performance	Li M., Zhang M., Agyeman F.O., Ud Din Khan H.S.	2011-2023
		Technology Management & Innovation.	Board composition and innovation in university spin-offs: Evidence from the Italian context	Prencipe A.	
"Innovation activity","university"	3360	*Business:* Theory and Practice	Model for opportunities assessment to increase the enterprise innovation activity	Frolova L., Zhadko K., Ilyash O., Yermak S., Nosova, T.	2011-2023
		Applied Engineering Science	Innovation activity and business incubators based on institution of higher education	Romanovich L., Evtushenko E., Romanovich M., Kudinov D.	