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**ACADEMIC ENTREPRENEURSHIP AS A MECHANISM FORMING  
THE COMMERCIALIZATIONS OF SCIENTIFIC RESEARCH WORKS IN  
THE HIGHER SCHOOL OF KAZAKHSTAN**

**Abstract:** The relevance of the article is caused by the problem of increasing competition in the global market of educational services. Universities are looking for ways and means to improve their competitiveness.

The purpose of the article is to review the experience of academic entrepreneurship of foreign universities and theoretical analyzes of the research work of various authors devoted to the study of the mechanisms of academic entrepreneurship. As a result of the study, several types and forms of academic entrepreneurship were examined and disclosed. Also considered various approaches to the formation of academic entrepreneurship in higher education institutions of Kazakhstan.

The conclusion that to maintain competitiveness, it is required to develop and support the institution of academic entrepreneurship. The importance of the study: the analysis revealed several areas and emphasis on which will allow Kazakhstani universities to be included in the number of higher education institutions. Materials can be useful in developing programs for the development of universities.

**Keywords:** academic entrepreneurship, transfer of scientific technologies, spin-off, start-up.

**Introduction.** During the XX century, many scientists in the field of science and technology adhere to a certain ethic, the traditional postulate that considered the openness of information, where it was a key, invariable value. This ethic lies in the fact that the results of the research were to be published as soon as possible and were accessible to all. Also, other research projects should have quick and unrestricted access to the results of research and other scientific research of scientists.

In modern conditions, the picture of the current realities is completely different. Over the past thirty years, many combinations of legislation and financial incentives for scientists have been changed. A lot of foreign universities and research institutes adhered to certain exclusive features, where, through intellectual property and, in particular, patents, they took institutions to a new level. Now it's no secret that many foreign research universities have become essentially an academic enterprise, where scientific research of scientists has become a commodity of sales or attraction of investments. There is also another pattern in foreign universities at the end of the 20th century. This feature became the function "Research", which became the main prerogative of the training of students.

This change or phenomenon was called "the first revolution of the academic environment" [9]. Abroad, the term "academic entrepreneurship" (English) - "academic entrepreneurship" is widely used.

It follows that the source of entrepreneurship in the academic environment was research and scientific transfer of technology.

The relevance of this article is that academic entrepreneurship in the form in which foreign universities can become one of the main drivers of the development of not only Kazakhstani education, but also the development of innovative technologies, the economy and other spheres.

The general definition of academic entrepreneurship is foreseen, by different scientists, for different reasons, researchers define academic entrepreneurship as a scientist's activity that is not part of his daily

duties at the university. Among such activities, it is possible to note tutoring on the side, consulting, conducting trainings and seminars at industrial enterprises, joint projects of representatives of universities and industry, patent activities, etc. [1].

However, the same term is also used to define a wider range of knowledge transfer activities. Thus, some more broadly this term is presented in the works of S. Nabi and J. Zhang, which academic entrepreneurship is considered as the main way of economic development and increasing the competitiveness of the country and the region [2, 3]. At the same time, researchers A. Sikula and M. Wood narrow the potential of academic entrepreneurship to the possibility of satisfying the needs of a university or an individual academic entrepreneur [4, 5].

The key difference between the academic field of entrepreneurship and other entrepreneurial professions is that often enterprises tend to focus on the profit and distribution of their product, while researchers, when making profits, further invest in promoting the academic field. Many, if not most, academics are connected with the university, teachers or students, where they are sometimes limited by opportunities or obligations to the university, while business enterprises do not support such ties.

In world practice, academic entrepreneurship is divided into three types, informal, non-profit and formal commercial activities. Table 1.

Table 1 - Types of academic entrepreneurship

№	Name	Definition	Types
1	Informal commercial activities	It is realized through commercial transactions and is based on knowledge that can not be protected using formal methods, but only by other means, such as copyright or trademark.	Software, literary or artistic works, industrial designs of plants or breeds of animals, counseling, contract research, etc.
2	Non-commercial activity	It is based on unprotected knowledge and is implemented to enhance the social well-being of an academic entrepreneur.	Providing an informal council, conducting public lectures, organizing exhibitions and publishing books for a wide audience, informal consultations, etc.
3	Formal commercial activities	Activities involve activities focused on technological inventions that can be protected through formal methods and through formal institutions.	Activities include licensing and the formation within the university of research and development structural units (such as, for example, spin-off, start-up, etc.).

\* The table was made by the author

The most common forms of academic entrepreneurship in Kazakhstan universities include the technology of spin-offs and business incubators, but so far in the modern history of Kazakhstan, not so well-known scientific projects that would have been known to the whole world. The reason for this problem are gaps in structural units in universities, namely:

- provision of necessary infrastructure (laboratory, equipment);
- selection of personnel for the implementation of the project;
- search and attraction of investors to research projects;
- advising scientists on licensing and patenting;
- protection of intellectual property;
- Advising and assisting scientists in creating spin-offs.

If you give an example of one foreign university such as Stanford University, then its fund for 2011 is about \$ 20 billion [2].

The success of academic entrepreneurs in the United States is supposed in two aspects: the first entry into the Beych-Dole Act and the second many academic entrepreneurs mainly work in universities where they conduct their research and business projects. This provides universities with a sustainable set of good researchers and developers who focus on innovation, and provide scientists with a reliable source of

income while they invest in their revenues for further innovation projects. In addition, universities are often sources of funding for researchers and their projects, although there are also funding at the state level.

Many foreign universities take very seriously the signing of contracts with scientists, in which research or innovation has been highly dependent legal with the university.

The success of the USA in the institution of an academic entrepreneur would not have been without the adoption of the Bayh-Dole Act.

Since the entry into force of the Bayh-Dole Act, there has been a significant increase in the commercialization of the transfer of university technology. When academic entrepreneurship began, there were two main aspects of technology transfer: patenting and licensing.

In modern conditions, this institution academic entrepreneurship for 37 years has different regions in different regions. An example is the comparison between academic entrepreneurs USA and Europe, where there are a number of differences.

Firstly, academic entrepreneurship employees working in the United States are considered employees of their respective university, and in Europe they are considered "civil servants". In addition, there is usually a much stronger sense of competition between researchers in the US, because they have to fight for the source of funding their projects, and the European system does not show such a strong dependence, and as a result, more attention is paid to "systematic interaction between institutional boundaries".

The strongest result that arises from this difference between the eastern and western applications of academic entrepreneurship is the impact on the salaries of researchers. For the United States, compensation for its researchers is decentralized, which gives universities a deep autonomy in determining how much they want to pay their employees. This means that in many cases the salary of US academic entrepreneurship is determined primarily by their productivity in the laboratory and their research. In Europe, on the other hand, compensation is centralized, and therefore universities do not have such autonomy. Compensation is instead determined by the state, which creates a standard rate for all in the same profession.

In addition, the United States has a multi-level, decentralized system for the decision-making process for research, which means that the approval of research comes from a number of policy levels (including federal, state and local) and agencies (public, private, funds, etc.). On the other hand, a centralized European system receives approval from only a few levels.

Hence the culture itself. Academic entrepreneurship is a way of transferring knowledge and technology from the scientific and educational fields to private business, which in turn contributes to the innovation and competitiveness of the economy, especially in the small medium business sector. That is why many countries support academic entrepreneurship as part of their small medium business support policy.

In order to develop academic entrepreneurship in Kazakhstan, we propose several actions:

1. combine all available resources (human, organizational, financial) existing scientific parks, departments of universities and support of entrepreneurship, which will make the system of supporting academic entrepreneurship more efficient;

2. form a clear vision, define an ambitious mission and create a brand that can actualize existing commitments and expectations, and help in identifying the phenomenon of academic entrepreneurship;

3. attract international partners who are known for their success in creating an effective ecosystem of academic entrepreneurship;

4. create "exemplary" successful spin-off projects. Several success stories will contribute to the development of entrepreneurial culture in the scientific and educational spheres;

5. Training in entrepreneurial skills should become one of the priorities for Kazakhstani universities;

6. "Unblocking" of scientific knowledge by institutions that are not able to ensure the practical use of their patents.

All these steps can stimulate the development of the ecosystem of academic entrepreneurship.

**Conclusion.** Academic entrepreneurship, at whatever level of development it may be, contributes to the country's innovation and the development of its competitive advantages.

According to many researchers, the process of forming entrepreneurial skills should begin at the earliest possible age, since students and students have modern thinking and are able to offer effective business ideas.

Undoubtedly, a significant role in the national development of academic entrepreneurship is played by the state, which forms the legislative base regulating the process of formation of high technologies and their commercialization. This approach to the development of academic entrepreneurship exists in China and the Republic of Korea, where the state not only forms an innovative strategy for universities and enterprises, but also financially supports venture enterprises.

This institution requires a lot of effort and the attention of Kazakhstan universities themselves, if we want to create SMARTCITY, then first of all it is necessary to make increased attention to the development of SMARTUniversity.

We are sure that the AE phenomenon can accelerate the spread of knowledge-intensive companies throughout Kazakhstan.

#### REFERENCES

- [1] Khegay E.V., Babak L.N., Filatkina I.D., Filatkina M.D. Motivaciya i faktory akademicheskogo predprinimatel'stva **2015**, no. 11(1), pp. 1075–1085.
- [2] Nabi G. From student to entrepreneur: towards a model of graduate entrepreneurial career-making. Journal of Education and Work, **2010**, vol. 3, pp. 22–38.
- [3] Filatkina I.D., Filatkina M.D., Krechetnikov K.G. Pravovaya reglamentatsiya trudapersonala v Indii, Izvestiya DVFU. Ekonomika i upravleniye = DVFU news. Economy and management , **2015**, no. 3, pp. 97–105.
- [4] Sikula A.F. The professor as an artist, a scientist, and an entrepreneur . The Teacher Educator, **2010**, vol. 3, pp. 23–44.
- [5] Wood M.S. A process model of academic entrepreneurship. Business Horizons, **2011**, no. 54, pp. 153–161.
- [6] Abreu M., Grinevich V. The nature of academic entrepreneurship in the UK: Widening the focus on entrepreneurial activities. Research Policy, **2013**, vol. 42, pp. 408–422.
- [7] Bathelt H., Kogler D., Munro A. A knowledge-based typology of university spin-offs in the context of regional economic development. Technovation, **2010**, vol. 30, pp. 519–532.
- [8] Wright M., Kleriss B., Master P., Lockett A. Academic Entrepreneurship in Europe. Unity-Dana Publ., **2013**. 317 p.
- [9] Fairchild R. An entrepreneur's choice of venture capitalist or angel-financing: a behavioral game-theoretic approach. Journal of Business Venturing, **2014**, vol. 26, pp. 359–374.
- [10] Nogin V.N., Homenko Y.V. Foreign experience of innovative activity of small and medium-sized enterprises. Management of Economic Systems, **2013**, vol. 3, pp. 51–64.
- [11] Rahim N.A. Commercialization of emerging technology: the role of academic entrepreneur. Procedia - Social and Behavioral Sciences, **2015**, vol. 169, pp. 53–60.

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#### **АКАДЕМИЯЛЫҚ КӘСІПКЕРЛІК ҚАЗАҚСТАН ЖОО-ЛАРЫНДА ҒЫЛЫМИ-ЗЕРТТЕУ ЖҰМЫСТАРЫН КОММЕРЦИЯЛАНДЫРУ МЕХАНИЗМІ РЕТІНДЕ**

**Аннотация:** Мақаланың өзектілігі білім беру қызметінің жаһандық нарығында бәсекелестіктің өсуіне байланысты. ЖОО-лар өздерінің бәсекеге қабілеттілігін арттыру жолдары мен әдістерін іздейді.

Мақаланың мақсаты – шетелдік ЖОО-лардың академиялық кәсіпкерлік тәжірибесін қарастыру және әртүрлі авторлардың академиялық кәсіпкерлік механизмдерін зерттеуге арналған зерттеу жұмыстарына теориялық талдау жасау. Зерттеу нәтижесінде академиялық кәсіпкерліктің бірнеше формасы мен түрі қарастырылды және ашылды. Сондай-ақ, Қазақстан ЖОО-ларында академиялық кәсіпкерлікті қалыптастыруға арналған әртүрлі тәсілдер қарастырылды.

Қорытынды бәсекеге қабілеттілікті қолдау үшін академиялық кәсіпкерлік институтын дамыту және қолдау қажет екендігі туралы. Зерттеудің маңыздылығы: талдау қазақстандық ЖОО-ларға көшбасшы ЖОО-лар қатарына енгуге мүмкіндік беретін бағыттар мен акценттерді анықтады. Материалдар ЖОО-ларды дамыту бағдарламасын әзірлеуде пайдалы болуы мүмкін.

**Түйін сөздер:** академиялық кәсіпкерлік, ғылыми технологиялар трансфері, спин-офф, старт-ап.

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### **АКАДЕМИЧЕСКОЕ ПРЕДПРИНИМАТЕЛЬСТВО КАК МЕХАНИЗМ ФОРМИРОВАНИЕ КОМЕРЦИАЛИЗАЦИЙ НАУЧНО-ИССЛЕДОВАТЕЛЬСКИХ РАБОТ В ВУЗАХ КАЗАХСТАНА.**

**Аннотация:** Актуальность статьи обусловлена проблемой возрастающей конкуренции на глобальном рынке образовательных услуг. Вузы ищут пути и способы повышения своей конкурентоспособности.

Цель статьи – рассмотреть опыт академического предпринимательства зарубежных вузов и теоретические *анализы* работ исследования различных авторов, посвященных изучению механизмам академическому предпринимательству. В результате изучения были рассмотрены и раскрыты несколько видов и форм академического предпринимательства. Также рассмотрены различные подходы к формированию академического предпринимательство в ВУЗах Казахстана.

Вывод о том, что для поддержания конкурентоспособности требуется развивать и поддерживать институт академического предпринимательства. Значимость исследования: анализ выявил несколько направления и акцент на которых позволит казахстанским вузам вывести в число вузов-лидеров. Материалы могут быть полезны при разработке программ развития вузов.

**Ключевые слова:** академическое предпринимательство, трансфер научных технологий, спин-офф, старт-ап.