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CONCEPTUAL ASPECTS OF UNIVERSITIES AND BUSINESS COOPERATION

Abstract. An article devoted to the main aspects of the cooperation between universities and business. The purpose of the article is to substantiate the tools of cooperation of domestic universities and business structures and to develop a model of cooperation between them on the terms of cooperation and collaboration. The main barriers to the cooperation of universities and business structures have been identified. A comparison of the relationship between universities and business structures in Ukraine and abroad. The volume of scientific works performed by scientific organizations in Ukraine and the total volume of expenditures for research and scientific and technical developments in 2018 by funding sources are analyzed. In order to determine further areas of development of partnership between businesses and universities, a SWOT analysis was conducted. This method revealed the following strengths in the interaction between the university and business: the readiness of universities to interact; students' desire to take part in joint projects; a high competitive level of higher education and enterprises; a high degree of achievement of the tasks in the system relationships; a high degree of fulfillment of the partner's obligations. Weaknesses of such cooperation were also revealed: high level of bureaucracy in universities; different models of communication in universities and enterprises; different motivation in universities and companies' activities; inconsistency of curricula with modern business conditions; insufficient financial resources for interaction with universities or unwillingness to spend them on such interaction, etc. On the basis of the conducted research, the model of cooperation of university and business is offered. This model is based on a system of complementary stages: attracting companies to jointly develop curricula, which will take into account the requirements of employers for graduates. This guarantee graduates successful employment in the future; tracking by universities of new technologies and new trends in relevant areas of interest to employers; increasing the mobility of scientists to gain useful experience; development of a dialogue between universities and employers to increase mutual trust, improve mutual understanding when formulating goals, etc.

Key words: university, business, SWOT analysis, barriers to cooperation, model of cooperation.

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Концептуальні аспекти співпраці університетів та бізнесу

Анотація. Стаття присвячена основним аспектам співпраці закладів вищої освіти (ЗВО) та бізнесу. Метою статті є обґрунтування механізму співпраці вітчизняних закладів вищої освіти і бізнес-структур та розробка моделі взаємодії між ними на умовах кооперації та співробітництва. Визначено основні бар'єри співпраці ЗВО та бізнес-структур. Здійснено аналіз взаємовідносин університетів і бізнес-структур в Україні та за кордоном. Проаналізовано обсяги наукових робіт, які виконуються науковими організаціями в Україні, та загальний обсяг видатків на дослідження і науково-технічні розробки у 2020 році за джерелами фінансування. З метою визначення подальших напрямів розвитку партнерства бізнесу та ЗВО було проведено SWOT-аналіз. Цей метод виявив такі сильні сторони: готовність ЗВО до взаємодії; бажання здобувачів вищої освіти брати участь у спільних проектах; високий конкурентний рівень вищої освіти та підприємств; високий ступінь досягнення поставлених завдань у системі взаємовідносин. Виявлено також слабкі сторони такої співпраці: високий рівень бюрократії в університетах; різні моделі спілкування в університетах і на підприємствах; різна мотивація в діяльності ЗВО та бізнес-структур; невідповідність навчальних планів сучасним умовам господарювання; недостатні фінансові ресурси для взаємодії з університетами або небажання витратити їх на таку взаємодію тощо. На основі проведених досліджень запропоновано модель співпраці ЗВО та бізнесу. Ця модель базується на системі взаємодоповнюючих етапів: залучення компаній до спільної розробки навчальних програм, які враховуватимуть вимоги роботодавців до випускників. Це - гарантія успішного працевлаштування випускників у майбутньому; відстеження ЗВО нових технологій і нових трендів у відповідних сферах, що цікавлять роботодавців; підвищення мобільності науковців для отримання корисного досвіду; розвиток діалогу між ЗВО та роботодавцями для підвищення взаємної довіри, покращення взаєморозуміння при формулюванні цілей тощо.

Ключові слова: заклад вищої освіти, бізнес, SWOT аналіз, бар'єри співпраці, модель співпраці.

Introduction. The importance of the higher education system for the development of society in any country is obvious. Today, universities both in Ukraine and abroad have many problems such as a low level of funding for higher education, a decrease the number of students and applicants, obsolescence of the material fund, slow rates of integration into the European and world intellectual space, etc [7; 9]. One of the possible directions for their solution is the establishment of cooperation between higher educational institutions and businesses. Such cooperation can be beneficial to both parties.

Analysis of recent research and publications. Features of cooperation between business and universities are widely considered by scientists: O. Bercha [3], A. Oke [13], S. Tarasenko, T. Shcherbata [8], O. Yankovska, E. Pinto [11], G. Fernandes [11]. In general, the concept of university-businesses cooperation includes all systematic activities that, combining university and industry facilities, attempt to perform tasks that each of these two institutions cannot perform separately. Lin [9] considers the goal of cooperative relations between the university and business to be access to technology, the expansion of financial resources, and the use of innovative capabilities of universities. Kucherenko S. [5] and Pinto E. [11] also believe that businesses should establish relationships with other organizations that produce knowledge, such as universities, research and development centers, and others to develop innovative activities.

The purpose of the article is to substantiate the tools of cooperation of domestic universities and business structures and to develop a model of cooperation between them on the terms of cooperation and collaboration.

Materials and methods. The research methodology is based on the principles of structural and functional analysis of the cooperation processes between universities and businesses, comparative analysis, and synthesis. The scientific novelty of the study is the systematization of forms of cooperation between businesses and universities. The model of perspective directions of their interaction is offered. The practical implications of the results are that they can be used in management decisions and activities to optimize the interaction of business, universities, and science. The partnership of universities and businesses based on the pooling of resources such as financial, material and technical, and personnel, is a requirement of the time, the purpose of which is the accelerated development of interaction participants, a positive impact on the development of the country as a whole [4].

Results of the research and their discussion. It should be noted that the potential for cooperation between higher education institutions and businesses is much greater. Such cooperation is useful both for higher education institutions and for business [2], and the areas of cooperation between higher education institutions and business can be diverse - from the creation of innovative products and individual training of students to conduct joint research with universities on topical issues [2]. However, there are many problems in such cooperation today.

Unlike Ukrainian educational institutions, which are not very active in cooperation with enterprises, the system of higher education in European countries, such as Germany and the United Kingdom, has a pronounced applied nature and practical orientation.

Compared to European universities, US higher education institutions have a number of differences. For the American type of higher education, it is more typical to involve business in the administration system, when representatives of the largest firms become developers of educational programs and courses.

Leading foreign universities in Australia, the United Kingdom, Germany, Sweden, Finland, and the United States has already implemented many successful projects for small and medium-sized enterprises, and developed specialized programs to attract students to interact with representatives of the business community.

One of the barriers to the development of partnerships between enterprises and universities is the low investment attractiveness of Ukraine. Since the main source of funding for innovation costs are the funds of enterprises 97%, the limited access to finance has a critical impact on the development of innovation in business. This factor has a negative impact on the development of partnerships between enterprises and universities due to limited funding for joint projects and research.

The next important barrier to the development of partnerships between enterprises and universities is the state of education and science in Ukraine. Now it has increased attention to the higher education system and university performance.

In today's conditions, innovative and information technologies are popular, and cooperation with higher education institutions is especially important for enterprises. Thus, the issue of developing effective partnerships between universities and enterprises is becoming increasingly important, which should be based on an individual approach to choosing a partner, an effective diagnosis of the partnership, and the optimal choice of strategy for the development of relationships.

It should be noted that the volume of expenses for the scientific research performance of Ukraine at the expense of all sources in 2020 was 16773.7 million UAH, including the expense of means of the state budget – 6020.9 million UAH which makes 35.89 %.

In the structure of domestic customer funds, the largest part was the funds of business sector organizations. Sources of financing of internal expenses for the performance of scientific and scientific and technical works in Ukraine in 2020 are given in fig. 1 [1, p.11].

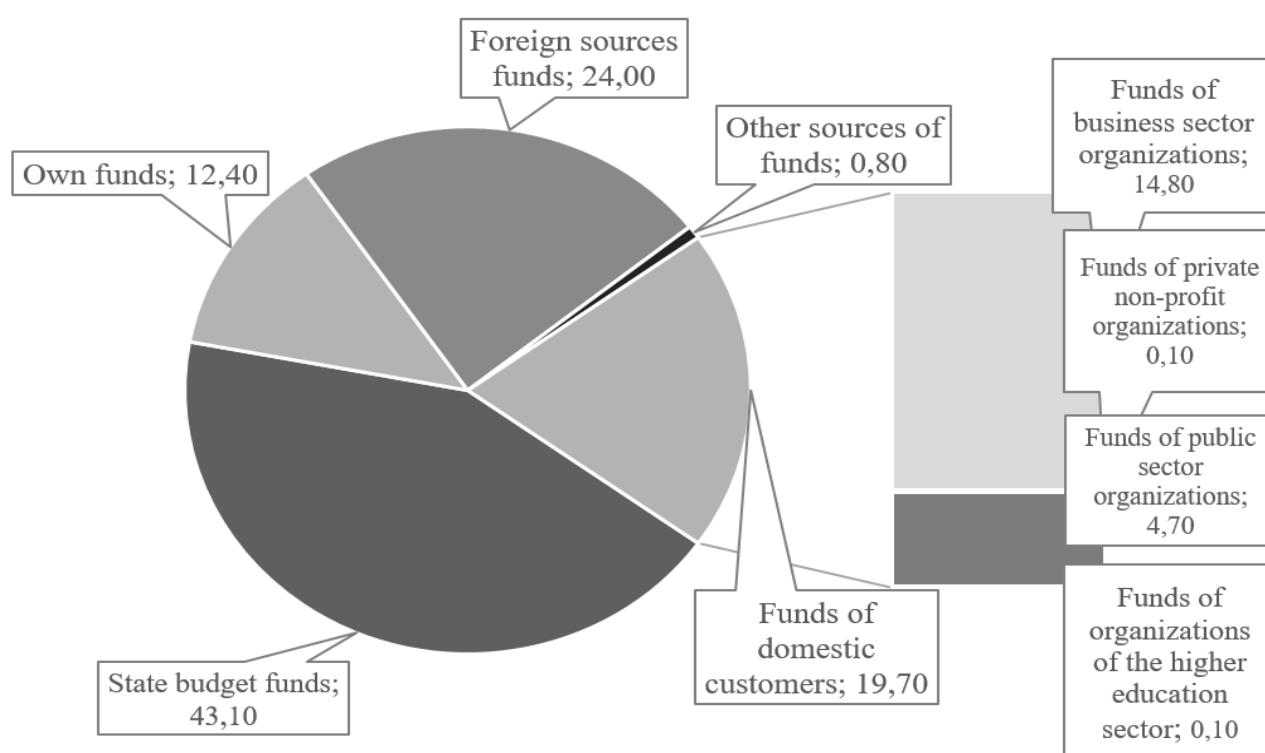


Fig. 1. Distribution of total expenditures for research and scientific and technical (experimental) developments in 2020 by sources of funding, %

In general, the share of expenditures on research and development in Ukraine is 0.47% of GDP, including 0.17 percent from the state budget. For comparison, in Sweden - 3.40%, Austria - 3.19%, Denmark - 2.96%, Germany - 3.18%, Finland - 2.79%, Belgium - 2.58%, France – 2.19%. As mentioned above, the costs of scientific work in Ukraine are financed, as a rule, at the expense of entrepreneurs and the state.

In Ukraine, there is also a tendency to reduce the performance of scientific and scientific-technical work by scientific institutions and universities. Figure 2 shows the dynamics of science intensity of Ukrainian GDP, %.

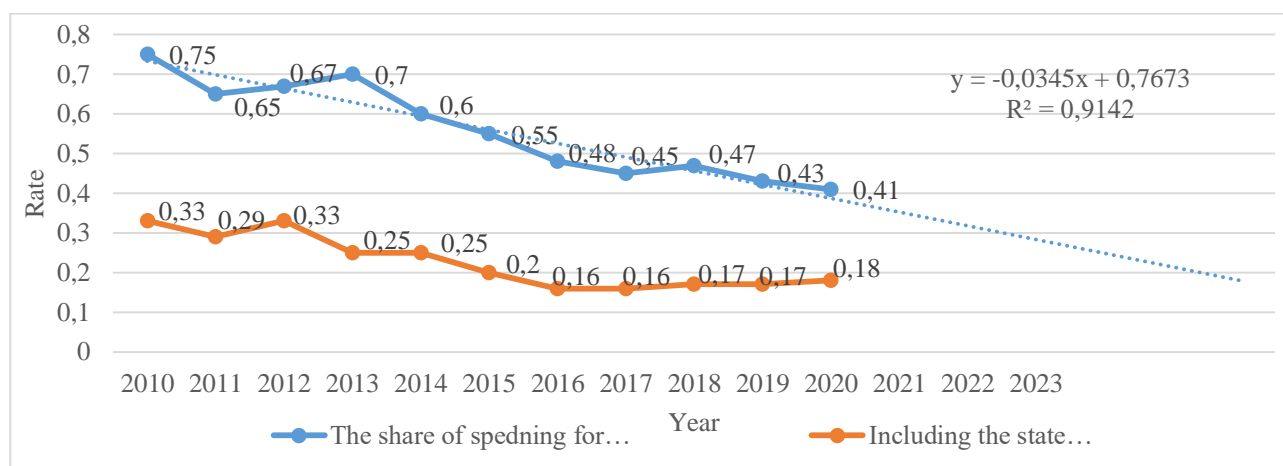


Fig. 2. Dynamics of science intensity of Ukrainian GDP, %

Therefore, the domestic scientific intensity of GDP is five times less than the average value of this indicator for EU countries. That is, Ukraine can compete only with countries that are not suppliers of new technologies or products with a high degree of added value.

In order to determine further areas of effective development of partnership between businesses and universities, a SWOT analysis was used (table 1). Thus, the strengths of partnership and potential opportunities contribute to the strategy of growth of active activities and the development of new forms of cooperation.

In turn, weaknesses and threats reproduce the need for dialogue with partners in order to jointly seek opportunities to develop these relations.

The conducted SWOT analysis allows considering various variants of strategic decisions on the development of interaction between enterprises and universities.

Summarizing the most common definitions of partnerships in an enterprise by scientists, we highlight the following characteristic features [4; 7]:

- 1) unity in a certain system of values and a separate environment;
- 2) limited decision-making;
- 3) synergistic effect of the result obtained and focus on the overall further development;
- 4) flexibility to change and adaptability;
- 5) interactivity, based on constant interaction and exchange of information, material, non-material resources, and business activity;
- 6) interest in investment, innovation, and marketing activities.

Table 1

SWOT analysis of the cooperation of enterprises and universities in Ukraine

Strengths	Weaknesses
<ul style="list-style-type: none"> – readiness of universities to interact; – students' desire to take part in joint different projects; – high competitive level of higher education and enterprises – a high degree of achievement of the tasks in the system relationships – a high degree of fulfillment of the partner's obligations 	<ul style="list-style-type: none"> – high level of bureaucracy in domestic universities; – different models of communication in universities and enterprises; – different motivation in universities and companies' activities; – inconsistency of curricula with modern business conditions; – insufficient financial resources for cooperation with universities or unwillingness to spend them on such cooperation; – ignorance by universities of the needs and business structures conditions; – insufficient business awareness about the potential and real opportunities of universities
Opportunities	Threats
<ul style="list-style-type: none"> – support for student initiatives and competitions; – concluding agreements on student internships; – development of joint courses and educational programs with universities 	<ul style="list-style-type: none"> – change in the number of students due to the demographic situation and the opportunity to study abroad; – outflow of qualified personnel abroad; – change of legislation; – socio-political instability in the country; – change in the labor market

It should be noted that the most effective forms for the development of the system of interaction between universities and business are:

- involvement of companies for the joint effective development of curricula, which will take into account the requirements of employers to graduates of educational institutions. This guarantees successful employment for university graduates;
- monitoring by universities of new innovative technologies and trends in relevant areas of interest to employers;
- development of the distance education system;
- increasing the mobility of scientists to gain useful experience;
- effective development of the dialogue of universities with employers in order to increase mutual trust, and improve mutual understanding in formulating the goals of their activities.

It should be noted, that an important area of establishing partnerships between business and the university is to conduct all types of student internships on the basis of enterprises, which involves the implementation of the chain: educational practice - industrial practice - undergraduate practice - employment in the enterprise.

The study allowed proposing a model of cooperation between business and universities, which promotes the active use of the scientific and technical potential of universities, in modern conditions in Ukraine can be carried out in different ways (fig. 3)

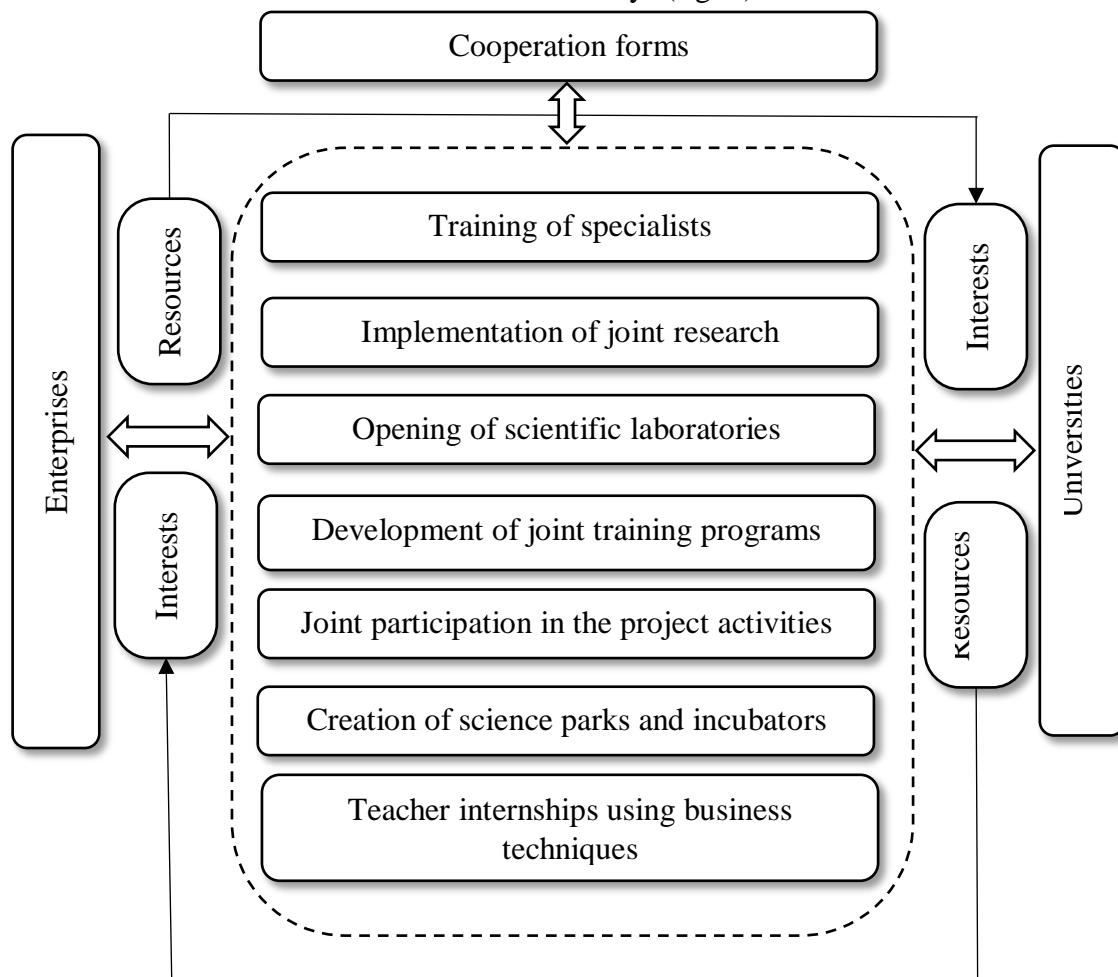


Fig. 3. The model of cooperation between enterprises and universities

Thus, the formation and development of cooperation between universities and business provides, in our opinion, a real opportunity to form an optimal model of partnership, which is not only one of the competitive advantages of the university but also a necessary factor for its survival in the face of growing threats and challenges.

Conclusions and future perspectives of the study. Forms and areas of cooperation between universities and business structures, which can be useful to both parties, are diverse. Nevertheless, today there are significant barriers to organizing such cooperation. Strategic cooperation between employers and universities helps to jointly solve the problem of lack of qualified specialists and employment of graduates. In addition, an educational institution can give the business access to its infrastructure, help with research, or become a client of the company.

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