

# “Formation interaction and adaptive use of purposive forms of cooperation of university and enterprise structures”

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<b>ARTICLE INFO</b>	Olena Rayevnyeva, Iryna Aksonova and Viktoriia Ostapenko (2018). Formation interaction and adaptive use of purposive forms of cooperation of university and enterprise structures. <i>Innovative Marketing</i> , 14(3), 44-56. doi: <a href="https://doi.org/10.21511/im.14(3).2018.05">10.21511/im.14(3).2018.05</a>
<b>DOI</b>	<a href="http://dx.doi.org/10.21511/im.14(3).2018.05">http://dx.doi.org/10.21511/im.14(3).2018.05</a>
<b>RELEASED ON</b>	Saturday, 08 December 2018
<b>RECEIVED ON</b>	Friday, 02 November 2018
<b>ACCEPTED ON</b>	Thursday, 06 December 2018
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<b>JOURNAL</b>	"Innovative Marketing "
<b>ISSN PRINT</b>	1814-2427
<b>ISSN ONLINE</b>	1816-6326
<b>PUBLISHER</b>	LLC “Consulting Publishing Company “Business Perspectives”
<b>FOUNDER</b>	LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

**24**



NUMBER OF FIGURES

**5**



NUMBER OF TABLES

**2**

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BUSINESS PERSPECTIVES



LLC "CPC "Business Perspectives"  
Hryhorii Skovoroda lane, 10, Sumy,  
40022, Ukraine

[www.businessperspectives.org](http://www.businessperspectives.org)

**Received on:** 2<sup>nd</sup> of November, 2018

**Accepted on:** 6<sup>th</sup> of December, 2018

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# FORMATION INTERACTION AND ADAPTIVE USE OF PURPOSEIVE FORMS OF COOPERATION OF UNIVERSITY AND ENTERPRISE STRUCTURES

## Abstract

Addressing the imbalance between the existing demand for graduates of higher education institutions is aimed at strengthening the processes of integrating the education system with the business. At the same time, issues related to the system of forming and determining the appropriate forms and types of partnership between universities and business in Ukraine are becoming more urgent. That's why the purpose of this study is to develop a methodical approach to the formation and adaptive use of forms of such interaction.

A comparative marketing analysis of the national and world experience of the forms and methods of interaction between educational institutions and business is carried out. A methodical approach to the formation of interaction between higher education institutions and the business has been proposed. The directions and types of public-private partnership in education are formed, the basis of which is the distribution of rights, responsibilities and risks between the partners of the relations. Depending on the changes in the external conditions of marketing functioning, there is a list of standard (universal) forms of interaction between universities and the business environment that make up the invariant core of such interaction and innovation-active (specific) forms that arise in connection with the expansion of university autonomy. The three-component model of the choice of the form of interaction between higher educational institutions and the business structures in Ukraine is proposed, which allows choosing the form that will be optimal considering the existing conditions.

## Keywords

public-private partnership, higher education in Ukraine,  
state, universities, business, forms of interaction,  
collaboration

**JEL Classification** I21, L14

## INTRODUCTION

In the process of implementation of the innovative model of state development, it is necessary to introduce the results of scientific research into industry and the real sector of the economy, activating the innovation activity of enterprises and organizations. The main direction of the implementation of the innovation model is the participation of the higher school in the implementation of innovation activities. Cooperation with universities helps to create an innovative model of state economic development and introduction of innovative technologies at the enterprise.

In modern conditions, universities have dual nature, which implies, on the one hand, the existence of a general intelligence of employees, that is, educational, cultural and innovative potential, and, on the other hand, the need for the introduction of innovative technologies and the latest educational products.

In the absence of one of the above conditions, real modernization of the economy and, in particular, higher education, cannot be carried out. In connection with this, the actual problem is the identification of the level of readiness of modern large, medium-sized enterprises of separate regions to active multi-purpose cooperation with local universities.

The purpose of this study is to theoretically and analytically generalize the world and national approaches to the forms and methods of interaction of universities with the business and to develop a methodical approach to the formation and adaptive use of forms of such interaction, taking into account the dynamic changes in the development of labor markets and education.

## 1. LITERATURE REVIEW

Higher education as a driving force of economic development in the context of the formation of the cooperation with business is widely studied by a lot of scientists. Among modern scholars who are studying the role and place of higher education there should be mentioned Lysytsia, Prytychenko, and Gron (2017), Martynenko and Menshykov (2017), A. Kuklin, S. Mardzhinson.

Lysytsia, Prytychenko, and Gron (2017) have suggested the vectors of promotion of economic educational services. They are the formation of positive reputation of the university, expansion of the range of criteria, which determine the choice of the university in the following marketing researches, presentation of career growth stereotypes, display of the results of the university's international academic cooperation on website, development of social support programs for students. The use of these vectors will allow universities to form loyalty programs for consumers of economic educational services and improve the competitiveness of higher education institutions.

Martynenko and Menshykov (2017) have considered the concept of development of the system of organizational knowledge (SOK) in the structure of vocational education of employees, which is based on a new scientific approach to the search of ways of improving the vocational education and includes theoretical principles directed at the solution of problems and contradictions at the macro, meso and microeconomic levels in the United Kingdom and Ukraine.

Shevchenko (2018) characterizes the contradictions of the new model of economic activity of universities related to generating their own (ex-

trabudgetary) incomes and increasing the share of private sources of funding. Foreign scientists consider such processes as the privatization of state universities. The article generalizes their thoughts about the preconditions, types and forms of privatization in the field of higher education. In Ukraine, attracting private individuals could contribute to the development of universities. However, it will not be able to solve even the current problems of universities. First, Ukrainian higher education institutions require significant funds for updating and expanding the material and technical base, developing research and financing other vital needs. Such expenditures are effective only for the state. Second, in the institutional environment of Ukraine, private funding for universities faces numerous traps of distrust on the part of consumers (payers) of educational services, employers, private investors and potential donors. The smallest interest in the development of university education is from private business.

The works of Zinchenko, Saprykina, Yankovskaya, and Vinnikov (2014), Ribeiro and Nagano (2018), Marjatkova, Snigova, and Mudra (2013), Dasgupta, Gupta, and Sahay (2011), Pavlin (2016) and other scientists are devoted to the study of the topic of partnership between business, state and universities.

Zinchenko, Saprykina, Yankovskaya, and Vinnikov (2014) focus on the comparative analysis of the legislative framework of foreign countries, which creates conditions for partnership between business and universities, assessment of the state of interaction between enterprises and universities, the synthesis of effective practices and the definition of components an effective model of cooperation between the investigated institutions.

Ribeiro and Nagano (2018) define the main characteristics of the university-business collaboration that promotes the creation and management of knowledge. The conceptual foundations of cooperation between universities and business are proposed, based on which the correlations between knowledge management and Triple Helix theories are determined. The ability of UBC to create an organizational structure that stimulates innovation is identified.

Marjatkova, Snigova, and Mudra (2013) consider the content of the interaction mechanism of customers and consumers in the market of educational services. The tools of the economic mechanism for quality management of educational services are determined. The structure of training for the branches of knowledge and needs of enterprises is explored. The imbalance between demand and supply of specialists in the market is determined. The necessity of regulating the interaction of educational services and labor markets is substantiated. Areas of improvement of the economic mechanism of quality management are proposed.

Pavlin (2016) analyzes business involvement in university-business collaboration (UBC), involving research and development, mobility of scientists and students, curriculum development and lifelong learning. The models, elements and processes that promote the development of university and business cooperation are determined. The analysis of cooperation between universities and enterprises in European countries has been carried out. Differences between teaching and research activities are determined. The problems connected with the integration of these two spheres, in particular the development of graduates' competences and the practical training of graduates, are considered.

The studies of education technologies with university-business collaboration are devoted to the works of Etzkowitz (2010), L. Leidsdorf, M. Rangi, Clauss and Kesting (2017), A. Rickne and others.

Etzkowitz (2010) outlines a model that takes account of border crossing and the coevolution between technological and institutional transformation, as well as a regional research project to elucidate these processes.

Clauss and Kesting (2017) determine the advantages and disadvantages of managing knowledge sharing in the process of university and business cooperation. Opportunities that the business gets when using university research and innovation support are separated. The features of cooperation between universities and enterprises are determined. The mechanisms of behavior management of subjects are proposed for the purpose of assigning intellectual property rights to knowledge and risk reduction.

Krpalek, Krelova, and Berkova (2018) emphasize that it is necessary to apply an integrated approach to the development of the competences of the learners. Using this approach enables students to acquire the necessary professional skills that will ensure their competitiveness in the labor market. In the article, the authors emphasize that acquiring pupils an effective competence profile by the pupils is possible only at the expense of a modern educational concept based on active teaching methods. The results of the study indicate that the professional skills of the teaching staff do not meet the needs of modern youth in developing their entrepreneurial competencies. At the same time, the obtained data testify to the advantage of using traditional methods of teaching that limit the creative potential of students and their development. As a result, young people do not get practical skills and knowledge, which thus makes it impossible to develop in modern economic conditions.

## 2. RESULTS

Market relations in the Ukrainian economy have changed the content and direction of university and business cooperation. All this causes the urgent need to create an extensive network, which is a platform for open cooperation between IHE and business. Knowledge-based economics requires the presence of multisectoral networks of organizations involved in various aspects of the economic process. In developed countries of Europe and in the United States, similar structures are provided with powerful financial support. This necessitates thorough monitoring of the direction and use of public investment, as well as identifying the most promising fields of interaction between business and institutions of higher education. Cooperation

between and higher education institutions is the key to the success of technological innovation, helping businesses “to develop their dynamic capabilities, taking into account new forms of competitive advantage” (Graham & Diamond, 2009).

Prospects for the development of innovative business on the basis of the university are quite real, but they will be realized only under the following conditions (Clauss & Kesting, 2017):

1. Necessity of formation of innovative infrastructure of IHE. It is about creating industrial parks, business incubators, scientific and experimental production complexes, as well as creating favorable conditions for attracting investments into higher education.
2. Involvement in the cooperation with the private sector through the provision of the most recent tax exemptions and abolition of legal and administrative restrictions.

Establishment of state for accelerated modernization of the economy is relevant and requires an analysis of the level of staffing of those new productions that may soon appear in our country.

One of the main tasks in modernizing the higher education system is the establishment of a productive mechanism of cooperation between universities, business and the state, which will increase the efficiency of educational activities and develop ways to transfer technology into production, commercialize knowledge in general. In national practice (Doslidzhennja Svitovogo ekonomichno-go forumu pro konkurentospromozhnist' u svi-ti), the following classification of mechanisms of public-private partnership in education is distin-

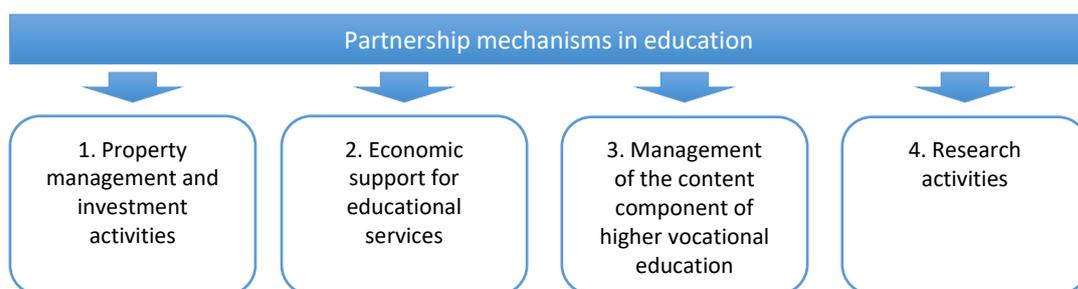
guished (Figure 1).

In developed countries, innovative development is made possible by close cooperation between universities, enterprises and the state, built on the basis of the model of the “triple helix” by G. Iskovitsa. This model describes the mechanism of the relationship between universities, business and the state and characterizes the role of each of the institutes in the development of innovation. In practice, the triple helix model is used by countries in America, Europe and Southeast Asia (Business-University Collaboration).

Triple helix as a synthesis of elements is a platform for the formation of institutes, the creation of new organizational forms for the introduction of innovations. It usually begins with the establishment of a relationship between university, business and the state of mutual relations in which everyone tries to increase the efficiency of others (Gryshchenko, 2017).

The concept of the “triple helix” contains three main elements:

1. The role of universities in interaction with business and the state in the context of the knowledge society is important.
2. Innovation component of cooperation comes not from the state initiative, but from the interaction “university – business – power”.
3. In addition to traditional functions, each of the three institutions partially takes on the role of another, thus becoming an important source of innovation (Entrialgo & Iglesias, 2016).



**Figure 1.** Classification of partnership mechanisms in the field of education

The basis of the triple helix model is the hypothesis that in the modern society the university cooperating with production, carrying out some functions of its research and development departments (R&D), acts as the nucleus of innovation activity, and concentrates state efforts related to the development of innovations (Entrialgo & Iglesias, 2016). In the process of triple cooperation, all higher education institutions are able to develop business incubators, venture capital training companies, research parks, consulting companies, using their own material and financial base. This ensures that they fulfill the real tasks of state or business, the participation of students and professors in research, funded not only by business, but also by the state (Belás, Ključnikov, Vojtovič, & Sobeková-Májková, 2015; Kobzev, 2011). The ability to achieve such results stimulates the university to build ties and develop co-operation. In general, such cooperation has a significant economic, scientific, technical and social effect for society as a whole, and investment in human and intellectual capital is most effective in the long run.

In general, in Ukraine, the same forms of interaction between higher education and business, as well as abroad, are applied. This means that there are similar foreign trends in the Ukrainian system of higher education. At the same time, it is necessary to note a significantly smaller variety of methods used in the interconnection of IHE and the business, which can be explained by the fact that the system of compulsory state distribution of graduates of IHE as a component of the planning system has been eliminated relatively recently. Since the abolition of the mechanism of state distribution of university graduates in Ukraine, the labor market of young specialists has started to develop as a part of the market economy as a whole.

The defined forms of collaboration are not always implemented in the process of cooperation between institutions of higher education and business. On the background of the fact that the emergence of this situation is due to many reasons, one of the main is the lack of activity of the participants in the process of establishing a close relationship between educational institutions and enterprises of the economic sectors. The result is the emergence of a dual effect: on the one hand,

the business expects greater activity from the IHE in establishing effective cooperation, and on the other hand, they themselves point out the lack of readiness of many owners to set specific marketing research tasks against the IHE and to finance their implementation in an appropriate amount.

A survey of forms and models of interaction between IHE and the business is aimed at achieving two global goals:

- 1) increasing the practical orientation of the learning process and the formation of a specialist with competencies that are relevant in the labor market. This increases the level of competitiveness of graduates of IHE, and, consequently, the level of attractiveness of IHE for future entrants;
- 2) formation of specialists with the knowledge and skills necessary for the modern labor market, which will have a positive impact on the development of specific enterprises and organizations, and, consequently, on the development of the country's economy.

The realization of these goals will increase the competitiveness of education, which, in turn, will provide the labor market of skilled workers who are in a position to raise the national economy.

Construction of an optimal model of business and university cooperation in Ukrainian realities should be based on principles other than foreign ones. The autonomy of Western higher education institutions implies less dependence on state influence from the point of view of funding and directions of curricula. In order to stay in the market of educational services and to have a good reputation, the leadership of Western institutions of higher education constantly maintains a dialogue with business representatives, responds to their needs and provides the requested specialists. Those educational institutions that succeed in these areas are becoming more attractive both for university entrants and for employers, which in turn is a guarantee of financial stability. That is why Western institutions of higher education are the main promoters of fruitful cooperation with business. Unfortunately, in Ukraine today, there is a global gap between the real sector of the economy

and the educational sphere. The quality of graduates of the IHE does not meet the current needs of the labor market, there is no truly innovative development of universities, which in turn leads to the stagnation of the national economy and undermines Ukraine's position in various international ratings.

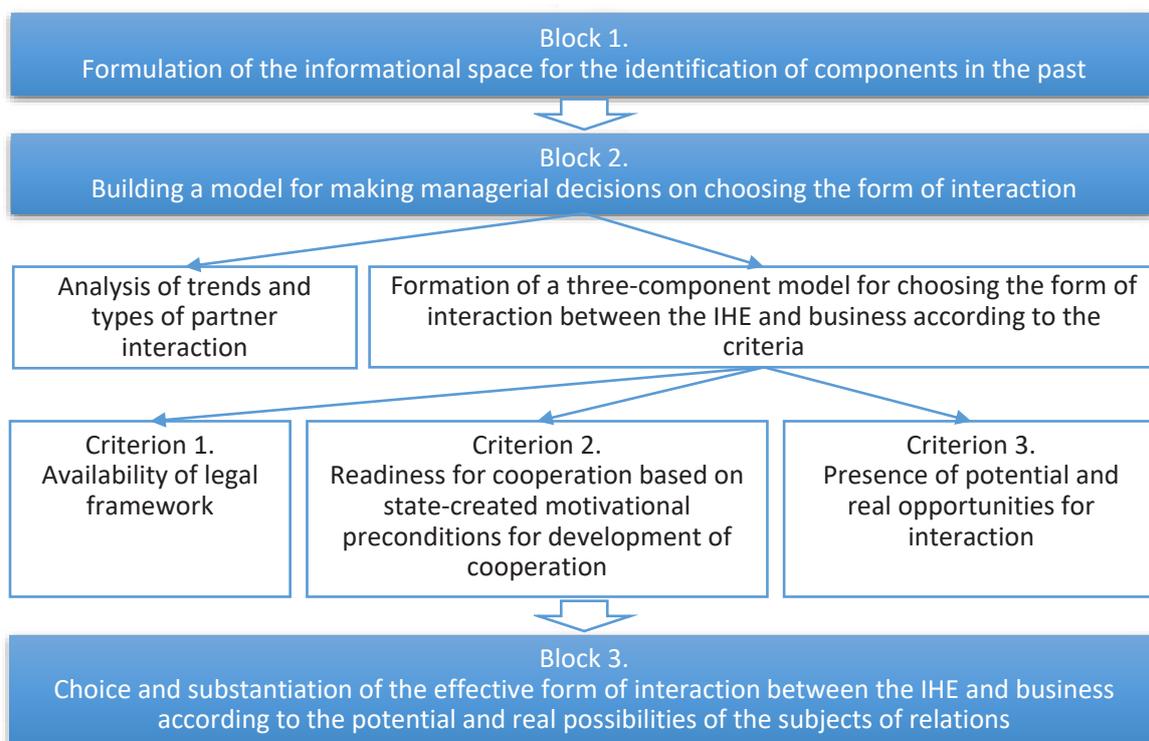
This problem is solved within the network structures of interaction in the field of education, marketing research, information technology and other activities. Interaction with entrepreneurial structures extends the possibilities of matching the provided educational services and graduates competences to dynamic market conditions.

To do this, the study suggested a methodical approach to the formation of interaction and adaptive use of appropriate forms of cooperation between the IHE and the business, which consists of three blocks (Figure 2).

According to Block 1, a study was conducted of national and foreign experience in the development of forms of interaction between NGOs and entrepreneurial, educational and scientific structures,

the results of which can be drawn from the following conclusions:

- the priority areas of the IHE partnership and business in the world are research and development; development and assessment of courses/programs; mobility of students as employees; protection of intellectual property;
- the priority direction of cooperation between IHE and entrepreneurial structures is training of specialists corresponding to the needs of enterprises and organizations in the national system of higher education. Institutions of higher education in Ukraine are trying to develop a partnership with business in the direction of both training specialists and marketing research work;
- the business practically does not affect the development of curricula and professional standards in Ukrainian institutions of higher education, and the most common forms of cooperation are students' internships and practice; lectures for students; student projects, competitions, provision of the IHE of the lat-



**Figure 2.** Methodological approach to the formation of interaction and adaptive use of appropriate forms of cooperation IHE and business

**Table 1.** Principles of the interaction of IHE and business

Principle	Content of the principle
Purposefulness	Defining target targets, identifying targets and timing goals
Systemicity	Management at all levels of interaction
Complexity	Taking into account all the factors that significantly affect the interaction of markets (ensuring the balanced functioning of all parts of the mechanism of interaction, the elimination of disparities and contradictions)
Adaptability	Creation of a system of methods and models, closely linked with information communications, able to adapt to real economic systems, processes and conditions of the fluctuation of the market environment
Flexibility	The use of system of management of methods and mechanisms that make it possible to project trends in the state of the environment and the possibilities of the system of interaction itself
Information openness and accessibility	Ensuring the openness and accessibility of all interacting parties
Partnerships	Engaging partners to address market harmonization issues
Voluntary engagement	Voluntary involvement of partners for cooperation
Parity	Taking into account the interests and responsibilities of all parties involved in the interaction
Hierarchy	Characterizes the relation of vertical subordination and coordination of horizontal actions, based on the division of tasks and functions
Efficiency	Consideration when developing a management solution for the entire set of costs
Transparency and accessibility	Comprehensive review, negotiation and discussion by all participants in the interaction (partners, employers, authorities at all levels, public organizations, interested international foundations, young people studying, students' parents, educational and educational institutions, etc.)
Synergies	Getting a synergistic effect from the integration of various elements of infrastructure, resources and other factors
Autonomy	Delegating parts of their functions that they cannot perform on their own in objective or subjective circumstances (for example, assessing the quality of learning, determining the ratings of activities, the actual amount of training in accordance with the needs of the economy, etc.)
Joint financing	A combination of public financing of infrastructure projects and private investment in specific educational projects
Innovative modernization	Implementation of innovative modernization of the technological basis of the market of educational services, use of best practices, new methods, methodologies and technologies for market harmonization

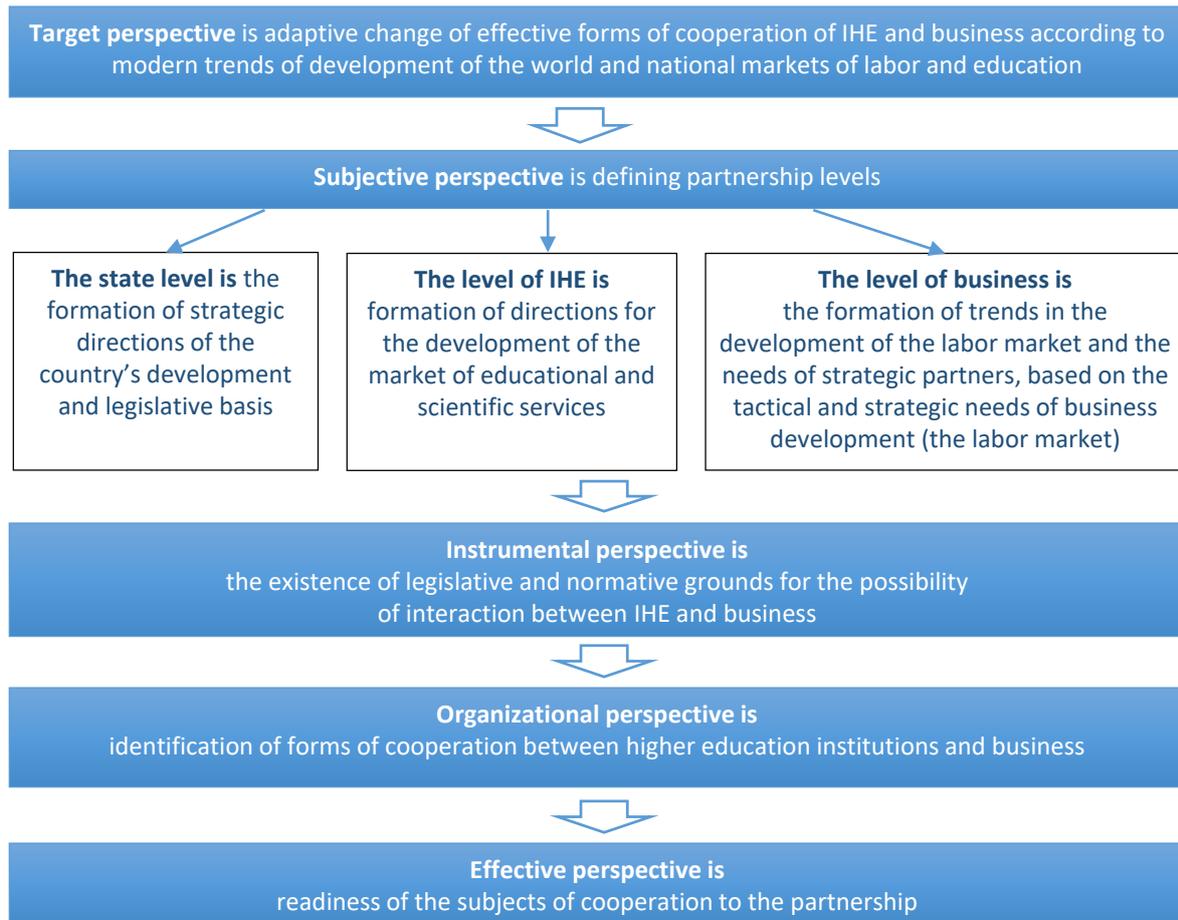
est equipment and technologies in the format of training centers, laboratories, etc.;

- the cooperation of enterprises and IHE in Ukraine is of a strategic nature. Top management of institutions of higher education and companies are committed to partnership, more than half of them have strategies, policies or other documents that regulate cooperation. More than half of companies have a separate budget article for partnership development, and a lot of the IHE have established a network of graduates that actively assist higher education (Chernjuk, 2016);
- universities are more active in establishing partnerships for graduates. According to the survey, 2/3 of the established partnerships with the employment departments were initiated by department and university staff, 1/3 – by business representatives (Chernjuk, 2016);
- business and university representatives determine the main obstacles to the partnership in

different ways. So, in the opinion of the representatives of higher education, the main barriers are the lack of awareness of the business about the possibilities of cooperation with the IHE and the orientation of the business only for a quick profit. And to the opinion of the companies, there is the lack of understanding by the higher education institutions of the realities of the business world and the bureaucracy of the IHE.

The basis for constructing a methodological approach for forming the interaction between IHE and the business is the justification of the principles and perspectives that make up its functional and organizational structure. The principles of the interaction between the IHE and the business are given in Table 1 (Dasgupta, Gupta, & Sahay, 2011).

These principles allow forming the perspectives that underlie the conceptual scheme of the methodical approach to the formation of interaction and adaptive use of the appropriate forms of cooperation between the IHE and the business. Perspectives of interaction are shown in Figure 3.



**Figure 3.** Prospects for the formation of interaction between IHE and business

Thus, the target perspective reflects the purpose of the methodological approach to the formation of the interaction between the IHE and the business, which consists in choosing and adaptive use of appropriate forms of cooperation between the IHE and the business, based on the justified need for a permanent change and the choice of new forms of such cooperation.

The subjective perspective shows that the interaction of IHE and the business should have been supported and stimulated by the state, that is, the partnership model is being built as a collaboration between the three entities such as IHE, the state and business. Each component of the subjective perspective acts as customers or consumers of educational and scientific services and has its own preferences.

The perspectives require legislative and regulatory support, which forms the content of the instru-

mental perspective of the proposed methodological approach.

Organizational perspective contains a selection of all possible effective and practical forms of interaction of the IHE with the business, which are divided into standard (universal), those which have long been used in the national educational system, and specific (contemporary), which are becoming widespread at the present stage of development the market of educational services, the labor market and the innovation economy of the country as a whole.

Effective perspective is the definition of a certain form of interaction between the IHE and the business, depending on the level of readiness of the subjects of such interaction to the partnership in the educational and scientific activities. In addition, the partners of the partnership are ready to adjust the forms of cooperation based on the

**Table 2.** Areas and types of interactions between university and business

Types \ Areas	Capital construction, reconstruction and further exploitation of objects: design, construction, maintenance of the object in a proper condition	Maintenance: organization and provision of related additional services	Educational process: participation in educational process, provision of educational services
Software project (contract)	Participation of a private partner in infrastructure projects	Contracts for management (financial, personnel management, etc.)	Educational vouchers and scholarships from the enterprise, material support of students, postgraduates, teachers in the form of grants, privileges, scholarships
	Participation in the construction and equipment of research centers and laboratories	Providing development of material and technical base	Contracts for providing additional educational services (outsourcing), organization and conducting of business games, seminars, trainings, practices; participation in teaching disciplines, examinations, defense of final works
Institutional (creation of new joint innovation structures)	–	Endowment fund	Joint development of educational standards Research centers, joint research projects, technology parks Creation of basic and specialized departments, common educational structures

changing situation in the labor market, educational services market or the market of people’s preferences regarding higher education.

The methodological approach to the formation of interaction between the IHE and the business is based on the following provisions:

Regulation 1. The subject of relations “university-business” is:

- a) specialists with necessary business competencies in order to provide educational services are provided;
- b) diffusion of the results of scientific marketing research into the practice of business in order to modernize the country’s economy in order to subject to the provision of scientific research and scientific and technical services.

Regulation 2. University and business act as equal partners on conditions of mutually beneficial cooperation in order to achieve their goals and interests.

Regulation 3. The interaction between the IHE and the business should be regulated by the legislative and normative base of the country. The latter should create a motivational precondition for the development of effective relationships in order to achieve the strategic goals of state development.

According to Block 2, the possible forms, directions and types of interaction between IHE and

business are considered. It should be noted that the directions and types of partnerships in education are largely dependent on the partnership object, which is aimed at the actions of the partners. The object may be land, buildings and structures, equipment and other property of social and cultural purpose. The results of intellectual and creative work can also be considered as objects of property rights and, accordingly, can serve as objects of partnership in education. Ownership of intellectual products, which was created during the work, as well as all the necessary for this type of object conditions, must be signed in the contract.

Table 2 shows the directions and types of partnerships in education. The basis for choosing the areas of interaction between IHE and business is the object to which the implementation of the relationship is directed. When choosing the kind of interaction, it is necessary to determine the distribution of rights, responsibilities and risks between the partners of the relationship.

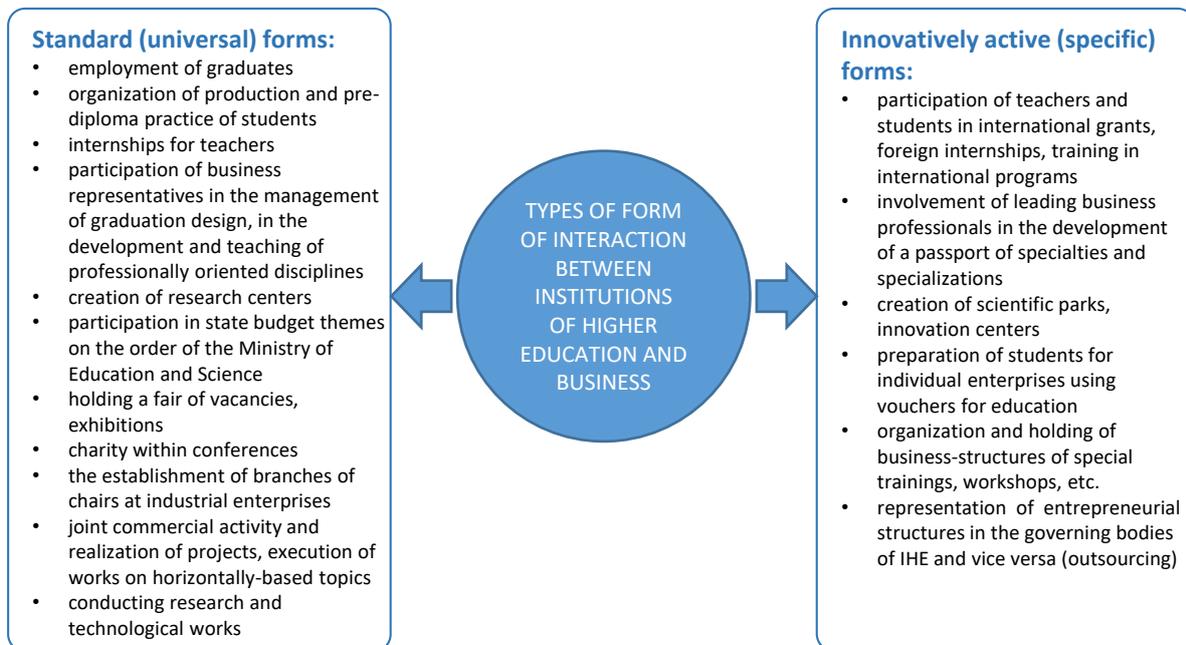
Depending on the changes in the external conditions of operation, which affect the priorities of each of the three subjects of the relationship: the state, IHE and business, it is necessary to form the best forms of interaction. For this purpose, in order to the marketing analysis carried out, it is expedient to select a list of standard (universal) forms of interaction between the IHE and the business, which constitute the invariant core of such interaction and innovative-specific (specific)

forms that arise in connection with the expansion of the autonomy of the IHE, which adopted by the new Law on Education (Figure 4).

According to Block 3, it is proposed to determine the effective form of cooperation between the IHE and the business entities in accordance with prospects, conditions and opportunities for the implementation of such relationships (Figure 5).

According to the position in the three-dimensional positioning model, it is advisable to choose the form that will be optimal considering the existing conditions. According to the three-component model that combines trends, types and forms of interaction, it is possible to identify adaptive and expedient forms of cooperation between IHE and business depending on the existing legislative framework, the possibilities of IHE and the interest of business. It allows to improve the quality of training of specialists in accordance with market needs labor, and, consequently, the degree of academic autonomy of the IHE.

Corrosive form of the three-component model of choosing the form of interaction between the IHE and business is as follows:



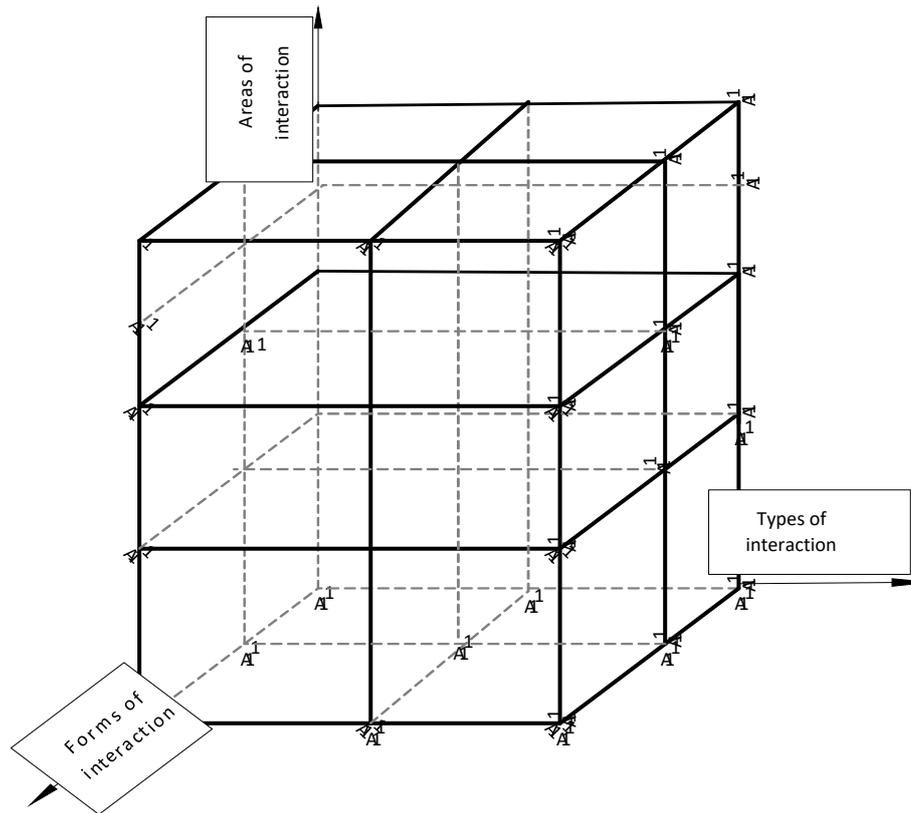
**Figure 4.** Types of standard and innovative forms of interaction between IHE and business in Ukraine

$$I_{FI} = \langle I_{ar}; I_t; I_f \rangle, \quad (1)$$

where  $I_{ar}$  – areas of interaction (Table 4),  $I_t$  – types of interaction (Table 4),  $I_f$  – standard or innovative form of interaction (Figure 4).

Features and positive points of this methodical approach are:

- marketing analysis of satisfaction of the needs of the business environment in the intellectual work workers possessing the necessary enterprises and organizations a set of competencies as an element of effective management of the intellectual capital of the enterprise;
- defining and taking into account the development trends in the country's economy that will allow them to respond to these trends;
- taking into account the direct interaction between the IHE and the business excluding the participation of intermediaries and without the use of state planning, which should ensure that the real needs of enterprises in the intellectual work staff are taken into account as much as possible.



**Figure 5.** Three-component model for choosing the form of interaction between the university and business

## CONCLUSION

As a result of marketing research, the system of benefits that each of the institutes receives as a result of interaction is determined. A comparative analysis of the forms of university cooperation and business structures in Ukraine and abroad is conducted. The methodical approach to the formation of interaction and adaptive use of appropriate forms of cooperation between universities and business structures is proposed.

A marketing analysis was carried out that allowed us to determine that the model that meets the following requirements would be the most effective for university partnerships and business structures. The principles of interaction between the university and business structures are given. The directions and types of partnerships in education are determined. The basis for choosing the areas of interaction between universities and business structures is the object on which the implementation of the relationship is directed. When choosing the kind of interaction, it is necessary to determine the distribution of rights, responsibilities and risks between the partners of the relationship.

Based on the conducted marketing analysis, the list of standard (universal) forms of interaction between the university and the business environment, which constitute the invariant core of such interaction and innovative-specific (specific) forms that arise in connection with the expansion of university autonomy, is highlighted. The three-component model, which combines trends, types and forms of interaction, is proposed, it is possible to highlight adaptive and expedient forms of cooperation between the university and business structures, depending on the existing legal framework, the possibilities of the university and the interest of business structures, which allows to improve the quality of training of

specialists in accordance with the needs of the labor market, and, consequently, the degree of academic autonomy of the university.

Consequently, the general content of the methodological approach to the formation of interaction and adaptive use of appropriate forms of cooperation between the IHE and the business is that the IHE assess the perspective needs of enterprises and organizations in intellectual work workers in order to prepare the necessary personnel for them, that is, in order to meet the existing demand according to its quantitative and qualitative parameters.

In order to stimulate and intensify cooperation between university and business, it is necessary to develop an effective model of interaction, first of all, the state needs to improve the legislation that would allow, simplified and stimulated such relationships. The model of interaction should be built on the following elements: to be strategic; have an impact on the general level of training of specialists; have clearly defined long-term goals and results of interaction; use a complex of forms of cooperation that have a logical relationship with each other.

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