

Using The Experience Of Developed Countries In Developing A Consortium Between Higher Education Institutions And Production

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Abstract: *Creating its own National model of education, Uzbekistan was based on the proven experience of countries with a developed education system, including the provisions of the Bologna process.*

Key words: *fundamental, economy, consortium, experience, innovative.*

1. INTRODUCTION

Today, the country has significantly stepped up efforts to transfer the economy to an innovative path of development.

One of the fundamental documents for the development of the country was the Decree of the President of the Republic of Uzbekistan up-4947 dated February 7, 2017 "Strategy for action in five priority areas of development of the Republic of Uzbekistan in 2017-2021" with the approval of the "Road map".

Over the past two years issued a number of Regulations and presidential Decrees for the development of the higher education system in the country: "On measures for further development of the system of higher education", PP-2909 from 20 April 2017 a Program of integrated development of the higher education system for the period 2017-2021, "On further improvement of postgraduate education", up-4958 dated February 16, 2017, "On measures to increase the participation of branches and spheres of economy in the improvement of quality of preparation of specialists with higher education" PP-3151, dated 27 July 2017, "On additional measures to improve the quality of education in higher education institutions and ensure their active participation in the country's large-scale reforms", PP-3775 of June 5, 2018. 21 September 2018, issued by the President of the Republic of Uzbekistan up-5544 "On approval of strategy of innovative development of the Republic of Uzbekistan to 2019-2021 years", where the main goal of the Strategy is the development of human capital as the main factor determining the level of competitiveness of the country on the world stage and its innovative progress.

To achieve the main goal of the Strategy, the main tasks are defined as: improving the quality and coverage of education at all levels, developing the system of continuing education, ensuring the flexibility of the training system based on the needs of the economy; strengthening the scientific potential and effectiveness of research and development, creating effective mechanisms for integrating education, science and entrepreneurship for the wide implementation of the results of research, development and technological work.

Based on the above-mentioned tasks set by the state for educational and scientific institutions, the problem of "Directions for the development of a consortium between a higher educational institution and production" is relevant.

Creating its own National model of education, Uzbekistan was based on the proven experience of countries with a developed education system, including the provisions of the Bologna process.

The main characteristics of higher education meet the recommendation standards of the International standard classification of education (ISCED), adopted by the UNESCO General conference in 1997. ISCED, as a tool for collecting, processing and analyzing comparable indicators, helps to adjust, and sometimes make changes and corrections when reforming national education models.

The Republic of Uzbekistan develops multilateral cooperation in the field of education with various countries, international missions and non-governmental organizations.

Many international organizations and projects in the field of education and training are actively operating in the Republic of Uzbekistan: the UNESCO office in Uzbekistan, the CES Uzbek Bureau with many EU projects (TACIS), the ETF, the DTC, the ADB, the Adenauer Foundation, the CAFE, the Peace Corps, and many others.

The national education system also covers international cooperation, which is clearly evidenced by the fruitful work of the Tashkent branches of the Plekhanov Russian University of Economics, as well as branches of the Lomonosov Moscow state University and the Gubkin Russian state University, the universities of Westminster and Turin, as well as the Singapore Institute for management development.

In order to ensure the quality of education in accordance with international requirements, the State educational standard of higher education and the Classifier of areas and specialties of higher education were developed.

The state proposes a strategy, outlines the directions in which the integrated system of national science and education should move, and the economic sector should specify the strategy.

Most Universities with scientific traditions conduct world-class research in dozens of industries and many different areas at the same time. These are such research centers as the University of California, Harvard University, the Massachusetts Institute of technology, Moscow state University, and others.

At the same time, in countries such as China, India, and South Korea, scientific and educational universities appeared not as a result of evolution, as a response to a request from business, but were created by Directive, by combining state scientific and educational centers. In such research centers, scientific research is conducted in several related areas.

The long-term experience of the United States in the interaction of universities and industrial corporations shows that the concentration of University efforts only on improving bilateral relations with one enterprise in the future is ineffective. We need an extensive system of scientific and educational relations. A knowledge-based economy requires the efforts of not only commercial firms and universities, but also financial and credit institutions, government agencies, non-profit organizations, and the media.

The network nature of relationships in the cooperative interaction of science, education and production is the most optimal. Higher education institutions that do not participate in interaction with business structures are in a vulnerable position. They lose their sources of financial income, lose their position in the eyes of the public and the business elite, and lose their prospects for participating in international scientific and educational cooperation. They reduce the possibility of successful employment of their graduates, which leads to an outflow of potential applicants.

Another consequence of the difficulties in establishing interaction between business structures and the educational community is the creation of corporate universities. Traditional business schools, which are structural divisions of universities, are often disconnected from real commercial practice and do not meet the needs of commercial companies. Therefore, the creation of corporate universities takes place outside of traditional higher education, according to its specific laws. There are already more than 1,600 corporate business schools in the United States.

The most successful project for establishing partnerships between business and the scientific community in the UK can be called the Faraday Community. They are an extensive network of organizations, including firms, trade associations, research bureaus, and universities. The main goal of these communities is to ensure the maximum exchange of the latest scientific and technological information, which is designed to increase the competitiveness of British industry in world markets and the economic prosperity of the country.

The Faraday communities are also supported by government agencies: the total annual investment in research is more than 100 million pounds. Between 2002 and 2003 alone, more than 1,700 companies joined the Faraday Community, and the number of teams of scientists engaged in specialized research grew to 381.

Research funding is often provided by commercial firms themselves. Specific forms of such events are as follows:

- * research customers are directly private companies;
- * companies are involved in research financed by the state.
- * Main types of cooperation between business structures and higher education institutions:
 - * research projects, partnership in publishing the results of scientific discoveries;
 - * practical activities in the use of patents and copyrights;
 - * transfer of knowledge and technology through the exchange of students and teachers between universities and enterprises;
 - * creation of subsidiaries of corporations, as well as the formation of new firms as a kind of incubators of new scientific developments and business models.

Higher education institutions in the United States differ from those in Europe. For them, it is more typical to involve business in the administration system, when representatives of the largest firms become direct developers and managers of educational programs and courses. The basis of this policy is the recognition of a certain type of knowledge that business representatives possess. The experience they have accumulated, according to the developers of such initiatives, can be very useful in shaping the educational space of the future. On the other hand, researchers recognize that business is just as dependent on universities. Today, a successful career in the United States is impossible without a University degree. In the US, universities are less dependent on the state. The sources of funding for universities are not laid down in the country's budget, but in various grants, ranging from donations to large investments. Universities, being limited in funds, are more actively involved in cooperation with business and see it as a necessary partner. Thus, the key to the success of American universities is the diversification of funding sources and the expansion of the research field.

American business structures are a regular customer of scientific and educational services, which, in addition to practical training of students, provides higher education institutions with funding: private corporations account for almost 60% of financial revenues to University science.

Specialized centers for the transfer of intellectual labor products to world markets are also being created in the United States. Such centers usually operate independently, but are listed as structural divisions of universities.

Transfer centers select the most promising projects, provide legal protection of copyrights, and protect the national interests of the United States in the implementation of high-tech products on the world market. US universities are not limited to the development and development of educational programs. Increasingly, there are statements about the so-called "transit of education" associated with the consequences of globalization. The growth of the information space implies greater accessibility of higher education. Accordingly, universities are faced with the task of realizing the existing potential and finding ways to transfer knowledge using the latest technologies and tools. Hence the widespread use of distance learning, organization of trainings and seminars. Business is also involved in such processes. The intensity of corporate activity encourages them to actively involve universities in their field of activity. Businesses can offer the implementation of the technological component for universities-the purchase of new equipment, installation of the latest devices, waiting for the results of scientific experiments or professionally trained specialists who are ready to work for them.

The US experience shows that interaction between universities and business is burdened with a number of problems.

The first of them is the human factor. Due to the peculiarities of professional training and ideological stereotypes, many scientists and University teachers cannot work "in the rhythm" of business. Entrepreneurs and University employees think differently, in fact "speak different languages".

* The second problem is the length of time performing research and development. The average period of the initial cycle of conceptual development of an innovative idea is 3 years, i.e. practically a "dissertation period". For businesses, this period may turn out to be a period of competitive losses.

* The third problem, which is largely caused by the wide diversification of administrative functions of universities – is numerous bureaucratic formalities and procedures, which sometimes significantly slows down the pace of work. The bureaucratic nature of universities' activities leads to the choice of a strategy to avoid any risks.

* Risk is one of the fundamental foundations of any business, but it is a legitimate concern for University officials. Commercial firms are guided by deadlines and results, and universities are guided by compliance with all stipulated regulations, even if this is done to the detriment of the final result. Such differences are unavoidable, so you should develop a mechanism to smooth them out.

* The fourth problem is related to bureaucracy. The experience of US universities shows that in the course of optimizing the work of universities, one should avoid the extremes of centralization and decentralization. On the one hand, in order to coordinate the efforts of various internal departments of the University and the firm, it is necessary to concentrate maximum powers in one hand, creating, for example, a special Department or Department that deals with consulting, processing applications, drawing up contracts.

It is particularly important to organize a single information service that provides accurate and timely data to all participants in joint projects. However, any centralization ultimately leads to overloading the management structures with various small tasks, as well as complicating and slowing down the decision-making process. Delegating some of the authority to grassroots departments is a very optimal option for establishing a mechanism for interaction between universities and business structures.

*The fifth problem is that a serious obstacle to cooperation between universities and business structures is the special nature of the internal culture of universities, in which teaching and research work is in the first place. Result orientation and profit generation cannot be among the top priorities in these conditions. In this regard, it is likely that

universities, encouraged by the prospects of partnership with business, will evolve towards greater commercialization, when "education will be replaced by "educational services".

As for the participation of universities in the development of regions, universities can perform various tasks at the regional level, depending on the characteristics of the regional industry. They:

- encourage the development of new enterprises based on research activities;
- contribute to the import of firms ' activities and the formation of a local level of their development;
- engage in the diversification of the existing industry, expand the range of its technological activities by using the latest research, as well as organizing forums for the exchange of views;
- they contribute to updating existing technological knowledge by entering into research contracts, consulting, and conducting educational programs and trainings.

Leading American universities are 20% to 30% funded by the profits they make from property consisting of real estate, company shares, government bonds, and other assets (capital funds). Income from the management of this Fund plays an important role in universities such as Harvard, Princeton, Yale, and Stanford. At the same time, in developed countries, neither state laboratories nor universities can compare with corporate science in terms of funding and the number of scientific personnel: 70% of the R & d conducted there is funded by corporations and only 30% by the state. In Uzbekistan, 3/4 of R & d expenditures come from the budget.

Despite the positive dynamics of Uzbekistan's socio-economic development, there have been no qualitative or quantitative changes in the scientific and technical sphere in recent years. Due to the passivity and financial instability of enterprises, science funding is mainly carried out at the expense of the state budget. In 2015, the share of science funding from all sources in GDP was 0.2 %. For comparison, this indicator is used in developed countries: Japan-3.0 %, Germany-2.8 %, the United States-2.8 %, Sweden-2.6 %, France-2.4 %. In most developing countries, this share is about 2.0 %. At the same time, a third of the total funding is provided by the state.

Of particular interest is the cost structure by source of funding (table 1.1). Budget funds (57.9%) take the first place in R & d financing, followed by enterprises 'own funds (21.7%) and customers' funds (15.8%). In 2015, the share of expenditures on natural Sciences accounted for 32.3%, technical - 34.5%, medical - 7.8%, and agricultural-7.9%.

table 1 Structure of sources of funding for R & d expenditures
(macro level, in %)

Source of financing	1995 г.	2005 г.	2012 г.	2017 г.*
Funds of foreign investors	0,0	0,6	2,5	0,8
Money of the customers	37,0	31,0	21,1	15,8
Companies ' own funds	18,1	17,2	10,7	21,7
Extra budgetary funds	3,1	6,5	5,0	3,9
Budgetary funds	41,9	44,7	60,7	57,9

*) Due to changes in the composition and timing of statistical information, data on the structure of R & d funding sources are provided once every 2 years.

Insufficient level of funding for R & d, i.e. innovative development (the share of expenditures on science to GDP is 0.2%, against the UNESCO recommended increase in R & d expenditures to at least 1.0% of GDP). This situation with the knowledge-intensive economy in the future may lead to a slowdown in the investment process and reduce the competitiveness of the country's economy. The share of the public sector in R & d financing

remains high (50.0%) and low for business structures (32.0%), which complicates the orientation of the economy to the investment and innovation path of development. This proportion in developing and developed countries is 30% and 70%;

– there is a trend of aging researchers and the outflow of young qualified personnel from science, which also does not meet global trends;

-mechanisms for attracting foreign innovative technologies, "know-how", foreign investment and personnel to domestic R & d work poorly, which is largely due to the problems of forming the necessary legislative and legal framework.

Despite all the measures taken, there remain serious problems – the maintenance of the building complex of highly skilled experts is still unresolved. This is due to the fact that the growth rate of construction and installation work is faster than the volume of training the necessary personnel. A wide network of professional colleges for training construction professions has been established in the regions of the country. But the main problem is the imbalance of supply and demand in the construction market. The Institute of architecture and construction operating in the Republic is not able to provide all sectors and branches of investment activity with highly qualified personnel with higher education. World practice shows that it is necessary to allocate at least 1.0% of GDP to support scientific, technical and innovative development, which is the threshold value of this indicator. Otherwise, there is a decline in the country's innovation potential and technical and technological backwardness.

As a result of research on the topic, the following main conclusions are made:

a study of the forms of cooperation of higher educational institutions with employers, organization of R & d in universities the reasons of passive development of integration cooperation of education and industry in the conditions of formation and growth of the economy at the expense of investment manufacturing processes. Not enough attention was paid to promising ways of training personnel in investment projects, creating a base for training and retraining personnel in basic universities of the Republic;

limited access to the introduced innovative technology of scientific and pedagogical personnel created difficulties for the successful development of innovative ideas and research carried out by universities;

a review of the experience of economically developed countries on cooperation between education and production proves the need to create an organizational form-a Consortium that unites independent parties with the aim of mutually beneficial purposeful coordination of their activities;

as a result of the research on the development of the consortium of education and production, taking into account the mutual interest of cooperation, the following proposals and recommendations were made:

1. Develop proposals for amendments and additions to the legislation, taking into account international experience, organizational and economic incentives in higher education institutions to improve the effectiveness of innovative cooperation;

2. Determine the development of regulations on the use of the innovation support Fund for economic management bodies and large state-owned enterprises, which is formed as a means of deducting 10 percent of the net profit of these entities, based on the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated January 12, 2018 No. PCM-24;

3. Based on the tasks set out in the President's speech at the solemn session in honor of the Constitution, to forecast the needs of the real economy in personnel for at least 10-15 years ahead and on this basis to train them, based on the experience of foreign partners, we propose to create an Agency for determining forecast professions and qualification requirements under local government bodies, in cooperation with large economic entities.

4. in higher education institutions, develop methods for identifying students ' aptitude for future activities in scientific and pedagogical, industrial, entrepreneurial, and other areas, and

organizing targeted training. At the same time, organize courses with cooperating employers to prepare a young specialist for a specific profession during the training period and subsequent years.

5. Encourage the establishment of partnerships between Uzbek and foreign universities, as well as Uzbek universities and foreign and domestic industries. Conduct regular and independent market research to assess the national economy's requirements for the professional skills of University graduates.

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