

Analysis of Foreign Experience of Industrial Enterprises on Competitive Training of Educational Institutions

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Abstract

The article considers three main types of integration of education, science and business. There are: American type, Japanese type and Mixed type. The main role in American type of integration plays Research University; the main role in Japanese type plays Government; the main role in Mixed type (mostly prevalence are in Central and Northern Europe) plays technological parks. The article considers merits and demerits of these types

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I. Introduction

The modernization of higher education in Uzbekistan is currently underway through the introduction of a new system of education, science and business integration into the national practice. This integration has been successfully implemented in many countries of the world and proves its effectiveness not only as an effective training model, but also as an innovation channel for the development of various industries and regions. This model is based on research universities. Such a university will become not only an educational center where students can gain new knowledge, but also the state and economic department with qualified workforce, as well as a scientific center for modern developments.

The concept of the research university was introduced in 1994 by the Carnegie Center for the Advancement of Science in Science. This notion has been used to distinguish traditional

universities and universities with a strong scientific base, innovation centers, and research parks. The concept of research universities is a comprehensive concept that combines two important aspects: generation and dissemination of knowledge, which reflects significant differences between research universities and traditional universities.

In European countries, the traditional (classical) university, which has a model to this day, is a generator of knowledge. In Europe, knowledge is considered the fate of nobles, and universities have studied the occult academicism. Universities undertook the dissemination of knowledge in the United States in the second half of the 19th century, when higher education was offered to disadvantaged groups. This was a fundamental change in the field of education. Since the 50s of the 20th century, the task of spreading knowledge has been enriched by more important aspects.

Stanford University, which founded Silicon Valley, was the first tech park to spread

knowledge, and it was like introducing scientific ideas and innovations into the economy. This study was based on a university model. It was the basis for the socio-economic development of certain regions and the country as a whole.

The idea of creating scientific technology parks and introducing innovations on US-based university campuses became popular in the 1970s and rapidly evolved over the past 20 years. Among the countries affected by the new idea are the UK, Canada and Australia. France, Germany, Belgium, and the Netherlands followed them. Japan was the first country to set up a scientific center in the eastern part of the world in the 1980s. China, Hong Kong South Korea and other eastern countries followed Japan.

Undoubtedly, the various historical, socio-economic development of the countries has contributed to the emergence of several types of integration models. There are three types of integration models in science today.

II. Theoretical background

The American type of integration is the first to be recognized by the United States, the United Kingdom, and the countries affected by Canada and Australia. The key role in this is played directly by the main unit of integration - research universities. The university is fully responsible for implementation and implementation of innovations, improvement of relations with industrial enterprises, attraction of state grants, improvement of education quality. All decisions are made by the university and are exempt from any obligations to the state.

Except for the provision of quality education to students on the basis of state standards, ie the fulfillment of the social order. This implies an increase in academic and research workloads, an increase in the level of scientific knowledge and the field, as well as the performance of the contracts for the winning grants (government

order). Interestingly, the American professor, who has 57 hours of training week, spends 43% of his working hours on teaching, 31% on research and 26% on administrative and public assignments. All of these will encourage universities to compete for entrants and funding, which will lead to an increase in the number and quality of research in education. There are two types of this type of integration model. The first is the world-famous Silicon Valley and the second is Road 128, which crosses Boston at least. Silicon Valley is a product of Stanford University.

III. Main part

The distinctive feature of this American integration model is that, at the initiative of the university's administration, business incubators have been established on its campus for science and technology parks and small firms. University-owned buildings are leased to small firms with concessional contracts. In many cases, this is due to the fact that even if the firm collapses, the university's income is higher than the rent. Thus, small businesses, founded on the scientific ideas of graduates of higher education institutions, are taken under the wing of the university. In addition, these firms will receive 5-year tax holidays on a three-year basis to encourage their development. Small firms that have subsequently grown to the size of giant (big) companies include Estmancodack, Google, Hulett Packard and others. These firms will be able to access legal, economic and management consultations for the strategic development of the company to gain access to new research university developments.

The American integration model is presented by Road 128. The difference is that smaller firms are located near the university and have more independence. In this system, the control center is not in the hands of the university administration. Boston University, like Stanford University, encourages these firms to actively collaborate and

offer them academic services and a wealth of advice. Thus, there will be a two-way advantageous opportunity for small firms to develop their own university-based research. However, such firms are established not only on student's initiative, but also often with the help of large companies and medium-sized firms.

It is well known that large capital prefers to invest small to establish a small firm because the loss of the firm will be small and, if developed, will buy its assets and profits. The benefit of the university is that the discoveries made by such firms are patented by the university, so the university and inventor share some of the profits from the sale of patents of large corporations. In both types of integration model, many graduates do not have to look for jobs.

Analyses

This will create the basis for the socio-economic development of the region. Through the University's Technical Licensing Unit, graduates can obtain a patent for their own discoveries and earn future profits (the sale of these patents from the United States to Europe and Asia would result in significant investment in the country). In the US, there is even the concept of a "licensed alien" called "Built Under Susense." In practice, however; A foreign manufacturer of aircraft manufacturing in a poorly developed country will acquire a license for the technology required in the United States and apply it for future aircraft manufacturing.

Professor of Columbia University D. One example of this is the discovery of MRES-4 by Anastasiosis. In 1997 alone, the Columbia University's Innovation Organization signed licensing agreements with more than 40 private companies that give them access to this digital standard. The main benefit of education is to involve students in research activities based on the existing Learning by doing model.

This type of integration model originated in an emerging country and has been developed by countries such as China, Hong Kong, South Korea, Brazil and India. The key role in this integration is played by the state. This model can be described as the development of science. The government undertakes to oversee innovation, research and development activities. The state acts as a major customer of technology. Unlike the American one, which considers the origin and development of integration as a natural process, the Japanese type is a process of artificial preservation of the integration model. This process is jokingly called the "migration of science." This form of integration is known as "technopolis". Technopolis is an area where scientific laboratories with state finances are set up to function perfectly with advanced infrastructure. There are private barber shops, shops, and even airports. Sometimes new university campuses will be built, and sometimes old institutions or universities (through merger or division) will be reorganized. Scientists and teachers from all over Japan come to the city. Most of the research activities are not universities, but the national educational laboratories take over. National laboratories and research institutions from the state or large businesses will receive grants for new technology development. This is the contribution of students in the integration of the Japanese type. Students are assigned to carry out research, and under the guidance of a teacher, they perform the task in the lab. Similar to the American integration principle, engineers are trained. It is worth noting that in the former Soviet Union, science was formed in the form of cities of knowledge, but the difference was that they were "closed" - the centers did not perform the dissemination of knowledge, where students did not receive higher education. The single customer was the state, and in Japan the private sector as a customer would be a large financial corporation.

Mixed form of integration. This form of integration is common in Germany, France, Belgium, the Netherlands, Finland and other European countries. The main role here is played by the usual techno-park structures. These may be technical or research parks, and sometimes they become agro-amelioration, like techno polis, but not for the state's activity, but for the operation of the parks. The state assumes the role of a customer, as well as private business, and creates favorable tax conditions.

Universities in European integration (excluding the UK) often perform educational functions, even in Japan, and do not consider industrial and technological developments and their commercialization, but actively involve relevant organizations. Sometimes, technical transfer centers get orders from commercial firms for product development, students also participate in product development, and practice training (Architectural modeling, dress design, etc.). In these cases, however, the following centers are not "inventors" but "cheap labor" - private contractors for specific products using students (naturally, in contract terms). In other words, they do not create new scientific products, but improve the already developed ones. There is also the possibility of opening specialized state-funded research centers, as in the case of Russia's Skolkovo model. Or university research laboratories, universities are less interested in this type of integration as mediators between science and education.

The most successful form of today's integration remains the research university. This can be explained for a number of reasons. As previously noted, the research structure of the university included research centers or laboratories, in other words, the Newton apple, the rotating Diogenic Fountain, and the burning citadel of science. This is especially helpful for students. If research laboratories gain administrative independence, universities will have to engage them through

additional contracts. Occasionally, such collaboration will be impossible (impossible) for other lab participants, for example, when a large commercial company is a customer. Government intervention will undoubtedly result in such cooperation, but the process of knowledge generation, their transfer to education, and their further development (implementation or disruption) will take a very long time. At the University of Research, however, the process is less time consuming and less costs and administrative costs.

Incentives are also an important aspect. When a student sees a real future (ie, getting a patent for his own development, setting up a firm on preferential terms, getting qualified help when needed, etc.), his motivation will increase rapidly. The ability of the student to find a job in any of the administrative, managerial, and other areas of expertise, and not in science, is eliminated by the fact that there are many companies that need a university or specialist. This, in the end, will provide the whole state economy and the socio-economic stimulation of the region.

While universities play an important role in the process of integration, along with the numerous American-style achievements, there are some serious disadvantages. One of them is my academic capital

The notion of "academic capitalism" emerged in the 1980s Beale Dale act of the last century. The act provides for its own research, in addition to considering the ownership of a patent for its discovery in the scope of research on federal and other grant programs. In other words, if a university employee in the process of research is funded by the Federal and municipal governments at the time of the creation of a novelty, the patent can be patented, and then the right to benefit from the discovery goes to the creator of science and the university. Revenue is divided into three parts: one is received by the inventor, the other by the university, and the other by the school where the

discovery is made. American analogs in Uzbekistan may be institutes or faculties. The university is just like an unprofitable corporation - it sells licenses and conducts business. The essence of the conflict is that universities must carry out educational activities - not only to generate, but also to distribute knowledge, knowledge, and licensing agreements at the same time to keep them a commercial secret. Numerous scientific books have been written on the subject in the United States. This is a really systemic problem. Another disadvantage is the regular increase in tuition fees as a result of university commercialization. This is bad for parents and students. According to statistics, the US is ranked 13th in the world for the opportunity to pay for higher education (Germany is 8th for comparison, 7th for Russia), but according to the same statistics, the US has the fourth highest education accessibility (compared to Germany 11). Russia) In the top 20, these are explained by tuition grants, tuition fees, and other donations. There are 7 educational channels available 1) Federal grants 2) Deposits (interest rates start at the moment of graduation from a university) 4) University Work (Canteen, Library, etc.) 5) Scholarships, various federal programs and state programs, private foundations, or private sponsors. Statistics show that in reality, education can solve problems.

The successes of the American integration method can be counted for a long time, and its shortcomings can be underscored, but at the moment this model is showing better results. And the Massachusetts Department of Technology's technical licensing division ended with a \$ 76.2 million profit. This is a high rate for organizations of scientific and business processes.

IV. Conclusion

Obviously, state involvement and large entrepreneurship are important in the integration of science education and production, but it is almost impossible to achieve without university

participation. That is why many scientific centers, which are isolated from education and business centers, are often ineffective.

Historical experience shows that at the present stage, Japan is gradually shifting to the American type, so that even Japan, which created its own type of integration, can maintain its traditions. This type of accelerated integration is indispensable for developing countries, but it is limited by certain limits. European colleagues, however, are increasingly trying to synthesize both types, taking into account the social, economic, cultural and historical conditions that have arisen in their territory.

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