Entrepreneurial Universities as a Modern Development Stage of the University 3.0 Concept

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Abstract

The article analyzes the formation of the entrepreneurial potential of students through the gradual introduction of the concept “University 3.0”, which provides for an inextricable link between the commercialization of the results of education, science, innovation and research in the field of higher education.

Keywords

University, Business, Techno-park, Business Incubator, Commercialization, University of Entrepreneurship, Startup.

Introduction

The processes of globalization, active integration, intellectualization and digitalization that are gaining momentum in the global economy today require the search and application of new growth models, even for deeply rooted social institutions. Higher education institutions cannot be left out of these processes. In this regard, the models and
methods of development of higher education, both in our country and abroad, are constantly discussed. Among them is the “University 3.0” model.

The existing “University 1.0” model in the education system is limited to teaching only. “University 2.0” - includes teaching and research. According to the Decree of the President of the Republic of Uzbekistan “On approval of the Concept of development of the higher education system of the Republic of Uzbekistan until 2030”, the “University 3.0” model, which is planned to be gradually introduced in the country, is a model of commercialization of education, science, innovation and research. In the “University 3.0” model, the university will be able to sell the results of its own research. For example, a university can open a separate technopark, create scientific developments and directly commercialize their developments. At the same time, graduates are not only provided with knowledge and its implementation.

At the beginning of the 21st century, the traditional, classical model of knowledge transfer and teaching has been replaced by the concept of University 2.0. According to him, the university has become a source of new knowledge and a center of consulting services for market participants. The University 3.0 is a new type of educational institution that must actively participate in the processes related to technological entrepreneurship, business development and the formation of new markets. Higher education institutions of this format will serve as a “driver” for the innovative development of Uzbekistan in the next five to ten years.

The University of the Future is an educational institution where graduates go to specific enterprises, companies, government agencies, and third- or fourth-year students are clearly defined depending on the prospects in the workplace.

It is very important to create professional teams involving students from different universities, for example, to combine the projects of economists with engineers, physicists, programmers. Then it will be possible to create a smart, modern business. Ensuring the joint development of research institutes and universities is an effective direction. Fulfillment of target orders of market participants should serve as the main source of funding for both students and universities.

**Methods**

Universities should be a place where knowledge and skills are accumulated that shape thinking, stimulate the thinking process of students. The more competent a university is to respond to changes in the environment, the more relevant its student mandates will be if it
coordinates its work with corporations. “University 3.0” is a living organism that is in active contact with the environment, understands what to teach students, where they go, who obeys their orders.

With the introduction of the “University 3.0” model in universities, it is necessary to create departments for the development of student entrepreneurship. University 3.0 is a university that works within the boundaries of science, and in addition to developing entrepreneurial competencies, it also promotes the academic component so that students from five to six years do not lag behind those working in the market. The university must work before the curve, defining the future.

It doesn’t matter what the university can offer now and how it sees itself in the future, most importantly, the demand from the external environment, the requirements for the university in the next five, ten or more years.

The needs of the economy are more important for the “University 3.0” model. Today, the economy is increasingly demanding productive communities that are able to create jobs, add value, open a new segment, a new market, build it, and thereby develop the economy.

It is necessary to teach students to work in the real sector of the economy, to try to direct them to a future with many promising ideas.

Today, corporations are not interested in training specialists themselves, but in cooperating with universities and even schools. In the past, employers have said that basic knowledge is important to them and that they are already making good adjustments within the corporation. Today, the requirements have changed: people are less socialized, they have access to the Internet, and it is important for the employer that employees have open, communicative, advanced cognitive skills.

Human behavior and social qualities are of paramount importance. Teachers who are now teaching their experiences to young people need to be more open. Why are inventions of 1990-2000, research collecting dust on archive shelves? Manufacturers of new ideas of their time in them could not bring to market because research institutes did not have the appropriate competencies, knowledge of industrial design, prototypes, marketing. For this reason, national startups are unique: they provide a link between the older and younger generations. This is the foundation of 3.0 University.

In the literature and circulation, the “University of Entrepreneurship” has recently been referred to as University 3.0.
Key Features of University 3.0:

- The formation and commercialization of knowledge as the main task of the new generation university;
- Enhanced cooperation with industrial companies, investors, venture funds, large corporations, research organizations and other universities;
- High international ratings;
- Active selection (competition) for the best professionals, students and research contracts;
- Globalization policy - teaching is conducted in English (teaching in English);
- Mainly conducting interdisciplinary research;
- A diverse faculty and student structure that is relatively close to the university 1.0 model (universities are becoming more multicultural, allowing students to develop not only research but also cultural and communication skills).
- Reducing dependence on public administration and intervention.

To date, researchers have identified two models of entrepreneurship universities:

- As a result, the university is an entrepreneur - this model provides a favorable environment for entrepreneurship training of students, teachers and graduates, in which teachers and graduates work in partnership with high-tech start-ups and mergers created by innovative companies;
- University or entrepreneur-university, depending on the type of activity of the management team - this model involves the creation of a strong research center, develops and markets new scientific and technical products, thereby attracting financial resources and becoming fully independent of public funding.

Acceleration programs to increase the role of the University of Entrepreneurship, the creation of new teams, mainly young people, successful start-ups (“Beginning of the process”), “spin-offs” (“advertising, message delivery”, “collaborative outcome”) plays an important role.

The University of Entrepreneurship is:

First, the university is an entrepreneur within its mission;
Second, the university-innovator, its subjects are innovative, its activities are innovative its products are innovative;
Third, the university-integrator, the activities of all its subjects are focused on the end result and are carried out in sync with the regional community. He is a member of “strategic associations” in cooperation with leading local and foreign universities.

The first university in Europe in the form of entrepreneurship has been Halmers University (Gothenburg) since 1994.

For the first time, the term “University of entrepreneurship (institute)” was coined by British researcher Burton Clark to describe the creation of business institutes. Organizational Ways of Transformation”, the author of the concept of “University of Entrepreneurship” is a professor at Stanford University Henry Itskovits.

The main aspects of the University of Entrepreneurship:

First, entrepreneurship universities engage in social entrepreneurship. P. Drucker believed that “entrepreneurship is neither a science nor an art – it’s a real activity, a practice”.

The essence of the University of Entrepreneurship can be expressed even in the following 4 aspects identified by Y. Shumpeter (1883-1950):

- Striving for innovation;
- Knowledge of risk;
- Self-confidence;
- Feeling of independence.

Second, it has a multi-channel system of financing its activities. Its main sources are:

- Implementation of educational services;
- Publication and sale of educational and methodical literature;
- By attracting joint commercial projects from business Raising funds;
- Proceeds from the implementation of regional orders;
- Government orders;
- Graduates;
- International philanthropic (sponsorship, charity) organizations;
- Fundraising (fundraising for various purposes);
- Endowment (charitable investment fund, a very important support for the university community).
Thirdly, it constantly comes up with initiatives to engage in new activities, such as increasing competition and diversifying activities, improving marketing services.

Fourth, it undergoes a profound transformation in accordance with its internal power (permutation). University of Entrepreneurship is an ambitious goal + effective organizational change. The business organization will need a new balance between science, education and innovation.

Innovation and project-oriented include both education and research. As a result, the concept of professionalism changes, interdisciplinary teamwork method is approved. In scientific research, the main focus is mainly on applied research and innovation development.

Fifth, bringing international relations to a new level by interacting with the external environment. The multifaceted interaction of the University of Entrepreneurship with partners can be considered through the principle of “triple spiral” of H. Itskovits: business, government, university.

The model of the “triple spiral” is based on the following assertions of H. Itskovits:

1. The principle of the possibility of joint entrepreneurial activity of business, government and the university;
2. In the government, business, and education model, they are closely intertwined, and the university plays a key role in the innovative economy.
3. The interrelationships between the indicated subjects are getting closer and closer, and the boundaries are gradually disappearing.

Medieval universities were modeled on the universities of Bologna and Paris, the Humboldt University in Berlin and the German classical university model were important milestones for next-generation universities, and who is the model for 3.0 universities? The leaders in the field of university 3.0 are Massachusetts Institute of Technology (USA), California Institute of Technology (USA), University of Cambridge (UK), Stanford University (USA), National University of Singapore (Singapore), Tel Aviv University (Israel) and others. Let’s take the example of the Massachusetts Institute of Technology (MTI).
Results and Discussion

The Massachusetts Institute of Technology was founded in 1861 in Cambridge, Massachusetts, USA. Its annual budget is $3 billion. In 2017, the total number of students was 11,000. MTI is the largest research center in the world, 89 of its members have been awarded the Nobel Prize, and for the past 5 years it has ranked first in the world ranking of QS universities. The Massachusetts Institute of Technology is based on the German Polytechnic Education Model and includes 5 world-renowned research laboratories such as the Lincoln Laboratory, the Laboratory of Informatics and Artificial Intelligence, and the School of Management.

Since the establishment of MTI, an interdepartmental research strategy has been developed for researchers, not limited to research areas, as a result of which the institute has actively developed cooperation with industry and other research organizations. Today, MTI works with more than 700 companies that work with teachers and students in general education programs and small associations. In 2016, research sponsorship raised more than $200 million, accounting for 19 percent of total funding for research at the Massachusetts Institute of Technology.

According to the U.S. National Science Foundation, MTI ranks second among all universities and colleges without a medical school in the development of science-funded developments and research. With the licensing and patenting of technologies, commercial investments are made in inventions and discoveries at the MTI and Lincoln Laboratories. MTI training enables engineers, scientists and researchers to become well-known and sought-after professionals.

A new stage in the development of the University 3.0 model was the emergence in universities of science parks, which opened in the United States and Canada in the 50-60s of the twentieth century.

According to the International Association of Technology Parks (IASP), a science park is an organization run by specialized professionals whose main goal is to increase the welfare of society through a culture of innovation and the competitiveness of business and innovation companies. To achieve these goals, the Science Park encourages and directs the flow of knowledge and technology between universities, research institutes, companies, and markets; contributes to the creation and growth of innovative companies through the incubation process, as well as providing other services and high-quality equipment and facilities.
Science parks can be classified according to the number of employees, the area occupied, the specialization and other factors. The first technopark was opened in 1951 at Stanford University in California, USA, and later became known as Silicon Valley. Thanks to Silicon Valley, California has become an international hub for technology, research and finance. The structure of the technopark can be divided into 4 parts:

• Business area (business area) involving one or more business parks, including small and medium innovative businesses, as well as prototype companies;
• Department of Research and Development (R&D), consisting of research centers and laboratories;
• Scope of technology services including business incubators, consulting companies, licensing and patent centers and other services;
• The scope of general services includes computer centers, power grid, library and others.

Henry Itskovits, an American scientist and professor at Stanford University, also discussed the need for interaction between universities, businesses and the state in the “Triangular Spiral” model. The “Triangular Spiral” model of innovative development includes three main components:

• A knowledge-based society is characterized by the growing importance of universities in collaboration with industry and government;
• Three institutes (University, Business, Government) seek cooperation, and the innovative component stems from this interaction, not from government initiative;
• In addition to the traditional functions, each of the three institutions assumes “the role of the other in part”. Institutions capable of performing non-traditional functions are the most important source of innovation [1.18].

The University 3.0 concept, now widely used in the field of international education, envisages giving universities a “digital code”. Thus, if a university is engaged only in educational activities, it is called University 1.0. Such a university serves as a “social elevator”, which provides the transfer of knowledge, training. If two assignments are completed at the same time - teaching and research - this is University 2.0. will have the status of. Its functions are to create new knowledge through research. “University 2.0.” the model serves as an activity and consulting service for market participants, conducts research on industrial orders, and creates “on-demand” technologies. A higher status is typical for the tertiary University 3.0 model. The task of this model will be to commercialize knowledge and technology. Such a university manages intellectual
property rights, shapes the entrepreneurial ecosystem, transforms promising technology markets, and serves to create the dominance of the country’s global economic platform.

According to Delft, a professor of entrepreneurship and innovation at the University of Technology (Netherlands), a modern university will change for the following reasons:

1. Large integration of theoretical and applied research, so there is a growing need for alternatives as the world’s leading universities, sources of funding from the government and therefore cooperation with interested high-tech companies;
2. transition from research within a single discipline to interdisciplinary research;
3. strengthening the global selection of universities for the best students, the use of inventions and know-how in the implementation of contracts for leadership;
4. the desire of universities to receive new benefits, the need to implement the state’s economic growth policy through the knowledge they create;
5. the need for economic security is to increase the efficiency of universities in the new environment, which is becoming increasingly complex;

The economic and technological environment has been formed in the leading universities of the USA, China, and the United Kingdom. It is this environment that is used by companies that will become the flagship of global business in new industries in 10-15 years. In particular, it was created by graduates of such universities. Such as “University 3.0.” In universities where the model has been introduced, human and financial capital will merge and become a system integrator.

Carnegie Mellon University in the United States is currently identifying key areas for the development of robotics. Through the University of Cambridge, the Cambridge District was formed, merging with the business community and local government and becoming the center of the high-tech world.

The concept of the University of Entrepreneurship is not a new concept and has been actively used in universities of developed countries since the end of the last century. The University of Entrepreneurship is a natural incubator that seeks to provide a conducive environment for the university community to research, evaluate, and use ideas that can be transformed into socio-economic entrepreneurship initiatives. Entrepreneurial universities participate in partnerships, industries, and other relationships in order to create a conducive environment for building relationships, collaborating, and working together.
Currently, business universities play an important role in strengthening the global information society and international relations, the implementation of inter-civilizational synergies.

So the University of Entrepreneurship is:

First, the university is an entrepreneur within its mission;
Second, the university is an innovator. Its subjects are innovative, its activities are innovative its products are innovative;
Third, the university is an integrator. The activities of all its subjects are focused on the end result and are carried out in sync with the regional community. He is a member of “strategic associations” in cooperation with leading local and foreign universities.

The main purpose of establishing business universities is to systematically train graduates with leadership skills and entrepreneurial outlook. Great attention should be paid to training graduates who are competitive and technology leaders, who are able to create startups in the future and bring local products and services to foreign markets. The curriculum of the University of Entrepreneurship is based on the development of “soft” skills (entrepreneurial thinking, leadership, creativity, data analysis), on the one hand, and on the other hand, providing basic fundamental knowledge and strengthening them in practice. It is appropriate to refer to the modern Western experience in turning young people, who are the driving force of social development, into “leader-entrepreneurs”, but at the same time we must not forget the Eastern approach and centuries-old traditions that play an important role in personal development.

According to the principles of Eastern life thinking, the morality and spirituality of the individual are at the center of human qualities. What potential a person has, what discoveries he has made, all his efforts are measured by spiritual and moral criteria.

The most important approaches and methods, such as project-based learning, should be introduced in the process of training on the implementation of a specific project with the support of foreign partner universities, in simulated game-like processes that can simulate the work of a real company. It is necessary to involve the best local and foreign teachers and practitioners in the educational process, and to include in the curriculum the latest problems and solutions of the industry.

On the other hand, there is a need to improve the quality of education and fight corruption. Universities need to establish adequate links with the business areas in which
they will then hire their graduates. It is only in recent years that local universities and rector's have begun to work more actively with the business community, and this has certainly been a positive growth. It would be great if we accept the practice of foreign universities, where entrepreneurs are constantly invited to participate in the educational process, are invited to hold master classes, discussions.

Therefore, the opening of private universities in our country is of great socio-economic significance. And it’s great that this is exactly the initiative of the business community - people who know very well in practice what knowledge vendors lack, what managers lack, and what engineers lack. Because business doesn’t need a diploma, it needs knowledge.

The Cabinet of Ministers adopted Resolution No. 241 of April 18, 2020 "On the establishment of “TEAM University.” TEAM University, which opened in Tashkent, and the opening of a branch of TEAM University in Termez, are the first private entrepreneurship universities in Uzbekistan. The launch of “TEAM University” in Termez, which is initially similar to the programs in Tashkent, as well as the development of the branch’s potential, is more focused on the scientific and socio-economic needs of the region.

The University of Entrepreneurship is a combination of the ideas of entrepreneurs who are representatives of the academic community and employers of future graduates. Thus, the business community of Uzbekistan contributes to the development of higher education in our country. It is run by company executives who know what the future business environment in the region will be like, and what employees are needed to work in business processes and know how to manage it, and who can be trusted to develop and implement business ideas.

The emergence of international universities such as Westminster and Inha has provided an opportunity to see how the development of new processes in higher education can benefit the development of our entire country. The main focus of the adopted concept is to introduce a training program on critical thinking, independent learning, use of virtual systems, etc.

Universities need to cultivate business professionals, people with certain skills and knowledge in a specific field, such as soft skills. This means that the graduate must be creative, able to work in a team and learn quickly. Special knowledge in the field we are studying today may not be of great importance very soon. The world is changing, so
professionals and employees of companies need to know how to learn, be ready to learn new things, be able to accept innovation, be flexible, have a good response effect.

“Soft skills” provide the opportunity to develop alongside a changing life with the help of “hard skills”. If previously it was enough for an engineer to have some knowledge to run a lifetime of work, and if he knew what he was going to do in the next 30 years, now in the next 10 years, 50 percent of the specialties could disappear. Maybe someone’s job will be replaced by artificial intelligence, but in the future there will be professions that we don’t know yet.

Educational institutions should be very close to the real field of study. That is, medical universities should be part of larger clinics where internships take place every day, and business universities should be closer to the industry in which they teach. Today, for example, students studying finance or management learn from textbooks that do not meet modern requirements, and employees who have completed training at this level have to retrain. It’s great that they've learned some basic things, but most of the time it’s 4 years old and they're not worth their money.

Conclusion

In short, the whole world is moving in the direction of the knowledge economy, where the main factors of development are knowledge and human capital. Universities in the knowledge economy are the flagships, that is, the most needed universities, and it is also an environment where science and practice come together, from where innovations and technologies move to mass production. The problem is that the pace of change is so rapid that some areas of knowledge are becoming obsolete in 3-7 years, and the industry cannot wait for educational institutions to adapt to change.

At this stage, universities will have to prove their worth in the field of education. Not only will they be able to quickly adapt to change, but in 3-5 years, graduates will be able to anticipate what skills they will need. In addition to the problems listed above, the higher education sector needs to change the entire environment and at the same time increase the admission of people to higher educational institutions by several times. Many higher education institutions need to move from a centralized government to an independent system of self-government in which they must operate independently, from independently developing courses and curricula to determining student enrollment and financial and economic management of higher education.
References


