

A THEORETICAL BASIS OF STARTUPS DEVELOPMENT IN THE INNOVATION SPACE OF THE STATE

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Abstract. *The authors emphasize the acute relevance of the topic of startup development because the high speed of information exchange causes changes in the field of innovation. A startup is defined as the process of introducing a newly created enterprise to the market in a short time with an innovative project at a minimal cost. The essence and characteristic features of a startup are given. The scheme of interaction of the entrepreneur-manager of the business project with the potential consumer of services is presented. The classification and description of startup development stages (pre-seed stage, seed stage, startup stage, growth stage, expansion stage, exit stage) are demonstrated. It is emphasized that the successful creation and development of a startup requires a favorable environment at each stage of development of the newly created business entity.*

The article substantiates the need to reveal the innovative potential of startups, in particular the involvement of highly qualified human resources, the creation of appropriate infrastructure and startup ecosystems.

Ukraine's place in the ranking of innovation of the world's economies is assessed. An important achievement is the twenty-seventh place of Ukraine in the overall ranking of "knowledge and research results".

Features of the theory of startup management in the domestic sphere of education are considered. An example of the most famous program to support innovations and startups at universities in Ukraine is given.

The article analyzes the information on the state funding of innovation and technology transfer activities during 2016–2018. The priority directions of innovation activity under the budget financing of innovations and technology transfer in Ukraine are defined.

The authors identify the current problems associated with the functioning of startups, outlines ways to overcome these problems. The development of the innovative business environment, startups, traditional business in Ukraine stimulates scientific and technological progress, promotes the introduction of the latest world achievements, so it is necessary to develop this area of activity.

Keywords: *innovation, startup, fintech development, investment, management, efficiency of the project, education, budget financing.*

Introduction. In recent decades, the information technology industry has become a driving force for the competitiveness of the world economy. The development of fintech has changed the ways and methods of management, which has led to a rethinking of approaches to management, knowledge acquisition, innovation, creation of new business models for enterprises, and more else. With the spread of information technology, startup companies are developing rapidly, which are flexible to market needs and offer specific solutions for their target audience.

Educational innovations include updating the content of education, methods, forms of teaching and education, development and implementation of new and dissemination of existing pedagogical systems. They are aimed at changing and improving all components of education and are systemic in nature.

Quality education is one of the most attractive areas for investment in the modern world. A person with right skills and knowledge will always find new opportunities for development and self-realization. Therefore, the topic of innovative startups in the information and educational environment is relevant in terms of the growing demand for education as a tool for professional and social mobility.

Analysis of recent researches and publications. The following authors studied the tools of innovation management and evaluated multidirectional startups: S. Blank [3], A. Colombelli, J. Krafft, M. Vivarelli [5], L. Dobryk [6], L. Shynkaruk [9], N. Sytnik [12], and other scientists and economists. In the article, we will focus on positioning the startup in the innovation space of the state.

Purpose. The purpose of the article is to determine the directions of expansion the innovative startups in the information and educational environment of the state.

Methods. In the process of research, such scientific methods were used as observation, comparison, measurement, an ascent from the abstract to the concrete, method of a statistical grouping, tabular, which allowed to form a logically combined array of theoretical information with a valuable practical component.

Results. The technology of startups in the educational space offers a new form of learning that will ensure the mobility of teachers and students, the ability to use modern gadgets and internet applications will form active thinking and creativity.

“The rapid social change from an information and knowledge society to a creative one has brought about various forms of the venture” [4, p. 1]. Startups are the lifeblood of our economy and innovation across the globe. They create jobs, new products, and dreams.

Startup – the process of entering the market of a newly created enterprise with an innovative project, usually in the short term and with minimal investment [7].

The successful startup implies that:

- there is a very good and unique idea (product or service) that customers will focus on;
- a well-thought-out and described company development plan, business plan;
- involves a strong team that will be able to develop and implement an innovative idea in a product or service;
- there is a strategy for the investor to leave the project;
- an obvious opportunity to earn.

Figure 1 outlines the main positions of the interaction of the entrepreneur-manager of the business project with the potential consumer of services provided.

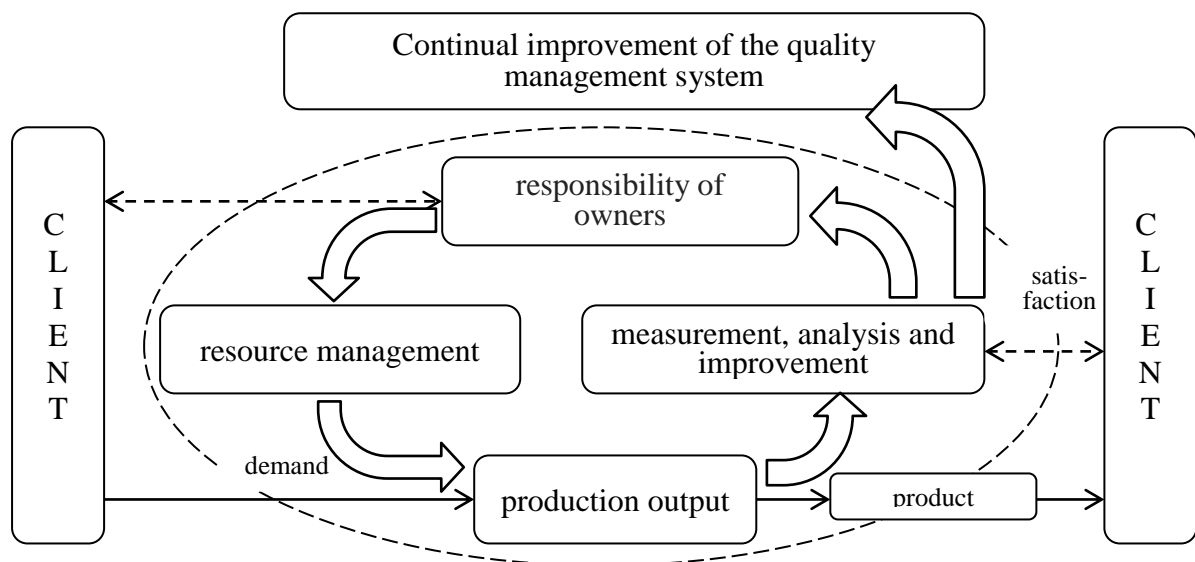


Fig. 1. Organizational efficiency of the project when starting your own business

Source: compiled by the authors.

Every startup should be considered as a project that has certain stages of its development. The division into stages is approximate and depends on the purpose and direction of the startup, the scope of its activities and other criteria that will affect the speed of development, and the number and level of investment in the startup. Therefore, there is no universal approach to describing the development of startups. The most frequently mentioned abbreviated classification of stages of startup development, according to which the startup goes through 6 stages in its development [1, p. 9–12]:

1. Pre-seed – stage of the idea. It includes the time from the idea to the commissioning. At this stage, there is nothing but the idea under discussion.

2. Seed stage – the market is studied, previously made tasks are implemented, a business plan is created and the project is tested. This is the stage when the company entered the market, new customers appeared, and investments appeared. Funding rule is used: 3F (Family, Friends, Fools). Also, it makes sense for startup developers at this stage to apply to the accelerator, business incubator, or participate in competitions that support innovative entrepreneurship.

3. Startup stage. The task of startup's participants is to set up a product promotion system and look for sources of funding. The ideal option is to find a business angel, a person who calculates the prospects of the project and wants to invest in it their own funds, experience, and contacts. Another source of funding at this time is crowdfunding.

4. Growth stage – is characterized by the presence of an existing company that makes a profit, occupies a prominent place in the market and is popular among users of the product.

5. Expansion stage. At this stage contracts are concluded for the sale of goods, services, technologies, sales outlets are opened, the number and quality of advertising to attract users on the Internet increases.

6. Exit stage. The startup project has turned into a serious business, there is a high payback, the company is a team of highly qualified specialists, and their work is

well-established. At this stage, investors who invested in the early stages, decide to sell their shares or receive income in the form of dividends.

Successful creation and development of a startup require a favorable environment, namely access to finance and knowledge.

The authoritative rating (The Global Startup Ecosystem Ranking) of the American research company Compass determines the success of the case according to five evaluation criteria [10, p. 36]:

- 1) efficiency of investment use (activity);
- 2) availability and amount of venture financing;
- 3) opportunities to enter national and international markets;
- 4) qualification and level of salaries of startup participants;
- 5) previous experience of participants in the development of startups.

Everything that surrounds us – science, culture, medicine – contains education in its foundation. It makes you think critically, doubt, prevents manipulation, fraud and is the key to the development of civilization. Modern people live in a world of digital technology, a world of quick solutions and emergencies. These realities require new views on the education system and it is in this area that many creative startups are emerging.

At the beginning of the 2019/20 academic year, there were 619 higher education institutions in Ukraine. The number of students who received higher education in these institutions was 1440 thousand people [11].

However, education in Ukraine is mostly limited to obtaining a diploma or continuing one's career in the scientific field, which is often detached from the needs of the market. In the world, in order to stimulate the development of entrepreneurship at universities, there is a tendency to form incubators of academic entrepreneurship.

The locomotive of Ukrainian innovative competitiveness is human capital. Its effective implementation is the key to gaining a competitive advantage.

In Ukraine, the most well-known program to support innovation and startups at universities is the Sikorsky Challenge business incubator, established in 2014 to encourage innovation and entrepreneurship at National Technical University of

Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, as well as to attract investment for startup projects and launch successful startup companies [8].

Based on the best world practices, systematic support has been launched for those promising Ukrainian projects that are not yet large enough to be in the field of view of classic investors. The Ukrainian Startup Fund is a country-wide investment program that funds the most talented Ukrainian entrepreneurs. Target sectors we are seeking to fund include but are not limited to AI, AR/VR, BigData, Blockchain, Cyber Security, Defense, Medical and Healthcare, Travel, FinTech, EdTech, Robotics, Professional Services, Manufacturing, Ecommerce, IoT [14].

Startup Ranking service, based on the analysis of the number of startups in 137 countries, has developed a rating in which Ukraine in 2018 took 42nd place (215 startups), ahead of Lithuania and Estonia. The first place in the ranking is occupied by the United States – 45004 startups, the second place by India – 5203 startups, and the third by the United Kingdom with 4702 startups. To evaluate the startups themselves, the service uses the SR Score [10].

SR Score is a number from 0 to 100000, which is calculated as an integrated indicator that reflects the importance of a startup on the Internet and its impact on social networks. SendPulse has the highest rating of Ukrainian startups – 238 positions out of 83313 SR Score.

In the 2018 ranking – the Global Innovation Index of the countries with the most innovative economies – Ukraine ranked 43rd, down one position compared to the previous year. According to the rating, the amount of funds as a percentage of GDP that Ukraine spends on research and development has a coefficient of 44; productivity – 50; presence in the economy of high-tech companies – 34; the number of registered patents and the number of researchers – 27 (Fig. 2) [13].

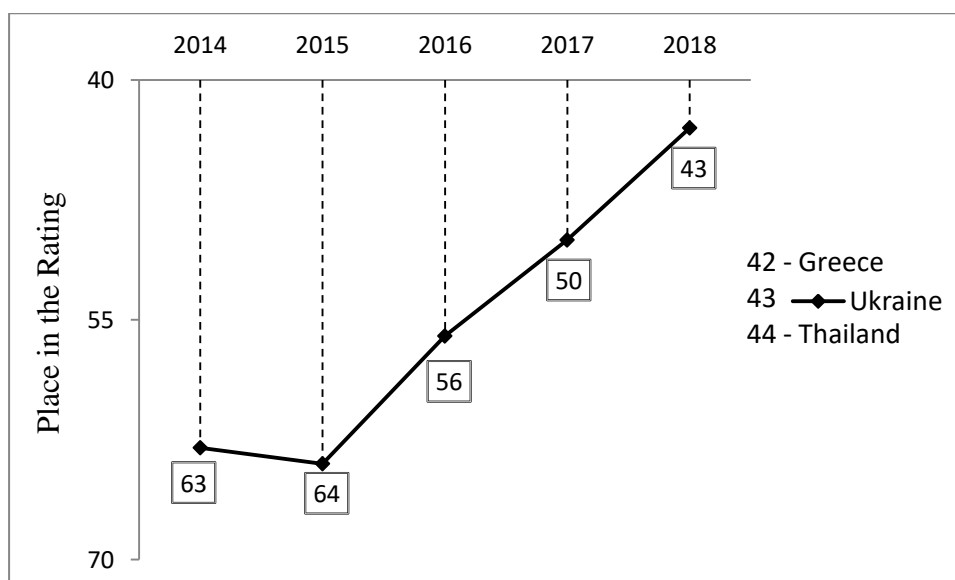


Fig. 2. Ukraine's place in the Global Innovation Index

Source: compiled by [13].

At the same time, according to the sub-index “knowledge and results of scientific research”, Ukraine is in a high 27th place in the overall ranking [13].

In 2018, information about the financing of innovation and technology transfer activities from the state budget was provided by three main administrators, namely: the Ministry of Education and Science of Ukraine (MES), the Ministry of Ecology and Natural Resources of Ukraine, the National Academy of Agrarian Sciences of Ukraine (NAAS). The total budget funding for strategic priorities of innovation and technology transfer activities in 2018 amounted to 291452,83 thousand UAH, or 94.9 % of the total budget funding for innovation, which is 12.5 % more than in 2017 [10] (Table 1).

1. Budget financing of innovation and technology transfer by strategic priority areas in Ukraine, thousand UAH

№	Priority areas innovation activity	Total		
		2016	2017	2018
1.	Development of new technologies of energy transportation, introduction of energy efficient ones, resource-saving technologies, development of alternative energy sources	20101,96	15212,73	17094,31

2.	Development of new technologies for high-tech development of the transport system, rocket and space industry, aircraft and shipbuilding, armaments and military equipment	6274,01	11710,93	18729,10
3.	Development of new technologies of material production, their processing and connection, creation of the industry of nanomaterials and nanotechnologies	16345,33	35979,56	45315,30
4.	Technological renewal and development of agro-industrial complex	115563,30	151412,50	153444,23
5.	Introduction of new technologies and equipment for quality medical care, treatment, pharmaceuticals	5023,95	4871,42	5356,06
6.	Wide application of technologies of cleaner production and environmental protection	23687,27	29182,88	32213,93
7.	Development of modern information, communication technologies, robotics	7562,39	10759,69	19299,91
Total		194 558,20	259 129,71	291 452,84

Source: compiled by [13].

In relation to GDP, the specified amount of funding in 2018 was 0.0082 % (in 2017 – 0.0087 %, in 2016 – 0.0082 %), in 2018, the real funding of strategic priorities of innovation was carried out at the level of 2016 despite the growth in absolute terms of funding. In 2018, the amount of funding of two managers out of three amounted to a total of 95.6 % and was distributed between the NAAS (51.1 %) and the MES (44.5 %). At the same time, compared to 2017, the share of the MES funding increased by 6.8 p.p., while the share of the NAAS decreased by 6.2 p.p., the share of the Ministry of Ecology and Natural Resources of Ukraine – 0.6 p.p.

Expenditures on innovation activity were directed to five of its types (in 2017 – to three), of which the largest share – to the type of innovation activity “Other” – 269876,83 thousand UAH or 92.6 % of total expenditures), which mainly involves the implementation of “Research & Development” on behalf of enterprises/organizations. At the same time, compared to 2017, there was a nominal increase of 13.7 % in the amount of funding for this type of activity [10].

At this stage of business development, there is a significant rise in the development of Ukrainian startups, which are developing quite rapidly and have many users. But the low interest of the state in modern innovative projects forces

young companies to cooperate with foreign investors who help to implement projects and become competitive. That is why it is necessary to promote the effective functioning of startups in Ukraine, to create mechanisms to increase the effectiveness of their activities in the domestic market, and to recognize the importance of innovative technologies for the successful development of Ukrainian enterprises.

“One of the key factors behind the startup success is finding enough financial resources to develop an idea, especially in a phase when the startup does not generate revenue” [2, p. 239]. Turning a great idea into a business requires careful planning and strategic execution. However, it should be understood that the development of innovations and startups is a very dynamic process that must keep pace with market trends and unite the interests of all participants in the ecosystem because everyone has their own goal: a startup – to implement their project; business angels, investment funds – it is profitable to invest their resources; the state – that innovative enterprises pay taxes and develop in its territory; in universities – to have high world rankings among applicants and additional sources of income.

Discussion. Thus, today education, as one of the types of economic activity, is an integral part of the market economy of Ukraine. At the same time, the economic condition of education in Ukraine is characterized by significant imbalances. The key problem of economic relations in the field of education in Ukraine is the inconsistency of the current economic mechanism with the principles of a market economy.

The current mechanism of budget financing for education does not allow introducing such a tool to increase the efficiency of economic activity as competition between educational institutions, as a result of which the educational institution as an economic entity can receive additional funds for better results of its educational activities.

Among the many issues regarding the prospects for the development of startups in Ukraine should be highlighted the following:

- setting up a constant interaction of startups with the science, the state and management consulting institutions;

- realization of the startup potential of Ukraine through the construction of an effectively functioning management education system and appropriate infrastructure;
- expanding the investing's concentration in the company only at the initial stage of launch;
- insufficient investor awareness of all risks;
- such problem as a lack of real market testing for the startup solution;
- professionalization of management economy, taking into account the specifics of startup activities and cooperation of the professional chain “education-business-state” etc.

To integrate into the European science and technology space, startup owners need to study the potential of the planned business, environmental risks and government funding programs.

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ТЕОРЕТИЧНІ ОСНОВИ РОЗВИТКУ СТАРТАПІВ В ІННОВАЦІЙНОМУ ПРОСТОРИ ДЕРЖАВИ

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Анотація. Авторами підкреслено гостру актуальність теми розвитку стартапів, адже висока швидкість обміну інформацією викликає зміни й у сфері інноваційної діяльності. Розкрито сутність і характерні риси стартапів. Унаочнено схему взаємодії підприємця-керівника бізнес-проєкту з потенційним споживачем послуг. Надано класифікацію та опис стадій розвитку стартапів (стадія попереднього насіння, стадія насіння, стадія запуску, стадія росту, стадія розширення, стадія виходу). Підкреслюється, що для успішного створення та розвитку стартапу потрібні сприятливі умови на кожному етапі розвитку новоствореного суб'єкта господарювання.

У статті обґрунтовано необхідність розкриття інноваційного потенціалу стартапів, зокрема залучення висококваліфікованих людських ресурсів, створення відповідної інфраструктури та екосистем стартапів.

Оцінено місце України у рейтингу інноваційності економік держав світу. Розглянуто особливості теорії управління стартапами у вітчизняній сфері освіти. Наведено приклад найвідомішої програми підтримки інновацій та стартапів при університетах України.

Проаналізовано інформацію про державне фінансування інноваційної діяльності та діяльності у сфері трансферу технологій за 2016–2018 роки. Визначено пріоритетні напрями інноваційної діяльності у разі бюджетного фінансування інновацій та трансферу технологій в Україні. У сучасних умовах спостерігається значне піднесення в розвитку українських стартапів, які досить швидко розвиваються й мають багато користувачів. Але мала зацікавленість держави в сучасних інноваційних проєктах змушує молоді

компанії співпрацювати з іноземними інвесторами, які допомагають втілити проєкти в життя та стати конкурентоспроможними.

У статті визначено проблеми сьогодення, які пов'язані з функціонуванням стартапів, окреслено шляхи їхнього подолання. Розвиток інноваційного бізнес-середовища, стартапів в Україні стимулює науково-технічний прогрес, сприяє впровадженню новітніх світових досягнень, тому необхідно розвивати цю сферу діяльності.

Ключові слова: інновації, стартап, розвиток фінансових технологій, інвестиції, управління, ефективність проєкту, освіта, бюджетне фінансування.