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THE USE OF INFORMATION TECHNOLOGY IN THE VENTURE INVESTMENT SYSTEM

The peculiarities of venture investment in terms of resource constraints are disclosed. It is proved that the need for economic development and support of the real sector of the economy requires the search for alternative mechanisms for the formation and implementation of investments. It is justified that it is venture investments in modern economic conditions that should be considered as a promising financial source of support for the innovation process in Ukraine and the world. Methodology, those research methods are based on the authors' scientific works on problems in the field of venture investment, development and use of information technologies in business. It is proved that modern technological developments in the field of information technologies are actively used in the venture investment system. The clarification of priority directions of using crowdfunding as a tool of venture investment in conditions of resource constraints has been carried out. Features of venture investment on the basis of crowdfunding platforms like Kickstarter and IndieGoGo are considered. The specificity of the creation and organization of the work of crowdfunding campaigns has been studied. Key directions of using information technologies in the venture investment system in Ukraine are detailed. Problems and perspectives of development of venture investment on the basis of crowdfunding platforms are analyzed.

Keywords: venture capital; venture investment; information technology; crowdfunding platform.

Introduction. The main tendencies of modern innovation processes change not only the structure of production, but also the structure of demand, causing the emergence of a special kind of financial capital, which is aimed precisely in the field of innovation entrepreneurship. Currently, one of the promising financial sources of support for the innovation process in Ukraine and in the world is venture capital investments, which represent the investment of investment funds or firms, and which are specializing in the formation and growth of new companies for the remuneration in the form of income from

equity capital. In conditions of resource constraints, economic growth of the country and ensuring its competitiveness in world markets can not be solved without increasing the efficiency of used information technologies in the system of venture capital investment. Therefore, the relevance of the research on the chosen topic is conditioned by the accelerating scientific and technological changes and the need for venture financing with the help of crowdfunding platforms as an important component of the financing system of the innovative development of the country's economy.

Analysis of recent research and publications. It should be noted that the scientific works of Y. I. Gorbachova, A.V. Kosenko, B. B. Sas, A.V. Cherep, R. A. Shatyla, and others are devoted to the theoretical aspects of given scientific research [1, 3, 6, 7, 8]. Although it was already proven that in the conditions of imperfect financial market, lack of financial resources, insufficient development of bank lending, venture capital is becoming almost the only available source of investments for the development of innovative firms and the implementation of innovative start-up projects; but still many applied aspects of the use of modern information technologies in the process of venture financing remain unresolved. Paying tribute to the theoretical and practical value of previous achievements, there is a need to explore the perspective directions of development and introduction of information technologies in the system of venture investment.

Setting objective. The purpose of article is to analyze the world and domestic experience of using crowdfunding as a tool of venture investment.

Research results. Under current conditions, the intensification of innovation activity is considered as one of the most important factors of the increase in the competitiveness of the domestic economy, but the lack of financial resources constrains the innovation process.

The need for economic development and support of the real sector of the economy, further structural reforms in Ukraine testify to the expediency of searching for alternative mechanisms for the investment formation and implementation. As the world practice shows, in modern economic conditions venture funds can well serve as an effective tool for the financial market of Ukraine. Thus, the development of the venture capital market is a key factor in the innovation process. In most countries of the world, the traditional sources of accumulation of venture capital and, accordingly, the formation of investment funds are private investors, investment institutions, pension funds, insurance companies, various government agencies and international organizations. However, it should be noted that the research of the latest developments testifies to the growth of the possibilities of using information technologies, in particular in such key area of providing innovative entrepreneurship as venture capital investment.

Using the analysis of recent advances in the use of information technology in the system of venture capital investment, we note that the development and application of crowdfunding platforms for massive venture capital investment is progressing fairly well in the world.

Crowdfunding can be considered as a process of attracting funds from many individuals to implement the project [6]. Projects can be cultural, social, commercial, political, creative, and personal. Meetings are conducted through the Internet with the help of crowdfunding platforms. Sponsors (beckers) do not receive anything in return, except of the donations or receive a non-financial remuneration (souvenir, pre-order product) or financial (royalties, shares). Only one third of the crowdfunding projects are social and entertainment, others are commercial (Table 1).

Table 1 – Leading sectors of crowdfunding financing

Sector	Funds raised, \$ billion
Business and entrepreneurship	6, 70
Social Initiatives	3, 06
Cinema and theater	1,97
Real estate	1,01
Music and sound recording	0,74

Source: [2]

Ten years ago, crowdfunding as a phenomenon did not exist in the world. Since 2000, singular «people's meetings» have been launched through the Internet to help musical projects. Only in 2008-2009, Kickstarter and IndieGoGo crowdfunding platforms were created, known for financing start-ups and local businesses. You can start a campaign on your own and for free: register, choose a funding scheme, promote the project, get the money. In order for the crowdfunding campaign to become successful and to attract as many people as possible into the project, all that was needed is marketing, PR, product promotion, market testing. Crowdfunding campaign gives the opportunity for ordinary Internet users to share about their idea, get feedback from them, make a preliminary sale of their product and try their hand at attracting the same investment. For example, in order to pass Kickstarter authorization and make payments, you need the status of a local resident (having a legal entity in one of the countries of the platform or partner), for IndieGoGo it is enough to have an account at the bank.

Thus, 2014 was the year of a real breakthrough in crowdfunding: the market grew threefold, by 167%, reaching \$ 16.2 billion (while in 2013 it attracted \$ 6.1 billion) [6, 9]. TOP-5 European markets of crowdfunding were headed by Great Britain, France, Germany, the Netherlands, and Spain. According to the World Bank, by 2025 annual investments in crowdfunding will grow to \$ 93 billion [5, 9]. Historically, KICKSTARTER was founded in 2009 [2] with a staff of 129 employees. The total amount of donations as of October 2017 was 3.3 billion dollars, of which 132.6 thousand were identified as successful projects, and 237.3 unsuccessful. But, 259 projects have collected more than 1 million dollars, and 52 thousand have not collected a single dollar. [2]

The greatest crowdfunding projects were launched on the Kickstarter platform: Pebble Time's smart clocks raised over \$ 20.3 million, Coolest Cooler

refrigerator bags – \$ 13 million, Ouya gaming console – \$ 8.59 million. Only in 2014 3, 3 million people have invested \$ 530 million in Kickstarter projects, financing 22.2 thousand projects. The company's report focuses on social benefits. So, the projects launched by the Kickstarter platform have created more than 300,000 jobs. At the same time, about 70% of the projects became profitable. From each dollar attracted to them, about \$ 2.46 was gained, and the total economic benefit is estimated at \$ 5.3 billion. Among the technological features of the accumulation of funds on the platform Kickstarter can be noted:

- resource services are not free;
- the author of each successfully funded project should share with the platform 5% of the collected funds;
- another 3-5% of the amount, depending on the country, is made up of commission to partner companies for payment processing;
- if the project does not collect the required amount in time, the use of the platform will be free of charge, and the funds will be returned to donors.

Proceeding from the above, company earned approximately \$ 16.5 million deductions from successful projects (5% of \$ 3.3 billion) from the start of the project. Originally, only projects from the United States were eligible for the Kickstarter platform, and «donors» could be located in any country in the world. But since October 2012, the official representation of the crowdfunding platform has been opened in the UK. In the first month, British projects raised more than 2 million pounds from 45 thousand users. In 2013, Kickstarter expanded to Canada, Australia, and New Zealand. In 2014, official platform offices were opened in Denmark, Norway, Sweden and Ireland, and in 2015 Kickstarter became available for projects from Germany, France, Spain, Austria, Belgium, Italy, Luxembourg and Switzerland. Since September 2017 the platform has been operating in Japan. In Ukraine, there are no representative offices yet. However, Ukrainian projects are successfully placed on Kickstarter and collect significant amounts. According to a study by the National Association of Venture Capital (NVCA), only in 2017, Kickstarter had 27 Ukrainian projects, 83% of them received funding. Judging by the results of seven months, the current year has become the most successful for domestic crowdfunders. In general, Ukrainian start-ups raised \$ 1.8 million with an expected \$ 454.3 thousand [4].

The largest Ukrainian start-ups, funded and recruited by Kickstarter platform in 2017, became an eco-camera for instant snapshots (collected \$ 377 thousand), a pendant for converting language records into Sentone text (\$ 370 thousand), mechanical 3D puzzles UGEARS Hurdy-Gurdy (\$ 288 thousand), electric DelFast Bike (\$ 130), «smart» smartphone holder for QLYX (\$ 125). Note that there are not many Ukrainians at Kickstarter because of the difficulties with costs of withdrawal and language barrier. Despite the achievements of technological projects, creative initiatives still remain the priority for the platform [3, 4].

The first collective financing platform in Ukraine was the «Spilnokosht», created in 2012 on the basis of the platform of social innovation «Big Idea». In

the two years there was attracted UAH 3.8 million. Among the projects there are the project of workshop on plastic processing Zelenew; project of alternative education for children «Pro.SVP»; project of digital studio Izolab; project for the creation of a service with interactive map for parking all over Ukraine. In February 2013, the second Ukrainian platform Na-Starte was created. During this time more than 40 projects were launched (and about 300 remained at the stage of creation or moderation), 90% of all published projects are commercial [4, 6].

Conclusions. Thus, venture investment is a specific kind of financial investment in high-tech manufacturing, the prospect of holding significant profits in which is highly risky. The trends of venture investment development on the basis of the introduction of crowdfunding platforms in the world and in Ukraine are indicated in the work.

Therefore, the authors find it worthwhile to emphasize that use of crowdfunding platforms in terms of resource constraints should be considered as a tool for finding alternative sources both for the development of innovative firms (local business), and for the purpose of implementing innovative start-up projects.

The development of further research in this direction should be aimed at forming an investment accumulation mechanism based on the use of modern information technologies, taking into account the specifics of the development of the national economic system and determining the economic, social and technological effect of venture financing based on the crowdfunding platforms.

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ВИКОРИСТАННЯ ІНФОРМАЦІЙНИХ ТЕХНОЛОГІЙ В СИСТЕМІ ВЕНЧУРНОГО ІНВЕСТУВАННЯ

Розкрито особливості венчурного інвестування в умовах ресурсних обмежень. Доведено, що потреба у економічному розвитку і підтримці реального сектора економіки, потребують пошуку альтернативних механізмів формування та здійснення інвестицій. Обґрунтовано, що саме венчурні інвестиції в сучасних умовах господарювання слід розглядати як перспективне фінансове джерело підтримки інноваційного процесу в Україні та світі. Методологія та методика дослідження ґрунтується на наукових працях авторів із проблем в галузі венчурного інвестування, розробки та використання інформаційних технологій в бізнесі. Доведено, що сучасні технологічні розробки в галузі інформаційних технологій активно застосовується в системі венчурного інвестування. Здійснено уточнення пріоритетних напрямів використання краудфандінга як інструменту венчурного інвестування в умовах ресурсних обмежень. Розглянуті особливості венчурного інвестування на основі краудфандінгових платформ Kickstarter і IndieGoGo. Досліджено специфіку створення та організацію роботи краудфандінгових кампаній. Деталізовані ключових напрямків використання інформаційних технологій в системі венчурного інвестування в Україні. Проаналізовані проблеми та перспективи розвитку венчурного інвестування на основі платформ краудфандінгу.

Ключові слова: венчурний капітал; венчурне інвестування; інформаційні технології; краудфандінгові платформи.

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ИСПОЛЬЗОВАНИЕ ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЙ В СИСТЕМЕ ВЕНЧУРНОГО ИНВЕСТИРОВАНИЯ

Раскрыты особенности венчурного инвестирования в условиях ресурсных ограничений. Доказано, что потребность в экономическом развитии и поддержке реального сектора экономики, требуют поиска альтернативных механизмов формирования и осуществления инвестиций. Обосновано, что именно венчурные инвестиции в современных условиях хозяйствования следует рассматривать как перспективное финансовое источник поддержки инновационного процесса в Украине и мире. Методология те методика исследования основывается на научных трудах авторов по проблемам в области венчурного инвестирования, разработки и использования информационных технологий в бизнесе. Доказано, что современные технологические разработки в области информационных технологий активно применяется в системе венчурного инвестирования. Осуществлено уточнение приоритетных направлений использования краудфандинг как инструмента венчурного инвестирования в условиях ресурсных ограничений. Рассмотрены особенности венчурного инвестирования на основе краудфандинговых платформ Kickstarter и IndieGoGo. Исследована специфика создания и организации работы краудфандинговых кампаний. Детализированные ключевых направлений использования информационных технологий в системе венчурного инвестирования в Украине. Проанализированы проблемы и перспективы развития венчурного инвестирования на основе платформ краудфандингув.

Ключевые слова: венчурный капитал; венчурное инвестирование; информационные технологии; краудфандинговые платформы.

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