

# The Impact Of Crowdfunding On The Innovation Process In The Conditions Of Ukraine's Economy Digital Transformation

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## Summary

Crowdfunding is an innovative tool for financing projects in the digital economy. The main concepts and types of crowdfunding are considered. Characteristics of the most successful crowdfunding foreign and Ukrainian platforms are given. The main characteristics of the crowdfunding platforms for the choice of the platform during the implementation of the investment decision are formulated considering its specific features in the conditions of digital transformation in Ukraine. Based on a comprehensive analysis of crowdfunding market dynamics in the world Ukraine revealed specific features of its operation compared with other countries. The perspectives and problems for the use of crowdfunding in Ukraine on the basis of foreign experience and the participation in world-wide crowdfunding platforms are defined. It has been found that Ukrainian projects are predominantly social in nature, while technological innovations and just for fun are more valued abroad. The advantages and disadvantages of crowdfunding as a tool for financing innovation process are summarized, as well as the prospects for its development in Ukraine. Functioning mechanism of crowdfunding is proposed. Its implementation will contribute to the efficient functioning of crowdfunding as a tool for financing digital economy projects in Ukraine.

### Key words:

*crowdfunding, crowdfunding platforms, digital economy, innovation process, market of crowdfunding.*

## 1. Introduction

The digital economy is based on information, communication and digital technologies, whose rapid development and spread are already affecting the traditional (physically analog) economy, transforming it from a resource consuming economy to a resource-creating economy. Data is a key resource of the digital economy. It generated and ensured electronic communications through the operation of electronic digital devices, tools and systems.

The main objective of digitalisation is to achieve the digital transformation of existing and the creation of new industries, as well as the transformation of life spheres into new more efficient and modern ones.

The emergence of novel and powerful digital technologies, digital platforms and digital infrastructures has transformed innovation and entrepreneurship in significant ways. Beyond simply opening new opportunities for innovators and entrepreneurs, digital technologies have broader implications for value creation and value capture [1].

The digital transformation of business doing has led to the transition from the business model “all we do to ourselves” to the business model “on its own plus the “crowdfunding” [2].

Crowdfunding potentially shortens the development cycle of new products, thus enabling an earlier market entry. Hence, crowdfunding serves as a multifaceted early-stage support instrument for innovation implementation facilitated by the crowd's resources. It not only provides upfront cash for product development and production, more importantly it enables a firm to show traction through the validation of the market demand that is based on the crowd's function as information multiplier generating public exposure and feedback [3].

The development of crowdfunding in Ukraine is at an early stage. Therefore, the study of crowdfunding from the point of view of its application by enterprises of Ukraine as an innovative tool for financing projects in the digital economy attracts a significant interest. In recent years, the publications that consider the phenomenon of crowdfunding, its importance, advantages and other issues started to appear in the domestic literature. However, as of today, various aspects of the theory and practice related to the definition of opportunities and basic characteristics of crowdfunding as a tool for financing investment decisions of the enterprise require further research, development and generalization. The purpose of the article is a comprehensive study of the functioning mechanism and prospects of the use of crowdfunding platforms as a tool for financing investment activities of enterprises of Ukraine on the basis of foreign experience, generalization and systematization of publications of domestic and foreign scientists.

The research objective is to determine the role of crowdfunding in providing social and economic

development, in particular, the importance for business, and the assessment of prospects of crowdfunding development as a tool for financing projects in Ukraine.

## 2. Related Work

Crowdfunding has a long history of formation and development. For centuries, authors and publishers have advertised book projects in praenumeration or subscription schemes. In case when a sufficient or a certain number of subscribers signal their readiness to purchase the book after its release, the book was published. The described scheme of the subscription business model is not exactly crowdfunding, since the actual flow of money only begins with the release of the product, that is, the possibility of its financing. The list of subscribers has the power to create the necessary confidence among investors that is needed to finance the publication and increase the chance of selling it.

There are several examples of the first use of crowdfunding and the creation of such a method of financing certain projects. Thus, in the formation of crowdfunding with this scheme of financing there were war bonds, which are theoretically a form of crowdfunding military conflicts. Another example is the case when London's mercantile community saved the Bank of England in the 1730s when customers demanded their pounds to be converted into gold - they supported the currency until confidence in the pound was restored, thus crowdfunded their own money. The cooperative movement of the 19th and 20th centuries is a more important precursor to the emergence and formation of this phenomenon. That is, at that time, it generated collective groups, such as community or interest-based groups, pooling subscribed funds to develop new concepts, products, and means of distribution and production, particularly in rural areas of Western Europe and North America. In 1885, when government sources failed to provide funding to build a monument of the Statue of Liberty, a newspaper-led campaign attracted small donations from 160,000 donors [4].

The first noteworthy example of online crowdfunding in art was in the music industry. It was in 1997, when fans underwrote a US tour for the British rock band Marillion, raising US \$ 60,000 in donations by means of a fan-based Internet campaign. The same band subsequently used this method to fund their studio albums [5].

In 2002, the "Free Blender" campaign was one of the first to use crowdfunding with software support. The community raised € 100,000 for this project while offering certain additional benefits for investors. The campaign was aimed at creating the Blender 3D computer graphics software [6-7].

Some aspects of the development, formation and functioning of crowdfunding were studied by the foreign

analysts, such as S. Nambisana, M. Wright, M. Feldman [1], N. Scholz [3], T. Masters [5], J. Hemer [8], H. Forbes, D. Schaefer [9], C. Song, Chaoyang; J. Luo, K. Hoelltae-Otto; W. Seering, K. Otto [11], C. S. Bradford [12], T. Prive [14] and others. Among the Ukrainian scientists we can mention the works of O. Shevchenko, O. Kazak [2], L. Yelisieieva [16] and others. But their works cover the operation of crowdfunding only partially, or just some issues thereof. Today, the functioning mechanism of crowdfunding is not formed yet, its development model is a combination of monitoring the experience of development of the best platforms providing crowdfunding services, which will enable to determine the place of crowdfunding companies in the modern world and domestic economy.

## 3. Results of the Research

Crowdfunding (from English crowd - "community, group", funding - "financing") is the practice of funding a project by raising small amounts of money from a large number of participants, typically via the Internet; the cooperation of people who voluntarily pool their money or other resources together to support the efforts of other people or organizations. Often the people who make monetary donations, actually act as investors, receiving a certain benefit for it [8].

Crowdfunding is therefore defined as the process of taking a project or business, in need of investment, and asking a large group of people, which is usually the public, to supply this investment [9].

Transaction value in the Crowdfunding segment amounts to US\$ 8,537.3mln in 2020 (see Fig. 1).

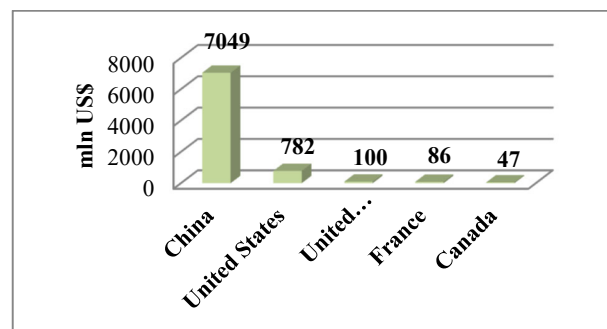


Figure 1. Global Comparison - Transaction Value

From a global comparison perspective it is shown that the highest transaction value is reached in China (US\$7,049mln in 2020).

The average funding per campaign in the Crowdfunding segment amounts to US\$780 in 2020 (see Table 1).

**Table 1.** Crowdfunding Market Indicators

Indicators of Crowdfunding	2017	2018	2019	2020	2021	2022	2023
Number of campaigns, in thousand	5204,7	6455,1	8724	10940,3	11823,6	12024,1	12063,9
Transaction Value, in mln US\$	3979,4	5319,2	6932,6	8537,3	9663,2	11113,7	11985,6
Segment is expected, in %	no data	33,7	30,2	23,3	16,7	11,5	7,8
The average funding per campaign, in US\$	765	824	794	780	843	924	994

Transaction value is expected to show an annual growth rate (CAGR 2022-2023) of 12.0% resulting in the total amount of US\$11,985.6m by 2023.

Crowdfunding has recently emerged as a social-technical phenomenon that is driven by entrepreneurs' need for new product development resources and enabled by the development of Internet and Web technologies. Specifically for the crowdfunding campaigns, the entrepreneurs describe and publish their product ideas on the web-based crowdfunding platforms for fundraising [11]. There are several models of crowdfunding (see Table 2).

**Table 2.** Models of crowdfunding

Models of crowdfunding	Characterization
the donation model	The contributions on donation sites are, as the name would indicate, donations. Investors receive nothing in return for their contributions - not even the eventual return of the amounts they contributed.
the reward model and	The reward model offers something to the investor in return for the contribution, but does not offer interest or a part of the earnings of the business.
the pre-purchase model	As with the reward model, contributors do not receive a financial return such as interest, dividends, or part of the earnings of the business. Instead, they receive the product that the entrepreneur is making.
the lending model	The lending model of crowdfunding is often called peer-to-peer lending. Peer-to-peer lending involves loans. Contributors provide funds on a temporary basis, expecting repayment. In some cases, investors are promised interest on the funds they loan. In other cases, they are only entitled to receive the return of their principal.
the equity model	Equity crowdfunding offers investors a share of the profits or return of the business they are helping to fund. The equity model is the model that most clearly involves the sale of a security.

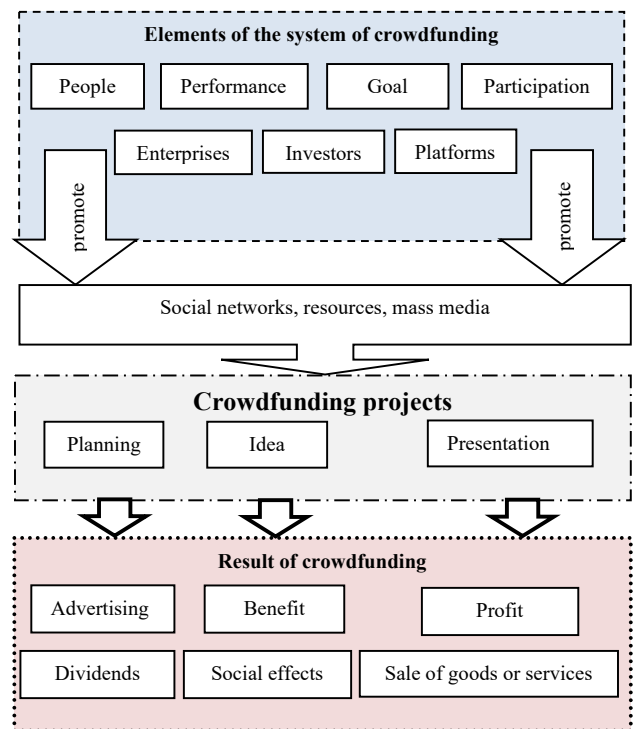
Despite the differences in the types of crowdfunding, most scientists agree that the main motivator and promotion of crowdfunding is to obtain benefits, rewards or compensation.

The existence and origin of such a phenomenon has an interesting system of distribution or promotion. The possibility of raising funds is in those projects, in which today a certain group of people, or their associations is interested. These groups create the very process of crowdfunding and influence the ultimate value of the offerings or outcomes of the projects. Each of these individuals acts as a promotion agent, selecting and promoting the projects they believe in. They sometimes

play a donor role oriented towards providing help on social projects. In some cases, they become shareholders and contribute to the development and growth of the offering. Individuals spread information about the projects they support in their online communities, generating further support, in other words, they unconsciously become promoters of the project. Motivation for consumer participation stems from the feeling of being at least partly responsible for the success of others' initiatives (desire for patronage), striving to be a part of a communal social initiative (desire for social participation), and seeking a payoff from monetary contributions (desire for investment).

An individual who takes part in crowdfunding initiatives tends to reveal several distinct traits: innovative orientation, which stimulates the desire to try new modes of interacting with companies and other consumers; social identification with the content, cause or project selected for funding, which sparks the desire to be a part of the initiative; (monetary) exploitation, which motivates the individual to participate by expecting a payoff [13-14].

Briefly, the functioning mechanism of crowdfunding can be represented as follows in Fig. 2.



**Figure 2.** Functioning mechanism of crowdfunding

Prior to the start of fundraising and placing the project on the platform, the goal must be stated, the final cost of achieving it must be determined, and both the calculations of all costs and the process of raising funds must be transparent for the society and freely available. An

enterprise or individual applies to place a project on a crowdfunding platform with a specific idea. The crowdfunding platform checks the idea for legality, relevance and feasibility in view of all possible risks. After the approval of the idea, a project is created on the basis of the crowdfunding platform, and the amount to be raised for its implementation and the term of fundraising are announced.

**Table 3.** The most popular foreign crowdfunding platforms

Crowdfunding platforms	Characterization
Kickstarter: Best Overall	Kickstarter is one of the biggest names when it comes to crowdfunding, known for helping tech and creative entrepreneurs fund their projects before getting a loan or raising money for venture capital. The company has raised over US\$ 4 billion with more than 155,000 projects funded since its inception in 2009. Potential funders can browse a number of verticals from arts and film to publishing.
Indiegogo: Runner-Up, Best Overall	Indiegogo users are usually creating campaigns for tech innovations, creative works, and community projects. The crowdfunding platform works similarly to Kickstarter, except it doesn't have an exclusively all or nothing fundraising model.
Causes: Best for Nonprofits	Causes is the world's largest online campaigning platform focused on social, political, and cultural issues. It brands itself as a social network for people who want to make a difference faster and more effectively. It boasts 186 million users in 156 different countries. The site is great for nonprofits that want to build a donor community without spending too much money and resources on networking. As it runs ads, Causes is free of charge for users.
Patreon: Best for Creators	Patreon is popular among digital creatives, such as YouTubers, podcasters, and bloggers. As opposed to you collecting one-off campaign donations, you have a subscription model where patrons regularly contribute a set amount of money every month or per creation. The site allows artists to form relationships with their fans, and creators can even deliver exclusive content to their Patreon subscribers as an incentive to continue funding them. Suffice to say, this service works best if you regularly share work on your personal platform. Otherwise, pledgers do have the option of canceling their subscription if creators don't produce content.
GoFundMe: Best for Personal Fundraising	You've probably seen a handful of GoFundMe fundraisers on social media at one point or another for emergencies and charitable causes, but businesses can use it as well.
CircleUp: Best for Equity Crowdfunding	If you're building a consumer brand, it's worth looking into CircleUp, which has helped raise US\$ 260 million dollars for 196 startups. It offers both equity capital and credit financing. It provides a platform to network with experts, retailers, and entrepreneurs. You can also connect with accredited investors, who have a net worth of at least US\$ 1 million and an annual income of at least US\$ 200,000. Other perks include access to special lines of credit and market insights using Helio, CircleUp's proprietary machine-based learning technology for making company strategies.
LendingClub: Best for Business Loans	Lending Club is a crowdfunding site that provides up to US\$ 40,000 for personal loans and up to US\$ 300,000 for business loans. It's a form of debt crowdfunding that's usually easy to qualify for and is often faster than going through a regular bank. As opposed to most equity crowdfunding, it won't require things such as business visits or plans and projects.

Platforms that host these projects play an extremely crucial role in the promotion. Crowdfunding platforms are motivated to generate income by attracting valuable

projects and generous financiers. These sites (platforms) also seek close public attention to their projects and platform (see Table 3).

**Table 4.** The most successful Ukrainian projects of 2020 on foreign crowdfunding

Project	Characterization	Amount collected / number of backers
Feel VR	Game steering wheel with pedals on the basics of using DirectDrive technology.	\$500000/ 904
Ugears	The Ukrainian company Ugears, which produces 3D wooden puzzles, is conducted two successful campaigns in Kickstarter.	\$187000/ 1375 \$275000/ 3911
Verum 1	Verum 1 - headphones that use a magnetic film instead of a speaker, so the headphones reproduce the signal more accurately.	\$185600/5 47
Enjoy The Wood	The Ukrainian company Enjoy The Wood is conducted two successful campaigns. The first product is a modular wall card made of wood. The second product is collection of products is maps of the largest cities in the world, also made of wood.	\$108000/ 655 \$56600/ 409
Pix	The creators of Pix are created a backpack, the front side of which can be changed to your taste - display pictures and animations that look like pixel graphics.	\$150400/ 597
Caster Wheels	Ukrainian startup Stealtho is appeared on Kickstarter with wheels for office chairs CasterWheels.	\$138600/ 2170
Legends of Signum: Battle for Vallor	SignumGame successfully is raised money on Kickstarter for the production of the board game LegendsofSignum: BattleforVallor.	\$109200/ 432
Wyrex	Wyrex is a wireless charger that can charge four devices simultaneously: two smartphones (on iOS and Android), AppleWatch and AirPods	\$92100/ 864
Hushme	A headset that makes user conversations inaudible to others. The money was collected on the Japanese service CAMPFIRE.	\$80000/ 363
Pleatpack	The main advantage of the Pleatpack is to increase the volume from 6 to 26.7 liters.	\$64300/ 605
Klips2	Klips 2 are the niversal magnets, which allow you to keep in order wires, documents and many other things. Money is raised on Kickstarter.	\$48500/ 937
Picolor	Picolor is a set of felt-tip pen and mixer, which can mix more than a million different colors.	\$40200/ 310
Wumba	The Ukrainian company ToysLab this year is conducted a successful Kickstarter campaign for children's toys Wumba. This is a set of five wooden products with a magnetic base.	\$37800/ 391
Adventur 3.0	MRF Engineering has launched a fundraising campaign for Adventur 3.0. It is a multi-functional tool for living in the wild.	\$37800/ 559
UniColor	Mobile LED-lamp, which can act as an unusual pidswitch for shooting at night and twilight. Money raised on the Indiegogo platform.	\$34500/ 198

Ukrainians have the opportunity to represent their own startups on foreign sites and participate in the financing of other people's projects. For example, only during 2014 more than 1 thousand individuals from Ukraine provided US\$ 259 thousand of financing. It can be said that the

problems of trust and motivation are key to the development of crowdfunding platforms in Ukraine [16].

Some successes in promoting crowdfunding in Ukraine are evidenced by projects for the implementation of which in 2020 more than US \$ 2 million was attracted (see Table 4).

In Ukraine, crowdfunding platforms oriented towards the local market are just developing. They are popularized and applied in various public niches: from purely commercial structures to cultural, creative, social and innovative.

In recent years, several Ukrainian crowdfunding platforms appeared, aimed at solving various problems, including the provision of humanitarian aid to victims of the Euromaidan and the conflict in Eastern Ukraine, business startups and innovative projects for the development of civil society and communities. Ukrainian crowdfunding platforms can be classified according to their specialization: humanitarian aid, non-profit organizations and social entrepreneurship. The largest platforms that operate in the domestic market are the following: GoFundEd, BigggIdea, Indiegogo, Fundly, Patreon, Smallknot, RocketHub, GoFundMe. It is worth noting some of the features of each of them, and group them by certain types of crowdfunding.

In Ukraine, three main types of crowdfunding may be distinguished:

- 1) Charitable crowdfunding (charity-giving crowdfunding, which outside Ukraine is usually called donation-based crowdfunding) raises funds for targeted assistance or urgent, often individual, needs. Examples of charitable crowdfunding include raising funds for a particular person's medical treatment or long-term medical care, restoring a damaged house, or paying for a University tuition. Several charitable crowdfunding platforms, including org.ua and People's Project, were founded after the Euromaidan; the others, including the Ukrainian Philanthropic Marketplace (UPM) and Tabletochki, existed before 2014.
- 2) Crowdfunding, aimed at community development (community-enhancing crowdfunding) uses philanthropy to improve the efficiency of community and promote the values of an open society, which are wider than the immediate benefits of the project authors and donors. These are projects aimed at the development of city and infrastructure, information exchange or educational projects, public broadcasting and the like. Crowdfunding platform aimed at community development include Spilnokosht, My City (projects for the development of Odessa) and GoFundEd (a new platform for educational projects). Spilnokosht is a platform for community development projects in urbanism, art, media, human rights, technology and education. Spilnokosht, founded in 2012 on the basis of BigggIdea social innovation

platform and supported by Pact in the framework of the UNITER project, has become one of the first and most famous Ukrainian crowdfunding platforms of social innovation and community development projects [18]. Despite the relatively low volume of raised funds compared to, for example, the Ukrainian Philanthropic Marketplace (UPM), Spilnokosht is an example of how crowdfunding affects the complex transformation processes in Ukraine. For example, the Hromadske Radio campaign on Spilnokosht provides evidence of the willingness of people to pay for objective information and to support the reform of public broadcasting. The first Hromadske Radio campaign on Spilnokosht was started in 2013 before the start of the Euromaidan. The "Public Television" (Hromadske TV) fundraising campaign [18], which raised UAH 1 million (US\$40694,59 at the rate on 08/02/2020), may be considered a turning point in the history of Ukrainian crowdfunding. In 2013 Spilnokosht had already conducted three Hromadske Radio campaigns oriented towards the Ukrainian diaspora.

Spilnokosht promotes the development of a culture of charity, in which the charity giver cares about the quality of the project implementation due to the fact that the author of the project is accountable for the money spent (so-called strategic philanthropy) [18].

GoFundEd is a new crowdfunding platform for educational projects that enables teachers to raise funds for their innovative school projects aimed at developing the most important skills of students. As of September, 2018, the platform has conducted nearly 90 successful campaigns and raised more than UAH 2237839 (US\$ 91067,94 at the rate on 08/02/2020).

NGO "Teple Misto" proposed a completely different model of crowdfunding, already tested in Ivano-Frankivsk. The initiative is aimed at attracting 500 investors to open a restaurant in Kiev, 80% of the profit from which will be used to finance social initiatives that will contribute to the development of the city of Kyiv.

- 3) Crowdfunding platforms with non-financial rewards (reward-based crowdfunding), such as Kickstarter, offering donors the option to pre-order, and authors of projects the financing of start-ups, are still evolving in Ukraine. However, Ukrainians actively use the opportunities of international platforms of this type, in particular Kickstarter, which offers the use of its technical solutions worldwide and expanding the customer base for business products produced in Ukraine.

One of the most successful Ukrainian crowdfunding platforms is Na-Starte.com with the head office in Odessa. Today we can talk about the launch of more than a hundred projects, 15% of which found the necessary funds,

raising up to UAH 100 thousand (US\$ 4069,46 at the rate on 08/02/2020).

Despite the fact that the platform team consists mainly of inhabitants of Odessa, the projects are launched in Zaporizhzhia, Kyiv, Cherkasy and Dnipro. The implementation of the most recent initiative has made them famous throughout Ukraine. Using the Na-Starte.com platform, UAH 3.7 million (US\$ 150569,99 at the rate on 08/02/2020) -124% of the stated amount of fundraising - were raised to film the movie "Odessa founding" by Heorhii Deliiiev. No crowdfunding platform of the country has demonstrated such figures yet [19].

Today, Na-Starte.com is aimed at working with two audiences: authors and sponsors. The first should understand the model and learn how to use the crowdfunding platforms, the second should actively support projects and increase confidence in the Ukrainian crowdfunding as a whole [19].

There are three key socio-economic risks for Ukraine within the framework of crowdfunding:

- 1) Distrust of innovative financial instruments on the part of potential investors. There is low involvement in investment processes, insufficient level of financial literacy, high level of distrust.
- 2) Increase in capital outflows and innovation projects to other countries. According to industry representatives, an imperfect regulatory system is the main obstacle to the development of Ukrainian crowdfunding. This moment forces investors and projects to look for more comfortable conditions, and this is very disadvantageous for the domestic economy.
- 3) Exclusion of a country from the processes of international integration in the sphere during the adoption of prohibitive and restrictive measures. The discussion of the regulation of the crowdfunding system takes place in the international arena. The development of new financial instruments has a serious globalization effect, contributes to the formation of the international community within the industry. If global trends are ignored, the country may lose the opportunity to interact with others in this area.

#### 4. Conclusions and Future Work

Crowdfunding is simple to use, accessible and, as practice shows, effective. It is easy to implement and apply for both enterprises and potential investors, who may be ordinary citizens. Of course, the vast majority of crowdfunding projects in developed countries are aimed at financing innovative projects as highly profitable and the riskiest.

The Ukrainian market of crowdfunding services is still in its infancy and lags far behind its foreign counterparts. One of the main disadvantages is the lack of a legislative framework. Introduction to the legal field of basic

concepts in the field of crowdfunding will allow to use its potential in full.

The development of crowdfunding infrastructure in Ukraine is an urgent need for the economic development and revival of business of various size. The implementation of various innovative projects in production is one of the conditions for the formation of domestic economy during its digital transformation, and this can be done with the help of crowdfunding platforms. Of course, there are certain shortcomings and obstacles to the development of this type of financing, but it still provides great opportunities for startups at an early stage of development. Because it is not only a chance to raise funds on acceptable terms. The main thing is the opportunity to test your idea and find out how important it is and how much society needs it.

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