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THE ERA OF THE DIGITAL ECONOMY IS AN ERA OF NEW OPPORTUNITIES AND PROSPECTS FOR BUSINESS DEVELOPMENT BASED ON CROWDSOURCING TECHNOLOGIES

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Abstract. Crowdsourcing is one of the most popular modern phenomena in business that allows you to use the work of a voluntary "crowd", i.e. the opportunities of people who are not employees of the company. Crowdsourcing can be considered a new way of production.

The main goal of crowdsourcing is to reduce costs, but the more important goal is to accelerate innovation. A synergistic effect occurs due to the fact that people are representatives of absolutely different professions involved in the single process of creating a new product. What is crowdsourcing, what is its nature and essence? Why is it gaining popularity all over the world? This article provides answers to these questions.

Keywords: digital economy; crowdsourcing; Internet things; crowd; crowd platform; crowdsourcing; crowdsourcing product; commercial crowdsourcing; social crowdsourcing; innovation crowdsourcing; crowdfunding; business models.

Introduction. The modern type of economy affects all sectors without exception, from retail to education, energy, and many others. A key element of the infrastructure of the modern economy is the digital economy, which includes the corresponding digital technologies, namely: the Internet of things (IoT), big data (Big Data), robotics, artificial intelligence, mobile devices - all of them modify the ways of economic relations and social interaction.

Despite the fact that the impact of the digital economy on economic processes and relations is obvious, this issue is not yet sufficiently studied and requires detailed consideration.

It should be noted that within the framework of digitalization of economic relations, not enough attention is paid to the issues related to the development of digital potential in order to achieve innovative growth of individual firms and industries. In addition, the institutional aspects of the modern economy, as well as the problems and prospects of business

development in the conditions of the digital economy formation, are practically not considered. Thus, in General, the place of the digital economy in the General system of modern economic relations is not properly reflected.

Literature Review. The economic development of Uzbekistan in the context of globalization of the world economy and technological development is difficult to imagine without the rapid growth of the digital economy. For example, the consulting company Accenture predicts that by 2022, up to a quarter of global GDP will come from the digital sector. It is not surprising that 2019 secretly marked the beginning of the era of technology giants, when the list of the 10 most expensive companies is firmly entrenched 7 companies in the technology sector.

The lack of digital skills in Uzbekistan can become a serious obstacle to digital transformation. Uzbekistan, as one of the few developing countries, has



absolute adult literacy rates (100% in 2016) compared to other countries with similar levels of GDP per capita (for example, in the Lao people's Democratic Republic, 84.66% in 2015). Due to the weak digital infrastructure and lack of digital skills in the country, digital trade is developing at a slower pace in Uzbekistan.

In 2017, Uzbekistan began its path to the e-government system with the development of a web portal for public services. In 2018, 127 online services were offered from various government agencies, and the number of applications reached 3.2 million.

In recent years, Uzbekistan has adopted a number of fundamentally important documents. According to the Decree of the President of the Republic of Uzbekistan No. 3832 of July 3, 2018 "On measures for the development of the digital economy in the Republic of Uzbekistan"¹, our country is taking large-scale measures to develop the digital sector of the economy, introducing electronic document management systems, developing electronic payments and improving the legal framework in the field of e-Commerce. In order to further improve the system of public administration in Uzbekistan and create conditions for the introduction and development of the digital economy, improve the investment environment, as well as the implementation of the action Strategy for the five priority areas of development of the Republic of Uzbekistan in 2017-2021, training of qualified personnel in the development and use of "blockchain" technologies will be organized.

Materials and methods. The digital economy has aroused the interest of scientists and specialists in issues without which it is impossible to use all the possibilities of modern economic realities and reduce technological and economic gaps with successful market counterparties.

Macroeconomists could study the role of crowdsourcing in shaping new economic thinking among society's representatives and increasing the country's innovative potential in order to solve labor-intensive tasks that require a long period of time and significant material and financial resources. For

example, the study of the human genome, the development of new drugs that allow the transition to individualized medicine, as well as to assess the risks and threats behind the processes of attracting the "crowd" to perform work at no cost.

The task was to investigate the essence and economic nature of crowdsourcing, describe the mechanisms for developing and implementing crowdsourcing projects, calculate the budget (cost savings) and investment plan, and most importantly, develop methodological foundations and reveal the features of industry crowdsourcing in order to further promote its technologies in the practice of companies.

What is crowdsourcing, what is its nature and essence? Why is it gaining popularity all over the world? This article will provide answers to your questions.

There are not many definitions of the term "crowdsourcing". Thus, according to Jeff Howe, "crowdsourcing (crowdsourcing, crowd - "crowd" and sourcing - "use of resources") is the transfer of certain production functions to an indefinite circle of people, the solution of socially important tasks by volunteers" [1, P. 640]. If you can agree with the first part of the definition, then the second part creates barriers to understanding crowdsourcing and contradicts the first part. So, according to Jeff Howe, we can make a logical conclusion that all cases of crowdsourcing are relevant only for socially significant tasks. And then all business problems that are solved by implementing crowdsourcing projects can be considered socially significant, but this is not the case.

Currently, businesses are embedding crowdsourcing technologies not only in the development of medicines and the study of the human genome, which is a task of special importance, but also often use them to promote the product on the market. The main goal is to get higher profits by generating sustainable demand with the direct participation of crowdsourcers, i.e. those who developed this product.

According to L. V. Lapidus, crowdsourcing in a broad sense is the inclusion of people ("crowds") in

¹ Resolution PP-3832 "On measures for the development of the digital economy in the Republic of Uzbekistan" dated July 3, 2018



the process of creating, financing, producing, and promoting a project (product, service) on a voluntary basis in order to add consumer value and make a profit by generating additional demand for a project (product, service) or solving socially significant capital, labor, and knowledge-intensive tasks using a crowdsourcing platform [2].

Results. Crowdsourcing in a narrow sense can be considered as a new type of production based on the use of collective intelligence, leading to a synergistic effect, thanks to the transfer of part of the production operations to an unlimited in space and time "crowd" (people-volunteers), who are able to perform their assigned functions at a convenient time in 24/7 mode (24 hours 7 days a week) from different points of the world on the Internet (see Fig. 1).

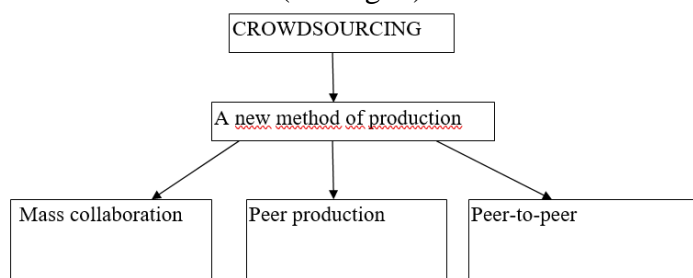


Fig. 1. The essence of crowdsourcing.

An important distinctive feature of crowdsourcing is that the diversity of the "crowd" is achieved due to the fact that there are no restrictions on the selection of applicants for work. In this context, the "crowd" is seen as a variety of those who are included in the production on a voluntary basis. There are no restrictions on nationality, level of education and professional skills, etc. the Synergistic effect is provided due to the heterogeneity of participants in crowd projects [3]. Attracting the "crowd" to work is possible only through the use of Internet technologies. As practice shows, often the best results are achieved by non-professionals, people who are interested in this issue as a hobby. For example, the study of the human genome, bird behavior, open source software development, industrial design, etc. Participants enjoy the process and have a strong internal motivation to achieve the result.

A crowdsourcing platform (crowdsourcing platform) should be understood as a specially developed technology service, owned or leased, where

it is possible to collect, process, store and transfer large amounts of data and financial resources received from crowdsourcers over the Internet. When it comes to collecting, storing and distributing voluntary donations, the platform is considered a crowdfunding platform. Crowdsourcer - a person, a representative of the "crowd", who voluntarily participates in a crowdsourcing project (crowd project). A crowdsourcing product is understood as anything created by a "crowd", i.e. using the work of "crowdsourcers" and based on a crowdsourcing platform. A crowdsourcing product can be a project, product, or service.

It is a mistake to believe that everything can be called crowdsourcing: from creating a questionnaire on a site for collecting customer impressions to embedding volunteers in the main business processes of the production cycle. In order to, to clarify this issue, let's look at different types of crowdsourcing and describe their features.

It is advisable to distinguish two types of crowdsourcing - for solving problems of the commercial and public sectors of the economy:

- * commercial crowdsourcing;
- * social (non-commercial) crowdsourcing.

Commercial crowdsourcing is the inclusion of people ("crowds", crowdsourcers) in the process of creating, financing, producing, and selling a project, product, or service on a voluntary basis in order to generate profit by adding consumer value and generating additional demand for a project, product, or service created by crowdsourcers using a crowdsourcing platform on the Internet.

Mandatory features of commercial crowdsourcing are the following.

1. People (crowdsourcers) perform work on a voluntary basis.
2. Crowdsourcers are active on the Internet.
3. Crowdsourcers are a heterogeneous "crowd".
4. Crowdsourcers add consumer value to a product (service).
5. Crowdsourcers take part in one or more of the following processes: creation, financing, production, promotion, distribution of a project (product, service).



6. The developers of a crowdfunding project pursue commercial goals: to achieve higher profits.

7. Crowdsourcing acts as an electronic marketing tool for promoting a project (product, service) created with the participation of crowdsourcers on the market.

8. There is an additional demand for a product (service) created with the participation of crowdsourcers.

For example, this type of crowdsourcing is used by Flickr, Wikipedia, P&G, YouTube, MySpace, Linux, etc.

It should be noted that the "prediction market" can be considered as a crowdsourcing technology. By its nature, the "forecast market" is very similar to commercial crowdsourcing. User activity is carried out on the Internet, anyone can participate, and the company's forecast is used to achieve commercial results. For example, Microsoft, Google, and others use this tool in their activities.

Social (non-commercial) crowdsourcing is the inclusion of people ("crowds", crowdsourcers) in the processes of solving capital, labor, and knowledge-intensive tasks (including socially significant ones) using a crowdsourcing platform on the Internet on a voluntary basis that does not pursue commercial goals.

Among the features of social (non-commercial) crowdsourcing are the following.

1. People (crowdsourcers) perform work on a voluntary basis.

2. Crowdsourcers are active on the Internet.

3. Crowdsourcers are a heterogeneous "crowd".

4. Crowdsourcing solves capital, labor, and knowledge - intensive tasks.

5. The developers of a crowdfunding project do not pursue commercial goals.

For example, conducting surveys of residents of the country.

It should be noted that volunteering can be attributed to social crowdsourcing if the condition is met that volunteers perform work using the Internet.

A special case of commercial and non-commercial crowdsourcing is crowdsourcing of innovations. Crowdsourcing of innovations - involving people ("crowds", crowdsourcers) in the process of searching for an innovative idea (solution) of a project

(product, service) using a crowdsourcing platform in the Internet on a voluntary basis. Practitioners are increasingly using the term "open innovation", which can be seen as the end product of crowdsourcing innovations.

Mandatory features of crowdsourcing innovations are the following.

1. People (crowdsourcers) perform work on a voluntary basis.

2. Crowdsourcers are active on the Internet.

3. Crowdsourcers are a heterogeneous "crowd".

4. The result of crowdsourcers' work is an innovative idea (solution, project, product, service).

5. A crowdfunding project can have both commercial and non-commercial goals.

For example, "idea exchanges" aimed at finding innovative ideas to improve the quality of products (services) can be considered as a technology for crowdsourcing innovations, which is a special case (form) of commercial crowdsourcing, i.e. aimed at increasing the company's profits. If a public authority has launched a crowdsourcing project to collect ideas for developing an innovative mode of transport, then we are talking about non-commercial crowdsourcing of innovations.

Another type of crowdsourcing is crowdfunding. Understanding crowdfunding as the collection of voluntary donations on specialized crowdfunding platforms for the purpose of further joint financing of innovative projects, it is worth arguing that crowdfunding is one of the technologies of crowdsourcing. Crowdfunding and crowdsourcing are related as part and whole, i.e. crowdfunding is a type of crowdsourcing. In other words, crowdfunding is financial crowdsourcing, the collection of voluntary donations using a crowdfunding platform on the Internet.

In this case, the product of the "crowd" is the funds raised to finance projects. Jeff Howe very accurately revealed the essence of crowdfunding, calling it a "social Bank" or "collective wallet" [1, P. 264].

When Wikipedia needed financial support in 2009, users of the online encyclopedia collected 5.5 million euros "in less than 8 weeks. 1.5 million euros were transferred by the Google search engine" [4, P.



34-35]. In March 2014, one of the largest venture capital funds, Kickstarter, demonstrated financial support for projects provided by users of the Kickstarter crowdfunding platform in the amount of \$1 billion. more than half were invested by US users (\$663 million). In second place with more than ten times the gap (\$53 million) - the UK. In total, investments from Europe accounted for about \$100 million [5] (see Table. 1). In Russia, crowdfunding practices of public Finance are being successfully implemented. So, Planeta.ru - the largest Russian crowdfunding platform, founded in 2012, one of the first services in Runet for collective project financing. Winner of the "Runet Award 2014" in the category "Economy, Business and Investment" [6]. In just a few years, 566542690 rubles were collected on the platform, and 2466 successful projects were implemented. Every third project is successful.

Table. 1.

Donations on the kickstarter crowdfunding platform by country

<i>Country</i>	<i>The amount of donations, \$million</i>
USA	663,3
Great Britain	54,4
Canada	44,9
Australia	31,8
Germany	21,6
France	10,1
Sweden	7,2
Japan	7,1
Netherlands	7,0
Singapore	6,7

Source: People's records / / Secret of the company. No. 4 (340). 2014. P. 41

Planeta.ru it allows you to easily and quickly create projects directly on the site using a special designer. The platform has 562,605 registered users, more than 700,000 visits per month, and more than 500,000 unique visitors per month, of which 40% are women and 60% are men. Segmentation of users by age: 5.8% under the age of 18; 30.8% between the ages of 18 and 24; 41.5% 25-34; 8.6% 35-44; 13.3% over the age of 45. We work as a "full-service Agency":

crowdfunding, logistics, promotion of PR projects, production, post-production and training. More than 12,000 people have been trained in their own "crowdfunding School" Planeta.ru.

The conducted research allows us to conclude that crowdfunding actually acts as an electronic marketing tool to promote projects for which voluntary funds are collected donations. As practice shows, people abroad mostly donate their funds to projects for the development of computer games. in Uzbekistan, crowdfunding is not yet sufficiently developed. This is primarily due to the lack of a legal framework, i.e. a weak legal field.

When doing business on the Internet and using crowdsourcing technologies, there is a reduction in the cost of communicating with crowdsourcers, promoting products and services to the market, and providing legal support for contracts with partners, which are represented by the "crowd".

We are talking about transaction costs [7], by which Ronald Coase in the work "Nature of the firm" understood the costs arising in connection with the conclusion of contracts, i.e. the costs of collecting and processing information, conducting negotiations and making decisions, monitoring and legal protection of the execution of contracts" [8, P.386-405].

The digital transformation of the business environment has led to the transition from the business model "we do everything on our own" to the business model "on our own plus outsourcing" and then to the business model "on our own plus voluntary "crowd" and eventually to the business model "pure 100% crowdsourcing (by voluntary "crowd")".

Currently, businesses mostly use the "on their own plus voluntary "crowd" model. Examples of companies with a "pure crowdsourcing" business model are photo banks, YouTube video hosting, Wikipedia, social networks, etc., i.e. it is inherent in companies that do full business on the Internet. Companies of this type primarily compete for Internet audience, as users play a key role in ensuring sustainable business growth. It should be noted that the capitalization of such companies directly depends on the number of content producers and consumers, community members, types, and the rate of growth of their number. For example, Google acquired the



YouTube video service for \$1650 million, which lasted only nine months at the time of sale, and thus demonstrated the high investment attractiveness of a marketing model based on 100% crowdsourcing technology.

A distinctive feature of the "100% crowdsourcing" or "pure crowdsourcing" business model is the complete transfer of production functions to crowdsourcers. This inevitably leads to a reduction in the number of staff. Companies are becoming small in number and can be formally referred to as small business entities. At the same time, hundreds or even thousands of crowdsourcers are attracted to work, who do not need to be officially registered for work, do not need to bear social responsibility for maintaining their working capacity and pay for holidays. And this is a trend in the development of modern companies, along with a focus on simplifying organizational management structures and reducing the number of management levels, even in large corporations.

Crowdsourcing changes business models not only for commercial companies. In the future, there will also be changes in the non-profit sphere, which will be accompanied by a transition to labor organization based on the creation of open communities that are not limited in time and space. For example, crowdsourcing will become more attractive for scientists in solving research problems and organizing scientific work by attracting like-minded people under the leadership of a leading scientist or group of scientists. Thus, there will be a departure from labor collectives limited by the staff of structural divisions. This is especially true when specialists from different professional fields are required to solve a scientific problem.

Thus, crowdsourcing can be considered not only as a technology for creating, promoting a product, service, and managing projects, but also as a talent management technology.

Discussions. The nature and essence of crowdsourcing determine the benefits that the business, the crowdsourcer itself, and the country's economy receive. Among the economic and social benefits that are currently demonstrated by businesses that implement crowdsourcing projects are: reducing costs; stimulating innovative developments; meritocracy;

increasing demand for products that are created with the participation of the "crowd" (see table. 2).

Table 2.
Benefits of crowdsourcing

<i>Benefits</i>
for the company
Reducing transaction costs _
Making a profit by generating additional demand for the project (product, service)
for crowdsourcers
Socialization - interaction with other people
Opportunity to do what you love
for national economy
The decision of socially-significant capital-, labor - and knowledge-intensive tasks
Developing innovative thinking among members of society

Currently, crowdsourcing is most popular in medicine, pharmaceuticals, programming, information services, and research and development. For example, "IBM has invested \$1 billion in open source software development... Amazon allows 140,000 SOFTWARE developers to have access to their product databases and payment services" [9, P. 104].

Participation in a crowdsourcing project allows a crowdsourcer to satisfy one or more needs. The most popular needs are: socialization (interaction with other people), creating an image on the Internet, and self-expression, increase resume capitalization and strengthen reputation. Along with these needs, some crowdsourcers manage to make good money. Thus, the prize Fund of the crowdsourcer-winner ranges from \$200 to \$100,000. Often crowdsourcers are driven by unrealized abilities. For example, the desire to engage in a favorite activity, which a person dreamed of since school, but he had to go to work, not related to the area of his interests.

Since the advent of the Internet, practitioners have followed the path of transferring the most advanced marketing tools of the digital economy and have proven the effectiveness of introducing new business technologies that reduce costs [10]. All this



made it possible to use crowdsourcing and crowdfunding technologies as innovative marketing tools for promoting projects, products and services on the Internet.

Wikipedia, Lima, Procter&Gamble, the air force, Nike, Best Buy, DuPont, MySpace, Starbucks, and others are successfully integrating crowdsourcing technologies into their business models. Popular specialized crowdsourcing platforms include YourEncore, Inno-Centive, eBird, Flickr photo service, YouTube video hosting service, iStockphoto photo Bank, and website Austrosurf.com for example, "all changes, updates, and improvements made to the program are publicly available and are free to all members of the Linux network. Hundreds of global companies like Google, IBM, US Postal Service, and Conoco have joined the open Linux network and become part of an ever-expanding community of programmers and users" [11, P.165]. "According to the results of a study conducted by the Massachusetts Institute of technology, an error in an article entered in Wikipedia randomly is corrected in an average of 1.7 minutes" [9, P.104]. Such results can only be achieved by using the possibilities of an unlimited "crowd".

Crowdsourcing is interesting not only for business representatives. More and more Internet users participate in the creation of user content and share their impressions on social networks, often for their own promotion. The Internet is increasingly becoming unlimited. Attitudes to knowledge and information are changing. "The desire to keep information in their property is replaced by an emphasis on openness and joint trust ownership. The bid for transparency instead of secrecy is based on the premise that creating value in the network does not devalue the individual contribution, but increases the value at the disposal of everyone as an equal participant in the common cause" [11, P.165]. Open educational services are being created, for example, opencourseware of the Massachusetts Institute of technology, the Russian service national platform "open education". Teachers of the highest-ranking universities develop training courses that are convenient for studying in a distance format.

Conclusions. Crowdsourcing and crowdfunding are slowly but surely gaining popularity.

You can observe the implementation of crowdsourcing projects, primarily in the field of open source software development, when anyone anywhere in the world can sit down at a computer, develop a product and become the best.

The conclusion is indisputable that crowdsourcing technologies are the technologies of the future and many scientific problems still need to be solved in order to answer the important question whether the crowdsourcing Institute will not create the problem of unemployment and social insecurity for those who choose the crowdsourcing path. And this is a task for macroeconomists, and for modern managers, one thing is obvious: all innovative marketing tools that allow companies to increase their commercial power will be supported by the business community and transferred to practice.

The era of the digital economy is an era of new opportunities and prospects for business development based on the active use of information technologies and innovative marketing tools for promoting projects, products and services on the Internet based on crowdsourcing technologies. The rejection of electronic communications and innovative technologies for promoting products and services to the market based on crowdsourcing can lead to a loss of control over the reach of the target audience, weak feedback from consumers and, most importantly, the inability to compete for reducing transaction costs.

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