

Crowdsourcing as a modern management technology used by government, business and society in the context of new industrialization

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Abstract—The purpose of the paper is to analyze the crowdsourcing platforms in Russia as a part of new economy resulting from new industrialization processes. One of the indicators of new industrialization is a widespread adoption of electronic technologies. Crowdsourcing is considered to be one of the most effective technologies in the new economy. In this study, crowdsourcing is regarded as a management technology applied by government, business and society to achieve their goals by attracting intangible assets. Each subject applies this technology according to its interests in its own specific way. The crowdsourcing platforms' success depends on their usability and interactive tools including feedback opportunities, advanced service, technical support, online help, social media presence. The most significant crowdsourcing platforms were selected and analyzed. The quantitative and qualitative characteristics of the platforms created by government, business and citizens were investigated. The principal conclusions drawn by the authors of the paper are the following ones. The most platforms in Russia are established by governments or citizens and aim at solving urgent social problems and development of interaction between governments and citizens. Companies do not use the potential of crowdsourcing. According to the visit statistics, 5 from 8 platforms are rarely visited. Most of the platforms have a good usability; however they do not provide feedback opportunities. Although the platforms try to employ opportunities provided by social media, they do not use all their benefits.

Keywords—crowdsourcing; new industrialization; management technology; new economy; interaction; government; intangible assets

I. INTRODUCTION

In the modern new economy resulting from new industrialization processes knowledge has become one of the most crucial factors affecting its development. The value of knowledge has vastly increased through the wide dissemination of innovations and new technologies.

The new economy is characterized by development and expansion of the public space by means of collaboration between economic actors through various virtual forums and platforms as well as the use of different kinds of capitals such as social, reputation and intellectual capitals as intangible assets. Thus, the new economy forms a certain “intangible superstructure”, the creation of which can be explained by exhaustion of natural resources on the one hand and the transformation of the relationship between the main social actors (governments, businesses and citizens) on the other hand. Currently, government agencies, commercial and non-profit organizations aspire to build collaboration with their stakeholders and customers which allows to involve them in decision making process and increase trust between the social actors. Eccles & Kryus (2010) formulated the principles the connection between an entity and their stakeholders must be based on – collaboration and engagement.

It is in line with the concept of corporate dialog promoted by Bonson and Torres (2012) which implies fair equal relationship between all the participants of the communication process.

This situation entails development of new management technologies which could enable achieving these

goals by the fastest and the most productive way. Crowdsourcing platforms can be an effective tool of communication between the social actors.

The purpose of the paper is to analyze the crowdsourcing platforms in Russia to develop measures for improvement of the existing system. The paper is structured as follows: Section 2 reviews the crowdsourcing related literature, Section 3 presents the methodology, Section 4 analyses the empirical results obtained, and Section 5 presents the conclusion.

II. LITERATURE REVIEW

Although we can identify examples of crowdsourcing in the literature of the 20th century, the term emerged relatively recently. Even before active use of the term, the idea of employing knowledge and skills of the crowd was developed and discussed by many researchers. The American journalist [James Surowiecki](#) was one of the first who argued that in many situations cumulative knowledge of large numbers of people can be used to solve important social and business tasks. Exploring his idea, he comes to the conclusion that collective intelligence of crowd enables to achieve more effective results. Moreover, wisdom of decisions made by the crowd does not depend on the amount of knowledge and the level of intelligence of participants. Even if the majority of the participants are not professional enough, the group is able to make a wise collective decision. However, to achieve this goal the crowd must possess the following characteristics: diversity of opinion, independence, decentralization and aggregation [3].

Kietzman (2017) gives a few examples of the involvement of people in solving organizations' problems. The first of them relates to the 18th century and is known as a Longitude Prize. The researcher highlights some limitations of using crowds' knowledge which were common before the progress in the field of information technology such as impossibility to work with large populations, difficulties to collaborate, and pure inertia [5].

The next step in the development of this concept was taken by Howe who introduced the term "crowdsourcing" in 2006. In the article, Howe gives a definition of crowdsourcing which he considers as "the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined (and generally large) network of people in the form of an open call" [4]. Various researchers ([5]; [6]; [7] and [8]) updated and extended this definition by adding some new characteristics such as variety of participants, division into human and non-human actors [5], the kind of crowd, incentives, different variants of crowdsourcing initiatives [9], pre-selection of contributors, accessibility of peer contributors, ways of remuneration, aggregation (Geiger), a flexible open call to obtain knowledge, idea or added value [6], characteristics of crowd, initiator and crowdsourcing process [7].

Variety of definitions developed in recent years can be explained by the fact that the researchers look at crowdsourcing from different points of view [7] considering its various aspects.

The broad scope of the term implies variety of its practices. Classifications developed by different scholars focus

on different criteria. Based on the kind of problems being solved Brabham (2008) identifies 4 types of crowdsourcing platforms such as knowledge discovery and management, broadcast search, peer-vetted creative production, distributed-human-intelligence tasking. According to the criteria of diversity and aggregation of contributions crowdsourcing types are as follows: microtasking, information pooling, broadcast search, open collaboration [11]. Regarding the dimensions of subjective or objective content on the one hand and aggregated or filtered contributions on the other hand, the following crowdsourcing forms can be identified: crowd-voting, micro-task crowdsourcing, idea crowdsourcing, solution crowdsourcing [12].

Exploring definitions of crowdsourcing and discussing its different aspects all the researchers agree about the benefits crowdsourcing brings. In this paper, crowdsourcing platforms in Russia and their characteristics have been investigated.

III. METHODS

To achieve the main purpose this study conducts the analysis of the crowdsourcing platforms developed in Russia for different purposes.

There are no national statistics on the number of the crowdsourcing platforms in Russia. According to the investigation conducted by the authors 217 platforms are available at present. However, two thirds of them exist only on paper. Although these platforms are officially registered, they do not provide sufficient information. They are not updated regularly and have dead links. All the existing functional platforms can be divided into three groups depending upon the purpose and the initiator of their creation:

- 1) Initiated by business with the purpose to obtain commercial gains.
- 2) Initiated by governments to solve urgent citizens' problems as well as build and maintain cooperation with them.
- 3) Initiated by citizens or public organizations to solve urgent citizens' problems.

From all the platforms 8 the most significant were selected and analyzed according to the developed criteria: subject matter, feedback, initiator of creation, number of participants, timely updating, interface and navigation system, accessibility, social media presence, online help, statistics of the site [visits](#). 3 platforms initiated by governments and 3 initiated by citizens were investigated. It should be noted, it was difficult to find examples of business crowdsourcing. There are only two attempts to employ this management technology in Russia in companies. Therefore, we investigate only two platforms initiated by business

IV. RESULTS AND DISCUSSION

In this paper, we present results of the investigation of the main crowdsourcing platforms established in Russia in recent years. Despite the great potential of crowdsourcing it still did not become a widespread phenomenon in the country. Exploring the present situation, practitioners conclude that the Russian businesses do not use all the benefits of crowdsourcing [13]. The following are among the reasons for this situation:

1) Reluctance of people in Russia to give their ideas and knowledge for free. Most of them would prefer to be rewarded, especially if they share their ideas with business which is traditionally associated with big money in Russia.

2) Lack of information exchange platforms through which entrepreneurs could establish contacts with customers or future experts.

3) Lack of competent and qualified specialists capable to work on crowdsourcing projects, organize communication with potential experts, select and evaluate suggested ideas.

Although the potential of crowdsourcing has not been fully realized in Russia yet, more and more organizations and agencies begin to understand its importance and try to profit from its benefits. The findings of the analysis of the most significant crowdsourcing projects in Russia are presented below.

8 platforms were investigated to find out their most important characteristics. Most of them were established within the past 10 years. Among the selected platforms two were established by companies, three by government agencies, three by citizens. Initiators of creation and subject matters of the platforms can be seen in Table I.

TABLE I. INITIATORS OF CREATION AND SUBJECT MATTER

Name of the platform	Initiator of creation	Subject matter
Sberbank	B	Collective solving problems
Yandex. Traffic	B	Real time traffic information
Virtualnaya rinda	S	Help in emergencies
LisaAlert	S	Searching for missing people
RosYama	S	Database of potholes
Crowd.mos.ru	G	Social initiatives
One click Yakutsk	G	Interaction between local governments and citizens
Portal of caring people	G	Interaction between local governments and citizens

Regarding the purpose and subject matter of each platform, it can be concluded that one of them (created by Sberbank) acquires to solve its problems with the help of citizens who can offer their ideas to improve the bank's products. Yandex. Traffic is an app of Yandex, the Russian company which specializes in Internet-related services and products. The purpose of Yandex.Traffic is providing real time traffic information. The platforms created by governments aim at the improvement of interaction between local governments and citizens and the development of social initiatives. The platforms developed by citizens try to solve urgent local problems.

It is challenging to evaluate the demand on these resources and their popularity, since not all the platforms provide information about projects' participants as well as visit and view statistics. Table 2 shows that only three of the presented platforms have more than 10000 site visits. The other ones are rarely visited and attract little interest.

TABLE II. POPULARITY OF THE PLATFORMS

Name of the platform	Number of participants	Statistics of the site visits
Sberbank	Nearly 300000	71
Yandex. Traffic	Data not available	10866
Virtualnaya rinda	Data not available	1733
LisaAlert	25000	11243
RosYama	17914	1713
Crowd.mos.ru	143787	30083
One click Yakutsk	36000	141
Portal of caring people	38358	310

In order to evaluate the platforms, we investigated their usability understood as a set of the following qualities: interface and navigation system, online help, accessibility, timely updating.

TABLE III. USABILITY OF THE PLATFORMS

Name of the platform	Interface and navigation system	Online help	Accessibility	Timely updating
Sberbank	+/-	No	-	-
Yandex. Traffic	+	No	-	+
Virtualnaya rinda	+	No	-	+
LisaAlert	+	hotline	-	+
RosYama	+	offline	-	+
Crowd.mos.ru	+	technical support	Translated English version	+
One click Yakutsk	-	No	-	-
Portal of caring people	-	No	Options for visually impaired people	+

As a general rule for any platform, the navigation system must be simple to save users' time maximally. All the presented platforms have simple interface and relatively clear navigation system. The most platforms offer a wide range of information which is well organized. Sberbank's site has good interface, but does not provide much helpful information. Only "Portal for caring people" offers options for visually impaired people. Crowd.mos.ru provides a translated English version. As can be observed, the access of certain groups of people to the platforms is limited. Online help is available only on the platform "LisaAlert", Crowd.mos.ru provides technical support. Most of the platforms offer up-to-date information. The exceptions are Sberbank and One click Yakutsk where the information is not updated regularly.

Most of the platforms do not have feedback opportunities. The platforms established by governments show the worst results on this indicator (Table IV).

TABLE IV. FEEDBACK OPPORTUNITIES

Name of the platform	Feedback
Sberbank	-
Yandex. Traffic	comments
Virtualnaya rinda	questions
LisaAlert	forum
RosYama	-
Crowd.mos.ru	-
One click Yakutsk	-
Portal of caring people	-

Any platform can reach wider audience and increase its interactivity by the involvement of social media. The investigated platforms try to use this resource. The results are presented in Table V.

TABLE V. SOCIAL MEDIA PRESENCE

Name of the platform	Social media
Sberbank	Facebook, VK, Twitter
Yandex. Traffic	Facebook, VK, Twitter, Instagram, Odnoklassniki, Viber, WhatsApp, Telegram
Virtualnaya rinda	Facebook, VK
LisaAlert	Facebook, VK, Twitter, Instagram, YouTube, SMS
RosYama	Facebook, VK, Twitter, Odnoklassniki
Crowd.mos.ru	Facebook, VK, Twitter
One click Yakutsk	Facebook, VK, Twitter, Instagram, YouTube
Portal of caring people	Facebook, VK

As we can see, all the platforms widely use opportunities provided by social media. The most popular social networks are Facebook and VKontakte, the Russian equivalent of Facebook. However, the investigation shows that information published on these social networks is often identical to the platforms content. Collaborative tools provided by social media such as chat, shared agenda, forum, etc. are used only by the platforms "LisaAlert".

V. CONCLUSION

The study applied the analysis of the most significant crowdsourcing platforms in Russia to develop measures for their improvement. We can conclude that the most platforms in Russia are established by governments or citizens and aim at solving urgent social problems and development of interaction between governments and citizens. Companies do

not use the potential of crowdsourcing. According to the visit statistics, 5 from 8 platforms are rarely visited. Most of the platforms have a good usability, however they do not provide feedback opportunities. Although the platforms try to employ opportunities provided by social media, they do not use all their benefits.

The results of the presented study can be used to develop measures for improvement of crowdsourcing platforms. Further study can conduct a survey to find out stakeholders' opinions and attitudes towards crowdsourcing with the aim to improve communication between the main participants.

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