Selected Crowdsourcing Paradoxes – a Literature Review

Abstract
Crowdsourcing is a complex and multidimensional concept, which may lead to numerous misunderstandings. It belongs to the group of “paradoxical” phenomena. In particular it is possible to observe numerous paradoxes at the level of the virtual communities. The awareness of this fact is important in particular in the preparatory phase of crowdsourcing, in which the organisation identifies problems, makes decisions whether or not and in what time it should entrust their solving with an undefined and anonymous virtual community. Identifying these paradoxes may also increase the efficiency and success of crowdsourcing initiatives. The aim of the article is to identify the key paradoxes of crowdsourcing. The research was conducted based on a review of literature on management sciences. The obtained results enable indicating that crowdsourcing is the source of many benefits and positive effects, but it can also be harmful to the organisation and cause effects that are opposite to those intended. Too much information may make communication impossible, decrease the virtual community’s motivation for action and lead to the outflow of valuable information, loss of image, inertia, bureaucratisation, and decrease of the organisation employees’ involvement.

Key words:
crowdsourcing, paradoxes of crowdsourcing, public organisations management.

1. This project was financed from the funds provided by the National Science Centre, Poland awarded on the basis of decision number DEC-2016/21/D/HS4/01791.
Introduction

Crowdsourcing is one of the new subjects, which has appeared in the last decade. It may be said that it strengthens its position in management sciences; in addition in business practice it has become a megatrend, which drives innovations, collaboration in the area of scientific studies, business, or society. More and more organisations reach for it, for instance taking into account its potential business value [Leimeister et al. 2009] in the scope of innovative solving of problems [Afuah, Tucci 2013]. Creative effects possible to be achieved owing to crowdsourcing are based not only on individual features, motivation, experience, and capabilities of virtual communities [Paulus, Dzindolet 2008]. It is also important to note the role of the initiator, namely the organisation, which directs questions and demands to the virtual communities [Schemmann et al. 2016]. It seems that the multitude and large number of obtained ideas is important and valuable for the organisation. Owing to that the organisation may expand its existing activity and offer, create its own image, optimise its operational costs, modify the business processes [Malone et al. 2010], and achieve the intended results at lower costs in a shorter time.

Crowdsourcing is a complex and multidimensional concept, which may lead to numerous misunderstandings. As indicated by J.F. Lebraty and K. Lobre-Lebraty [2013, p. 23] it belongs to the group of “paradoxical” phenomena. In particular it is possible to observe numerous paradoxes at the level of the virtual communities. The awareness of this fact is important in particular in the preparatory phase of crowdsourcing, in which the organisation identifies problems, makes decisions whether or not and in what time it should entrust their solving with an undefined and anonymous virtual community. Identifying these paradoxes may also increase the efficiency and success of crowdsourcing initiatives. The aim of this elaboration is to identify the key paradoxes of crowdsourcing. The research was conducted based on a review of literature related to management sciences.

The term and essence of crowdsourcing

For the first time the notion of crowdsourcing appeared in the subject literature in 2006 owing to J. Howe [2006]. He defined crowdsourcing 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. This can take the form of peer-production (when the job is performed collaboratively), but is also often undertaken by sole individuals” [Howe 2006].
With time new definitions of crowdsourcing started to appear, which included the role of the Internet as a specific moderator [Quinn, Bederson 2011; Brabham 2013]. It started to be linked with establishing cooperation and relations with virtual communities [Yang et. al. 2008], and further making use of their wisdom [Surowiecki 2004] to solve problems [Vukovic 2009], creating innovative solutions [Sloane 2011], and open source software [Rouse 2010].

Looking at crowdsourcing from the organisation’s perspective, we refer to the actions conducted by an organisation which has made a decision on implementing crowdsourcing. In particular, this perspective enables establishing whether a problem directed by an organisation to virtual communities has been correctly assigned to a given task. In addition, within the framework of this perspective it is possible to determine crowdsourcing processes [Sharma 2010], aspects of intellectual property protection, crowdsourcing coordination mechanisms [Burger-Helmchen, Pénin 2010].

From the virtual community’s perspective, this community may be treated by the organisation as a partner in a crowdsourcing initiative. Adopting the virtual community’s perspective enables determining its motivation and behaviours. This means awareness of the factors which motivate to action [Brabham 2008, 2010; Lakhani et al. 2007] and the ways in which it behaves.

The technical level focuses on crowdsourcing technical aspects [Adepetu et al. 2012]. It enables determining the parameters of a crowdsourcing platform, i.e. software elements, technical functions, necessary data objects, interface, user authentication, their profiles, the skills and knowledge declared by them, history tracking, payment mechanisms, quality control, and work flow [Hetmank 2013].

**Selected examples of crowdsourcing paradoxes**

A paradox is defined as something that is both a certain state, but also the opposite state at the same time [Mick, Fournier 1998]. In management practice it is possible to indicate many paradoxes, which may arise from the various concepts of management. These communities express “a cognitive perplexity, which comes from previously adopted ways of perceiving and explaining reality” [Czakon 2012]. It should be emphasised that management sciences make use of the output of other fields of study and by the same token they are characterised by methodological pluralism and eclecticism [Sułkowski 2011]. Which means, on the one hand, possibility of using methods taking into account various paradigms and approaches, at the same time using logics of deduction and induction and a nomotetic and idiographic approach and on the other hand a cognitive freedom appears and a possibility of combining...
the methods from various disciplines, paradigms, and approaches [Sułkowski 2012]. In addition, the conditions in which contemporary enterprises function also contribute to the appearance of difficulties and paradoxes, "which in fact simultaneously condition themselves and condition the enterprise’s success understood as coping with the reality [Fojcik 2015, p. 19].

It is indicated in the literature that technologic advantages can be of paradoxical nature [Mick, Fournier 1998]. Crowdsourcing is listed among them – it may generate contrasting conditions that exist simultaneously. Which may signify that crowdsourcing may bring both positive and negative effects for each participant – both the organisation and the virtual community. Based on a literature review the most important paradoxes of crowdsourcing have been identified. In light of the fact that the principal construction material of crowdsourcing is wisdom of the crowd, thus of virtual communities [Surowiecki 2004] – the focus has been on the paradoxes connected with the virtual community. Nevertheless, the organisational level has not been omitted and thus the initiator and technological levels.

The identified, most often appearing paradoxes have been presented collectively in Table 1 – care for the level of crowdsourcing does not only come down to continuous aiming at maximising all of its aspects. Although on the one hand crowdsourcing gives many benefits to the initiator, on the other hand its too high level may be harmful to the organisation and cause effects that are opposite to the intended ones – which may be named the paradox of crowdsourcing. The identified paradoxes reflect a parabolic nature and they assume the shape of an inverted U [Czakon 2012]. In other words, when a given phenomenon [e.g. access to the ideas of others] assumes a strong form, then the expected level of the dependent variable [in this case creativity, output of the members of the virtual community] is low. Such approach is connected with obtaining benefits by the initiator, but also with awareness of the threats that may be caused by the virtual community members’ involvement in solving problems or creating ideas.
Table 1. Crowdsourcing paradoxes

<table>
<thead>
<tr>
<th>Crowdsourcing levels</th>
<th>Specification</th>
<th>Excessively low level</th>
<th>Excessively high level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual community level</td>
<td>Information</td>
<td>Ineffective communication, lack of understanding, aversion to sending ideas</td>
<td>Discouragement to creating and sending ideas, excessive stress, uncertainty, passivity, frustration, aversion to cooperation, informational overload</td>
</tr>
<tr>
<td>Access</td>
<td>Low quality of the ideas sent, dissatisfaction from participating in crowdsourcing</td>
<td>Violation of copyrights, temptation to pattern oneself on the ideas of others, theft of ideas, reduction of creativity, dispersion of attention, disappointment with participation</td>
<td></td>
</tr>
<tr>
<td>Organisational level</td>
<td>Task</td>
<td>Dissatisfaction, negative perception of the organisation, sabotage type, harmful actions</td>
<td>Dissatisfaction with participation in crowdsourcing, aversion towards the task itself and the initiator</td>
</tr>
<tr>
<td>Technological level</td>
<td>Functionality</td>
<td>Aversion to participate</td>
<td>Aversion to sending ideas</td>
</tr>
</tbody>
</table>

Source: own elaboration.

Creating versus destroying

The crowd in crowdsourcing is not an unorganised, chaotic group, but it is rather a collectivity, which demonstrates a will to react and be engaged. It becomes a characteristic virtual community, which is united by interactions, relations, and common knowledge [Rheingold 2000; Lin et al. 2008]. This constitutes a confirmation that in crowdsourcing, a group may achieve and work out more benefits than any expert [Jeppesen, Lakhani 2010; Leimeister 2012]. Its function is carrying out tasks, solving problems, or undertaking any activity [Burger-Helmchen, Penin 2010; Basto, Flavin, Patino 2010]. These communities are characterised by the following conditions: repeated involvement, active participation, strong emotional bonds, and common actions, access to common resources and defining the rules of access to them, mutuality of information, support, common context of social convention, language, and protocol, willingness to interact in order to satisfy one’s needs, common interests, norms, which lead the relations, computer systems, which assure support, and integrity among members. And so, the members of the virtual community are interested in co-creating, initiating ideas, and assessing ideas of others who participate in crowdsourcing [Schemmann et al. 2016]. Seemingly it may appear that from the
point of view of the initiator of crowdsourcing a large number of acquired ideas and active members of the virtual communities are invaluable. However, paraphrasing the statement "every excess becomes a vice" – a broad user base can also have negative effects on user engagement. It was stated in the literature that when a community surpasses a certain number of active users, idea generation is negatively affected [Chan, Li, Zhu 2015]. An excess of the ideas sent, users, feedback between the organisation and virtual community may discourage them from creating and sending ideas. It is said that it raises their stress level and causes uncertainty [Chan, Yim, Lam 2010] as well as it has a negative effect on the motivation to take part in the creative process [Paulus, Brown 2007]. The paradox discussed above refers to the engaging-disengaging paradox by G.S. Mick and S. Fournier [1998], according to which excessive motivation of the community to co-create may cause their passiveness, frustration, harmful actions, and a lack of willingness to cooperate.

One of the examples that confirm this paradox is Lubelskie Dobre Pomyśły [Lublin Good Ideas] platform. It was established in 2014 within the framework of a project financed from EU funds [Regional Operational Programme of the Lublin Province for the years 2007–2013] entitled: Economic Marketing of the Lublin Province within the framework of the financial perspective for the years 2007-2013. According to the assumption of the organisers, i.e. the Marshal’s Office of the Lublin Province, the aim of the platform is strengthening the economic image and raising investment attractiveness of the Lublin Province as well as increasing the region’s economic competitiveness and creating new jobs. The last Internet user entries are from the beginning of 2015, 25 users are registered. Despite the fact that the platform offers various possibilities of collecting points and further on exchanging them to prizes – the crowdsourcing endeavour has ended in failure.

**Availability versus unavailability**

Virtual communities are driven by various motives when they undertake to co-create crowdsourcing. Among these a feeling of connection with the other members of the community, willingness to communicate with people having similar interests, a need to constant access to information and knowledge, possibility to participate in games, tournaments, being anonymous, possibility to carry out commercial transactions, providing knowledge, in particular readiness to share knowledge with the other participant [Chiu et al. 2006], but also willingness to comment on the ideas of others are pointed out. However, such behaviours and motives may impede creativity and willingness to send one’s own ideas by the virtual community’s members
[Smith, Ward, Schumacher 1993]. Then a temptation takes place to compare one’s own idea with the others, which may decrease the interest in sending one’s original idea – due to fear of ostracism or destructive criticism [Pettuš, Sipilä 2007]. It is because they may have a feeling that their idea is not good enough. The availability of ideas on a crowdsourcing platform may also decrease creativity and output and cause dispersion of attention. The Internet users may influence or even inspired by an idea of another person and unconsciously propose analogous ideas [Stone 1971]. Access to an excessive number of ideas of others may lead to dissatisfaction [Grant, Schwartz 2011], decreasing efficiency [Chua, Iyengar 2008], and inertia [Paulus, Dzindolet 2008]. Nevertheless, limitation of access to the ideas of others or placing only one idea also leads to sending of low quality solutions and dissatisfaction with participation in crowdsourcing.

We the People was an endeavour initiated by President Barack Obama. Within this platform, it was possible to collect digital petitions to realise an idea. According to the organisers’ assumptions, an idea that received at least 5 thousand signatures in 30 days was implemented. Finally, over 34 thousand people signed a petition to secure funds to build the Death Star (see: https://petitions.obamawhitehouse.archives.gov/petition/secure-resources-and-funding-and-begin-construction-death-star-2016). Despite a discussion and placing of a counter of collected ideas, this idea was not implemented, which was justified by Obama’s administration with a negative attitude to blowing up planets. After that, considering the large interest and negative consequences, the petition signature threshold was raised to a range from 25 thousand to 100 thousand.

**Satisfaction versus resentment**

Creating an image is one of the benefits possible to be achieved by the organisation exactly thanks to making use of crowdsourcing [Djelassi, Decoopman 2013; Hsieh, Chang 2016]. A feeling of satisfaction of the members of the virtual community translates to a positive perception of the crowdsourcing initiator. However, the role of the initiator is directing to the crowd via the crowdsourcing platform an open call for cooperation and defining the tasks expected to be solved. It is important that the initiator specifies here the aim, scope, schedule, expectations, awards, or recipient group. The initiator should also, during the course of the project, exercise control over its process, e.g. evaluate the incoming ideas/solutions, answer the questions of the participants. The initiator is perceived through the task directed to the virtual community [Fennis, Stroebe 2016]. Thus, it may be assumed that positive experienc-
es from participating in crowdsourcing may have a positive influence on perceiving the initiator and the attitude towards it. On the one hand, the fact of crowdsourcing alone may cause that the initiator is perceived as an innovative, modern entity, which is open to the environment and its opinion. This increases satisfaction and localness towards the initiator [Brakus, Schmitt, Zarantonello 2009]. On the other hand, however, dissatisfaction with crowdsourcing, participating in it, or aversion towards the task directed to the virtual community alone – may contribute to discouragement and dissatisfaction and negative perception of the initiator.

One of the examples of paradoxes in this scope is Shell’s campaign, which was initiated following obtaining the consent of President Barack Obama for exploitation of deposits in the Arctic. Shell allegedly decided to support its entry with drilling rigs with an information campaign using a slogan Let’s Go! Arctic. In the opinion of the organisers “the aim of the campaign is making everyone feel excited by releasing the so necessary resources of the Arctic”. Within the campaign a gallery of advertisements was created on the arcticready.com platform, enabling the users to add any kind of text to a photograph through a special advertisement generator. Due to this, advertisements were created which were not very favourable to the organisation. With time it turned out that the entire crowdsourcing action was a provocation organised by Greenpeace and The Yes Men, without Shell’s knowledge about it. Nevertheless, a parody of Shell’s advertisement was even displayed on a billboard in Houston. The Internet users shared the original versions of the advertisements via the social media, at the same time accusing Shell’s employees of stupidity and lack of sensitivity.

**Functionality versus non-functionality**

In Lee and Shim’s opinion, the more the technology is consistent with the current situation and needs of the organisation, the faster it will be accepted by the virtual community. The following parameters are important, among others: reliability, range, capacity and storage, efficiency, safety, comprehensiveness, types and methods of available interactions, throughput, working time, reaction time, administrator entitlement types. M. Hosseini, K. Phalp, J. Taylor and R. Ali point out that a platform should enable establishing interactions with the crowd, including: a possibility to register the crowd, to authenticate it, declaring by the crowd its capabilities and skills, allocating tasks, sending ideas, coordination, supervision, and feedback. In addition, the authors indicate the possibilities of contacting the organisation by the crowd, sending the executed tasks, assistance in registration, time negotiation mechanisms, price, and archiving [Hosseini, Phalp, Taylor, Ali 2014; Soliman 2014]. Whereas, an incorrect-
ly chosen crowdsourcing platform, which is too complicated and with too many functions may contribute to receiving low quality ideas developed by the virtual community and its aversion to participate in crowdsourcing. As examples show, an easy to operate platform and with not too many functions also lead to discouragement.

An example of such unsuccessful campaign is the action conducted by the Durex brand which offered sending condoms to couples which needed them in any city of the world. The crowdsourcing platform did not impose any difficult rules and was user friendly. It was also available as a smartphone application. It was enough to place a demand via the website or by using an application entitled SOS Condoms. The company decided to open to crowdsourcing in the beginning of the campaign and asked the “crowd” to choose any city around the globe where it would launch an information campaign. Unfortunately, this impacted the activeness of the virtual community members. They started to joke about it and put forward Muslim cities as candidates. The biggest number of votes was obtained by a conservative and Muslim city named Batman. Durex decided to close the campaign.

**Conclusion**

Identification in the subject literature of crowdsourcing paradoxes enabled formulating the following conclusions:

1) A broad selection of benefits able to be achieved owing to crowdsourcing is the driving force for more and more organisations to initiate such endeavours. Apart from the potential advantages, crowdsourcing carries significant threats. This means that it is hard to bring down caring for the level of crowdsourcing only to continuous aiming at maximising all of its aspects: its too high level may be detrimental to the organisation and invoke effects contrary to those intended – which may be named the crowdsourcing paradox. Awareness of the decision makers of the existing paradoxes may contribute to the success of a crowdsourcing endeavour.

2) Among the identified paradoxes it is possible to indicate the following: communication/its lack between the virtual community and the organisation, excess/shortage of ideas placed on the crowdsourcing platform, satisfaction/resentment, and functionality/impracticality.

3) The above-mentioned findings correspond with the results of research obtained by J. Haag [2017] who formulates similar conclusions which state that giving access on the platform to individual ideas of the members of the virtual community leads to acquiring ideas of poor quality. Whereas, an excess may cause
chaos and a decrease of creativity. In the context of the task: if it is too simple it
leads to indolence and if it is too difficult it discourages from taking action. A lack
of assessment of the ideas sent by the virtual community decreases efficiency
while an excessive assessment contributes to a feeling of intimidation. An exces-
sive system of motivation causes that the participants focus on the assessment
criteria and possibility to win, a lack of motivation discourages from work.

The identified paradoxes may transform the dilemmas and difficulties into chal-
lenges that the organisation which wishes to become mature crowdsourcing wise
should be able to meet. The carried out literature studies conducted for the needs of
this article may also become an inspiration to design research in this area.
References


