Crowdsourcing as a Mean of Supporting Creativity in Business: An Introduction to International Research

Wioletta Wereda[1] Agnieszka Knap-Stefaniuk[2]

Abstract:

Purpose: The aim of the article is to present the role of crowdsourcing as a mean of supporting creativity in business.

Design/Methodology/Approach: This article delves into case studies of enterprises that have utilized crowdsourcing in recent times. To complement this empirical approach, the study also employed theoretical research methods such as analytical-synthetic analysis to critically evaluate relevant literature. Further, abstraction was utilized to isolate essential elements for analysis, while generalization and inference were employed to deduce conclusions.

Findings: The considerations contained in the article are the part of a broader research on the role of crowdsourcing as a mean of supporting creativity in business. It should be seen that the digital transformation changed all the processes in contemporary business entities.

Practical Implications: The deep financial and economic crisis, which still characterizes these years, requires searching for tools in order to enhance knowledge sharing, creativity and innovation. The Internet is one of these tools that represents a practically infinite source of resources. Besides, the corwdsoursing can help to gain knowledge from the wisdom of the crowd.

Originality/value: There are many articles about crowdsourcing but there is a gap between using it and defining it. The article presents both issues.

Keywords: Crwodsourcing, crowdsourcing systems, creativity, innovations, digital transformation.

JEL classification: M31, M21, L22.

Paper Type: Research study.

[1]*PhD., Institute of Organization and Management, Faculty of Security, Logistics and Management, Military University of Technology, Warsaw, Poland*
e-mail: weredawioletta@tlen.pl;
[2]*PhD., Jesuit University Ignatianum in Krakow, Poland*
e-mail: agnieszka.knap.stefaniuk@ignatianum.edu.pl;

1. Introduction

The ubiquitous employment of the internet, both individually and corporately, to impart knowledge, exchange information, and procure services, is fundamentally transforming the process of innovation for products and procedures. It is also reshaping business practices at the regional and international level, empowering all participants in the global competitive arena.

The vast expanse of the Internet has forced companies to rethink their approach to knowledge management. Rather than hoarding specialized knowledge, they now encourage its open sharing and matching with those who need it. To stay competitive, businesses must utilize ideas, knowledge, and technologies from external sources. This is where the concept of crowdsourcing comes in, particularly in its internet-based form. Known as a resource, it involves collaborative activities, such as co-creation and user innovation, that take place online.

The rapid development of teleinformatics has changed both the way of life of individual people and the shape of social relations within entire communities. The elimination of many barriers resulted in the emergence of interpersonal interactions of a completely new nature and on an unprecedented scale. Technological changes have allowed for the emergence of network structures in which units are connected and the value of the whole is greater than the sum of the individual elements.

Widespread availability of mass communication and collaboration tools favours specialization in narrow areas of activity without losing the ability to build larger units. It drives the development of entrepreneurship and business activity according to patterns previously considered unprofitable. One of such solutions is acquiring resources in network markets, i.e., those where the infrastructure for managing relations between participants is the most valuable asset of the enterprise. Crowdsourcing serves the purpose of exploring these relationships for business purposes (Mazurek, 2015, p. 125).

2. Literature Review and Applied Research Methodology

2.1 The Characteristics of the Concepts of Crowsorursing

Crowdsourcing (abbreviated as CS) is an interdisciplinary and relatively new phenomenon and consists of two clusters of words, i.e. crowd and sourcing, which means the process of obtaining goods or value by a company from a large group of people or companies. At the same time, the individual involvement of each of the participants may be very small.

This term refers to the widely known concept of outsourcing, which (in simplified way) describes the process of outsourcing operations outside the company, which until now were carried out using its own resources. In practice, this means finding a

partner who will sell the same operations as a service. Therefore, the basic difference between the terms outsourcing and crowdsourcing concerns the number of sources of goods or services. In the first case, we are talking about individual specific business partners or possibly a small group of them. In the second case, we obtain information from the crowd, i.e., a very large group of people whose identity is not important (Lenart-Gasiniec, 2017, p. 75).

This term was used for the first time by J. Howe in 2006, who defined crowdsourcing as "an act in the activity of a company or institution, consisting in separating certain functions traditionally performed by employees and outsourcing them to an undefined, usually large group of people, in the form of an open invitation, which can take the form of peer production when work is performed jointly by a group of people or be undertaken individually" (Howe, 2006).

Over time, the author himself extended this definition to include the application of open source principles, not only in terms of software, but also outsourcing tasks to the crowd, matching the talent and knowledge of the crowd to the needs of the organization (Howe, 2008).

In the literature on the subject, there are many definitions and phrases synonymous with this concept. However, the analysis of the definitions shows that crowdsourcing consists of the following elements: virtual community, crowd, open invitation, tasks, problem solving and outsourcing (Saxton *et al.,* 2013). Another element is the size of the virtual communities: it is a large group of mostly anonymous and voluntary members of the virtual community.

These people perform simple tasks, solve problems and/or contribute to the creation of new solutions, share their ideas (Lenart-Gasiniec, 2017, p. 77). Some definitions also include phrases related to open innovation, partner production or open resources (Brabham, 2015), but it should be emphasized that these concepts are not identical and should not be treated synonymously, as presented in Table 1.

In 2017, Ferri and his colleagues provided an overview of several crowdsourcing platforms.The literature delves into the inquiry of "What are the potential contributions of users?" with regards to the offered system functionalities. These functionalities include evaluation, sharing, networking, artifact building, and task execution. Systems that utilize crowdsourcing for evaluations permit users to assess a variety of items, such as products, web pages, knowledge, or users. This can be done through the use of textual comments, numeric scores, or tags.

Some well-known examples of such systems include Amazon, del.ici.ous.com's tagging of web pages, and Google Co-op. Sharing activities can be accomplished through crowdsourcing systems, which facilitate the exchange of structured knowledge, textual knowledge, products, and services. Among the platforms that operate on this premise are Napster, YouTube, mailing lists, Twitter, and Yahoo!

Answers. Social networking sites like Facebook and LinkedIn provide crowdsourcing systems that enable users to collectively create social network graphs. Users of artifact-building systems can construct a variety of products, including structured knowledge bases, software, systems, and textual knowledge bases. Linux, Apache, Wikipedia, Open Mind Common Sense (OMCS), Wikipedia infoboxes/DBpedia, and Second Life are among the chief systems used for this purpose. Demand Media and Associated Content are examples of systems that facilitate task execution. Such systems enable content creation, cooperative debugging, search and rescue efforts, and even elections.

Table 1. *Interpretation of crowdsourcing and related concepts*

Concept	Interpretation
Crowdsourcing	The implementation of clearly defined, diverse tasks, the manifestation of open innovation, the performance of tasks by an anonymous crowd, the organization manages the flow and quality of the crowd's work, external and internal motivation of the crowd.
Open innovation	Creation and process of innovation.
Partner production	Actions by anonymous crowd members, no defined goal for the virtual community, intrinsic motivation of the crowd.
Open resources	Relying on the power and knowledge of the crowd, the actions are driven by the virtual community, the intrinsic motivation of virtual communities.

Source: *Based on Lenart-Gasiniec, 2017, p. 77.*

Summing up, it should be emphasized that the concepts analyzed above have a common denominator, i.e., performing certain tasks, specific goals, open invitation, online process. Moreover, the whole strategy is to propose, by open invitation, a certain task to be performed. In response, the crowd undertakes work, shares their knowledge, skills and experience. The reason for taking action is to receive benefits - it could be a monetary reward, social recognition, self-esteem or the development of individual skills.

Therefore, the organization receives in return ready-made solutions, ideas or knowledge of virtual communities. What makes these concepts different are the multiple goals and end effects (Lenart-Gasiniec, 2017, p. 78). In the literature, the presented definitions focus on various aspects: economic, IT, social and structural.

However, many authors and the author of the dissertation interpret crowdsourcing as a business model used by various economic entities and organizations to outsource tasks, to collect scattered units, even in the millions (e.g., in the case of the Freelancer.com platform) and to support the business strategy with additional elements e-business, coming from the wisdom of the crowd. Selected definitions of crowdsourcing are often related to the types and methods of measuring its levels.

Many authors have made their own measurement, which is tailored to the specificity

of a given level and sector. Moreover, researchers point to different levels of crowdsourcing: organizational, technical, process and individual. However, in the materials in the field of management sciences, only three are analyzed, i.e., organizational, process (also referred to as virtual communities) and individual. It should be emphasized that the authors treat them separately, despite the fact that the literature on the subject suggests a holistic analysis of crowdsourcing (Lenart-Gansiniec, 2017, p. 79) is presented in Table 2.

Table 2. *Selected studies and definitions of crowdsourcing by the level*

Authors	Definitions and form of action	Analysis level	Method
Walter, Back (2013)	Type of award, specificity of the task, relations with the virtual community, market maturity.	Process	Case study
Bayus (2012)	Implementation of the ideas generated by the crowd by the organization, interaction and exchange of ideas by the crowd, the number of ideas proposed, the success in generating ideas so far, number of ideas implemented, likelong registered on the platform.	Process	Case study
Dunn, Hedges (2012)	Motivation for crowdsourcing, type of activities carried out on the crowdsourcing platform, establishing relationships with other participants, sense of community and unity, interest in the problem / topic.	Process	Case study
Budhathoki, Haythornthwaite (2012)	Provision of information, altruism, active participation in sharing knowledge, participation in projects, willingness to participate in solving social issues, sense of identity with other members of the community virtual.	Process	Case study
Cullina, Conboy, Morgan (2014)	Identity with other users, interactions with other users, time spent on the platform, trust in other users, number of tasks performed.	Process	review of the literature
Goncalves, Kukka, Sánchez, Kostakos (2016)	The nature of the relationship between the virtual community and the organization, implementation of planned goals, receipt projects.	Process	Case study
Oomen, Aroyo (2011)	Building a bond with the crowd, creating a sense of belonging to the altruistic society.	Organizational	Case study
Lönn, Uppström (2013)	Commitment to change.	Organizational	Case study

Estermann (2016)	The basics of crowd knowledge, the implementation of crowd ideas.	Organizational	Case study
Basto, Flavin, Patino (2010)	Creating incentives for employees to adopt the knowledge of the crowd, generating trust.	Individual	Case study
Cullina, Conboy, Morgan (2014)	The way of contacting the crowd, using the knowledge of the crowd.	Individual	Case study
Agapie, Teevan, Monroy-Hernandez (2015)	Ability to cooperate and interact with others.	Individual	Case study

Source: *Own elaboration based on the results of a systematic literature review based on Lenart-Gansiniec, 2017, pp. 79-80.*

In the business world, crowdsourcing involves outsourcing a previously internal function to an expansive and anonymous group of individuals via an open call. This practice can be viewed from a process, organizational, or individual standpoint, but the key takeaway is that it fosters creativity and innovation in all aspects of a business.

While acknowledging that crowdsourcing is not a panacea for business, Howe (2008) emphasizes in his book that the crowd contributes a diverse range of strategies to aid enterprises in their operations. To adapt to constantly changing policies, scientific advancements, technological developments, and evolving skillsets, organizations must operate with greater efficiency. This is necessitated by the dynamic nature of the wider economy. The gathering of many can facilitate various conundrums, spanning from uncomplicated, repetitive duties such as image categorization, fundraising or voting, to intricate and multifaceted issues.

Tasks such as generating innovative concepts, formulating fresh products, and devising strategic procedures, are all examples of issues that may arise. Zooniverse's SETIlive is a prime example of the far-reaching potential of crowdsourced problem-solving. The citizen science project was launched in partnership with the SETI Institute, highlighting the vast scope of this new approach. A global appeal was made to unearth extraterrestrial intelligence, beckoning people worldwide to lend a hand.

Alternatively, the pursuit could be incredibly detailed, with the quest for novel technology to eliminate a particular issue. InnoCentive is currently managing a competition that tackles the challenge of microbubbles in extracorporeal bloodstreams. Although some efforts have been made to categorize the remarkable range of applications, into a conventionalized grouping of general crowdsourcing methods.

There is a noticeable schism in the nature of crowdsourcing initiatives - some are focused on practical problem-solving, while others center around specific platforms

or tasks. Crowds themselves can vary widely in size and skill level. Take TaskRabbit, which employs freelance workers to assist with everyday chores, such as cleaning or delivery, in contrast to Kaggle, a competition site for data science, which requires contestants to possess advanced mathematical, statistical, and physical science knowledge (Figure 1).

Figure 1. *Choosing the right crowd for the right problem*
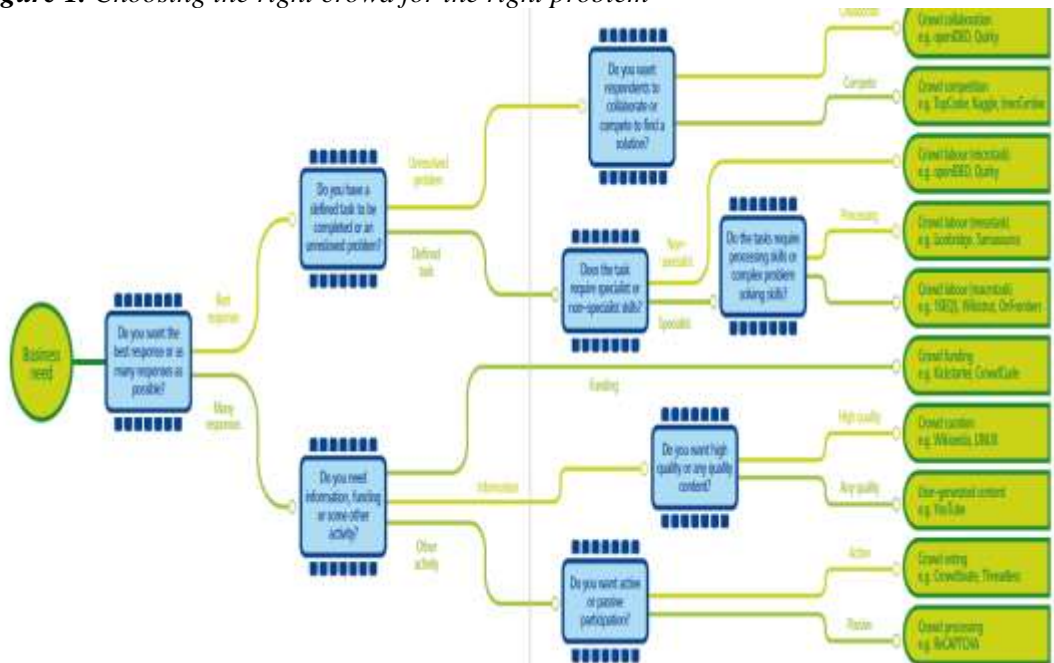
Source: *Based on Report Deloitte, 2016, pp. 4-5.*

2.2 Types of Crowsorursing

From the point of view of the types of this process, Kleemann and Voss (2008, pp. 11-15) proposed a typology of the following seven forms:

1. Model of consumer participation in product development and its configuration; the idea is the active, creative participation of participants in designing new products of a given company, who are not rewarded; e.g., the strategies of Fiat, Dell or IBM. An example of such an undertaking is the cooperation of customers with the Fiat concern in the improvement of one of the car models. A few months after the launch of the campaign, the "crowd" of customers made about 10 million visits to the company's website, submitted almost 170,000 of its own projects and 20,000 comments on the car's equipment; consumers were, inter alia, authors of about a thousand accessories. The project was a huge success for Fiat, although the participation of consumers was free of charge.

2. Product design model; the essence is to involve network users in creating a product that depends entirely on their entrepreneurship - for example on the Spreadshirt.net platform.

3. Model of competing offers; activates a large group of employees to carry out innovative projects; e.g., the activity of InnoCentive.com (only the winning teams are awarded - with an amount of up to USD 1 million).

4. Continuous Open Notification Model; is a permanent offer for obtaining information, e.g. for the needs of media concerns, also for domestic TV stations (with or without gratuities).

5. The "reporting community" model; participants inform about new products appearing on the market that they would be willing to buy (at a certain price); e.g., trendwatching.com publishes annual reports on current market trends.

6. Model of product evaluation by consumers; is a typical solution in the field of e-business, the essence of which is to obtain opinions about products from consumers, e.g., reviews about books in the Amazon.com community (participants are not paid).

7. Model of interaction between clients creating a network of connections between consumers within the framework of discussion forums and chat rooms for the transfer of information (for a fee or not).

The presented typology is open to new solutions, including indirect ones; these are, among others (Dziuba, 2012, p. 68):

- the so-called a public CS, which is an extension of the said model of continuous open reporting; the Internet community constantly reports to the public administration about events that have occurred, e.g., crisis situations; the Indian platform Ipaidabribe informs the administration about corruption;
- crowdfunding, i.e. collecting funds using the CS concept, e.g., on Kickstarter.com platforms; IndieGoGo.com; Bananacash.com,
- other forms based on separate applications.

To sum up, according to the literature on the subject, crowdsourcing generally in enterprises contributes to cost savings, access to external resources (Saxton *et al.,* 2013), problem solving, creating innovations, optimizing the costs of the organization's operations, or is considered a tool for marketing and cooperation with the client. Crowdsourcing may be a source of competitive advantage (Leimeister, Zogaj, 2013) and the improvement of business processes (Burger-Helmchen, Penin, 2010).

Additionally, crowdsourcing may contribute to reducing the entry barrier to various activities (Brabham, 2015). It facilitates access to knowledge and creativity or the acquisition of new content and data. Moreover, the literature emphasizes that crowdsourcing can complement traditional organizational learning (Majchrzak, Malhotra, 2013) and a new, more effective form of learning. Additionally, it is indicated that it can contribute to organizational learning (Schlagwein, Bjorn-Andersen, 2014).

3. Results

Referring to the business practice and according to the research conducted by the consulting company Deloitte, it can be concluded that modern enterprises have many opportunities and benefits from the use of crowdsorucing. An open approach to innovation, as well as the use of ideas from the "wisdom of crowds" has long been the norm for many international companies, and for example, the P&G corporation, thanks to the "Connect+Develop" platform, made it possible to establish over 2,000 successful contracts with innovative partners around the world, while in 2001, IBM launched an in-house innovation experiment that has now been transformed into the "InnovationJam™" platform with which masses of customers work to help jam participants by contributing their own opinions and expertise in various subject areas.

However, it should be noted that an increasing number of companies and public sector organizations are now abandoning traditional innovation processes and launching mass-scale platforms that enable them to reach wider crowds that can generate ideas, responses, and complete tasks faster and more efficiently than their own employees, who are sometimes more expensive to maintain (Report Deloitte, 2016, p. 5). Table 3 below presents example platforms, depending on the type of crowdsourcing.

Table 3. *Examples of crowdsourcing platforms (due to the model used)*

Crowdsourcing model	Good for	Not so good for	Examples
Crowd collaboration	• Tasks requiring the aggregate 'wisdom of the crowd'; • Generating outside ideas.	• Promoting individual capabilities or expertise; •Predetermined outcomes.	• 99Designs; • X Prize; • Quirky.
Crowd competition	• Creating actionable solutions; • Developing prototypes; • Building a sense of community; • Generating outside ideas; • 'Gamification'.	•Predetermined outcomes.	• TopCoder; • Kaggle; • InnoCentive; • Applause.

Crowd labour (microtasks)	• Well-defined, everyday tasks for individuals that require general skills only; • On-site manual work, such as store restocking, furniture assembly and cleaning; • Large crowds; • When you don't want to hire permanent employees or contractors; • Real-time market intelligence or data gathering.	• Poorly defined, unstructured or non-routine activities; • Tasks requiring subjective judgement; • Tasks requiring specialist or higher-level cognitive skills.	• TaskRabbit; •Amazon's Mechanical Turk; • Streetbees; • Gigwalk; • Samasource.
Crowd labour (mesotasks)	• Well-defined tasks that require specialist processing skills; • Routine but time-consuming activities, such as data entry; • When you don't want to hire permanent employees or contractors.	• Poorly defined, unstructured or non-routine activities; • Tasks requiring subjective judgement or specialist skills.	• Lionbridge; • CrowdFlower.
Crowd labour (macrotasks)	• Poorly defined or unstructured tasks or problems, such as strategy development, research or consulting; • Tasks requiring subjective judgement or specialist skills; • When you don't want to hire permanent employees or contractors.	• Routine tasks and activities.	• 10EQS; • Wikistrat; • OnFrontiers; • Applause.
Crowdfunding	• Fundraising; • Start-ups; • High transparency.	• Financing ongoing operations; • Loosely structured initiatives; • High short-term expectations.	• Kickstarter; • CrowdCube.
Crowd curation	• Building and sharing knowledge.	• Solving defined problems.	• Wikipedia; • TripAdvisor.
User-generated content	• Building large content repositories.	• Ensuring the best possible quality of content.	• YouTube; • iStockphoto.

Source: *Based on Report Deloitte, 2016, p. 6.*

Summing up the considerations on the importance of crowdsourcing in business, it should be emphasized that the crowdsourcing environment is still young and developing, but as new platforms and opportunities to use emerge, the potential to influence the enterprise is significant.

The use of an "external" approach to problem solving, for example by means of crowdsourcing, changes the way many organizations - enterprises or public sector entities - function more open to value creation. The size of the organization, the number of employees, the possession of intellectual property or the development of an exclusive contract with its partners in the supply chain do not limit the possibility of discovering and applying new knowledge thanks to crowdsourcing tools.

The greater access to knowledge provided by the wisdom of the crowd, and in particular the "smooth" flows of various ideas create added value. In connection with the above, many benefits of the use of crowdsorcing can be mentioned (Report Deloitte, 2016, p. 9):

1. To expedite development and cut costs, the US Advanced Research Projects Agency adopted a crowdsourcing approach in 2012 to produce a new amphibious combat vehicle, after a conventional undertaking had cost taxpayers $13 billion. The winning entry was declared a mere half-year after the initiative began, in April 2013.

2. To facilitate swift and inexpensive development of mini models, TechShop, a hub for creative minds, proposes a range of modern industrial tools in its network of US-based workshops. Its offerings include 3D printers and robots, which can be used by local community members of varying skill levels to prototype innovative projects and bring their ideas to life.

3. In an effort to improve their service quality, Allstate, which ranks as the second-largest insurer in the United States, initiated a competition. Participants in their network competed to create a liability prediction model that was proven to be 271% more accurate than the original.

4. Companies can benefit from greater flexibility by leveraging the crowd to adjust product titles, descriptions, and marketing text when introducing new consumer products. By doing so, retailers can enjoy faster launch times in the market, without compromising on the accuracy of product information.

5. TaskRabbit satisfies the hunger for challenging work. It provides an opportunity for individuals to earn money by helping customers complete a wide range of tasks, such as assembling furniture, moving, and decorating. These tasks may seem simple but require skills and time that some customers lack.

6. SpringRole offers a gateway to a vast reservoir of external talent. It's been hailed the "Recruiting Rabbit" by HR technical managers for its ability to help regular people earn money performing simple referral tasks for job openings.

7. Thomson Reuters has discovered an innovative way of tapping into the potential of its 17,000-strong pool of technologists. By using crowdsourcing techniques within the company, it has been successful in better engaging and retaining its internal talent. This approach has enabled the identification of new problem solvers and facilitated the discovery of solutions to complex issues.

4. Conclusions

The major challenge impeding digital transformation is the cultural acceptance of the concept. Many institutions exhibit this reluctance, which is fueled by the ever-shifting. The absence of aligned key performance indicators and clear targets often result in a lack of defined goals. Individuals require lucidity when it comes to a well-defined vision for transformational endeavors.

A crucial element in adapting to evolving job responsibilities is comprehension, combined with a purposeful approach. Investing in the development of employee skills is crucial to create a connection back to the organization. By inculcating a supportive culture shift, employees can create a more conducive work environment. To pursue genuine growth, one must allocate dedicated time for continuous learning. Provided with the chance to utilize their acquired expertise, a retrained workforce can excel.

However, if they are not given an opportunity to apply their newfound skills, the benefits of retraining may not be fully realized. The lack of authority to implement newly acquired expertise renders the investment futile. Businesses nowadays are turning to crowdsourcing in order to boost creativity within their enterprises, recognizing the tendency for ideas to swiftly deteriorate.

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