Chapter 8

Crowdsourcing – Foundations and Examples of Use in Marketing

Marcin Lewicki

Abstract: The main purpose of the chapter is to present the foundations of crowdsourcing and possibilities of its application in marketing. The first subchapter focuses on defining the very concept and its essence. Despite the fact that crowdsourcing is relatively well described in the subject literature, many discrepancies were found between the various approaches. Next, the paper discusses individual crowdsourcing models. It is emphasized that there is no compliance in this respect, therefore the number of possible solutions is relatively different. In the third subchapter the areas of crowdsourcing use in marketing are presented. The last part of the chapter refers to presenting the case studies of different crowdsourcing platforms that have been successful in recent years. To achieve the main purpose of the chapter, the desk research method and the case study were used.

Keywords: crowdsourcing, cooperation, consumer behaviour, Internet

Introduction

Crowdsourcing is a term that has been present in the subject literature for over 13 years. Despite this period, the concept is still treated as relatively new, and is a popular subject of many publications in the field of management. While the theoretical basis of this concept should be considered relatively well described, the distinct research gap is related to the optimization and implementation of crowdsourcing platforms in specific areas of the economy. Therefore, the latest publications on crowdsourcing focus

on these two issues (Van Horn et al., 2018; Daniel et al., 2018; Chawla, Hartline, Sivan, 2019; Clark et al., 2019; Wang et al., 2018). In light of the above, the main purpose of this chapter is to present foundations of the very concept and examples of its use in marketing. In order to fulfil the above-mentioned purpose specific objectives were adopted i.e. defining the concept and its essence (Subchapter 1.), presenting crowdsourcing models (Subchapter 2.), presenting its application in marketing and key success factors (Subchapter 3.) and presenting exemplary solutions of its use (Subchapter 4.). In order to achieve the objectives, desk research and the case study method were used.

Crowdsourcing – definition, history and essence

Crowdsourcing is one of the most frequently defined concepts in the literature in the field of management sciences. Most of these definitions can be grouped into five main categories (Lenart-Gansiniec, 2017):

- an economic approach – crowdsourcing and measurable benefits that can be achieved by the organization in the form of a solved problem, additional knowledge,
- a technological approach – crowdsourcing as an IT tool, channel of communication with the crowd,
- a social approach – crowdsourcing as a way of building social capital, participation, participation, social activation, behaviour and creative work,
- a structural approach – crowdsourcing and processes that compose it,
- a functional approach – application and use of crowdsourcing for a given task.

The term was defined for the first time in 2006 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. The crucial prerequisite is the use of the open call format and the large network of potential laborers.” (Howe, 2006). While the above-mentioned definition seems to be the most frequently quoted in numerous publications, it is also worth citing a definition which is one of the most complex: “Crowdsourcing is a type of participative online activity in which an individual, organization, or company with enough means proposes to a group of individuals of varying knowledge, heterogeneity, and number, via a flexible open call, the voluntary undertaking of a task. The undertaking of the task, of variable complexity and modularity, and in which the crowd should participate bringing their work, money, knowledge and/or experience, always entails mutual benefit. The user will receive the satisfaction of a given type of need, be it economic, social recognition, self-esteem, or the development of individual skills, while the crowdsourcer will obtain and utilize to their advantage that what the user has brought to the venture, whose form will depend on the type of activity undertaken.” (Estellés-Arolas, González-Ladrón-de-Guevar, 2012, p. 9). This definition is not only the result of one of the widest literature studies on defining crowdsourcing to the

present day but also a relatively successful attempt to create the most integrated definition of this concept. Moreover, based on the definition proposed by Estellés-Arolas and González-Ladrón-de-Guevar, it is possible to name eight characteristics common to any given crowdsourcing initiative (Fig. 1.) that can be used as criteria for filtering individual initiatives to determine whether they are crowdsourcing initiatives.

Figure 1. The main characteristics of crowdsourcing initiatives

Source: Reprinted from Towards an integrated crowdsourcing definition, by Estellés-Arolas, E., González-Ladrón-De-Guevara, F. (2012). *Journal of Information science*, 38(2), 189–200.

Obviously the approach proposed by Estellés-Arolas and González-Ladrón-de-Guevar is not the only attempt to determine the criteria that a crowdsourcing platform should meet. For example, according to a different approach (Hosseini et al. 2014), only four parts should be included in order to constitute the entire crowdsourcing operation. The so-called crowdsourcing pillars include in this case:

1. **The crowd:** the crowd consists of the people who take part in a crowdsourcing activity.
2. **The crowdsourcer:** the crowdsourcer is the entity (a person, a for-profit organization, a non-profit organization, etc.) who seeks the power and wisdom of the crowd for a task at hand.
3. **The crowdsourcing task:** the crowdsourcing task (simply called the task hereinafter) is the activity in which the crowd participates.
4. **The crowdsourcing platform:** the crowdsourcing platform is the system (software or non-software) within which a crowdsourcing task is performed.

Interestingly, the authors of this concept have identified a number of features that correspond to each of the pillars (Tab. 1.) where:

- The crowd is described by the prism of five features i.e.: diversity, unknown-ness, largeness, undefined-ness and suitability,
- The crowdsourcer by the prism of four features i.e.: incentives provision, open call, ethicality provision and privacy provision,

- The crowdsourcing task by the prism of eight features i.e.: traditional operation, outsourcing task, modularity, complexity, solvability, automation characteristics, user-driven and contribution type,
- The crowdsourcing platform by the prism of four features i.e.: crowd-related interactions, crowdsourcer-related interactions, task-related facilities and platform-related facilities.

These features allow for a detailed description of specific pillars and provide a solid basis for distinguishing individual crowdsourcing initiatives.

Table 1. The four pillars of crowdsourcing and their features

The crowd	The crowdsourcer	The crowdsourced task	The crowdsourcing platform
1. Diversity	1. Incentives Provision	1. Traditional operation	1. Crowd-related Interactions
1.1. Spatial Diversity	1.1. Financial Incentives	1.1. In-house	1.1. Provide Enrolment
1.2. Gender Diversity	1.2. Social Incentives	1.2. Outsourced	1.2. Provide Authentication
1.3. Age Diversity	1.3. Entertainment Incentives	2. Outsourcing Task	1.3. Provide Skill Declaration
1.4. Expertise Diversity	2. Open Call	3. Modularity	1.4. Provide Task Assignment
2. Unknown-ness	3. Ethicality Provision	3.1. Atomic Tasks	1.5. Provide Assistance
2.1. Not Known to Crowdsourcer	3.1. Opt-out Procedure	3.2. Divisible to Micro Tasks	1.6. Provide Result Submission
2.2. Not Known to Each Other	3.2. Feedback to Crowd	4. Complexity	1.7. Coordinate Crowd
3. Largeness	3.3. No Harm to Crowd	4.1. Simple Tasks	1.8. Supervise Crowd
3.1. Number Fulfills the Task	4. Privacy Provision	4.2. Complex Tasks	1.9. Provide Feedback Loops
3.2. Number Not Abundant		5. Solvability	2. Crowdsourcer-related Interactions
4. Undefined-ness		5.1. Simple for Humans	2.1. Provide Enrolment
5. Suitability		5.2. Complex for Computers	2.2. Provide Authentication
5.1. Competence		6. Automation Characteristics	2.3. Provide Task Broadcast
5.2. Collaboration		6.1. Difficult to Automate	2.4. Provide Assistance
5.3. Volunteering		6.2. Expensive to Automate	2.5. Provide Time Negotiation
5.4. Motivation		7. User-driven	2.6. Provide Price Negotiation
5.4.1. Mental Satisfaction		7.1. Problem Solving	2.7. Provide Result Verification
5.4.2. Self-Esteem		7.2. Innovation	2.8. Provide Feedback Loops
5.4.3. Personal Skill Development		7.3. Co-creation	3. Task-related Facilities

5.4.4. Knowledge Sharing	8. Contribution Type	3.1. Aggregate Results
5.4.5. Love of Community	8.1. Individual Contribution	3.2. Hide Results from Others
	8.2. Collaborative Contribution	3.3. Store History of Completed Tasks
		3.4. Provide Quality Threshold
		3.5. Provide Quantity Threshold
		4. Platform-related Facilities
		4.1. Online Environment
		4.2. Manage Platform Misuse
		4.3. Provide Ease of Use
		4.4. Provide Attraction
		4.5. Provide Interaction
		4.6. Provide Payment Mechanism

Note: Reprinted from The four pillars of crowdsourcing and their features, by Hosseini, M., Phalp, K., Taylor, J., Ali, R. (2014), In 2014 IEEE Eighth International Conference on Research Challenges in Information Science (RCIS) (pp. 1–12). IEEE.

Despite the multitude of approaches to defining crowdsourcing and its features, undoubtedly, the Internet could be named the main enabling factor for this concept because companies were able to access potentially unlimited number of people with very little effort (Ghezzi et al., 2018).

Nevertheless it should be also noted that the concept of using the crowd to carry out tasks was present in the economy much earlier i.e. at least since 1714 when the British government launched the Longitude Prize and offered a monetary reward to anyone who could develop a method for tracking a ship's longitudinal position. Then it was continued in subsequent years as part of other projects. (Figure 2.)

Obviously, the history of crowdsourcing does not end in 2006, on the contrary, it was at the beginning of 2006 that a sudden increase in the number of possible solutions based on this concept could be observed.

Crowdsourcing models

In the case of models used in crowdsourcing, similarly to the situation related to defining this concept, it is possible to point to many different approaches. The classification criteria adopted under particular approaches lead to a situation in which the exact number of potential solutions that can be described as crowdsourcing is difficult to determine. For example, based on such dimensions as the outsourcing area, communi-

ty user role, level of collaboration, and type and level of managerial control systems it is possible to develop nine distinct crowdsourcing models (Saxton, Oh, Kishore, 2013):

Figure 2. The history of crowdsourcing

Source: Author developed (2019) from topcoder.com, Howe (2006) and web.archive.com

1. **Intermediary Model** embeds major business and control processes in its web platform. In the model, web users serve as a virtual work force that follows the process consisting of three steps i.e. (1) Find -> (2) Finish -> (3) Earn through the web. They search through the lists of tasks posted by a given crowdsourcer, choose and finish the tasks they feel qualified to accomplish, and earn monetary rewards. In the meantime, as an intermediary, the crowdsourcer is actively involved in the various stages of documentation and working processes to facilitate communication

and address intellectual property and copyright issues. In this model, R&D problem-solving activity is outsourced to the online community, and community users accomplish tasks by playing the role of innovative problem solvers such as scientists, researchers, and engineers.

2. **Citizen Media Production Model** generates revenue through user-generated news, TV programs, or commercials, and shares profits with citizen reporters or media producers. In this model, the crowdsourcing media website is not a supply chain to resell the paper-based news to online users after processing them into digital format; instead, the crowdsourcing web space is a collaborative media content production platform, where heterogeneous users create or directly post news content from their perspectives. In the citizen media model its users are no longer passive consumers. They are active producers of the news and earn profits for the media content they contribute. At the same time, the crowdsourcer is involved in the collaborative media production process by addressing the issues of copyright, intellectual property, and quality control, utilizing sophisticated managerial control systems.
3. **Collaborative Software Development Model** embeds into a web platform sophisticated software development processes, from idea selection to software development and sales. The online community serves as a source in the area from business idea initiation through software design to product development and sales. While community members provide different product ideas, the crowdsourcing company conducts market research with the selected ideas, facilitates the product development process, and shares profits from the successful product with involved project members. In this model, the processes of product design, decision making, market research, marketing, and software development are outsourced to online users, who perform the roles of web designer, programmer, project manager, and even marketer.
4. **Digital Goods Sales Model** is mainly used by the royalty-free stock photo crowdsourcing sites and is a solution in which the website is a platform to source in digital goods (mostly pictures) from community users around the world. Approved community users upload and sell their digital pictures through the company-provided web platform, and they are rewarded based on the download count of their goods. To become a member, community users not only have to pass the quality-review process but comply with rigorous copyright policies. In the digital goods sales model, photo tagging, and numerous quality-control processes are outsourced to community users. The company is involved in the production process by providing market demand information and policies to address potential copyright and intellectual property issues.
5. **Product Design Model** allows to manufacture consumer products (e.g., T-shirts, mugs, shoes, calendars, and so on) out of designs submitted by online community members. The crowdsourcer outsources a given product design to online users through an ongoing open call for design submissions. Once a design is submitted, community members begin voting, scoring and commenting about the design. The results are presented to the community on a regular basis and based on established

criteria (like voting scores, comments, and the “I’d buy it” count) the crowdsourcer picks a certain number of designs from which to manufacture products, and rewards the selected designers in a certain way (with coupons, credit points, using a monetary reward etc.). The crowdsourcer can also introduce rewards to community members for additional activities such as the promotion of selected products in the pictures posted on the website.

6. **Peer-to-Peer Social Financing Model** bypasses traditional banks and financial institutions by directly connecting lenders and borrowers. Through the website interface, lenders and borrowers negotiate interest rates directly with each other, and lenders make the individual loan decisions and use their own funds to make the loans. In the peer-to-peer social financing model, web users thus play the role of both banker and borrower, and the lending decision-making and funding processes are effectively outsourced to a geographically dispersed crowd of virtual lenders.
7. **Consumer Report Model** sources in consumer reviews or essays on products, local contractors or healthcare professionals from online community users by using review quality-control measures. The crowdsourcer in this model motivates consumers to provide high-quality product reviews through various incentives (for example differentiates mediocre reviewers from high-quality “category lead” or “advisor” reviews, with different recognition and reward scales). In this model, the review process is outsourced to online consumers who, enticed by strategic compensation measures, play the role of consumer reporters.
8. **Knowledge Base Building Model** aggregates human intelligence information or knowledge of specific topics. This model has been demonstrated by “wikis” as an effective knowledge-building method. In this model diverse methods to elicit domain experts’ contributions are implemented (such as a rigorous peer-review system to evaluate the competence of membership applicants, who are supposed to submit data; reward schemes to draw quality information from the crowd etc.). In the knowledge-building crowdsourcing model, the information- or knowledge-generation process is outsourced to community users, and diverse types of incentive measures and quality-control mechanisms are utilized to elicit quality knowledge and information that may be latent in the virtual crowd’s “brain.”
9. **Collaborative Science Project Model** takes advantage of human participation to complement shortcomings of computer algorithms by introducing large-scale, diverse online communities into the machine learning process. In this model, web users play the role of research assistant, distorted text transcriber, search result evaluator, and so on.

On the other hand, it should be emphasized that the vast majority of crowdsourcing models can be grouped according to the criterion of tasks performed by the crowd (Hopkins, 2011, p. 18). On this basis, four groups can be created i.e.:

- **collective intelligence/crowd wisdom** is a model in which the crowd shares its knowledge (from suggestions sourced from the crowdsourcer employees up to open idea jams conducted on the Internet) with the crowdsourcer within a dedicated environment created by the crowdsourcer,

- **crowd creation** is a solution in which the crowdsourcer source not only ideas but also engages the crowd in product/service creation process,
- **crowd voting** is a model used for sorting a given data based on different ratings provided by the crowd and is often used as a supplement to the two models described above,
- **crowdfunding** is a model in which the crowd provides microloans, thus enabling the financing of certain enterprises of the crowdsourcer.

In turn, taking into account the possibility of crowd monetization, eight models can be distinguished (Dawson, Bynghall, 2012):

1. **Media and data** – creation of media, content, and data by crowds,
2. **Marketplaces** – matching buyers and sellers of services financing through mechanisms including bidding and competitions,
3. **Platforms** – software and processes to run crowd works and crowd projects, for use with internal or external crowds,
4. **Crowd services** – services that are delivered fully or partially by crowds,
5. **Crowd ventures** – ventures that are predominantly driven by crowds, including idea selection, development, and commercialization,
6. **Crowd processes** – services that provide value-added processes or aggregation to existing crowds or marketplaces,
7. **Content and product market** – sale of content or products that are created, developed, or selected by crowds,
8. **Non-profit.**

Undoubtedly crowdsourcing models can be classified along many dimensions. According to Doan, Ramakrishnan and Halevy (2011) especially nine dimensions should matter i.e.: nature of collaboration, type of target problem, a solution for the recruitment and maintenance of users; range of possible actions for the user; a solution for combining user input; a solution for the evaluation of the contribution, degree of manual effort, role of human users, and standalone versus piggyback architectures. Possible system solutions for crowdsourcing based on these dimensions are presented in the table 2.

Table 2. A sample of basic crowdsourcing system types on the World-Wide Web

Nature of collaboration	Architecture	The need to recruit users	User activities	Target problem
Explicit	Standalone	Yes	Evaluating – review, vote, tag	Evaluating a collection of items (e.g. products, users)
			Sharing – items, textual knowledge, structural knowledge	Building a (distributed or central) collection of items that can be shared among users.
			Networking	Building social networks.
			Building artefacts – software, textual knowledge bases, structured knowledge bases, systems, others	Building physical artefacts.
			Task execution	Possibly any problem.
Implicit	Standalone	Yes	Heavily diversified – play games with a purpose, bet on prediction markets, use private accounts, solve captchas, buy/sell/auction, play massive multiplayer games	Labelling images, predicting events, rating movies, digitizing written text, building a user community (for purposes such as charging fees, advertising).
	Based on another existing system	No	Heavily diversified – keyword search, buy products, browse Web sites	Spelling correction, epidemic prediction, recommending products, reorganizing a Web site for better access.

Note. Reprinted from Crowdsourcing systems on the world-wide web, by Doan, A., Ramakrishnan, R., Halevy, A., Y. (2011, April). Communications of the ACM, Vol. 54, No. 4, 86–96.

In summary, in the context of crowdsourcing models there is definitely no consensus on how to classify them. As a result, there are many approaches to this subject, which vary in the degree of detail, as well as in terms of the selection criteria and the number of possible solutions created on their basis.

Crowdsourcing application in marketing activities and key success factors

The use of crowdsourcing should correspond to a specific organizational need and desired outcomes. Based on these two dimensions, it is possible to identify four distinctive areas of its application i.e. marketing/branding, productivity, product/service innovation and knowledge capture. In addition, another important factor differentiating each of the areas is the crowd itself, which can be characterized in terms of the following features (Erickson, Petrick, Trauth, 2012):

- **Crowd knowledge** – there is a close relation between the organizational need and the specific types of crowd knowledge (namely: general, situational, product/service, specialized and domain expertise) required to complete the task,

- **Crowd value** – the value the crowd brings to the task may be a result of: diversity, distributed knowledge or sheer numbers,
- **Crowd location** – organizations can target crowds outside the organization (i.e., external crowds), as well as inside the organization (i.e., internal crowds).

A brief description of each of the areas mentioned above in relation to these dimensions is presented in Table 3.

Table 3. Criteria for the differentiation of crowdsourcing areas of use

	Marketing/Branding	Productivity	Product/Service Innovation	Knowledge Capture
Organizational Need	To increase profits and brand affinity by engaging customers to supplement current resources/processes	To reduce time and/or costs by replacing current resources/processes	To gain competitive advantage and increase innovative potential by supplementing current resources/processes	To advance understanding or accuracy by capturing distributed knowledge to create new resources/knowledge
Desired Outcomes	- Creative outputs - Market insights - Increased market exposure	- Completion of routine, time-consuming tasks, or tasks difficult to automate	- Identification of evolutionary and/or revolutionary product/service opportunities	- Accumulation of knowledge in a central location - Additional source of training data to improve automated processes
Ideal Crowd Knowledge	- Product/service - Specialized	- General - Specialized	- Product/service - Specialized - Domain expertise	- Product/service - Situational - Domain expertise
Desired Crowd Value	Diversity			
		Large Numbers		
				Distributed Knowledge
Preferred Crowd Location				Internal
	External			

Note. Reprinted from Hanging with the right crowd: Matching crowdsourcing need to crowd characteristics, by Erickson L., Petrick I., Trauth E. (2012).

Focusing on the use of crowdsourcing in marketing, it should be emphasized that in the subject literature there is a relative agreement regarding this problem. According to Whitla (2009) there are three main areas of marketing activities under which crowdsourcing solutions are applied, namely: product development, advertising and promotion, and marketing research.

In the case of product development and design, various forms of crowd use are applicable in which enterprises attempt to (Whitla, 2009):

- get input and advice on their own product development efforts from existing end-users, and experts who may be able to solve a certain scientific or design problem,

- challenge the crowd to design their own products, which the enterprise may then produce on the crowd behalf, sharing the profits,
- use the crowd to create a product, which then becomes part of the company's offer.

In the area of advertising and promotion, two forms of crowd involvement are noteworthy (Whitla, 2009) i.e.:

- the crowd can be used for activities which are time-consuming and labour-intensive-tasks that although laborious cannot easily be computerised,
- the crowd can be used to help create and develop advertising and promotional campaigns.

Finally, using crowdsourcing for marketing research may take such forms as (Whitla, 2009):

- using the crowd to respond to online questionnaires,
- using the crowd to participate in qualitative studies,
- using the crowd to obtain expert knowledge on issues such as future technological developments, environmental trends or legal developments etc.

For comparison, Gatautis and Vitkauskaite (2013) suggest a slightly different approach to the problem and indicate opportunities to apply crowdsourcing for five marketing activities i.e. product management, distribution management, communications management, marketing research and content marketing (Tab. 3.). Nevertheless, all of the marketing activities highlighted in this way could be equally attributed to the areas proposed by Whitla.

Table 3. Opportunities to apply crowdsourcing in marketing activities

Marketing activity	Crowdsourcing deployment opportunities
Product management	Widely accepted crowdsourcing is used to support new ideas and new products development as well as testing of prototypes.
Distribution management	Crowdsourcing especially might be successful in information product distribution, but also crowd labour might be applied for distribution tasks in physical market.
Communications management	Often addressed issue in research as Internet mainly serves as communication channel. Companies can allocate different communication tasks to users through crowdsourcing.
Marketing research	Crowdsourcing enables to get feedback and opinion from the crowd, however engagement and quality assurance issues are critical.
Content marketing	Crowdsourcing can be actively deployed in content marketing activities.

Note. Reprinted from Crowdsourcing application in marketing activities, by Gatautis R., Vitkauskaite E. (2014). *Procedia-Social and Behavioral Sciences*, 110, 1243–1250.

Finally, it should be noted that regardless of the marketing area in which crowdsourcing will be used, there is a set of factors that will be conducive to the success of the entire initiative (Fig. 3). On the basis of the list of eleven key success factors proposed by

Dawson (2012) in the context of marketing activities, the following should be emphasized (Gatautis, Vitkauskaite, 2013):

- **Contributors breadth** – a large pool of contributors is necessary, as it makes base for crowdsourcing,
- **Contributors quality** – the size of pool might vary, but it is important for a company to have contributors which have expertise in the field and share relevant opinion,
- **Public reputation measures** – enterprise ability to maintain reputation (brand) maintaining capacity to attract most reliable and highest quality contributors,
- **Internal reputation measures** – crowdsourcing is dealing with external companies services, so for a company it is important to select the highest quality service providers, which also require appropriate skills and capacities,

Figure 3. Success factors for crowdsourcing marketing

Source: (Gatautis, Vitkauskaite 2014)

- **Project management capabilities** – crowdsourcing marketing initiatives or certain marketing functions/actions might be treated as a project, so strong management capabilities are required for project implementation,
- **Project management tools** – as the factor above implementation of crowdsourcing will need specific tools and software,
- **Quality control** – the crowdsourcing should lead to high quality outcomes, so appropriate quality control procedures are needed.

Moreover, the main crowdsourcing characteristics mentioned in the first subchapter, as well as its four pillars, can also be explored through the prism of success factors, significantly expanding the list of factors that should be considered when creating any crowdsourcing initiatives.

Crowdsourcing – exemplary solutions

A lot of crowdsourcing initiatives managed to solidify their position in the online environment even before the very definition of this concept appeared in 2006. Some of the oldest that are still functioning include:

- **iStock** (istockphoto.com) – founded in 2000, the platform created the crowd-sourced stock industry and became the original source for user-generated stock photos, vectors and illustrations, and video clips. Today it is one of the world's leading stock content marketplaces, offering millions of hand-picked premium images.
- **Threadless** (threadless.com) – founded in 2000, the platform is an online community of artists and an e-commerce website where designs are created by and chosen by an online community. Designs are submitted online and are put to a public vote then the staff reviews the top-scoring designs and based on the average score and community feedback. Designs selected in this way are then printed on clothing and other products, and sold worldwide through the online store and at Threadless retail store in Chicago. Artists whose projects have been selected earn the entire difference between the base price and the sale price of a product. Since the launch over 450,000 designs have been submitted from which over 9,300 have been printed to date.
- **InnoCentive** (innocentive.com) – founded in 2001, the platform is enabling corporations, government, and non-profits across a range of industries to embrace the power of the crowd ever since. Today the company has over 390,000 Solvers from over 190 countries with 60% educated to Master's level or above in its network to help clients to tackle a problem more effectively exploring the vast domain of solution space.
- **Amazon Mechanical Turk** (mturk.com) – founded in 2005, the platform enables companies to harness the collective intelligence, skills, and insights from a global workforce to streamline business processes, augment data collection

and analysis, and accelerate machine learning development and more. Today there is over 100 000 workers available on the platform from over 190 countries.

- **99designs** (99designs.com) – founded in 2008 it operates as freelancer platform for connecting graphic designers and client. Today the platform connects more than 1 million freelancers with their clients, a new design is uploaded every second which resulted in earnings for a global artist's community of over 200 million dollars to date.
- **IndieGoGo** (indiegogo.com) – founded in 2008 is a crowdfunding platform, allowing people to solicit funds for an idea, charity, or start-up business. The company charges a 5% fee on contributions and offers services and resources from key partners to empower entrepreneurs throughout the life of their project. As of today, the platform has raised over 1 billion dollars across all projects over 223 countries and territories.
- **Kickstarter** (kickstarter.com) – founded in 2009, the crowdfunding platform is helping artists, musicians, filmmakers, designers, and other creators find the resources and support they need to make their ideas a reality. Since the launch, 16 million people have backed a project, \$4.3 billion has been pledged, and 163,674 projects have been successfully funded to date.
- **IdeaScale** (ideascale.com) – launched in 2009 in tandem with President Barack Obama's Open Government Initiative. As of today it is the largest cloud-based innovation software platform in the world with more than 25,000 customers and 4.5 million users. The software allows organizations to involve the opinions of public and private communities by collecting their ideas and giving users a platform to vote. The ideas are then evaluated, routed, and implemented.

Each of the platforms mentioned above has been successful on the market, and has managed to develop solutions that should serve as a benchmark for future crowdsourcing projects. The vast majority of these platforms inform about the scope of activities undertaken in the very first contact i.e. on the home page, trying to introduce potential clients to the concept of crowdsourcing. In the next step, they try to point out a number of benefits of using this type of solution, which often is followed by a detailed description of how a given platform works (along with a detailed description of its features), both from the perspective of the crowd and crowdsourcer. In order to increase the number of users of a given platform, examples of completed projects or well-known brands that have decided to use crowdsourcing services are often referred to. In some cases (especially crowdfunding platforms), visitors to a given website are provided with very detailed statistics, e.g. regarding the total number of funds accumulated for supported projects or the number of people creating a crowd on a given platform. All of these steps are in line with success factors mentioned in previous chapter. In light of the above, it should not come as a surprise that the majority of new crowdsourcing initiatives make extensive use of years of experience and the solutions developed in this field for these platforms. For example, the GOuep platform which was launched in 2019 (gouep.pl) is an interesting approach to the topic of crowdfunding in higher education, where through a dedicated website, both researchers and students

can submit their projects, which are largely financed from the support of the entire academic community. Another good example may also be the “L’ORÉAL BRANDSTORM 2019” competition (brandstorm.loreal.com). The aim of the Competition was to offer the students a pedagogical and professional experience and the opportunity to innovate within the beauty industry. The participants had to compose a team of three students whose task was to solve specific tasks announced periodically by L’ORÉAL. The whole competition was managed through the use of crowdsourcing platform, where the solution from all participants were gathered.

Despite the existence of many well-established crowdsourcing platforms, the very idea of crowdsourcing can still be considered a relatively fresh one, and should provide further examples of its application in the following years.

Conclusions

Crowdsourcing seems to be an area that is relatively well described in the subject literature. In terms of the theoretical foundations of the concept, there is plenty of sources for crowdsourcing definition, business models, and possible areas of its use or key elements of success. Nevertheless, individual sources relatively often differ in their approaches to this problem. This is particularly evident in the definition of the concept itself, resulting in discrepancies in what should be treated as a crowdsourcing. The situation is similar in the case of crowdsourcing models. On the other hand, the relative compatibility of approaches can be found in the context of possible areas of crowdsourcing application in marketing, as well as in the case of determining the key success factors of crowdsourcing initiatives. Numerous crowdsourcing platforms, many of which have been operating on the market for over 10 years, can and are often used as a benchmark for future initiatives.

It should be noted that crowdsourcing as any form of collaboration has its pros and cons. One of the most important advantage for the crowdsourcer is the fact that it can help to optimize efficiency (especially in the case of repetitive microtasks), reduce costs and at the same time provide solution that responds to actual consumer needs on a much higher level. However, it should also be emphasized that the quality of solutions provided strongly depends on the crowd and if crowd characteristics (such as its knowledge, value and location) does not match a crowdsourcer requirements to solve a given problem, crowdsourcing will simply not work. On the disadvantageous side there are also many control and trust issues such as anonymity of participants or disclosure of solutions to company competitors. Another common problem could be the relatively low level of benefits for the participants for their contributions, which may lead to their exploitation by crowdsourcers (Lewicki, 2016). Nevertheless, some of the described problems are often solved, e.g. Threadless recently decided to increase the level of its contributor’s earnings.

References

1. 99designs.com
https://99designs.com/?utm_source=google&utm_medium=cpc&utm_network=g&utm_creative=323339051009&utm_term=99designs&utm_placement=&utm_device=c&utm_campaign=ROW%20-%2099designs%20Branded&utm_content=99designs%20-%20exact&gclid=EAlaIQobChMlvdxIom14gIV1UkYCh23WwxBEAAYAAEgJVrPD_BwE [accessed online:24.05.2019]
2. brandstorm.loreal.com,
<https://brandstorm.loreal.com/en/challenges/challenge/agreements?lang=en> [accessed online: 25.05.2019]
3. Chawla S., Hartline J.D., Sivan B. (2019). *Optimal crowdsourcing contests*. Games and Economic Behavior, 113(C), pp. 80–96.
4. Clark B.Y., Zingale N., Logan J., Brudney J. (2019). *A framework for using crowdsourcing in government*. [In:] *Social Entrepreneurship: Concepts, Methodologies, Tools, and Applications*. IGI Global, pp. 405–425.
5. Daniel F., Kucherbaev P., Cappiello C., Benatallah B., Allahbakhsh M. (2018). *Quality control in crowdsourcing: A survey of quality attributes, assessment techniques, and assurance actions*. ACM Computing Surveys (CSUR), 51(1), 7.
6. Dawson R., (2012). *Chart: 11 critical success factors for crowd business model*. <https://rossdawson.com/blog/chart-11-critical-success-factors-for-crowd-business-model/> [accessed online: 24.05.2019]
7. Dawson R., Bynghall S. (2012). *Getting results from crowds*. Advanced Human Technologies, San Francisco, CA:
8. Doan A., Ramakrishnan R., Halevy A.Y. (2011). *Crowdsourcing systems on the world-wide web*. Communications of the ACM, 54(4), pp. 86–96.
9. Erickson L., Petrick I., Trauth E. (2012). *Hanging with the right crowd: Matching crowdsourcing need to crowd characteristics*.
10. Estellés-Arolas E., González-Ladrón-De-Guevara F. (2012). *Towards an integrated crowdsourcing definition*. Journal of Information science, 38(2), pp. 189–200.
11. Gatautis R., Vitkauskaitė E. (2014). *Crowdsourcing application in marketing activities*. Procedia-Social and Behavioral Sciences, 110, pp. 1243–1250.
12. Ghezzi A., Gabelloni D., Martini A., Natalicchio A. (2018). *Crowdsourcing: a review and suggestions for future research*. International Journal of Management Reviews, 20(2), pp. 343–363.
13. gouep.pl, <https://gouep.pl/> [accessed online: 25.04.2019]
14. Hopkins R. (2011). *What is Crowdsourcing?* [In:] Sloane P. (Ed.) *A Guide to open innovation and crowdsourcing – Advice from leading experts*. Kogan Page Limited, London.
15. Hosseini M., Phalp K., Taylor J., Ali R. (2014). *The four pillars of crowdsourcing: A reference model*. [In:] 2014 IEEE Eighth International Conference on Research Challenges in Information Science (RCIS). IEEE, pp. 1–12.
16. Howe J. (2006). *The rise of crowdsourcing*. Wired magazine, 14(6), pp. 1–4.
17. ideaskale.com, <https://ideaskale.com/> [accessed online:24.05.2019]
18. indiegogo.com, <https://www.indiegogo.com/> [accessed online:24.05.2019]
19. innocentive.com, InnoCentive <https://www.innocentive.com/> [accessed online: 24.05.2019]

20. istockphoto.com, IStock <https://www.istockphoto.com/pl> [accessed online: 24.05.2019]
21. kickstarter.com, <https://www.kickstarter.com/> [accessed online: 24.05.2019]
22. Lenart-Gansiniec R. (2017). *Crowdsourcing – systematyczny przegląd literatury*. Przegląd Organizacji, 3, pp. 25–34.
23. Lewicki M. (2016). *Crowdsourcing as a platform for enterprise collaboration with the Internet community*. [In:] Pająk K. (Ed.) *Innowacyjność wyzwaniem dla współczesnej gospodarki*. CeDe-Wu, Warszawa.
24. mtrurk.com, Amazon Mechanical Turk <https://www.mturk.com/> [accessed online: 24.05.2019]
25. Saxton G.D., Oh O., Kishore R. (2013). *Rules of crowdsourcing: Models, issues, and systems of control*. Information Systems Management, 30(1), pp. 2–20.
26. threadless.com, <https://artistshopshelp.threadless.com/> [accessed online: 24.05.2019]
27. Wang R.Q., Mao H., Wang Y., Rae C., Shaw W. (2018). *Hyper-resolution monitoring of urban flooding with social media and crowdsourcing data*. Computers & Geosciences, 111, pp. 139–147.
28. web.archive.org, A brief history of crowdsourcing <https://web.archive.org/web/20150703041454/http://www.crowdsourcing.org/editorial/a-brief-history-of-crowdsourcing-infographic/12532> [accessed online: 24.05.2019].
29. Whitla P. (2009). *Crowdsourcing and Its Application in Marketing Activities*. Contemporary Management Research, 5(1), pp. 15–28), Retrieved April 13, 2014, from <http://www.cmr-journal.org/article/viewFile/1145/2641>.
30. Van Horn, G., Branson S., Loarie S., Belongie S., Perona P. (2018). *Lean multiclass crowdsourcing*. [In:] Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition, pp. 2714–2723.