The Rise and Fall of Crowdsourcing?

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Abstract

Crowdsourcing has been discussed both in academic and managerial articles in recent years. Despite some critical voices, the overall attitude towards crowdsourcing has been quite positive in extant literature. In this paper we want to address potential drawbacks and issue that create shadows on top of crowdsourcing. The overall purpose of this paper is to discuss the reasons why crowdsourcing initiatives may not always live up to the expectations placed upon them. Despite some seemingly successful case examples, not every crowdsourcing initiative has taken off. While some of the barriers are case or industry specific, there are also certain overall reasons hindering crowdsourcing from reaching de facto modus operandi, especially in the innovation creation context. This paper is intentionally written through a critical lens by design and hopefully provides a constructive balance for those with an overly positive approach towards crowdsourcing.

1. Introduction

Crowdsourcing is a relatively new term, often cited to have been coined by Jeff Howe [1] in his Wired magazine article. The founding idea behind crowdsourcing is to delegate work - which can take the form of ideation, problem solving, voting for the best option or even microtasking - to a large number of people. The guiding principle behind this ideology is popularized by Jurowiecki [2] in his book The Wisdom of Crowds. While Jurowiecki did not exactly use the term crowdsourcing, he illustrated the guiding principles behind it - i.e., diversity of opinion, independence, decentralization, and aggregation of opinions – that are the key criteria that need to be in place for a ‘crowd to be wise’.

A commonly accepted definition for crowdsourcing has yet to emerge. According to Howe [3], “crowdsourcing isn’t a single strategy. It’s an umbrella term for a highly varied group of approaches that share one obvious attribute in common: they all depend on some contribution from the crowd.” (p. 280). This is a quite short and perhaps even a bit of a vague expression that leaves plenty of room for interpretation.

There are many other attempts to define crowdsourcing and an extensive list of definitions is available by Estellés-Arolas and González-Ladrón-de-Guevara [4] who went through the definitions of crowdsourcing and extracted common elements of them. According to their analysis, “crowdsourcing is a type of participative online activity in which an individual, an institution, a non-profit organization, or company 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 what the user has brought to the venture, whose form will depend on the type of activity undertaken.” (ibid, p. 9-10.) This definition is quite extensive and is also the one we are confident to apply in this paper.

The purpose of this paper is to provide, not only successful but also unsuccessful examples of crowdsourcing. After that we will discuss the reasons that creates problems with crowdsourcing. Due to scope and limitation we, however, intend not to solve these issues nor do we aim to provide any managerial suggestion to do so. We hope that collecting and identifying the relevant information related to crowdsourcing problems by conducting a selective literature review will provide valuable information to academic audience and practitioners alike.

2. The conceptual dimensions of crowdsourcing
While the definition of crowdsourcing is still under debate, similarly, the exact crowdsourcing taxonomy is also yet to emerge. One approach is to look at crowdsourcing processes from an organizational perspective. Thus, the four basic dimensions of crowdsourcing are: preselection of contributors, accessibility of peer contributions, aggregation of contributors, and remuneration for contributions [5].

One way to categorize crowdsourcing initiatives is to list them according to their nature, i.e., simple, complex, or creative [6]. Simple tasks are typically microtasks, such as short translations or interpretations of visual data via Amazon Mechanical Turk. Creative tasks can include name competitions or graphic design, such as is the case with Threadless. Complex tasks are scientifically or technologically challenging and can be found, for instance, via innovation brokers such as Innocentive, Yet2, or NineSigma [7].

While the definition and taxonomy are creating debate, the semantic confusion with other concepts is also evident. It is not clear how crowdsourcing is conceptually aligned or contrasted with other terms, such as consumer co-creation [8], user innovation [9], collaborative innovation [10], and used-generated content [11]. While crowdsourcing is used as a way to manifest the open innovation ideology [12] its alignment with other terms, such as peer production, collaborative systems, community systems, collective intelligence, crowd wisdom, and mass collaboration is still unclear [13].

3. The claimed benefits of crowdsourcing and hallmark case examples

Crowdsourcing has its roots in open source development, where a community of software enthusiasts wanted to create better codes than those available from large corporations [3]. Famous examples are, for instance, the Linux operating system, Apache server software and the Firefox web browser. Crowdsourcing has claimed to provide several benefits for firms looking for new innovations because, via crowdsourcing, firms can come up with new ideas, solve problems effectively, lower their costs, and shorten their product development cycles [14] [15]. Categorization of crowdsourcing platforms and a basic description of the crowdsourcing process and business model have been illustrated in literature [15] [16].

There are several authors who celebrate crowdsourcing and share an optimistic attitude towards the value that can be created by applying it. For instance, Chesbrough [17] states “Crowdsourcing is thus a powerful resource for innovators. … A world of people and organizations is available to assist you, if you have the commitment and care to engage them properly.” (p.xix). There are also several examples of successful crowdsourcing initiatives. Threadless is often mentioned as a hallmark example of a successful crowdsourcing initiative. Their business model of designing and making t-shirts has already been described in several articles [18] [3] [8] and is not worth repeating here. Lego has been often used as an example of how to engage customers and create a community of hobbyists and enthusiasts to support product development [19]. iStockphoto is also an example of crowdsourcing where amateurs can seemingly deliver output that can compete with that created by professionals. The reason for this is well explained by Howe [3] who states: “Crowdsourcing capitalizes on the fact that our interests are more diverse than our business cards would have one believe” (p. 38).

One group of crowdsourcing initiatives, which seemingly have been successful, are those that have been created to help society and science in general. Fold.it is a site where people can participate in folding human proteins and thus help bio-sciences. PlanetHunter is an initiative where anyone can participate in searching for patterns and anomalies in large data and thus help astronomy to locate new planets. Stardust and GalaxyZoo are similar sites where volunteers search for interstellar dust via virtual microscope or classify photographs taken by Hubble telescope. FreeMBD uses crowdsourcing to transcribe the civil registration of births, marriages and deaths in the UK. Similarly, several wiki sites are also examples of crowdsourcing targeted for common good.

While many crowdsourcing initiatives are in the consumer industry, there are also examples in the B2B industry. Procter & Gamble has been running the Connect and Develop initiative in the spirit of open innovation [20]. Dell has initiated IdeaStorm and the Cisco iPrize to receive new ideas [21]. IBM has organized global idea, Innovation Jam [22] and SAP has approached their user community for new ideas [23].

One famous B2B example is Goldcorp, a Canadian mining company that published their geological data to be available for anyone to examine and asked the crowd to provide solutions for targets of new gold deposits in their mines, compensating with relatively large rewards [14].

Many famous crowdsourcing campaigns are built on lucrative rewards. Netflix has offered the reward of 1 million USD for an algorithm that would help their accuracy in forecasting. InnoCentive has been inviting experts to solve demanding problem by providing well-paid incentives. Google recently announced the Lunar
X Prize where 30 million USD is the reward for the first private team to send a robot to the moon.

Naturally there have been price-based competitions long before the Internet. For instance in the 18th century The British Navy created an open call to seek help for external experts to help solve the problem of longitudinal navigation [3] and this can be seen as an early example of crowdsourcing.

4. Unsuccessful crowdsourcing initiatives

We have addressed a few successful crowdsourcing cases above, but there are also those that have encountered some difficulties.

Gambrian House was one of the first firms that described themselves as a crowdsourcing company. Despite interest from the press and a quite decent member rate, the firm did not manage to engage the community to participate in actual implementation of ideas. In other words, most of the visitors just looked, and sometimes ranked, the ideas but did not participate to make the ideas real [3] [24].

An additional example is CrowdSpirit. The French company worked as an innovation intermediary with the original idea to provide a platform for the community to manage the whole R&D process. The original business model was to sell a product designed by a community to end-users – something that did not work in reality due to the low number of actual contributors. The case study of CrowdSpirit also revealed the difficulties in defining a viable business model that would capitalize on crowdsourcing and provide viable business in terms of revenue stream. Additional challenges were associated with the development of proper incentive structures and distribution of intellectual property rights. [25]

Howe also describes challenges encountered by Assignment Zero – a journalism crowdsourcing project - that were related to organization, timing, and community management [3].

It is worth mentioning that we do not claim that these examples are enough evidence to propose that crowdsourcing does not work per se. Naturally there can be all kinds of reasons why these cases did not succeed as pointed out by one of the reviewers. Our purpose, however, was to pinpoint unsuccessful examples that are often neglected in literature where successful cases typically prevail. The next chapter will discuss generic crowdsourcing related difficulties in more detail.

5. The generic challenges with crowdsourcing initiatives

There are several different types of crowdsourcing and they naturally have their own specific concerns. The following three subchapters discuss generic issues and challenges that are creating concerns with crowdsourcing as a phenomenon. Additional issues that do not fall under these three generic topics are discussed in the chapter six separately. The purpose is not to present any inclusive list of all possible challenges but to provide a reader an overview of the typical challenges associated with crowdsourcing.

5.1. How can you make a crowd aware of something?

How can you make the general public aware of crowdsourcing initiatives? How can you spread the word about idea contests and how do you invite people to solve the problems an organization has? Because crowdsourcing sites are de facto Internet sites themselves, this boils down to the question any on-line marketer has today – How can we spread the word and encourage people to visit our site? If we make a desktop rejection of the idea of purchasing advertising space in the printed media or on TV (or Google) we are left with the natural option of leveraging social media.

Social media is becoming a mainstream tool for spreading messages and providing information [26] [27]. It is however no place to silver bullet as there are already vast amounts of traffic competing for individuals’ precious time – crowdsourcing initiatives being just one category of various internet sites competing for people attention. While it is being said that it is less and less important to compete for attention and that several crowdsourcing sites have failed because they have been designed to capture attention rather than create engagement [24], we argue that both of these items are actually needed. It is rather hard to create and maintain engagement if nobody has even heard about the initiative seeking that engagement. In this sense it is no wonder that big consumer brands, such as Doritos and Starbucks, have managed to engage participants into their crowdsourcing initiatives. While a well-known brand name is a great asset when reaching out to the crowd, there is the viral marketing effect [28] [29] which can help smaller organizations to receive traffic to their sites. In any event, it is assumed that several crowdsourcing initiatives already suffer in that first step as they are not able to generate enough interest among Internet users.
5.2. How can you get the crowd to contribute?

There have been several studies that have dealt with the users’ motivation for participating in crowdsourcing and open innovation in general. A summary of the motivations to participate in online communities is provided, for example, by Antikainen, Mäkipää, and Ahonen [30].

According to Antikainen et al. [30], “it is already challenging to create collaboration between strangers in face-to-face situations, and the internet environment can make this even more difficult” (p 113). They notice that rewarding a group for their mutual collective work is anything but easy and that taking into account the challenges of scheduling and managing time may lead to less willingness to cooperate between members.

As was discussed, one of the simplest ways to motivate a crowd to contribute is to offer significant monetary rewards. Many innovation intermediaries aim to capitalize on that. However, there have been some doubts if their business model is viable for meeting the great expectations laid upon them [31]. Thus, as the amount of crowdsourcing initiatives grows, it is likely that a tragedy of the commons has an affect on crowdsourcing culture [24] i.e. not every initiative is able to motivate people to really work with their best efforts and make them contribute as much as they could. In other words, when people do not feel like being part of something valuable to them, they lack the commitment and engagement and lose their interest to contribute. This eventually leads people to drop the project – the third issue we address next.

5.3. How to get a crowd to stay on board

Gaining lots of inbound traffic is not sufficient if these people do not feel home with the site. A recent case study regarding the adoption of Yammer (a social media application) in a large organization clearly revealed the that there is a need for users to engage and for a certain critical mass to emerge before a system can work. This relates to important questions presented by McGonigal [24] – “How many communities can an individual belong to before dropping out one or another? How many projects can an individual contribute to before neglecting some and rejecting others?” (p. 5) In other words, this means that crowdsourcing sites are competing with each other for available ‘crowd-resources’ [24], which ultimately means that not all projects will be able to create enough traction, i.e., maintain a sufficient amount of contributors to create a virtuous development cycle [32]. If we consider users as resources, the dilemma is that these resources cannot be managed as there is no contractual relationship in place[25].

Similarly there is the dilemma of how to motivate participants to ‘stay on board’ after the first excitement has disappeared. According to Chanal and Charon-Fasan [25] “the hope of having one’s own idea selected is not sufficient to maintain a high level of contribution” (p. 336).

6. Additional issues hindering crowdsourcing

On top of the three generic issues addressed, there are also other issues that cast some dark clouds over crowdsourcing initiatives - Organizational resistance, tweaking the game, the crowd versus companies, the question of labor exploitation, dealing with legal issues, de-democratization of the Internet, and quality of ideas are discussed next.

6.1. Organizational resistance

‘Not invented here’ is something that hinders innovations in large organizations. While this is not the fault of crowdsourcing per se, the phenomena may be seen as an issue hindering the applicability of ideas and solution proposals generated by the crowd.

There are typically certain cultural differences between different organizational units inside large firms, which creates resistance towards new ideas even if it originates within the boundaries of the same employer [33] [34]. If internal ideas are suffering from the “not invented here” dilemma, it can be assumed that ideas generated by external resources will be treated no differently.

6.2. Tweaking the game and pranks

Scoring and ranking different ideas is typically a task that a seeker is willing to crowdsource to the community. This makes the selection task of an innovation seeker seemingly easier but unfortunately this is not the whole truth. For instance, there are possibilities for certain individuals to try to tweak the results. Let’s think about an idea contest where users are asked to provide ideas and then vote or rank the best ones. It is not too far-fetched to think that someone might feel tempted to write a script (perhaps using a different IP addresses) that generates a huge amount of votes for their idea. While there are counter mechanisms to prevent this technically, it is still possible for a popular person to harness his or her personal network to provide real votes and thus manipulate the results. Another side of this is that those
people who feel that they do not have a wide enough network to ask for help may simply feel de-motivated to participate if the ranking is just based on popularity.

An additional issue related to voting is “crowd-humor”, which may turn against the company running an idea or opinion contest. Based on web sources we have identified several cases that have backfired. For instance, NASA organized a public call for naming a space station. Stephen Colbert (a famous US comedian) shared this contest with his followers and fans and was able to generate a huge amount of votes, which seemingly placed his name as the winners’. NASA, however, decided not to name the station after him. Similarly, Barack Obama’s press conference was collecting questions from the public in advance. A massive amount of ‘legalize marijuana’ enthusiasts were soon pushing their cause over the other topics. An additional example is of the New York Mets (a baseball team) who wanted to crowdsourcet heir inning anthem for their home games. Rick Astley’s song was used as an Internet prank that dominated the competition [35].

One recent initiative in this prank category is a site called Kickstriker notified by a recent blog post [36]. This fake site imitates Kickstarter, which is an actual funding platform for creative projects ranging from music to design and from fashion to film. Kickstriker on the other hand lists many illegal and evil projects searching for funding. Obviously this site is a hoax that attempts to call attention to possible malpractices that could accompany crowdsourcing [36].

6.3. The crowd versus companies

Howe [3] provides a comparison between amateurs and professionals. Brabham continues the discussion[37] and points out that “in the end companies never lose with crowdsourcing” (p. 406). In brief, this means that claims of low quality or failures in the outcome of a crowdsourced project can be blamed on the crowd that created them in the first place. This is exactly what happened with Pepsi and Dorito who ran a contest for a Super Bowl advertisement. One of the videos seemingly insulted the Catholic church and Pepsi and Dorito responded fast with the argument that they had nothing to do with the commercial and that it was not going to be aired [38].

6.4. Labor exploitation?

There can be several completely distinct angles from which to investigate crowdsourcing. One is to look at it from the focal firm perspective. This means crowdsourcing provides an opportunity for firms to save costs as they do not need to pay for designer firms or to hire scientists on their payroll. What this means in practice is that crowdsourcing is good for business from the cost saving point of view. Naturally, quite the opposite attitude is found among the professionals providing these services who may feel crowdsourcing disruptive, doing nothing but eating up their profits/salaries.

An example of this was one contest where a firm crowdsourced new 3D designs for their new product and got over one hundred models. The selected winner was given an iPad. In other words, a large amount of intellectual capital is delivered to a company in an exchange for relatively little money spent on rewarding the winner. The same kind of power-bias is often seen in logo and graphic design contests. Sites that aim to engage freelance designers are for instance 99designs.com, mycroburst.com and crowdspring.com While these seem to be a good source for income for freelancers, there are also claims that these sites actually are benefiting from labor exploitation.

There are already movements trying to protest against these initiatives and discourage talented people from participating. Naturally, participation is voluntarily and individuals can perceive this from different perspectives. Those whose living is not dependent on the prizes can participate for fun. Similarly, those with great talent coming from low-income economies may feel that even a modest reward (as perceived from the salary standards of developed countries) is tempting enough to be worth participating in.

According to Brabham [14] “on the micro-level, crowdsourcing is ruining careers. On the macro-level, though, crowdsourcing is reconnecting workers with their work and taming the giants of big business by reviving the importance of the consumer in the design process.” (p. 84) There is also discussion and analysis about “democratized” crowdsourcing and the capitalist logic associated with crowdsourcing [37].

6.5. De-democratization of the Internet

The section header relate to a larger socioeconomical development of social media and the Internet. While at the outset it may seem that the Internet user-base is quite heterogenous, there are actually many similarities between the majority of users. So if the majority of users are white, middle- or upper-class, young, English speaking, higher educated, and with high-speed connections, it can lead one to ask if crowdsourcing can utilize diversity after all [14].

An additional dilemma is that if the user base distribution is skewed, is there room for alternative ideas? Brabham [14] provides observation on this by stating “if solutions are measured against the yardstick
of the company sponsoring the crowdsourcing application, or measured against the opinions of the homogenous crowd, alternatives to the presiding discourse will probably always lose out” (p. 86)

6.6. Crowdsourcing and law

If a firm is just looking for a new flavor for ice cream, or to run a contest to acquire user-generated advertisements for the Super Bowl, one may well perceive these as a marketing campaign rather than serious innovation cases where Intellectual Property Rights (IPR) plays a role [3]. Especially in an industrial context, the question of IPR is highly relevant and may create some resistance for firms to participate in open innovation and crowdsourcing activities [39]. Naturally, delicate handling of IPR issues is highly relevant for intermediaries [25]. In any event, because crowdsourcing is shifting many conventional practices it may not always be straightforward to find answers related to it from a legal point of view. Topics related to employment law, patent inventorship, data security, copyright ownership, and securities regulation of crowdfunding need to be addressed [40]. The legal issues related to the misuse of personal information can also create some issues [41].

6.7. Quality of ideas

The recent empirical study by Poetz and Schreier (2012) found that ideas generated by users - contrasted with those of created by professionals - scored higher in terms of novelty and customer benefit [42]. This study, however, was conducted among simple consumer products where the prior knowledge required to contribute was quite low and the authors actually point out that, “there may be a significant relationship between knowledge-based entry barriers and the users’ ability and likelihood of coming up with promising new product ideas” (ibid). Industrial firms have expressed that their products are under strict standards, something which users are not aware of, and that their products require deep technical expertise and so they would not get much help from the crowd [39]. Some product development authors have also doomed crowdsourcing completely. For instance, Cooper and Edgett state, “crowdsourcing sounds like a neat method, but it’s not popular and results are weak” [43].

On the other hand, many, especially consumer-driven crowdsourcing initiatives are, by purpose, more or less marketing campaigns rather than projects really seeking novel ideas or innovations [3]. Snack manufacturer Doritos’s contest to acquire user-generated advertisements for the Super Bowl is one example of that kind of approach.

7. Propositions

It is worth pointing out that we are not declaring crowdsourcing dead – (that is why the title has a question mark in it). Crowdsourcing has proved to work in many situations and it is assumed that many new crowdsourcing initiatives will find their way into the mind of the crowd. Also, many new user-driven innovations will most likely emerge in the future.

However as the amount of new initiatives emerge the competition between them naturally increases. As pointed out by the reviewer, many barriers and problems can naturally be associated with increased competition. This is why three generic topics were addressed in the chapter five. Based on the discussion in the chapter five we present following propositions to be tested empirically:

**Proposition 1.** When the amount of crowdsourcing sites will increase the amount of participants per site will decrease.

**Proposition 2.** The quality of contribution in terms of added value to a site owner will decrease when the amount of competitive sites will increase.

**Proposition 3.** The turnover rate of participants will be shorter when the amount of crowdsourcing sites will increase.

If corporations take any of submitted ideas into production and provide compensation (be it glory or currency) that satisfies the original creator(s) everybody should be fine. This is in contrast with company driven initiatives where only one participant can be the winner but companies reap the benefits of other contributions. This lead to our fourth proposition:

**Proposition 4.** Only those crowdsourcing initiatives with lucrative prices and/or a connection to a famous brand or a major link to common societal well-being will be able to continue with “one winner gets all” kind of business model.

In other words, we assume that those crowdsourcing platforms that are honest enough from the crowd’s point of view and that run innovation and problem solving contests fairly (i.e., prices and rewards are distributed fairly) and where participants feel that they are intellectually challenged and stimulated so that the reward (be it money or just fun) to participate exceeds the cost (time, effort) to participate, will be also popular in future.
8. Discussion, limitations and future directions

In this study we have purposely discussed crowdsourcing from a critical angle. While this may be seen as revealing a certain bias, we hope that this paper is able to provide a counterbalance to the writing that has perhaps shown quite a positive perspective on crowdsourcing.

The underlying phenomenon is new and there are not much journal level publications about the subject yet. There is actually a recent literature review about crowdsourcing from information system perspective [44]. However, our focus was quite narrow and to be able to focus on the barriers and negative effects we had to rely on selective literature review as data collection method. We have also used some non-academic outlets and websites as references; something which can be seen lesser value from strict academic perspective. As time passes it would be useful to conduct longitudinal analysis as was suggested by one of the reviewers. Also deeper ideological issues and antecedents of observed problems of crowdsourcing deserve further investigations in future studies.

In any event, we feel that presented ideas in this paper are fundamental topics that practitioners need to consider when they are about to set up crowdsourcing initiatives. How should companies do that in practice goes beyond the scope of this study. There are, however, already several checklists available. For example; immediate feedback, clear objectives, visible failure rates and staged series of challenges are suggested [24]. A list of ten ‘rules of crowdsourcing’ is also provided at the end of Howe’s book [3].

Despite the provocative title of this paper we do not want to claim that crowdsourcing is doomed to fail automatically. However, we started this investigation with the premise that ‘a hype’ that often coins new management concepts and ‘isms’ requires some investigation that takes a more critical approach. In any event, we expect many new crowdsourcing initiatives to emerge, some to succeed and many of them to fail. Time can only tell which will which.

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10. References


