

Crowdsourcing as an Open Innovation Tool for Entrepreneurship

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Abstract—As traditional innovation has already taken its place in managers' to do lists; managers and companies have started to look for new ways to go beyond the traditional innovation. Because of its cost, traditional innovation became a burden for companies since they only use inner sources. Companies have intended to use outer innovation sources to decrease the innovation costs and Open Innovation has become a new solution for companies at this point. Crowdsourcing is a tool of Open Innovation and it consists of two words: Outsourcing and crowd. Crowdsourcing aims to benefit from the efforts and ideas of a virtual crowd via Internet technologies. In addition to that, crowdsourcing can help entrepreneurs to innovate and grow their businesses. They can crowd source anything they can use to grow their businesses: Ideas, investment, new business, new partners, new solutions, new policies, data, insight, marketing or talent. Therefore, the aim of the study is to be able to show some possible ways for entrepreneurs to benefit from crowdsourcing to expand or foster their businesses. In the study, the term crowdsourcing has been given in details and these possible ways have been searched and given.

Keywords—Crowdsourcing, entrepreneurship, innovation, open innovation.

I. INTRODUCTION

INNOVATION is acknowledged as a vital social and financial phenomenon that is fundamentally worth to explore. Organizations are stressed over their innovation capacities, particularly the ones about their rivals since they think their future relies on upon this [1]. Innovation which has not been in company priorities anymore takes its place gradually in to do lists in managers' offices. Notwithstanding, the development procedure in many organizations makes hack sounds like a corroded old motor. Not in a way that is different from the internal combustion engine, since the parameters have changed totally, conventional advancement is going to subside [2].

Innovation endeavours might be adequate where vulnerability and changeability are restricted in a market domain. Be that as it may, if there are vulnerability and inconstancy, if the organization enters an obscure market or begins to create an obscure item, we should demonstrate more push to see the open doors and dangers before us [3]. The expansion of instability and unpredictability in the market with the requirement for data strengths organizations to move past the idea of innovation and cripples inward R&D exercises. This has prompted to the development of the idea of open innovation by moving past innovation. Open innovation

is to give significant data information and yield so as to quicken the inside development and is to make markets such places where innovation is utilized remotely [4].

Crowdsourcing is a relatively new open innovation tool consists of a combination of words outsourcing and crowd. Crowdsourcing is a term invented by Jeff Howe [1]. Jeff Howe has defined the term of crowdsourcing in his article [1] published in Wired magazine as "taking a job which is traditionally performed by an appointed trustee (generally a worker) ad giving it to undefined, mostly large scale of people as an open call." Crowdsourcing might be a tool for entrepreneurs to foster their businesses. Entrepreneurs can benefit from crowdsourcing in certain ways.

Paper aims to focus on the types, use, requirements of crowdsourcing and these certain ways that entrepreneurs can benefit from.

II. LITERATURE REVIEW

A. Crowdsourcing

Considering the literature on crowdsourcing, there are several definitions, Table I.

Based on given definitions some inferences can be drawn about crowdsourcing. For instance, requirements for crowdsourcing can be listed as [7]:

- A person, usually called the *crowdsourcer*, who manages the process,
- A group of people, called the *crowd*, who do the work,
- A market, usually called the *crowdmarket*, that is used to help manage the contributions of the crowd (crowdmarkets are often found on Internet sites that are called *crowdsites* or *platforms*),
- A means of communicating with the crowd – usually the Internet.

In other words, as [18] stated, there are eight fundamental elements that any crowdsourcing initiative must contain. These elements are as follows:

1. There is a clearly defined crowd.
2. There is a task with a clearly defined goal.
3. There is a clearly defined reward received by the crowd.
4. The crowdsourcer is clearly identified.
5. There is a clearly defined response to be received by the crowdsourcer.
6. Participation process is online.
7. There is an open call due to participation.
8. It uses the Internet.

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TABLE I
CROWDSOURCING DEFINITIONS

Author	Definition
Brabham [5]	"A strategic model to attract an interested, motivated crowd of individuals capable of providing solutions superior in quality and quantity to those that even traditional forms of business can."
Brabham [6]	"Crowdsourcing is an online, distributed problem-solving and production model that leverages the collective intelligence of online communities to serve specific organizational goals"
Geiger and Schader [7]	"An umbrella term for approaches that harness the diverse potential of large groups of people via an open call for contribution over the Web. Using information technology as a facilitator, crowdsourcing organizations implement socio-technical systems to channel the contribution of human workforce, knowledge, skills, or perspectives into the generation of digital information products and services. Such crowdsourcing information systems have recently gained in popularity for a variety of organizational functions such as problem solving, knowledge aggregation, content generation, and large-scale data processing."
Howe [1]	"Simply defined, crowdsourcing represents 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 individual. The crucial prerequisite is the: use of an open call format, and the wide network of potential labourers."
Howe [8]	"Crowdsourcing is the act of taking a job traditionally performed by a designated agent (usually an employee) and outsourcing it to an undefined, generally large group of people in the form of an open call"
Kleeman et al. [9]	"A profit oriented form outsources specific tasks essential for the making or sale of its product to the general public (the crowd) in the form of an open call over the internet, with the intention of animating individuals to make a contribution to the firms' production process for free or significantly less than that contribution is worth to the firm."
Liu & Porter [10]	"The outsourcing of a task or a job, such as a new approach to packaging that extends the life of a product, to a large group of potential innovators and inviting a solution. It is essentially open in nature and invites collaboration within a community."
Oliveira et al. [11]	"A way of outsourcing to the crowd tasks of intellectual assets creation, often collaboratively, with the aim of having easier access to a wide variety of skills and experience"
Poetz and Schreier [12]	"Outsource the phase of idea generation to a potentially large and unknown population in the form of an open call."
Ribiere & Tuggle [13]	"Consists of making an open online call for a creative idea, or problem solving, or evaluation or any other type of business issues, and to let anyone (in the crowd) submit solutions."
Saxton et al. [14]	"Crowdsourcing is a sourcing model where organizations use mainly advanced Internet technologies to benefit from the efforts of a virtual crowd for accomplishing certain organizational tasks."
Sloane [15]	"One particular manifestation of open innovation. It is the act of outsourcing a task to a large group of people outside your organization often by making a public call for response. It is based on the open source philosophy, which used a large 'crowd' of developers to build the Linux operating system"
Vukovic [16]	"A new on-line distributed problem solving and production model in which networked people collaborate to complete a task"
Whitla [17]	"Crowdsourcing defines a process of organising labour, where firms parcel out work to some form of (normally online) community, offering payment for anyone within the 'crowd' who completes the task the firm has set"

B. Types of Crowdsourcing

Due to the literature review, various authors [5], [7]-[9], [19]-[21] have given various types of crowdsourcing. Given types can be summarized as:

1. *Crowdcasting or Crowdcontests*: This is a contest-like crowdsourcing type, where a problem or a task is proposed to the crowd and being rewarded in return [22]. Crowdcontests are perhaps the simplest form of crowdsourcing. Smart thoughts do not generally originate from exceptional ability. They frequently originate from long-term experience. The crowd regularly comprehends the qualities and shortcomings of a product superior to the specialists who composed it. The engineers may have special expertise. The crowd probably has much more experience of the product, so by drawing in the crowd, you extend your comprehension [7]. It incorporates those activities where the member who first or better unravels the test postured gets a reward [22].
2. *Crowdcollaboration*: It incorporates extends in which members convey their insight to take care of issues or raise thoughts cooperatively, often without a reward [23]. Crowdsourcing activities in which correspondence between people of the crowd happens, while the initiator of the activity remains as side-lines [22]. The following subtypes fall under this category:
 - *Crowdstorming*: These are massive online brainstorming sessions, in which diverse thoughts are raised and the group can bolster those thoughts with their opinions and votes [22].
 - *Crowdsupport*: These are activities that permit clients themselves to take care of the inquiries or issues of others without appealing to the technical support or customer after-sales service [23].
3. *Crowdcontent*: In these crowdsourcing tasks, the crowd utilises their work and knowledge to create or discover substance of different sorts but not in a competitive way. Three subtypes can be found [22]:
 - *Crowdproduction*: It is a kind of crowdsourcing where the crowd ought to make content, as it is done independently when interpreting short bits of content or tagging pictures [22].
 - *Crowdsearching*: In this kind of tasks, the participants look for substance accessible online for a specific reason [23].
 - *Crowdanalysing*: It is a kind of crowdsourcing where the crowd seeks yet not in the Internet but rather inside mixed media archives, for example, recordings or pictures [22].
4. *Crowdfunding*: A sort of crowdsourcing where the crowd is utilized to raise cash for a company, a charity or an artistic endeavour. The crowd can be requested donations, or cash can be raised for an organization by offering shares of stock [7]. This can be done in exchange for a reward.
5. *Crowdopinion*: For this situation, the goal is to know the client feelings about a specific issue or product through votes, remarks, tags, or even offer of shares [22]. If this is performed through voting, it is called crowdvoting [23].

C. Types of the Crowd

Likewise with all types of crowdsourcing, innovation crowdsourcing requests that you have a group that is very

much coordinated for the innovation that you're attempting to create. On the off chance that somebody in the group does not have the correct involvement, right abilities or right associations with the issue, you do not get anything of significant worth from her [7]. In innovation crowdsourcing, you try to get skills and ideas that originate from a known group of people such as your employees or customers.

In innovation crowdsourcing, you can use two classes of crowd (Fig. 1):

- *Public crowds* are selected through an open invitation. They might be worked out of individuals who go to your site.
- *Private crowds* begin with a group of people that you already know. be amassed from your workers, clients or members.

Both kinds of crowd can be further divided into two classes:

- *In open crowds*, you take everyone who comes as a member of your crowd.
- *In curated crowds*, you limit enrolment to individuals who have particular experience, abilities or positions.

TABLE II
DIFFERENT TYPES OF CROWDS FOR INNOVATION

	Public Crowd	Private Crowd
Open	Everyone who comes to an invitation. <i>Example:</i> People who come to your website.	Everyone in a pre-existing group. <i>Example:</i> Your customers
Curated	A restricted public crowd. <i>Example:</i> The visitors to your site who are mothers of young children.	A restricted private club. <i>Example:</i> Employees who use your product.

D. Crowdsourcing Process

Crowdsourcing is an online business design, which makes the best utilization of the people on the web, through open call, and finally gets innovative responses [24]. In this model, issues are circulated to unknown individuals (crowd) through open calls; individuals come, take a shot at the assignments, offer their answers, and get some incentives in return.

Crowdsourcing structure involves three principle parts: Platform, applications, and crowd [25].

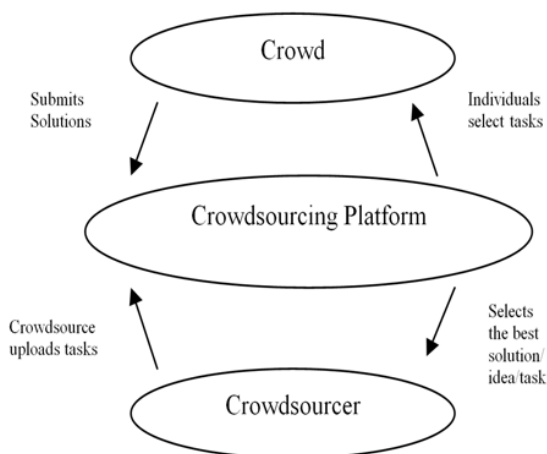


Fig. 1 Crowdsourcing Process

As it is seen in Fig. 1, crowdsourcing process begins when the crowdsourcer uploads a task which he seeks for a solution or an idea on the crowdsourcing platform. Members of the crowd responds to the task, select to offer a solution or an idea. Therefore, they submit solutions or ideas on the platform and finally crowdsourcer selects the most efficacious solution or the idea.

E. Reasons of Crowdsourcing

You get distinctive advantages from crowdsourcing, contingent upon your identity and what you're doing. In any case, the vast majority who crowdsourcer are hoping to get no less than one of three things. They're looking for [7]:

- *Access to talent:* Many individuals crowdsourcer to access ability that they cannot get in some other way. They do not have the capacity to discover any individual who is a specialist application software engineer, or knows how to make an interpretation of French into Urdu, or knows how to improve a site page so as to get the best positioning on search engines. Crowdsourcing can help you discover individuals who have these skills. It can likewise present to you the ability that originates from the gathered knowledge of the group, the capacity to do things that are troublesome for machines to do.
- *Doing more with less:* Crowdsourcing permits you to accomplish more with your assets. You procure the best individual for every employment as opposed to searching for a solitary individual with various abilities. In case you're building a bilingual site page, you don't need to search for a website specialist who knows two languages. You can crowdsourcer one individual or group for the assignment of building the webpage. You can crowdsourcer another group or individual for the assignment of composing the content in an alternate language.
- *Greater flexibility:* Crowdsourcing allows you to follow trends in the market. It gives you a chance to supplant unbending hierarchical structures with straightforward, adaptable procedures. Grier [7] gives a good example: "Say that you've an office that processes email. Rather than creating a large staff with fixed rules, you can give some of the work to the crowd and let individuals decide the best way to process the material and find the information you need."

III. CROWDSOURCING SOLUTIONS FOR ENTREPRENEURSHIP

Crowdsourcing gives an entrepreneur access to assets on a worldwide scale through the Internet. These assets might be a great deal more practical for the business person and also important when hoping to discover and draw in the best individuals to take care of issues and add value [26].

Crowdsourcing offers skills that small businesses cannot easily get any other way. A new business, for example, can use crowdsourcing to stay small and minimise the demands on its capital. You may not have the need for a full-time marketer, but you can get professional marketing skills for each project when you need them. You may not have the need

for a full-time finance officer, but you can get financial advice through crowdsourcing [7].

Now, small businesses can innovate better and cheaper and they can compete with their larger competitors because they are not as flexible as small companies and they are much more costly than small companies. Besides, small companies can utilize these tools in effective and shrewd ways to push their organizations: new applications and markets for technology, breakthrough marketing strategies and even identifying potential partnering opportunities for their businesses. These are all substantial uses of open innovation and the time is appropriate for small companies to incorporate these ideas into their organizations [27].

Considering the reasons why companies use crowdsourcing, entrepreneurs can benefit from crowdsourcing while founding or trying to foster their business.

Entrepreneur can reach wider crowds through Internet and can also use social networks for some tasks. Therefore, entrepreneur needs 2 basic things to benefit from crowdsourcing:

1. Internet (Social Networks or Websites)
2. Crowd

While launching a new business, entrepreneur might have some difficulties to provide all resources he/she needs. So, crowdsourcing might be her best solution to handle this problem. She can benefit from some applications of crowdsourcing in a very efficient way. That is to say, Crowdstests/Crowdcasting, Crowdcollaboration, Crowdfunding and Crowdo opinion to launch or to foster her business.

A. Crowdstests/ Crowdcasting for Entrepreneurship:

If the entrepreneur wants to find a creative business idea or to find a creative solution to her tasks or problems, Crowdcasting/Crowdstests might be a helpful solution for her. Entrepreneur might not provide all the resources she needs but by the help of crowdsourcing, she can delegate those tasks to the crowd. Moreover, it would be cheaper, faster and easier.

Grier [7] gives a good example of the application of Crowdcasting/Crowdstests: *“Let’s say you need a good design for your website or you’re preparing an annual report for your organisation. You’ve written all the text you need but you want it organized with a nice graphic design. You post on a crowdsite or platform a request for proposals for a design for your report. The crowd members submit proposals. You choose the one that best suits your needs and compensate the individual who created it.”*

It might not be possible to hire a full time graphic designer, a copywriter or a financial analyst and give him/her a high salary but this way entrepreneur can have her work done in a cheaper and an easier way. Besides, she will have the possibility to reach a wider range of talents. Because, Internet removes all the boundaries and an entrepreneur does not have to content herself with the talent in her neighbourhood. In addition to that, entrepreneur does not have to deal with staff

documents needed such identity info, education info, etc. It is a much simpler way for entrepreneurs.

B. Crowdfunding

Entrepreneur can also use Crowdsourcing to provide financial resource to launch her business. There are two ways of crowdfunding. First, she can provide owner’s equity by selling the shares of the business. Howe [28] gives a brilliant example of Crowdfunding to launch a business:

“In April 2007, William Brooks, a thirty-six-year-old copywriter in England, launched MyFootballClub with the aim of collecting £35 each from fifty thousand people that would then be spent in purchasing a professional football team. By November 2007, Brooks had raised more than £700,000 and completed the takeover of the Ebbsfleet United Football Club. Brooks’ crowd decides, via online vote, everything from what jerseys the team wears to who should coach the team.”

Second, she can post a request on a crowdsourcing platform and ask for donations to launch her business or to buy the land, the equipment she needs to launch her business.

C. Crowdo opinion

Entrepreneur can use this type of crowdsourcing as an effective marketing tool. Crowd opinions or feedbacks on a certain product can be requested. Market search will be cheaper and faster this way. Entrepreneur can use crowd opinions on design of a new product, content of a new product, packaging of a new product, shape of a new product, pricing of a new product, etc.

Social media might be an effective way to gather those opinions and feedbacks. There are polls to make the crowd vote. Crowdvoting is a good way of gathering info.

Besides the entrepreneur can promote her product or project by creating videos, photos, tweets, stories and pithy messaging. This type of crowdsourcing might be a loadstar to an entrepreneur.

IV. CONCLUSION

To sum up, we can say that Crowdsourcing is an easier, cheaper, faster and a smarter way of benefiting from the wise of the crowd especially for entrepreneurs. Different types of crowdsourcing might be useful for entrepreneurs in different ways. It is hard for entrepreneurs to find resources to launch or foster their businesses. Sometimes it is too expensive to get a resource they need. However, crowdsourcing might be such a helpful tool to get those resources in an easier and a cheaper way. To hire a fulltime employee who can speak a rare language might be extremely expensive but entrepreneur can hire a person for a permanent task through internet in a much cheaper way.

To provide a financial resource is also another hard problem for entrepreneurs. An entrepreneur has a brilliant idea but she does not have any money to make it real. Crowdfunding might be great support for her to find the money she needs. She can offer some prizes or shares in return.

To benefit from the wise of the crowd, crowdopinion is the best way of crowdsourcing. An entrepreneur can use social media and crowdsourcing platforms as a marketing tool for market research by asking their opinions and by crowdvoting and to promote her product or project by using videos, photos, tweets, stories, etc.

Despite it is a new concept in business environment, crowdsourcing is getting used more and more each day. This paper aimed to explain the concept of crowdsourcing and to discuss the concept from entrepreneurs' aspect.

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