

A Project Report on
Survey on Crowdsourcing Technologies - Initial
Experiences

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With sincere regards,
C.Varalakshmi(R171204)



Certificate

This is to certify that the report entitled “**Survey on Crowdsourcing Technologies**” submitted by c.Varalakshmi in partial fulfillment of the requirement for the award of Bachelor of Technology in Computer Science and Engineering is a bona fide work carried out by us under his supervision and guidance.

The report hasn't been submitted previously in part or in full to this or any other university or institution for the award of any degree.

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Declaration

I am **C.Varalakshmi** here by declare that this report entitled "**Survey on Crowdsourcing Technologies**" submitted by me under the guidance and supervision of **Mr.Chandra Shekar N**, is a bonafde work. We also declare that it has not been submitted previously in part or in full to this university or other university or institution for the award of any degree or diploma.

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Abstract

Crowdsourcing is an emerging business model where tasks are accomplished by the general public; the crowd. Crowdsourcing has been used in a variety of disciplines, including information systems development, marketing and operationalization.

Crowd sourcing is a collaboration model enabled by people-centric web technologies to solve individual, organizational, and societal problems using a dynamically formed crowd of people who respond to an open call for participation. We report on a literature survey of crowd sourcing research, focusing on top journals and conferences in the Information Systems (IS) field. To our knowledge, ours is the first effort of this type in the IS discipline. Contributions include providing a synopsis of crowd sourcing research to date, a common definition for crowd sourcing, and a conceptual model for guiding future studies of crowd sourcing. We show how existing IS literature applies to the elements of that conceptual model: Problem, People (Problem Owner, Individual, and Crowd), Governance, Process, Technology, and Outcome. We close with suggestions for future research.

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1.Introduction

The rapid development of Internet technologies and the collaborative computing concept have aided the possibility of crowdsourcing of certain types of large projects. The term crowdsourcing was coined by Jeff Howe in 2006. Jeff Howe proposed the following definition: 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 (Howe, J., 2006). Open call format and the wide network of potential labourers are salient features of crowdsourcing and are particularly emphasized in this context. By using crowdsourcing, large group of people can solve problems faster and in a much cheaper manner than an individual. It is a better problem solving approach than earlier traditional methods. Crowdsourcing requires a large infrastructure support for which companies need to implement platforms that provide these services. Revolution in computing technology, evolution of cloud computing and social networking has made it possible to implement crowdsourcing. Changing trends in web technologies and vast usage of Web 2.0 has made it possible to develop applications that require sharing and collaboration among different people spread throughout the globe in solving problems of distributive nature

1.1 Objective of crowdsourcing

The objective of any crowdsourcing project is to use the wisdom of a large group to achieve a common goal. The practice helps organisations collect new insights, gain monetary value, create a new product, streamline intricate processes or generate marketing content. In crowdsourcing, the people identified for the work are unaware of the tasks performed by other members. Companies use several digital spaces such as social media platforms, dedicated crowdsourcing platforms and even their website to increase awareness about their requirement and encourage the audience to take part. Several industry-specific micro-labour sites attract individuals with specialised skills. Companies with clearly defined crowdsourcing objectives may use these platforms to complete tasks or resolve issues.

1.2 Four pillars on crowdsourcing

1.The crowd

These are people who are participating in crowdsourcing activity

2.The crowdsourcer

These are the people who are seeking for a solution to problem or innovation or co-creation

3.The crowdsourced task

that is what needs to be performed, solved, created or innovated by the crowd

4.The crowdsourcing platform

This is where it all takes place

1.3 Why focus on crowdsourcing and marketing?

The idea for this research originates from my previous research agenda and teaching in the field of entrepreneurship. My earlier research on business models led me to crowdsourcing. As I researched business models, I discovered that creative entrepreneurs and marketers were using crowdsourcing not only as a business model but also as a marketing tool.

It is important to focus on crowdsourcing and marketing for at least three primary reasons:

- 1) crowdsourcing is part of the digitalization of business (Tiago & Veríssimo, 2014);
- 2) crowdsourcing is an example of entrepreneurial marketing (Schindehutte & Morris, 2009);
- 3) while most of the discussion and research around crowdsourcing has a positive bias, not all direct and side effects are positive (cf., Harris, 2011; Simula, 2013).

The process of gaining work or funding from a crowd of people, usually through online sources, is called crowdsourcing Marketing. Created by combining the two words, namely crowd, and outsourcing, the main idea behind this method is built on delegating tasks and then outsourcing them to a group of people, usually on the internet. A prime example of crowdsourcing Marketing was done by which invested in writers and editors who made the information independently instead of creating its encyclopedia. It resulted in building a comprehensive global encyclopedia popular with all internet users today. The main principle behind outsourcing is based on the fact that the quality produced by multiple people is more than the quality made by an individual. By bringing together a large crowd of people, crowdsourcing Marketing believes that the skills, idea generation participation, and quality of content are extremely good and superior at all possible levels.

Crowdsourcing Marketing can help brands and companies with innovation. Whether it is a business idea, a project begins, or a marketing campaign, open innovation can support all aspects of the business, from designers, investors, marketers, and brand managers to collaborate on a single idea. This technique can implement through a dedicated web platform that people outside/inside the company can use. Through open innovation, brand managers can bring together people from around the globe and professionals with varying expertise to work on a single project. This is. Therefore, a collection of people and expertise would only be available to an entrepreneur with access to online media. By bringing together people across the globe to work on a single project, no distance is too much for a person who banks on open innovation.

2.2. Literature Survey

2.1 What is crowdsourcing

Crowdsourcing is the collection of information, opinions, or work from a group of people, usually sourced via the Internet. Crowdsourcing work allows companies to save time and money while tapping into people with different skills or thoughts from all over the world. Crowdsourcing involves seeking knowledge, goods, or services from a large body of people. These people submit their ideas in response to online requests made either through social media, smartphone apps, or dedicated crowdsourcing platforms. A flexible method for innovation, data collection, and analysis in social science research.

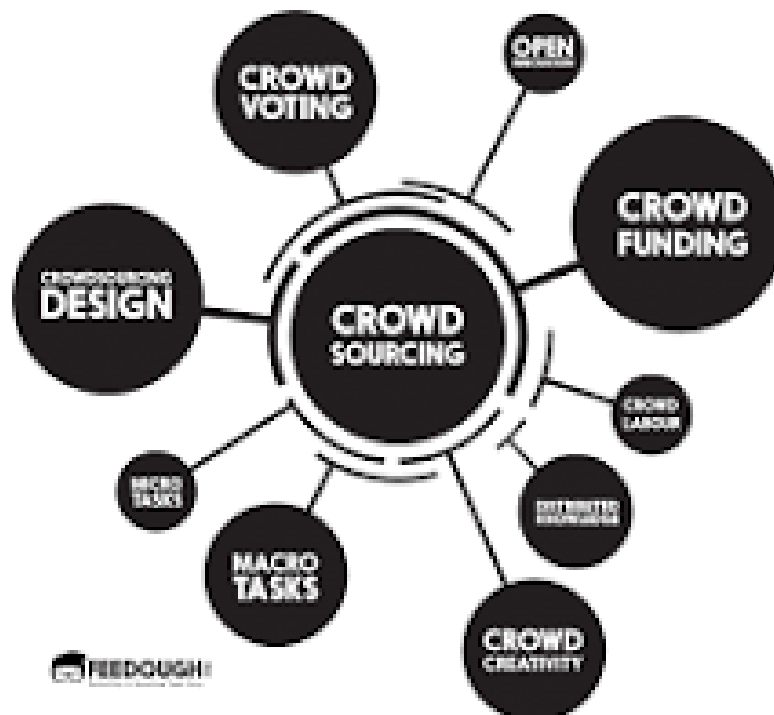
Crowd sourcing can play an important role in the Internet of things(IOT) applications for information sensing and gathering where the participants are equipped with geolocated devices. Mobile crowdsourcing can be seen as a

new paradigm contributing to the development of the IoT. Crowdsourcing is a decentralized model used to provide solutions to design or production problems by outsourcing the task to people from the crowd.

Crowdsourcing is the act of collecting services, ideas or content through the contributions of a large group of people. Typically, the “crowd” in crowdsourcing is a third-party unrelated to the business seeking results. Crowdsourcing can help quickly assemble the data, expertise and resources required to perform a task or solve a problem by “allowing people and organizations to collaborate freely and openly across disciplinary and geographic boundaries”. Crowdsourcing is a way to get your ideas and content directly from the source and develop training that is more personal and relevant.

2.2 types of crowdsourcing

there are four types of crowdsourcing



Wisdom of the crowd: It's a collective opinion of different individuals gathered in a group. This type is used for decision-making since it allows one to find the best solution for problems. Many brands pay attention to the collective opinion of their customers because they help bring their businesses new ways of thinking, ideas, and strategies. As a result, the overall performance of a company improves.

Crowd creation: This type involves a company asking its customers to help with new products. This way, companies get brand new ideas and thoughts that help a business stand out. For instance, McDonald's is open to new ideas from its consumers. The famous fast food company asked customers to create their perfect burgers and submit their ideas to the brand. The company released winners' burgers each week, including the creator's short bio.

Crowd voting: It's a type of crowdsourcing where customers are allowed to choose a winner. They can vote to decide which of the options is the best for them. This type can be applied to different situations. Consumers can choose one of the options provided by experts or products created by consumers. For instance, if a brand asks its consumers to create a new taste, package, or design of a product, other consumers vote to identify the best one.

Crowdfunding: it's when people collect money and ask for investments for charities, projects, and startups without planning to return the money to the owners. People do it voluntarily. Often, companies gather money to help individuals and families suffering from natural disasters, poverty, social problems, etc.

2.3 History of crowdsourcing

Some peculiar examples of “crowdsourcing” could be found as far back as in ancient Babylonia. Yet most pundits would agree that crowdsourcing was born in 1714, when the British Parliament launched the Longitude Prize, soliciting a reliable method of determining a ship’s longitude at sea.

The beginning of the modern history of crowdsourcing can be traced to the early 2000s, coinciding with the birth of “open innovation,” a business concept postulating that organizations should combine both internal and *external* sources of knowledge and expertise to advance the development of new products and technologies. Along with co-creation and web scouting, crowdsourcing represents a practical open innovation tool that organizations can use to meet their strategic innovation objectives.

The appreciation of the value that crowdsourcing can bring to the marketplace was helped by the appearance of first commercial crowdsourcing platforms. It took a few more years, however, to fully realize that crowdsourcing can only be effective if careful consideration is given to identifying and formulating problems to be crowdsourced as well as to precise matching of these problems with the most suited crowds.

The past ten years have been the time crowdsourcing has finally begun coming of age. Although it’s virtually impossible to even list all successful, high-profile crowdsourcing campaigns carried out over the decade, some examples are worthy of mentioning. One of the most exemplary, both in purpose and design, was the 2014 Grand Challenge launched by the U.S. Agency for International Development to crowdsource the safe and comfortable protective equipment for healthcare workers battling Ebola.

2.4 Advantages and Disadvantages of crowdsourcing

Advantages of crowdsourcing

- Cost-effective: the company only pays for bugs which are found instead of an hourly or salaried rate which professional testers would receive
- Vast range of users provide huge diversity in their experiences
- Allows for testing with all kinds of different parameters, such as with different connection speeds, browsers, and devices to which the core testing team may not have access
- Larger group is more likely to find reproducible bugs than a handful of testers
- Lack of bias towards the company can be expected of testers
- Monetary value of both of the above= more thorough testing for an equal price range in a shorter amount of time sans contract and overhead

Disadvantages of crowdsourcing

- Confidentiality is compromised by having testing performed by a large group who may or may not have much loyalty to the brand/product
- Communication between testers can be difficult due to time or language barriers
- Test coverage can be more difficult to guarantee and can therefore require more managerial oversight to ensure thorough bug identification

- Because payment usually depends on the number of bugs found and not their severity, testers may seek out and identify many small, less-important bugs rather than devote a lot of time and effort to finding one or two large, debilitating bugs
- This, combined with the exploratory nature of crowdsourcing, means that it can be difficult to ensure that the entire product has been tested thoroughly enough to ensure usability

Some companies prefer to use crowdsourcing in addition to or support of their own in-house testing teams. This provides a much more in-depth testing process, but can sometimes lead professional testers to feel that their skills are being undervalued and outsourced to those who are less qualified. If a crowdsource tester finds no bugs, they are not paid; in the eyes of a professional tester, that can be seen as relating their hard-earned skills and education to unpaid labor. It can also undermine much of the cost-effective nature of crowdsourcing, because the company has to pay their test teams' wages on top of the per-bug compensation.

3.Main findings of survey

3.1 Overview of technology

Crowdsourcing involves obtaining work, information, or opinions from a large group of people who submit their data via the Internet, social media, and smartphone apps. People involved in crowdsourcing sometimes work as paid freelancers, while others perform small tasks voluntarily.

During the past decade, there were rapid developments in the Internet, computing technologies, wide-spread, and use of location-aware technologies such as GPS and mobile phones. These developments influenced how people communicate and share their opinions, views, knowledge, maps, and many others throughout software platforms.

There are many online Crowdsourcing applications such as Amazon Mechanical Turk, Open Street Map, and Yahoo Answers amongst others.

Thus, crowdsourcing is a collaborative process which involves

four main components (requester, crowd, open call and platform). People might benefit financially or intellectually from participation in crowdsourcing. This chapter serves as a general overview of crowdsourcing research and envisages future research directions.

3.2 EXAMPLES OF CROWDSOURCING

Cost and time-efficient crowdsourcing is widely applied by big brands. Companies strive to do everything possible to meet customers' requirements and they can do it with crowdsourcing. In this section, we'll unveil several examples that demonstrate how the technique works and review the benefits it brings.

Lay's:

Lay's, the world-known producer of potato chips, created the 'Do Us A Flavor' crowdsourcing campaign. The campaign lasted for around ten months and aimed at finding a new universal taste its customers would love. The brand encouraged consumers to think of a new taste of chips they would like to eat. After voting, customers identified 'Cheesy garlic bread' taste as the winner of this competition. After its release, Lay's had an 8% increase in sales.

Waze:

Waze is an app that provides users with information about closed roads, traffic jams, and the fastest routes. The company is based on crowdsourcing because it receives current information about traffic from people. Users update the app on closed roads and in traffic jams. Moreover, the platform calculates the average drivers' speed to identify overcrowded roads.

CitySourced:

An industrial platform for civic involvement is called CitySourced. Citizens can discover and report non-emergency civic issues like public works, quality of life, and environmental issues using the CitySourced mobile app. The service is a component of the e-Government or “gov 2.0” movement, which attempts to use technology to establish a connection between the government and its constituents.

Zooniverse

Given the size of the universe, it would take an enormous quantity of data to fully understand all of its complexities. Through the Moon Zoo crowdsourcing project, which Zooniverse established, regular people can examine and arrange high-resolution lunar photos. Four million lunar photographs have been studied so far.

Video on Zooniverse

My Starbucks idea:

Starbucks has a strong presence on multiple social networks and regularly encourages consumers to submit, view and discuss submitted ideas with employees from various Starbucks departments.

They even have a website dedicated to this purpose, including a leader board to track which customers are most active.

Experimentation and social media, together with customer engagement and market research, results in a cocktail that has made the brand excel.

McDonald's Burger Builder:

In 2014, McDonald's decided to give their customers free reign and submit ideas for the types of burgers they'd like to see in store.

They could create their perfect burgers online, and the rest of the country could vote for the best ones. In Germany, creators were also encouraged to

develop their own campaigns, which included viral videos and other valuable content marketing, which of course, cost McDonald's nothing.

Once the winners were crowned, McDonald's released the burgers weekly, along with the picture and short bio of the creator.

Samsung:

Even the big guys such as Samsung realize the value of Crowdsourcing. Samsung has the largest Crowdsourcing facility in Palo Alto.

What they seek from others is innovative solutions for existing electronic products and technologies. They also seek collaboration with other firms and interested individuals.

In 2013, Samsung partnered with a product development platform, Marbler to Crowd Source ideas on utilizing newly discovered patents from NASA.

They offered users the chance to help create the company's next product and earn a share of revenue along the way.

3.3 Crowdsourcing in market

Crowdsourcing marketing is a promotional strategy that involves collecting information from the general public to guide a company's product development and advertising efforts. It allows customers to contribute their ideas about how a business should operate or what features the company incorporates into its products. Crowdsourcing marketing strategies include contests where people suggest product names, vote for new product releases or show how they use a company's products in their daily life.

Companies that use crowdsourcing as part of their marketing plan aim to gather input from a wide variety of potential consumers to guide market research, make authentic connections with an audience and gain user buy-in for new products.

How does crowdsourcing work in marketing

Crowdsourcing works as a marketing tool by providing the public with an opportunity to engage with a company, which then can lead them to learn more about what the business does and eventually make a purchase. Businesses use crowdsourcing as part of their marketing strategy to generate new ideas for their business and to customize marketing content to specifically target their customer base. They also use crowdsourcing as a publicity campaign, as people share the opportunity to contribute to a company's products and services with their personal network.

Many businesses crowdsource content from their audience to provide a personal connection to their advertisements. Companies can collect submissions from the public to use in their marketing materials or crowdsourced advertising campaigns. They ask their audience to share videos, images, audio or text, which they can then repost or use to promote their brand. Types of marketing campaigns that involve crowdsourcing content creation include:

- Hosting contests to draw the company's next logo or package design

•Asking for people to post photos and videos using the company's products

An example of content creation crowdsourcing would be a skateboard company making a post on social media asking for followers to submit drawings to print on their next limited edition skateboard deck with prizes for the top designs. During the competition, they could feature fan submissions on their social media account to generate interest and excitement among their audience.

3.4 Applications on crowdsourcing

1. Application of crowdsourcing in health: Diagnosis was the most common usage of crowdsourcing in health. Crowdsourcing has been used multiple times for diagnosing malaria, specifically, and then for grading images in order to diagnose various conditions and diseases. It has also been used to assist physicians in diagnosing conditions.

2. Crowdsourcing application in marketing activities Active deployment of information communication technologies between consumers' enables them contribute actively to various business activities. A crowdsourcing phenomenon is observed recently from perspectives ranging from users' involvement in company's communication activities to various crowdfunding models

3. Crowdsourcing as comprehensive literature review Crowdsourcing has much unused potential, and the use of crowdsourcing is increasing rapidly. The study provides a thematic review of various applications of crowdsourcing. Successful applications of crowdsourcing include idea generation, micro tasking, citizen science, public participation, wikies, open-source software and citizen journalism.

4. Google had introduced an app called crowd source which is used to collect the data from the people like the people belongs to a specific region knows about their regional foods, culture and so on...So, Google started collecting the data belongs to various fields like image label verification, Translation, Hand writing recognition, and so on..There you can also see your level and your contributions to the Google as well. So, In this way Google is using crowd source to collect the data.

4.Future scope

In a world where the challenges we face become increasingly complex, finding methods of bringing together crowds, experts, and technology in ways that facilitate creative and beneficial solutions presents exciting opportunities where a great many “laypeople” can engage in activities that they enjoy while solving real-world challenges.

Moreover, with such labour force arrangements, the global economy can complete complex tasks on demand and at a large scale with no geographic boundaries. Research in this field is currently undertaken so as to investigate, understand and facilitate this new form of supplying and demanding labour.

In this context, we have presented an initial attempt to review contemporary crowdsourcing websites considering how they offer their services. We reviewed 98 top websites, as ranked by Alexa, which offer crowdsourcing services and have presented descriptive statistics related to their country of operation, the kind of services provided and the mechanisms used to ensure the quality of work performed. Research in this field is currently undertaken so as to investigate, understand and facilitate this new form of supplying and demanding labour. In this context, we have presented an initial attempt to review contemporary crowdsourcing websites considering how they offer their services. We reviewed 98 top websites, as ranked by Alexa, which offer crowdsourcing services and have presented descriptive statistics related to their country of operation, the kind of services provided and the mechanisms used to ensure the quality of work performed.

Crowdsourcing will become an essential component of this structure. Organizations will be using their own employees to perform the “core” activities. But for the tasks they lack internal resources or expertise for, crowds of independent on-demand contributors will be assembled. Many organizations will start nurturing their own crowds which will be repeatedly used for similar projects and tasks. The future competition will become competition for the quality of the crowds each organization can rapidly assemble to perform an urgent job.

5. Conclusion

A final reflection

Now that we have arrived at the end of our journey through the land of crowdsourcing, we would like to reflect on three final points linking an organization to a crowd.

Is crowdsourcing not really just another way of insourcing?¹ With crowdsourcing, the crowd becomes an integral part of the company – an essential connected resource, virtual to be sure, but fundamentally linked to the company all the same.

Are we on the path to a change in paradigm, the atomization of work, the calling into question of the idea of an employee as we know it, and a return to task – or mission-based work? Indeed, in these times of crisis, why work for one company when we can work for several at once? And, from the company's point of view, why work with only a small number of people when a whole crowd of employees is available

According to Actor-Network theory [CAL 06; LAT 92], all types of actors in a network must be taken into account. Humans, machines and documents all create a network that exists, evolves, increases in strength and, sometimes, disappears. Most connected devices are able to be programmed so that they work together; the concept of the crowd requires the enrichment as the above-mentioned concept of the actor. This new form of crowdsourcing crowdmanufacturing will be a prolific source of opportunity in years to come. Future debates, both managerial and academic, should be rich indeed.

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