A Study on IT Enabled Crowd Sourcing

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Abstract: There have been several attempts and opinions in varied fields to understand about crowd sourcing and its application in various domains. Lot of research has been conducted to develop a cohesive definition that can contain all aspects of Crowdsourcing. There is sufficient literature available explaining the concept of crowd sourcing. Even though, crowd sourcing as a tool for problem solving has been used since early 18th century, it gained momentum with the advent of internet. Now a days, we could find crowd sourcing in almost all spheres of human life. This paper tries to explore how information technology has influenced the growth of crowd sourcing and also tries to check whether IT enabled crowd sourcing is a win-win model among the various stakeholders.

Keywords: *Business, Crowdsourcing, Government, Information Technology, Stakeholders*

I. INTRODUCTION

Crowdsourcing – as the term suggests, is sourcing from the crowd. This is a phrase coined by Jeff Howe and Mark Robinson in June 2006. (Howe, 2006)[1], describes it as a new web-based business model that harnesses the creative solutions of a distributed network of individuals. In other words, an institution intending to perform a particular function gives an open call to general public to complete it in return for some remuneration. The function is normally performed by sole individuals but in some cases collaborative groups undertake to complete the task. As per Merriam-Webster, Crowd sourcing is defined as "the process of obtaining needed services, ideas, or content by soliciting contributions from a large group of people, and especially from an online community, rather than from traditional employees or suppliers"[2]In simple words, crowd sourcing could be explained as 'outsourcing to the crowd'. People resort to crowd sourcing when they wish to complete a tedious, time consuming and at times not so economical task by outsourcing it to undefined public willing to complete the task for a nominal fee. By using crowd sourcing you not only get the advantage of using 'mass intelligence' in completion of a particular task or solve a problem but also get to complete the task at fairly lower price compared to the price charged by dedicated professionals. [3]
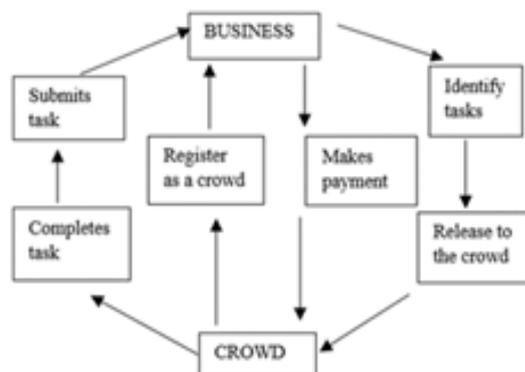
II. HOW DOES CROWD SOURCING WORK?

Figure 1: Chart showing working of crowdsourcing

A business identifies a task that is traditionally performed by its own employees. The tasks are released to a 'crowd' of outsiders in the form of an invitation for a stipulated fee. Anyone who is interested in completing the task may submit their response. A specific time allowance is given for completion of the task. Once the task is completed and submitted, the company reviews it and makes the payment if satisfied. (Whitla, March 2009)[4]

III. HISTORICAL INSTANCES OF CROWD SOURCING

Crowd sourcing as such is not a new concept. The usage of crowd sourcing for problem solving could be traced back to as early as 1714 where in the British Government came up with a longitude prize for those who could find a way to measure a ship's longitude. In 1884, Oxford English Dictionary used the service of 800 volunteers to catalog words. There are several instances where in crowd sourcing has been used by people all over the world in the fields of astronomy, ornithology, genealogy research, journalism as well as public policy. Recently Government of India used crowd sourcing to design the Indian rupee symbol which can be cited as an example for usage of crowd sourcing by Government to complete a task. The present rupees symbol (₹) was selected by the Indian Government in the year 2010 from among 3331 responses received from the crowd.

IV. IT AND CROWD SOURCING

Information technology has brought substantial changes in human lives. IT revolution has not only made the world smaller and also complicatedly simpler. Albeit the complexities, IT has become pervasive in all walks of life.

The advent of internet has brought a revolution in the field of crowd sourcing. The internet revolution which started in 1990s slowly spread to the field of crowd sourcing as well. The year 2000 saw people coming together through internet as volunteers to contribute their time and skills for the United Nations Volunteers (UNV)[5] program – a UN organization formed with an aim to bring volunteers from across the world together to support peace and development.

The following cases explain how IT intermediation has contributed to the growth of crowdsourcing.

V. WIKIPIDEA & YOUTUBE-CROWD SOURCING

In 2001, Mr. Jimmy Wales and Mr. Larry Sanger launched Wikipedia as an encyclopedia in English language containing articles written by experts from different fields. Wikipedia was actually started as a feeder project for Nupedia, an expert written, peer reviewed encyclopedia started by Bomis, a dot-com company founded by Mr. Jimmy Wales, Tim Shell and Michael Davis. [6] Nupedia could not find much contributions as it had a very strict seven step approval process before the content was posted on the site. To overcome the paucity of contributions and lack of speed, Sanger and Wales launched Wikipedia as a platform where in anyone interested could contribute to the content development. Within a year of its

launch, Wikipedia saw close to 20000 articles spread across 18 different languages and by 2015, the total number of articles crossed 36 million spread across 291 language editions. This phenomenal growth of Wikipedia could be attributed to its underlying concept – crowd sourcing.

YouTube was founded by Chad Hurley, Steve Chen and Jawed Karimin - three former PayPal employees, in the year 2005 as a video sharing platform. YouTube describes itself as "a consumer media company for people to watch and share original videos through a Web experience.[7] The website became a popular content sharing platform in a short span of time and by July 2006, around 65000 new videos were uploaded and the video views reached close to 100 million a day. People started realizing the entertainment value of YouTube which was slowly growing in to a platform to scout for crowd sourced talent. In October 2006, Google identified YouTube as "the next step in the evolution of the Internet [8]"and purchased YouTube for $1.65 billion [9]. In May 2007, the company launched its partner program to let people get paid for their content which went viral. People started quitting their jobs to become active YouTube content developers. The opportunity of making money through YouTube partner program became so popular that people started uploading videos and publishing articles about "how to make money through YouTube".

VI. CROWD SOURCING AND ONLINE SHOPPING

Amazon.com

Amazon, the American online supermarket company integrates the concept of crowdsourcing very well in to their business operations. The business model of Amazon can be classified in to two stages – a) Supply side and b) Delivery side
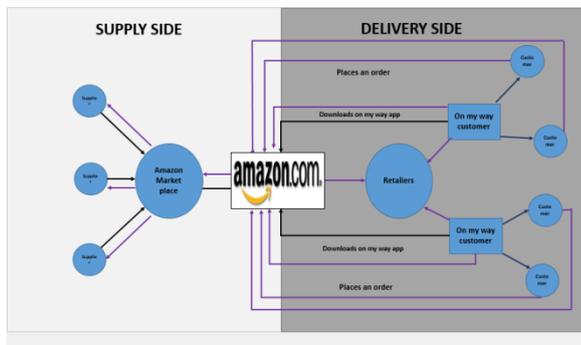

Figure 2: Chart showing supply and delivery side of Amazon.com

The supply side operations of Amazon with the technique of crowd sourcing is made possible through Amazon market place [10]. It is an online fixed price market place where the sellers get a chance to offer their items along with the regular offerings of Amazon. Through Amazon market place, a customer can view same/similar products offered by different sellers, can make price comparisons and choose the best item/offer which suits his requirement. Any product not found on amazon.com will lead the customer to amazon marketplace. Amazon marketplace indeed acts as an alternative for those products which Amazon is not able to sell. However a customer hardly can see any difference between both the sites. Therefore a customer is never turned down by amazon for lack of products; thanks to crowdsourcing.

Amazon is known for its lightning speed delivery to its customers. The company has started using crowdsourcing in

the delivery side operations as well through their service "On My Way".

The service works in the following manner. The company hires retailers in urban area to store their packages. When a customer comes to pick up his package stored with the retailer, he could pick up the package of someone else, preferably of a neighbour or somebody who stays close by ("on his way") and deliver it at his convenience for a small fee. To be an "on my way" customer, a person first needs to sign up in the "On My Way" app and verify his credentials. Through this service, which effectively follows the basic technique of crowd sourcing, the company intends to reduce its shipping costs while maintaining the delivery speed. This model is still in its nascent stage and we need to wait and watch for the result.

Flipkart.com

Flipkart, India's one of leading platform [11] for selling online is also using crowd sourcing concept in their operations. Through Flipkart sellers' hub, any manufacturer, vendor or supplier can sell their products online on Flipkart and become an ecommerce player. Flipkart assists these sellers by conducting workshops, training and other support. On the delivery side, Flipkart has now tied up with the Dabbawalas [12] of Mumbai who are known the world over for their smooth and reliable delivery system which has survived the test of time—even under extreme conditions.
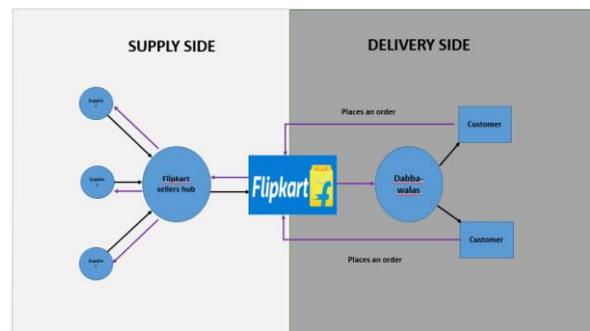

Figure 3: Chart showing supply and delivery side of Flipkart

Bigbasket.com

Bigbasket, the online grocery store and supermarket in India also effectively uses crowdsourcing technique in their operations. The company sources the products from different farmers / vendors and stores them in their warehouses. For fruits and vegetables, big basket collects early morning report on all prices from the whole sale mundies every day around 4.00 am [13]. Once the report is received, the company fixes its offer price for the day and informs the farmers in the belts around the collection centers who supply to the company. For groceries and provisions, the company sends its employees to the retail markets to check on the prices before fixing their offers for the day. The offer price to the farmers (here, the crowd) and the offer price to the customers are effectively done with the integration of latest technology. Once a customer places an order, the company packs the products and dispatches to customers.

Other examples

Companies like Grofers, PepperTap (app and Web) and ZopNow (app and Web), which are portals for online grocery purchase, work on the "hyper-local business model [14]" which is explained here. Firstly, a customer places an order through app or web. The order then goes to the delivery boys stationed

at the local markets. These boys procure the orders from the kirana stores (small local stores). Companies like LocalBanya pack the goods in their central facility before dispatch. The orders are then delivered to the customers within few hours. This is a win-win business model for all the stake holders involved. Customers save time and energy by doing shopping at the comfort of their home/office [15]. Local stores get more sales through tie ups with these online vendors. Online vendors get commission from these local stores on the basis of their orders.

The examples given above are only few in number. Nowadays, we can see a lot of companies mushrooming in the ecommerce sector which extensively use crowd sourcing technique through integration of technology.

VII. CROWD SOURCING AND TRANSPORTATION

Companies like **OLA, Uber** [17] etc. work on the basic principle of crowd sourcing with the help of IT. Though they are called aggregators who these companies have pre-registered cab drivers who pick up the customers from nearby locations in a maximum time of 15-20 minutes. These companies do not own any cars but act as a platform to connect between people who need a chauffeur-driven car. Once a customer requests for a car, any registered cab driver with the company available at that place and time can take up the call of the customer. The driver can track and reach the commuter on time with the use of his

whole process revolves around IT integrated crowd sourcing technique.

VIII. CROWD SCOURCING IN ONLINE EDUCATION[18]

Khan academy [19]

One of the most famous free online education portal in the world too uses the concept of crowd sourcing in their operations. Although the content is developed and managed by its employees, anyone from any part of the world can volunteer to support their educational initiatives. One such support is in the form of translators who are able to translate the Khan Academy content in to the language of their choice. People can also volunteer to contribute to discussion forums or become coaches.

Homeworkbazaar

Homeworkbazaar [20], an online tutoring platform also works on the lines of crowdsourcing. The portal works as follows: A student seeking a solution to an assignment can upload it through his username in the HWB portal and also set the price which he is ready to offer provided he buys the solution. Any subject teacher who is a registered tutor can take up the assignment and provide solution and accept the payment if the solution is felt satisfactory to the student who uploaded. The portal alerts the registered tutors about the uploaded assignment and a registered tutor of the portal can directly communicate with the student and solve the assignment.

The above examples clearly show the integration of technology and crowd sourcing being successfully used in the education sector

IX. CROWD SOURCING IN JOB MARKET

Amazon Mechanical Turk[20] – an online marketplace which brings together people who want to get some task done and

people who are willing to complete such tasks for some payment. There are many tasks which human beings perform much better than computers like data de-duplication, researching data details, identifying objects in photos or videos etc. This marketplace gives an opportunity for people to post tasks known as HITs (Human Intelligent Tasks) to be solved or completed by workers who are interested to do so. IT and crowdsourcing thus go hand in hand in successful completion of tasks in less time and money.

X. CROWD SOURCING FOR SOCIAL CAUSE

In December 2015, the people of Chennai, the capital of Tamil Nadu, faced one of the worst floods in their life. Before the government could act, it was the common man who came outside their comfort zones with helping hands to save people from drowning. The flood not only brought volunteers to come together but also saw people extensively resorting to technology to trace and save those who were stranded in the affected areas. Volunteers shared a Google spreadsheet which contained information about areas severely flooded and were inaccessible. The spread sheet was used alongside satellite images to identify areas that were inundated. Also social media was resorted to disseminate information about the availability of food, water, accommodation, medicines and other basic essentials and the people supplying them which helped many to overcome the worst hardship they faced in their lives. It was indeed crowd sourcing in its full potential with proper integration of technology which saved the lives of many people in Chennai.

XI. CROWD SOURCING IN GOVERNANCE

Technology integrated crowd sourcing is prominently used by governments nowadays in tracking down fugitives. Crowd supplies the whereabouts of absconders through the portals provided which help the government and police department in successfully tracing and capturing them before they flee again.

The Government of India is also going tech-savvy by experimenting with crowdsourcing model for several projects that require IT compatibility. The NDA Government's aim to make India a 'Knowledge-driven' and digitally enabled country is garnering the support and power of the denizens of India for its many digitization projects. The twin benefits from such projects is that the citizens take ownership of the project as well as gain some monetary compensation which is project-specific.

Some of the projects that deploy crowd sourced model are discussed below.

The GOI recently launched the **'Digitize India Platform'** [22] under the DIGITAL INDIA PROGRAMME. This is an initiative of the Government to convert all the scanned documents and also paper documents into data elements. Most of the Government offices across India store humungous amounts of physical documents and scanned images of documents which is posing a challenge for storage and cataloging. The crowd sourced model allows any citizen of India who possesses basic computer knowledge to register and type the contents of the scanned images as a text into the template already provided in to a downloaded app. Nuances like security, privacy and verification are already built into this technology.

'Business Standard' [23] claims that Digitization of documents by Indian Government is "one of the largest crowd-sourcing projects in the world after United States". Also, the names of

several projects like Jan DhanYojana, SwachBharathAbhiyan were contributions from the crowd. Apart from that, the issues that are taken up for discussion in Mann kiBaat, the radio program hosted by Indian PM Mr. NarendraModi are contributed through crowdsourcing with the aid of citizen engagement IT platformof Government of India - mygov.in.

CONCLUSION

IT has brought a paradigm shift in the way tasks are performed. Parallelly, crowd sourcing enables easy completion of designated tasks at nominal costs. However, IT enabled crowd sourcing is not a panacea for all the tasks. A marriage between IT and crowd sourcing has the potential to break down a complicated problem into manageable task which creates a win-win model for all the stakeholders.

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