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## Crowdsourcing in Libraries in the Digital Age

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# **Crowdsourcing in Libraries in the Digital Age**

## **ABSTRACT**

Information has been an intrinsic part of humanity throughout the years. Libraries and information centers have always been considered, as the custodians of information. However, with the overwhelming of information in the digital age, libraries find it difficult to deliver the right information at the right time. Despite various efforts by libraries to deliver information on time, at times the necessity of libraries is questioned. Crowdsourcing gains importance at this juncture. Today since catalogs and other allied information are mostly online, users can perform various activities like refining metadata of records, adding the new subject heading that library staff overlooked, etc, thus revitalizing the existing library services. Also, today as libraries are trying to re-engineer themselves by expanding their services and adding new services, an audience that can assist libraries in this process will be an added advantage. The purpose of this paper is to study how crowdsourcing will be helpful to libraries and information centers to deal with these aspects, i.e. improving the existing service and adding new services. A crowdsourcing cycle has been proposed in this conceptual paper, which aims to delineate how crowdsourcing aids the library in accomplishing the above-mentioned aspects.

## **KEYWORDS**

Crowdsourcing, Digital era, Information delivery, Crowd Ask, Library reengineering

## **1. INTRODUCTION**

Digital disruption has been changing the world at an unprecedented speed. Digital, digitization and digital transformation have now become a buzzword, every sector started embracing the digital transformation and even the bricks and mortars were bound to espouse digital business inadvertently. Libraries and information centres are no different, with present libraries experiencing a paradigm shift from physical libraries to digital libraries. As a result, libraries in the present era are dealing with an avalanche of information, which could be either digital information such as text, audio, video, etc, or even traditional information. Regardless of all these, libraries of any age must be able to furnish the right information irrespective of the form to the users at the right time. However, information generation has been rampant and libraries at times find this a daunting task. Somehow libraries in the present era must reincarnate to take the edge off the colossal growth of information.

With the advent of web 2.0 tools, user participation has been an indispensable part of any organization. In the case of libraries and information centres, users can rate the library services, express their concerns and opinions, put out their ideas, review a book, refine metadata etc.

Crowdsourcing is the act of a corporation or an establishment where several functions which were performed earlier by employees within the organization are being outsourced to an anonymous legion of people using an open tender (Howe, 2006b).

Moreover, in the present era, where the necessity of libraries and information centers is questioned, user collaborations are going to be a real shot in the arm for the sustenance of these institutions. This study will try to delineate how crowdsourcing can reinvigorate libraries and library systems to meet the information requirements in the digital age.

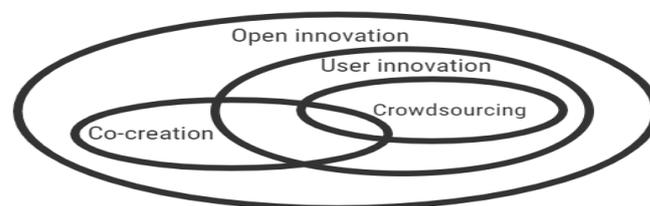
## 2. BACKGROUND: LITERATURE REVIEW

The term “crowdsourcing” was originally proposed by Howe (2006) who defined it as: “the act of taking a job which has been generally discharged by the concerned delegates (usually an employee) and outsourcing it to an anonymous en masse, generally large group of people in the form of an open call.” Oomen and Aroyo (2011) state, “crowd-sourcing has been seen as a strategy to arouse and develop a more open, connected, and smart cultural heritage” by engaging both the users and consumers of the data”. The fillip for crowdsourcing emanates from the researcher’s compendium that individuals are no longer passive browsers on the web but the Web 2.0 technology has transformed them into active donors of value-added data. (Zhao & Zhu 2012). Brabham (2008) explained that “crowd-sourcing is a model pertinent to the consumption of collective talents by amalgamating collective intelligence and knowledge and also by increasing the inventiveness and ingenuity of the crowd”. Faradani et al. (2011) have defined the concept of crowdsourcing as follows: “A crowdsourcing is akin to a marketplace, usually website or some kind of forum, where workers find and perform tasks often with the expectation of receiving some kind of financial reward.”

A large number of researchers opine that crowdsourcing can be categorized into various categories. Howe (2009, pp. 280–281) states that there are four primary categories of crowdsourcing: collective intelligence, crowd creation, crowd voting, and crowdfunding. A study conducted by Yuen, King, & Leung (2011, p. 768) revealed that there lies a fifth category: games, which embeds metadata along with it as a by-product.

Howe has also drawn up a taxonomy that delineates similar terms like (1) crowd intelligence, (2) co-creation or crowd creation, (3) crowd voting, and (4) crowdfunding, which even encompasses crowd-based microfinancing organizations. Secondly, from a theoretical point of view, crowdsourcing also supersedes the related concept of co-operative innovation, such as open innovation (Chesbrough, 2003) and user innovation (Von Hippel, 2005).

By casting a glance at Figure 1, we could perceive how crowdsourcing and similar concepts are related to each other. Here, user innovation forms the larger set and crowdsourcing comes under user innovation, which has been engulfed by a much larger set i.e. open innovation.



Schenk & Claude, 2009

**Figure 1: Relationship between crowdsourcing and other similar ideas**

Crowdsourcing is advantageous to any organization including libraries for several reasons, including:

1. Time: By truncating a herculean task and dispensing it across a large group, crowdsourcing can cut down the time it needs to complete the task, given a clear demarcation of the task assigned to the crowd (Brown et al., 2014).
2. Validation criteria: In most cases, the organization is unaware of what factors bring an anomaly to their products and services. However, when crowdsourced crowd acts as beta customers their fulfilling a first-hand validation (Lin et al., 2014).
3. Diversity: A crowd opens the door to a plethora of notions (André et al.,2014).
4. Scale: When a task is distributed among the members of a crowd, subsequently much bigger tasks can be fulfilled such as a complex computer program (Lin et al., 2014).

A thorough study of the existing literature reveals that some libraries have already started acknowledging crowdsourcing as an effective solution to cope with user requirements of the digital era.

### **3. TYPES OF CROWDSOURCING**

In his article “Crowdsourcing. Why the Power of the Crowd is Driving the Future of Business” J. Howe. has identified the following types of crowdsourcing:

- Crowd wisdom or collective intelligence: It means that a problem that requires a solution is being given to the crowd by a public call, and whoever wishes to throw light on the issue can come up with a suggestion, thus clearing up the issue using the crowd. Surowiecki (2004) stated in his article regarding the benefits of crowd wisdom when be applied in the organization. According to him, the simplest example one could infer is a very popular search engine, Google, which performs based on the wisdom of the crowd.
- Crowd creation or user-generated content: This means making use of the intellectual abilities of the crowd to mould something productive (e.g., YouTube, Wikipedia, Dbpedia, Stockphoto.com)
- Crowdfunding: As the name suggests here projects are being funded by the community. It means micro-lending when small sums are being lent for a variety of purposes. Crowdfunding is about amassing the money in small donations from a large crowd of people. However, there has been a lot of contention about the idea, as many researchers have been embarrassed and ill at ease, whether the initiative can be a success or failure.
- Crowd-voting: Though this concept is simple, indeed it is very powerful. Here users’ interests, as well as their opinion about products and services are being ascertained by the organization after statistically analyzing the vote given by the crowd. For example, Threadless.com is a

flamboyant venture where designs for the T-shirts are being crowd-sourced, where users are entitled to vote the one they like and the selected ones are printed and made available in the market for sale.

## **4. CROWDSOURCING IN LIBRARIES**

### **4.1 Information delivery in the digital era**

With the advent of ICT and other technologies, the present century has been witnessing a paradigm shift from the traditional library to more user-oriented personalized digital libraries or virtual repositories. On the flip side, there has been a tremendous proliferation of information mainly in the form of digital or e- resources. Now the question is how libraries effectively tackle this challenge.

Libraries have always become succour to the legion of people who were bereft of information and now it's the obligation and motto of libraries to furnish them authentic and relevant information in a scenario where they have been overwhelmed with resources i.e. physical books, audio, video, e-books, e-journals, numeric, computer programs, or multimedia composites. Despite the plethora of technologies libraries deploy to organize the information, sometimes library staff fails to cater to the information need of the users.

### **4.2 Crowdsourcing in Libraries in Information Era**

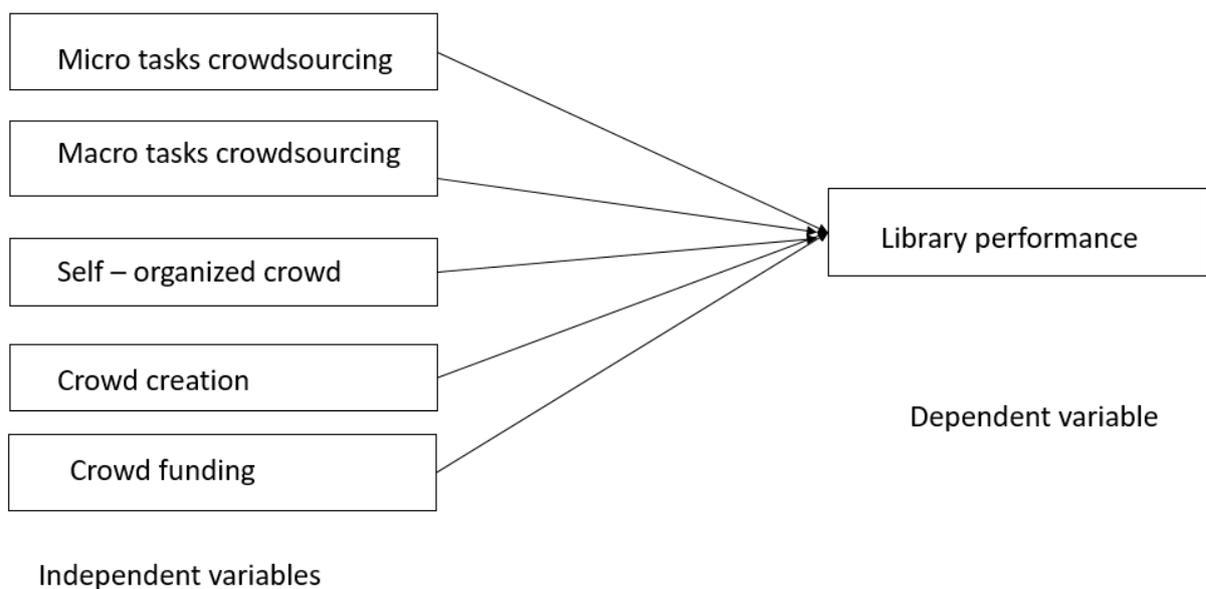
One of the reasons, why libraries become incompetent in the present era is information proliferation. Overwhelming information poses a major challenge to librarians and information professionals in delivering authentic information on time. As discussed, in the present age, we have a plethora of information sources, and librarians and information professionals without sufficient user interaction can't go and fetch the relevant information. Users must also be information literate so that they help information professionals in finding the information they required. Not only that, if users can perform some of the library-related work, that will be advantageous to the library staff. This is where the concept of crowdsourcing gains importance in the library scenario.

To put forth:

- (1) Crowdsourcing can bring about a good rapport between the library, library staff, and the public.
- (2) Save the time of library staff thus invigorating them to perform a more sophisticated and creative task, which in turn revivifies the library.

In a typical library scenario, users can rate the library services, express their concerns and opinions, help the library in amassing funds, review a book, OCR correction, add or refine metadata for a physical book, e-book, and so on.

The conceptual framework proposed by (Zakaria & Abdullah, 2018) gives a holistic view of how one can utilize the theories of crowdsourcing in libraries.



**Figure 2: Crowdsourcing and Library performance**

Examples of crowdsourcing goals for present era libraries could be:

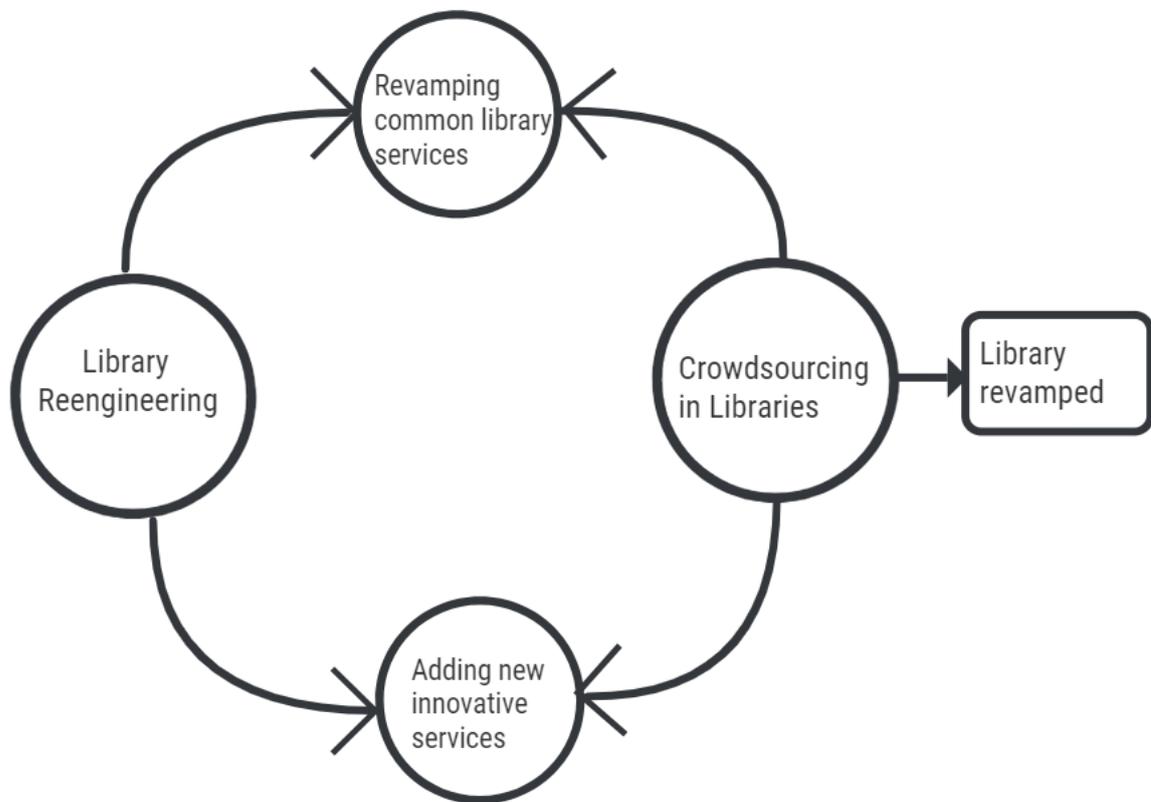
- a) assigning users to identify and rectify the errors in their catalogues
- b) rating as well as acknowledging the reliability of information/records
- c) enrich the content by appending additional information to records
- d) authenticate the accuracy of the name authority files and subject authority files
- e) Add new subject headings that library staff overlooked
- f) helping in digitization and OCR correction
- g) Proofreading and corrections
- h) Assigning metadata for digital objects
- i) providing suggestions through comments,
- j) transcribe various contents
- k) Translation of e-books and other e-resources

A simple example could be the images. In the present era, libraries own oodles of images, be it photographs or other images. However simply archiving that anywhere doesn't make sense, but if users are given a chance to describe or narrate those pictures that bring value to the data.

### 4.3 Crowdsourcing Cycle in Libraries in Information Era

After carefully examining the disruption that has been happening in library scenarios, I believe that crowdsourcing in libraries in the digital era can be mainly from two aspects, one is making use of the potential of the crowd in assisting in various library-related jobs (OCR correction, adding metadata, and so on) and the second one is user's support in extending and expanding the library activities by adding new services (building museums associated with the library, archives, special collections) to sustain and gain importance in the 21st century. Figure 3 is a proposed cycle that tries to depict the crowdsourcing cycle in libraries from the two aforementioned aspects. Although painful for library and information professionals, it is an unalloyed truth that in many parts of the world, libraries are on the brink of cessation and people are ambivalent about the significance of libraries. Being at the

crossroads, libraries need to revamp themselves, by expanding their functionalities and services. Nowadays, most recently established libraries will have a museum, archive, or some other projects to establish their identity in the digital era.



**Figure 3: Proposed crowd sourcing cycle**

As mentioned in the proposed cycle by making use of the potential of the crowd, library professionals can fine-tune their existing services and also add new innovative services, thus revamping the library.

#### **4.4 Crowd Ask: Crowdsourcing software for libraries**

As the idea of crowdsourcing has been proclaimed worldwide with time, many software has also been developed in tandem with the proliferation of the idea. Since the idea has a good application in the domain of business and other allied fields, a large number of tools are being developed by professionals in this domain that are pertinent to meet the demands of the user in respective domains. One of such kind is the Mechanical Turk from Amazon, which has gained widespread popularity in the contemporary era.

Crowd Ask the crowdsourcing software for libraries (an open-source software), which emerged along the same lines as Amazon Mturk was developed by Purdue University. This is a real-time software where users can get the answer to their queries on time. Crowd Ask allows users to ask and answer open questions related to library resources. The additional features of this software include options for users to vote their opinion, and studies manifest that even naive users have been expressing their stance. Moreover, the system operator or the librarian will bestow a badge to users who answer the

question shrewdly. This led to the emergence of a nexus of users, whom the library can count on at difficult times.

## **5. ADVANTAGES AND DISADVANTAGES OF CROWDSOURCING**

The realm of knowledge is expanding as it is being inundated with a prodigious number of novel ideas and concepts, where some ideas are ephemeral, and no idea has eternal life. This applies to the idea of crowdsourcing as well thus it has many pitfalls, also has an edge over many ideas. Hence before employing any concept one must have a thorough understanding of the pros and cons of the stated concept.

### **5.1. Advantages**

- Improving the quality of data

This is one of the magnificent advantages of crowdsourcing as here data is wide open to a throng of users who in reality can refine the data through comments, tags, ratings, reviews thus enabling the data more visible to the multitude of patrons.

- Saving Huge Costs

Allowing the general public to share and analyze the digital information which is already on the web emancipate librarians or institutions from incurring huge costs.

- Building a wider virtual network

When it comes to virtual network crowdsourcing has an added advantage over similar concepts as it brings together, detached users who were previously a standalone entity under one umbrella. i.e. Libraries can establish a virtual users' community that shares and interact with the online content frequently. Once such an environment has been molded, subsequently the users can also learn, engage and transfer their knowledge.

- Strengthening and building trust

As the users are actively involved and participating in various activities of the library, a strong rapport has been developed between the library and the user community. Hence, users feel free to pass on the information and their contributions without expecting any profit in return hence fostering a sense of responsibility towards the organization.

### **5.2. Limitations and Challenges**

Even though crowdsourcing is being acknowledged as one of the finest concepts which have been propounded in the 20<sup>th</sup> century, inextricably it has some limitations.

1. Specific and well-structured tasks for volunteers- This is of the major challenges. i.e. often the potential ability of the crowd has been underutilized, as they are not assigned tasks according to their competence. Thus, most of the time people find it difficult to achieve a task or lose their interest in the task in between, which leads to unsatisfactory results. In reality, it has grave repercussions as it brings out deplorable results, also the time invested for the task has been misspent.

2. Lack of motivation- The crowdsourcing venture must be able to engross the participants for making use of their potential benefits. This is essential when the crowd deals with a difficult task, which needs a significant amount of time and effort. Many researchers opine that if properly motivated they will embark on any strenuous task thus helping the organization in scaling new heights.

3. Ensuring that you have the right crowd- As it has already been said that the core of crowdsourcing is the crowd and all other determinants fall back on the crowd. If one has not recruited the right crowd, by understanding the requirements and skillsets of the crowd, the complete venture will be disrupted. The idea of crowdsourcing will be useful to the organization only if, it has the right legion of the crowd to accomplish the assigned task. Moreover, to make the crowd vigorous, the organization must bestow some kind of incentives, that will reinvigorate the crowd.

## 6. CONCLUSION

Libraries are being considered the heart of any institution. As we are living in an information age where data is the new oil and information becomes a commodity, organizations, and technologies which furnish reliable and authentic information has paramount importance. However, with the advent of Google and allied technologies, a paradigm shift from physical libraries to digital libraries and information proliferation have become roadblocks to libraries and information centers establishing their significance in the digital age. Moreover, this quagmire has inflicted an extra workload on the library and information managers as present-day libraries are bound to go beyond their routine tasks to emphasize their relevance, making library staff life miserable. The concept of crowdsourcing become relevant in libraries at this juncture, where libraries can truncate certain tasks and give them to an anonymous crowd, who assist the library in achieving the task thus creating a virtual community. Moreover, in this changing scenario, libraries have been coerced to adopt novel technologies that they may not be familiar with, but the crowd having various backgrounds and skillsets can help out libraries in this aspect. The proposed cycle could be used by the libraries, as employing the idea of crowdsourcing in the library scenario is a real shot in the arm, since a congregation of people with different outlooks is always an added advantage for any organization. It is the need of the hour that libraries must reinvent themselves to sustain in this information proliferation era.

## REFERENCES

1. Howe, J. The rise of crowdsourcing, 2006, *Wired.*, **14**(6), 1-4.
2. Oomen, Johan & Aroyo, Lora. Crowdsourcing in the cultural heritage domain: opportunities and challenges. *Proceedings of the 5<sup>th</sup> International conference on Communities and technologies.*, 2011, 138-149.
3. Zhao, Yuxiang & Zhu, Qinghua. Evaluation on crowdsourcing research: Current status and future direction. *Information system frontiers.*, 2012, **16**, 417-434.

4. Brabham, Darren C. Crowdsourcing as a Model for Problem Solving: An Introduction and Cases. *Convergence: The International Journal of Research into New Media technologies.*, 2008, **14**(1), 75-90.
5. Howe, J. Crowdsourcing: why the power of the crowd is driving the future of business. New York: Three Rivers Press., 2009, 280-81.
6. Yuen, Man-Ching & King, Irwin & Leung, Kwong. A Survey of Crowdsourcing Systems. *PASSAT/SocialCom.2011.*, 2011, 766-773.
7. Chesbrough, Henry W. *Open Innovation: The New Imperative for Creating and Profiting from Technology*. Harvard Business School Press, 2003.
8. Hippel, Eric von. *Democratizing innovation*. MIT Press, 2005.
9. Schenk, Eric and Claude Guittard. Crowdsourcing: What can be Outsourced to the Crowd, and Why? 2009.
10. Brown, Graham & Pierce, Jon & Crossley, Craig. Toward an Understanding of the Development of Ownership Feelings. *Journal of Organizational Behavior.*, 2014, **35**(3).
11. Shinsuke Goto, Donghui Lin, and Toru Ishida. Crowdsourcing for Evaluating Machine Translation Quality. *In Proceedings of the Ninth International Conference on Language Resources and Evaluation (LREC'14).*, 2014, 3456–3463.
12. Zakaria, Nur & Abdullah, Che. Crowdsourcing and Library Performance in Digital Age. *International Journal of Academic Research in Progressive Education and Development.*, 2018, **7**(3).
13. Stonebraker, Ilana & Zhang, Tao. Crowdsourcing Reference Help: Using Technology to Help Users Help Each Other. *ACRL (Association of College and Research Libraries).*, 2015.