



Using Crowdsourcing Effectively In Libraries And Institutions

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Crowdsourcing has emerged as a transformative approach for libraries and cultural institutions to expand their resources, increase community engagement, and enhance access to diverse information. This study explores the effective utilization of crowdsourcing in these settings, focusing on how it can be strategically implemented to achieve institutional goals. Through the analysis of various case studies and best practices, the research identifies key factors that contribute to successful crowdsourcing initiatives, such as project design, participant motivation, and quality control mechanisms. Libraries and institutions can leverage crowdsourcing to tap into the collective knowledge and effort of the public, enabling them to enrich their collections and improve data accuracy. This paper examines the various methodologies and tools employed in crowdsourcing projects, including digital platforms and incentive structures that encourage participation and ensure high-quality contributions. Additionally, the study addresses the ethical considerations and potential challenges associated with crowdsourcing, such as issues of data privacy and the need for inclusivity. Findings indicate that when executed effectively, crowdsourcing not only enhances the resources and services of libraries and institutions but also fosters a sense of community ownership and participation. By aligning crowdsourcing projects with institutional objectives and user needs, libraries and cultural institutions can create more dynamic, inclusive, and participatory environments.

Keywords: crowdsourcing, libraries, cultural institutions, community engagement, digital platforms, data quality, ethical considerations, inclusivity, public participation.

1. Introduction

Crowdsourcing has become an increasingly popular way of accomplishing large-scale projects in recent years, using the power of the internet to harness the efforts of volunteers from around the world. Calling on the talents and skills of the public as and when they are needed and compensating them fairly for their work, it has been successfully employed in a vast range of projects cutting across industry, the sciences and the humanities. This success has in turn prompted academic and scholarly communities to consider harnessing the power of crowdsourcing to facilitate the extensive and wide-reaching projects involving digitization, transcription, translation, and description that are often required in the fields of history, culture, and the sciences. Given the success of commercial crowdsourcing ventures, it is imperative that potential 'project initiators' in the GLAM (Galleries, Libraries, Archives, and Museums) and academic sector are given a clear understanding both of the potential benefits that crowdsourcing can offer their projects and the potential issues and challenges that they will need to address. Libraries significantly contribute to research in the field of digital humanities by combining the study of history, literature, and philosophy with the use of digital tools and technologies, developing digital tools and methodologies for study and instruction, and creating and analyzing digital content in addition to offering access to digital collections, resources, and expertise. In the context of Digital Humanities and libraries, leveraging crowdsourcing involves enlisting the assistance of the general public to transcribe, interpret, tag, or annotate digital content, as well as to contribute data, comments,

feedback, and criticism on research projects, thereby supporting and enhancing research efforts.

For Digital Humanities initiatives in libraries, crowdsourcing can help address issues like scarce resources, inadequate data, or the need for various viewpoints. In addition to encouraging community involvement and cooperation, crowdsourcing can make research more open and pertinent to a broader audience. Computerized technologies are fostering the growth of a more participatory society, encouraging people to participate more actively due to decreasing obstacles to civic commitment and proof that their commitments matter. This empowerment enables individuals to play a more dynamic role. As a result, libraries and institutions (LIs) increasingly embrace crowdsourcing to develop and improve online collections and resources more affordably, involve a larger audience, and empower and facilitate research.

In libraries, crowdsourcing involves welcoming or employing web-based volunteers to engage the public in various Digital Humanities projects, assigning tasks typically completed by a specific or small group of individuals to a larger community through an open call. These projects require extensive, wide-reaching tasks that involve human insight and cognition, such as tagging, labeling, identifying, recording, proofreading, text encoding, transcribing, translating, interpreting, digitizing rare items, and developing digital exhibits and content. Management decisions regarding task distribution, project targets, volunteer enrollment, configuration and system design, volunteer assistance, moderation, and assessment impact the proficiency, viability, and efficacy of crowdsourcing in this context. Furthermore, crowdsourcing gathers the public's views and thoughts on digital humanities projects, thereby improving research questions and methodology.

Managers, curators, and librarians must delve into a diverse array of fields, such as business, economics, marketing, information and library science, software engineering and design, planning, and computerized humanities. This broad exploration is necessary because existing publications fail to offer a comprehensive and tailored framework for crowdsourcing that is both learner-centered and focused on information literacy. This study comprehensively examines literature and theory on crowdsourcing within general management while also delving into its relevance in the latest research within the context of information literacy. The aim is to pinpoint effective management strategies that project managers can employ when planning and coordinating crowdsourcing endeavors. By proposing actionable suggestions and ideas, this study aims to provide project managers with a foundational framework for effectively planning and organizing crowdsourcing initiatives, serving as a springboard for future research endeavors.

1.1 Purpose of the Study

Crowdsourcing in libraries and cultural heritage institutions has become more prevalent in recent years. This will be evident through the exploration of current projects and one case study that will be discussed later on in this paper. This paper will look at the various advantages and disadvantages of this technique and debate its claims as being a 'less expensive' way of completing tasks. Throughout this paper, there will be a focus on the pros and cons of using crowdsourcing as a method of completing large tasks and data collection in cultural heritage institutions and libraries. This will be explored through the evaluation of the various projects in which these organizations have used this method and finish with an overview of the case study presented.

Crowdsourcing is a method that many organizations are using to help in the completion of large tasks by outsourcing them via the internet to large group of people, generally an undefined, in the form of an open call. This technique is often used for small tasks that pay very little money. However, this paper is focusing on the uses of crowdsourcing in cultural heritage institutions and libraries, where the monetary return for the completion of these tasks is not the primary motivator.

2. Review of Literature

2.1. A novel business strategy and plan of action

Crowdsourcing, a novel web-driven business model, has significantly reshaped the corporate landscape through its utilization of the internet and rapid advancements in digital innovations and technology, which are becoming increasingly efficient, affordable, intelligent, and user-friendly. Gaule suggests that smaller businesses often possess a strategic advantage over their larger counterparts in exploring niche markets or even revolutionizing entire industries. The emergence of crowdsourcing was initially highlighted in management literature as a groundbreaking development warranting ethical deliberation. Early prominent

instances of crowdsourcing, such as *Amazon Mechanical Turk*, enabling businesses to delegate tasks to an anonymous "crowd" at lower costs compared to traditional methods, and *Threadless*, the t-shirt company that engages the public in design submission, voting, and contribution, suggested that this innovative approach was initially perceived as a challenge to conventional hierarchical structures and organizational paradigms, posing a potential disruption to traditional employment models. Moreover, crowdsourcing has been viewed as essentially an expansion of freelancing (Sollish&Semani,2011). Afuah (2009) took a broader perspective and outlined Highlighting the advantages of crowdsourcing for businesses, proponents argue that this approach will become increasingly crucial in strategic planning. Leveraging a diverse pool of individuals with varied experiences, backgrounds, mental models, and expertise can lead to quicker and more cost-effective solutions. Similarly, organizations, including LIs, can utilize crowdsourcing to achieve goals and tasks that would otherwise demand significant labor, ensure a broader representation of participants, tap into external knowledge, and engage visitors through innovative means. Crowdsourcing can also be utilized to pioneer internal processes because work can be done along any value chain (Afuah, 2009; Hopkins, 2011). In fact, according to Howe (2009), there are no restrictions to crowdsourcing because it is limited only by people's creativity and desire. A comprehensive description has been recently suggested to address the adaptability of emerging business models, catering to both for-profit and non-profit entities.

Crowdsourcing represents a form of collaborative online engagement, wherein an individual, organization, company, or non-profit entity issues an open call to a diverse group of people with varying levels of expertise and numbers to undertake a task voluntarily. The task's complexity and quality vary, requiring participants to contribute their skills, resources, labor, and experience. These dynamic fosters mutual benefits, with participants leveraging what the client offers for their advantage. The specific structure of this collaboration depends on the task at hand. Meanwhile, the client receives fulfillment of specific needs, whether they are financial, social recognition, bolstering self-esteem, or enhancing personal skills.

2.2. Crowdsourcing Techniques and Methodologies

The four main types of crowdsourcing are collective intelligence, crowd creativity, crowd voting and crowdfunding, according to Howe (2009). A fifth category was discovered in a study of crowdsourcing systems by Yuen, King, and Leung (2011): games, which provide helpful metadata as a result and by product. Crowdsourcing research in the social legacy area adopts a new classification system for initiatives involving public engagement and investment, taking inspiration from citizen science: contributory, cooperative, or collaborative, co-imaginative, co-creative, and facilitated or hosted (Oomen & Aroyo, 2011; Simon, 2010). The capability of crowdfunding (web based raising money) is hardly discussed in the writings because LIs have not yet grasped it. There are many different kinds of crowdsourcing initiatives included in this categorization scheme, such as text rectification, record transcription, contextualization, supplementing collections, classification, grouping, translation, interpretation, digitization, and text encoding. All of these programs make use of what Howe (2009) refers to as people's "spare cycles," which Shirky (2010) translates as "cognitive surplus/mental excess," or extra time that is not taken up by work or different commitments. According to Howe (2009), even those individuals with only a couple of moments to spare can definitively make a meaningful contribution to a crowdsourcing project by breaking down huge jobs into smaller portions or "micro-tasks".

2.3. Volunteerism

Successful crowdsourcing initiatives are characterized by a deep commitment to community involvement. Each endeavor in crowdsourcing should represent a significant exchange, as engaging customers in the production process fosters goodwill and strengthens brand loyalty. Particularly in the public sector, crowdsourcing stands out as a model that emphasizes community participation. This emphasis distinguishes it from its use in business settings. In public organizations, crowdsourcing is viewed as a natural extension of the longstanding tradition of volunteering for the common good, rather than driven by competitive advantage or the offer of personal incentives like monetary compensation. The motivations for volunteering in the public sector range from addressing significant challenges, fostering partnerships with reputable organizations, contributing to research, enjoying mental stimulation, pursuing educational opportunities, fostering a sense of community, pursuing individual research interests, and enhancing resources that will ultimately benefit volunteers themselves. Oomen and Aroyo (2011) emphasize that engaging with collections on a profound level is crucial, not just for the enrichment of historical organizations, but also for their administrative and public relations endeavors, as the cultural impact often influences their financial support. In the realm of

Library and Information (LI) services, crowdsourcing projects typically involve a dedicated core of contributors rather than anonymous crowds (Causer & Wallace, 2011; Chrons & Sundell, 2011; Owens, 2012; Taranto, 2011). Therefore, LI directors should consider this approach as a way to connect with a broader audience of like-minded individuals and to leverage the expertise and enthusiasm of "pro-ams" - amateurs who demonstrate professional standards and contribute innovatively within their networks (Leadbeater, 2004; Shirky, 2010).

2.4. Project management

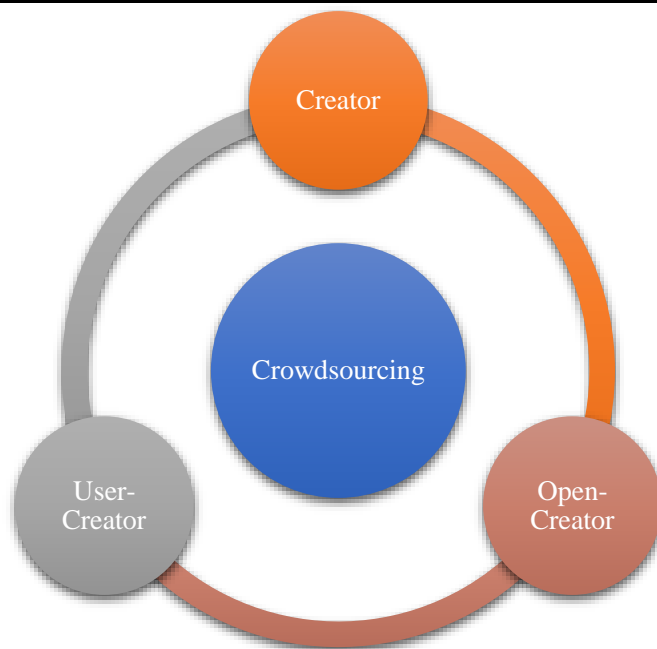
Despite the proliferation of library and information (LI)-driven crowdsourcing initiatives, there remains a scarcity of documented research regarding best practices. While some of the general guidelines outlined by Howe (2009) are applicable, few specifically address volunteer programmers. Sherman (2011) offers the most comprehensive and easily accessible overview of crowdsourcing models and guidelines, yet its focus is primarily commercial, presenting a broad perspective. Administrators aiming to engage, educate, guide, and inspire volunteers would find contextual analyses, volunteer surveys, and reports focusing on the LI domain and citizen science projects to be the most pertinent sources of information.

Holley (2009-2010) provides a foundational framework for organizing crowdsourcing initiatives, drawing from her experience managing the Trove historical newspaper project at the National Library of Australia. She delineates crucial aspects influencing online visitor engagement, underlining the importance of clearly defining the project's goals, understanding the audience, grasping volunteer motivations, and offering appropriate incentives. The online platform should be user-friendly, reliable, fast, and include a comprehensive progress tracker. Holley also suggests that volunteers should be able to identify themselves on the platform, receive acknowledgment, and access the necessary resources to contribute to a vibrant, cohesive community. To ensure the crowdsourcing platform meets user expectations, early stages of project development should solicit volunteer feedback.

In the realm of library and information (LI) studies, Howe's (2009) insights regarding the significance of community are reflected. A recent analysis of social metadata revealed that "the presence and sense of community—whether pre-existing or cultivated—foster greater user engagement and facilitate expansion into new communities" (Smith-Yoshimura, 2012). Respondents to a survey conducted among Trove volunteers expressed that they would be more productive and feel a stronger sense of responsibility if they perceived themselves as part of a team or virtual community. This indicates that fostering a sense of camaraderie and community online could enhance volunteer motivation (Holley, 2009). With the rise of social networks, businesses and organizations are now employing virtual community managers to nurture, promote, and oversee online collaboration with the public (Garrigos-Simon, 2012; Rosenkranz & Feddersen, 2010). Given the challenges associated with establishing and sustaining online community networks, which require active management, this role is particularly relevant to crowdsourcing endeavors (Howe, 2009; Kanter & Fine, 2010).

2.5. Balance and assessment

Experts in the field of library and information (LI) studies, along with research communities interested in utilizing collections and resources, are engaged in ongoing debates concerning the value and feasibility of incorporating crowdsourced contributions (Oomen & Aroyo, 2011; Ridge, 2012; Rockwell, 2012; Simon, 2010). Despite the importance of budget breakdowns, project management evaluations, and job assignments in aiding LI directors considering crowdsourcing as a strategic approach and business model, there remains a dearth of published case studies in this area. In terms of transcription, research partners employed full-time would have transcribed more than double the number of manuscripts compared to volunteers within a similar timeframe, as noted by Bentham, Causer, Tonra, and Wallace (2012). However, the research associates devoted significant efforts to establishing and managing the online platform, recruiting volunteers, and overseeing their contributions. While it may seem that the project was not cost-effective, it's underscored that securing funding solely for the transcription task was not feasible. Crowdsourcing offers additional benefits beyond task completion for both the organization and the volunteers involved. As Holley (2009) points out, "Users are just as concerned about the improvement of the data as they are about the social impact the service has on the community and individuals." However, the library has yet to quantify these aspects.



3. Benefits and Drawbacks of Crowdsourcing

The field of knowledge is expanding as a vast number of unique ideas and thoughts are introduced, some of which are transient and have no everlasting life. This also applies to the concept of crowdsourcing, which has both advantages and disadvantages over other concepts. Therefore, one must have a clear understanding of the advantages and disadvantages of the presented concept before using it.

3.1. Benefits

Increasing the data's quality This is one of the brilliant benefits of crowdsourcing. Since the data is available to a vast number of users they can improve it through comments, tags, ratings, and reviews, making it more accessible to a larger audience.

Saving gigantic expenses: By enabling the general public to share and study the digital data that is already available online. Libraries or other organizations are freed from having to incur significant expenses. Building a more extensive virtual organization network: Crowdsourcing has an edge over similar ideas in virtual networks since it unites dispersed people who were previously separate entities under one roof. Libraries, for example, can create a virtual user community that frequently shares and engages with the online information. After such a setting has been created, users can then learn, interact, and share their knowledge.

Nourish and building up trust: A strong connection has grown between the library and the user community as a result of the users' active involvement in and participation in a variety of library programs. As a result, users are free to share the knowledge and contributions they have made without anticipating payment, which encourages a sense of obligation to the organization.

3.2. Limits and Difficulties

Despite being regarded as one of the best ideas to come out of this era, crowdsourcing has some drawbacks.

1. **Clear and organized tasks for volunteers** - One of the main issues is giving volunteers clear and organized tasks. i.e., because they are not given jobs that are appropriate for their skill level, the crowd's potential aptitude is frequently underutilized. So, most of the time, people struggle to complete a task or lose interest in it in the middle, which results in disappointing outcomes. In actuality, it has serious consequences because it produces appalling results and wastes the time allocated for the task.
2. **Absence of motivation** - In order to harness the participants' potential advantages, the crowdsourcing project must be able to captivate them. This is crucial when a group of people must work together to complete a challenging task that takes a lot of time and effort. That's what numerous analysts believe,

if people are appropriately motivated, they will start any difficult activity, aiding the company in reaching new heights.

3. *Making sure you have the correct crowd* - As was already mentioned, the crowd is the primary factor in crowdsourcing, and all other factors are dependent on the crowd. The entire enterprise will be disturbed if the proper crowd has not been attracted by knowing the needs and skill sets of the crowd. Only if the company has the right crowd to complete the task at hand will the concept of crowdsourcing be beneficial. Also, the organization needs to provide incentives of some form to re-energize the crowd to make it lively.

4. Strategies used in Libraries

A common strategy used in libraries to engage the community and acquire data and information is crowdsourcing. These are some practical management tactics for managing crowdsourcing in libraries:

Characterize the project's objectives and parameters: Clearly characterizing the objectives and extent of the crowdsourcing venture will assist you in characterizing and distinguishing the kind of task that should be crowdsourced and the target audience.

Recognize and choose the appropriate platform: There are many platforms accessible for crowdsourcing, including social media, library websites, and crowdsourcing platforms. Determine which platform is best for your project.

Make an arrangement for commitment: Establish a strategy for community engagement and publicize the crowd sourcing initiative through various channels, including social media, email, neighborhood news sources, and local media.

Set standards: The contributed information should be specified in the manner in which it is submitted, and the submissions criteria will be evaluated and judged.

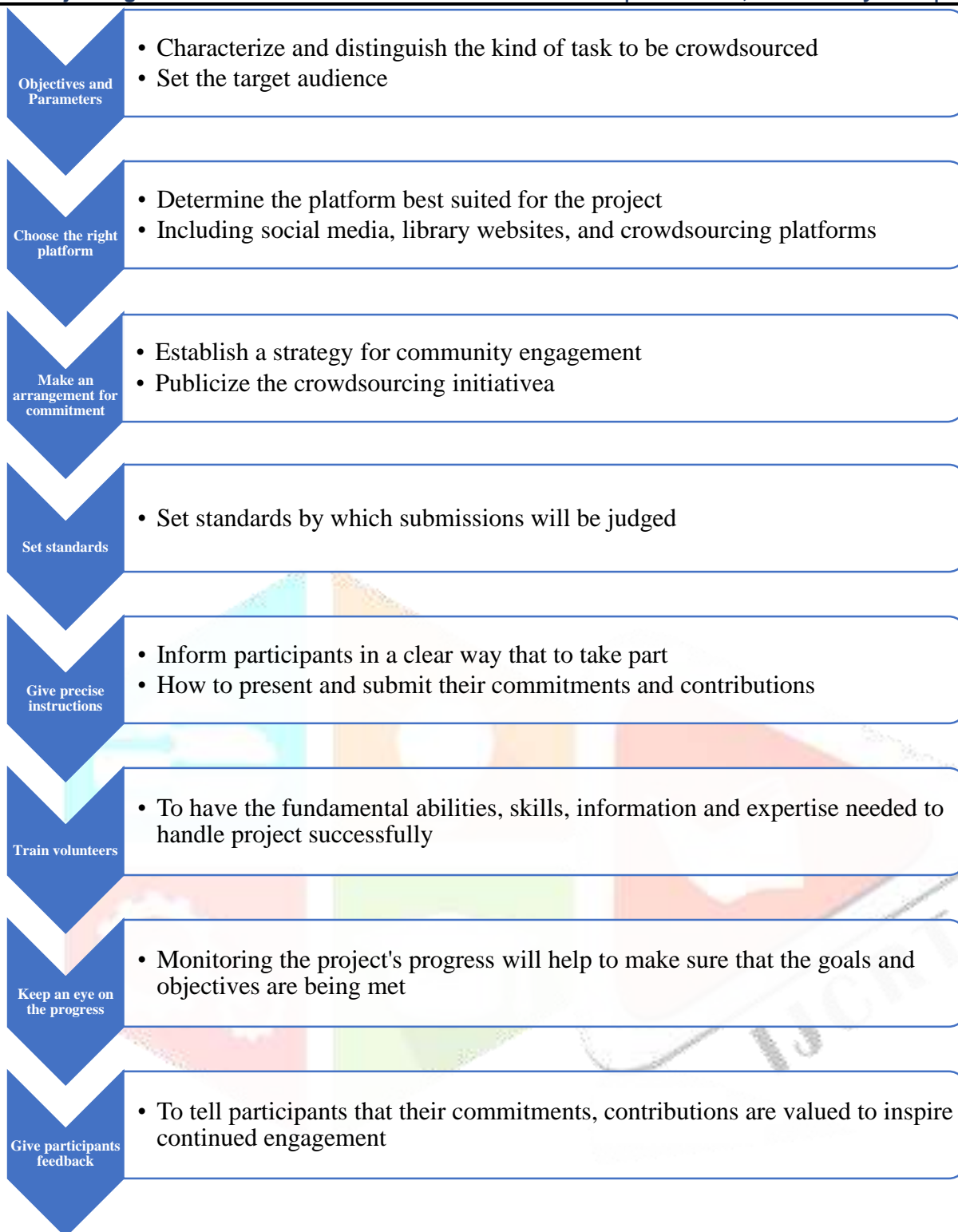
Provide clear and precise instructions: Inform participants in a straightforward manner how to take part, what is generally expected of them, and how to present and submit their commitments and contributions.

Train volunteers: Make sure the staff or volunteers who will be working on the crowd sourcing project have the fundamental abilities, skills, information, and expertise needed to handle it successfully.

Keep an eye on the progress: Monitoring the project's progress will help to make sure that the goals and objectives are being met. Maintain tabs on how many people participate, how well the contributions are done, and any problems that occur.

Give participants feedback: Provide participants with feedback to let them know that their commitments and contributions are valued and to encourage continued engagement.

Libraries may manage crowdsourcing initiatives and engage the community to obtain important data and insights by employing some practical management techniques.



5. Proposed Model for Crowd Sourcing in Libraries

There are a number of proposed models for crowdsourcing in libraries, and each model takes a different approach and crowdsources a different set of tasks. The following are a few popular models for crowdsourcing in libraries:

Citizen Science Model: At libraries, scientific research is crowdsourced using this methodology. Data collection, analysis, and interpretation are open to the public. Libraries can employ citizen science to collect information on subjects like genealogy research, environmental studies, etc.

Community Tagging Model: This strategy involves asking members of the public to add tags or keywords to library resources. Community tagging can increase the accessibility and discoverability of library resources for users.

Digitalization Model: Under this concept, tangible library items, including books, documents, and

photos, are crowdsourced to be digitized. Volunteers can assist with undertakings, including quality assurance, metadata development, and scanning.

Model for Transcription: Under this approach, the transcription of handwritten or printed materials that are challenging for computers to read, like old authentic manuscripts or archival documents, is crowdsourced. The text can be converted into a searchable, accessible digital format with the aid of volunteers.

Oral History Model: Under this methodology, oral history transcription and collection are crowdsourced. Oral history interviewing, transcription, and indexing are among the duties that volunteers might assist with.

Geotagging Model: In this paradigm, the crowdsourcing of geotagging the library resources, like images or maps, is used. Volunteers can assist in locating the resources and improving users' access.

Each one of these models offers extraordinary open opportunities for libraries to interact with their communities and make use of the aggregate information, abilities, skills, and knowledge of volunteers to accomplish their objectives. Libraries can successfully crowdsource their projects and enhance their services by selecting the best model for their requirements.

6. Crowdsourcing methods in Indian Libraries

Although there are now a number of programs in progress to use the power of the crowd to prop up research, knowledge preservation, and access, crowdsourcing methods in Indian libraries are still in their beginning phases. The following are some instances of crowdsourcing techniques used by Indian libraries:

Projects of Transcription and Translation: Crowdsourcing is being used by some Indian libraries to transcribe and translate historical and cultural documents like manuscripts, diaries, and oral narratives. Volunteers interpret and transcribe individual accounts for the Indian Memory Project, a digital repository of Indian family histories. A web-based archive tracks down histories and identities via photographs found in personal archives.

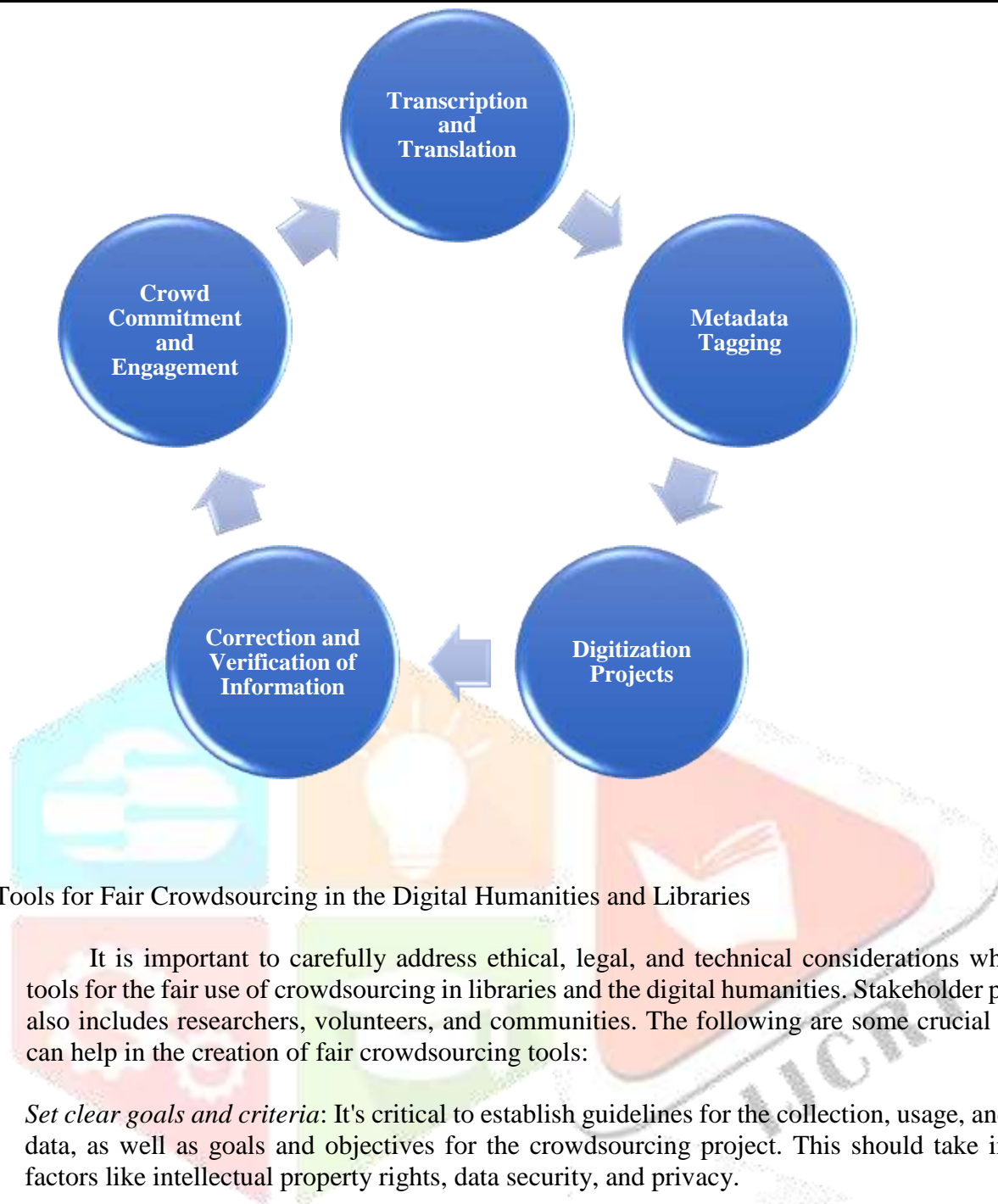
Metadata Tagging: Crowdsourcing is being used by Indian libraries to annotate digital resources with descriptive metadata, which can enhance search and discovery potential. The Indic Digital Library, a digital collection of Indian materials, tags books with subject headings and keywords using crowdsourcing, making them available for open access.

Digitization Projects: Crowdsourcing is funding digitization projects that involve cultural artifacts in Indian libraries. For instance, the ancient city of Hampi was digitally mapped and archived as part of the Digital Hampi project, a partnership between Google and the Archaeological Survey of India.

Projects Involving Correction and Verification of Information: Information in digital collections can also be verified and corrected via crowdsourcing. An initiative to verify and verify heritage sites in India, has been started by the Indian National Trust for Art and Cultural Heritage (INTACH).

Crowd Commitment and Engagement Projects: Crowd sourcing initiatives can be utilized to involve general public in the preservation and dissemination of their social legacy and cultural heritage. In Delhi, for instance, the Sarai Project at the Centre for the Study of Developing Societies has started a project to map the city's cultural treasures with the help of the local population.

By and large, there is a growing recognition and understanding of the potential for crowdsourcing for the preservation, accessibility, and sharing of India's rich social legacy and cultural heritage. In general, crowdsourcing activities in Indian libraries are diverse and expanding.



7. Tools for Fair Crowdsourcing in the Digital Humanities and Libraries

It is important to carefully address ethical, legal, and technical considerations when creating tools for the fair use of crowdsourcing in libraries and the digital humanities. Stakeholder participation also includes researchers, volunteers, and communities. The following are some crucial actions that can help in the creation of fair crowdsourcing tools:

Set clear goals and criteria: It's critical to establish guidelines for the collection, usage, and sharing of data, as well as goals and objectives for the crowdsourcing project. This should take into account factors like intellectual property rights, data security, and privacy.

Plan easy to use interfaces: Tools for crowdsourcing should be made as easy to use as possible for volunteers, with clear instructions and feedback provided. It's also critical to make sure that the tools and instruments are comprehensive and open to all users, taking into account their varied skill sets and linguistic prowess.

Give clear attribution and affirmation: Clear attribution and recognition should be given to all contributors in crowdsourcing initiatives to recognize the importance of their work and to be transparent about how their data is used.

Foster training and support materials: It is essential to provide volunteers with training and support materials so that they are aware of the project's goals, regulations, and technical resources. These can include user manuals, instructional recordings, and online tutorials.

Monitor, assess, and evaluate the project: Monitoring and evaluating the project on a regular basis can help pinpoint areas that could use improvement and ensure that the project is fulfilling its objectives in a fair and ethical manner. This can include evaluating the project's impact, analyzing data, and soliciting volunteer input.

Interact with stakeholders: Having interaction with stakeholders is crucial to ensuring that the project is compassionate to their concerns and needs. Stakeholders include researchers, volunteers, and communities. Stakeholders should be consulted, given the opportunity to provide comments, and maintained contact throughout the project's lifespan.

Ultimately, a collaborative and iterative strategy that balances the requirements of all stakeholders and takes into account ethical, legal, and technical challenges is needed to develop tools for the fair use of crowdsourcing in libraries and the digital humanities.

Set Clear Goals and Criteria

Plan Easy to Use Interfaces

Give Clear Attribution and Affirmation

Foster Training and Support Materials

Monitor, Assess and Evaluate the Project

Interact with Stakeholders

8. Performance of the Library and crowdsourcing

Crowdsourcing objectives for libraries in the modern period include:

- a) Editing and correcting using tools like Grammarly
- b) Adding metadata to digital objects using services like Alation Data Catalog Alex Augmented Data Catalog; Ataccama Data Catalog; Atlan Data Discovery & Catalog; AWS Glue Data Catalog
- c) Electronic book and other e-resource translation with Wordbee; Paraphrase by Microsoft, Smartcat, Crowdin, Lionbridge
- d) LibStaffer, a one-stop location for scheduling staff and service points. Spreadsheets should be made simple, so one can click on them to throw them out.
- e) LibCrowds, L-Crowd: The Library Crowdsourcing Project in Japan, are a few of the well-known crowdsourcing tools for libraries
- f) Libraries leverage crowdsourcing for collection development. By and large, libraries are involving this practice for acquiring new books/archives. In this procedure, patrons recommend that the library buy printed books and non-print items, including e-books, based on their needs in the designated format. For instance, Purdue University Library has created the CrowdAsk crowdsourced reference system, allowing users to ask and respond to open inquiries about library resources and services.
- g) Libraries can also leverage crowdsourcing by linking all helpful online resources created by subject matter experts of various branches of knowledge, such as e-PG Pathshala, a door to all postgraduate programmes offered in India by INFLIBNET, including those in the social sciences, the humanities, the natural and mathematical sciences, linguistics, and languages, etc.

- h) Libraries are under pressure to efficiently provide patrons with access to the library catalogue by employing the notion of collaborative cataloguing to organize/classify their substantial collections. For instance, all the sister libraries are linked through AMULIBNET (AMU Library Network), enabling a shared catalogue of library resources and other similar services of Maulana Azad Library of Aligarh Muslim University, Aligarh.
- i) Printed text is digitized using the OCR process, for editing and searching electronically. For example, the National Library of Australia used crowdsourcing to correct 2 million lines of text in 100,000 articles over the course of a six-month period from August 2008 to January 2009.
- j) Libraries can establish their own social media pages on sites like YouTube, Facebook, LinkedIn, Instagram, Twitter, and many more to advertise their resources, services, tours and orientations, instructions and tutorials, and other things.
- k) The WhatsApp Group of Maulana Azad Library System's, AMULIBNET, evolved as a lifeline for the system libraries, staff, and officials for social and personal communications. It also assists in raising money or crowdsourcing in the event that any staff members require money due to an illness, a death, or any other circumstance.

9. Global Crowdsourcing Practice Trends

There are numerous global efforts involving crowdsourcing that libraries all over the world have embraced. Here is a brief discussion of a few of them:

1. The public was asked to contribute their own digital photographs to Picture Australia through the National Library of Australia's program. Similar to this, the Library of Congress, in collaboration with Flickr, unveiled a project called "The Commons" to improve public access to photography collections and give the public a way to contribute knowledge and information that enables users to recognize the locations, people, and situations depicted in the images.
2. Library Tree, a user interface that offers users a more social, pleasurable, and engaging experience to read books, was used by the University of Glasgow.
3. The Library of Congress, crowdsourcing project, "Beyond Words" encouraged people to recognize photos and cartoons in the Chronicling America notable paper assortments to further develop research in light of these assortments.
4. Another record and labeling crowdsourcing venture from the Library of Congress by the People. Endorsed volunteers can edit others' records. Materials are broken into ""Campaigns", for example, "Letters to Lincoln". "Anna E. Dickinson Documents" and "Rosa Parks: In her own words." Records are made available for download once the mission is finished.
5. The California Digital Newspaper Collection began using crowdsourced OCR text correction in August 2011 for its digitized historical newspapers, some of which date back to 1846.
6. Distributed Proofreaders, is a web-based project, often known as DP or PGDP, that assists Project Gutenberg in the creation of e-texts by enabling many individuals to collaborate in editing drafts of e-texts for mistakes.
7. The largest creative crowdsourcing platform in Asia, Jade Magnet, focuses on SMEs and offers design services like logos, brochures, websites, flyers, and animations. It is a technological platform that enables clients to gather numerous possibilities for original solutions before choosing one.
8. Volunteers at LibriVox.org record passages and sections from books that are in the public domain and afterward make the audio recordings available online for free. The audio has all been given back to the public domain.

9. Organizations can have their data examined by the top statisticians in the world through Kaggle, a podium for machine learning, bio informatics, data prediction and competitions.
10. In order to safeguard websites from automated bots trying to access password-protected sections, reCAPTCHA uses CAPTCHA to assist in digitizing book text. People are invited to enter the text for the visuals they see of the book. The New York Times has already been digitally preserved for twenty years.
11. Shakespeare's World with the Folger Shakespeare Library, Oxford English Dictionary, and Anti-Slavery Manuscripts with Boston Public Library are just a few examples of humanities initiatives.
12. University of Virginia's Book Traces- A crowd-sourced web initiative that shares marginalia and other distinctive elements of nineteenth- and early twentieth-century print books on library shelves.
13. Decipher History - Milner Library, Illinois State University, transcribes handwritten diaries, letters, descriptions of photographs, and the sky is the limit from there.
14. The Huntington Library: Decoding the Civil War, a collaborative endeavor to digitize and transcribe the Union Army telegrams from the Huntington Library's Thomas T. Eckert Collection. 75,000 volunteers are needed!
15. Laboratories at the New York Public Library
 - 15.1. Building Inspector - This project analyzes, corrects, and extracts data from old maps in the collection of the New York Public Library.
 - 15.2. Emigrant City - a public effort that will extract organized information from more than 6,000 handwritten mortgage and bond ledgers from the Emigrant Savings Bank from the late 19th and early 20th centuries.
 - 15.3. Ensemble - a collaborative endeavor to transcribe playbills from early 20th-century plays in New York City.
 - 15.4. What's on the Menu - a community-based effort that transcribes menus from New York City restaurants from the 1840s to the present.
16. Smithsonian Digital Volunteers- Since June 2013, over 6,000 volunteers have evaluated and transcribed digital versions of field notes, diaries, ledgers, logbooks, manuscripts, photo albums, and other materials from the Smithsonian's extensive collections.
17. Transcribe Bentham - University College London - Involves "the public in the online transcription of original and unstudied manuscript works produced by the eminent philosopher and reformer Jeremy Bentham (1748-1832)"

10. Digital Humanities practices in Indian Libraries

Although numerous projects are being carried out to promote research and instruction in this area, digital humanities practices in Indian libraries are still in their beginning phases. The following are a few instances of Digital Humanities techniques used in Indian libraries:

Digital Collections: To increase the accessibility of their holdings to researchers and the general public, many Indian libraries are digitizing their collections. For instance, books, manuscripts, and other resources from Indian cultural institutions are freely accessible in digital form thanks to the Digital Library of India, a government-sponsored initiative in India. Maulana Azad Library of Aligarh Muslim University has one of the largest digitized Oriental Collection of Manuscripts (collection of rare books published during 16th to 19th centuries including the oldest printed Arabic book (Ibn-e-Sina's printed in 980-1037 AD; Al-Qanun published in 1593AD in Italy)) uploaded on the portal of

Digital Library of India.

Online Displays and Resources: Indian libraries are creating web displays and resources to highlight their holdings and offer students and scholars access to instructional materials. A web-based display on the historical backdrop of the Indian subcontinent, for instance, has been fostered by the British Library.

Collaboration on Research Projects: Indian libraries work with academics and organizations in India and abroad to conduct studies in the humanities using digital technology. For instance, the Indian Institute of Technology Bombay's Digital Humanities Lab promotes investigation of social networks, text mining, and data visualization. Recently Harvard University developed LISH ie. Laboratory for Innovation Science of Harvard conducts rigorous scientific analysis and research to solve real-world pioneering challenges.

Digital Humanities Training: Training in digital humanities is being offered by Indian libraries to assist scholars and students in gaining knowledge of the techniques and technologies used in this field. Digital Humanities Alliance for Research and Teaching Innovations or DHARTI, for instance, provides training sessions and workshops on subjects like text encoding, data visualization, and digital narrating and storytelling.

Crowdsourcing initiatives: To involve the public in Digital Humanities projects, Indian libraries are adopting crowdsourcing. For instance, volunteers are used to translate and transcribe conversations and interviews with rural Indians for the People's Archive of Rural India or PARI, a digital archive of rural India.

Digital humanities practices in Indian libraries are still developing, but there are many fascinating projects underway that are improving public and researcher access to the nation's rich cultural history. One such example is:

Going by the Book: Kerala and Telangana men are crowdsourcing libraries to connect bookworms. To combat the reading deprivation caused by the Coronavirus pandemic, book activists; Shankar Reddy Patlolla in Telangana and Vijesh in Kerala are building crowdsourced libraries in their towns and villages.

The small library was established by farmer, poet, and activist Patlolla, who had spent more than a month at a migrant camp outside of Hyderabad during the height of the lockdown, where more than a lakh worker was getting ready to return home.

In Perumkulam, Kerala, India's most literate state, where, Vijesh, a teacher is leading a project called Pusthaka Koodu "book nest", that includes putting little boxes containing books throughout the community.

A library with 600 books was established in space provided by school building, well-wishers gave books, book racks, reading lights, chairs. The house-shaped wooden book nest, is filled with 30 to 50 books, you can pick up a book while waiting for the bus.

The idea driving these miniature libraries is "Take a Book, Leave a Book". After Bhilar in Maharashtra, the project has given Perumkulam the title "Village of Books". The goal is to foster a reading habit in youngsters who are tech-obsessed as education is now online.

Globally Digital Humanities projects using library collections.

Frederick Douglass in Britain- resource uses historical newspapers, GIS and text mining .

Robots Reading Vogue- at Yale University Library, with the historical collection of 'Vogue' magazine, text and image data mining projects, demonstrates color tones, topic modeling, n-gram search, match wood blocks to their printers using VISE computer vision software from the John Rylands Research Institute and Library.

BBC News Visual Search - Using VIC computer vision software, demo of the large-scale on-the-fly

web search technologies at Oxford.

Paintings Visual search - Using VIC computer vision software, from photographs on the internet, find objects in paintings by learning classifiers at Oxford.

Data science and historical texts: meaning of modeling changes from Ancient Greek to web archives - The work which is completed is digitized and interpret accurately the historic collections with modern approaches for web archives and social media by Manchester University.

In Search of the Drowned: Testimonies and Testimonial Fragments of the Holocaust. Yale Fortunoff Archive, USC Shoah Foundation, United States Holocaust Memorial Museum. By using data mining, computational linguistics, visualization build a digital archive, with state-of-art digital technology, that documents the Holocaust from perspective of sufferer.

Text and data mining: At the University of Manchester
Transliteration of the Mary Hamilton papers (TEI)

Example of financial databases mapping
Visualization and computer vision: At Manchester University

Mapping the friends and collaborators of Jeff Nuttall
Multi spectral imaging at CHICC

Facial recognition techniques are used to compare portraits related with Shakespeare

11. Proposals

11.1. Recognize the situation and communicate the advantages

Directors /Managers/Curators who want to persuade stakeholders that crowdsourcing is appropriate must comprehend the unique circumstances and situations, how it might be interpreted, and how it is being applied in the particular area. Few stakeholders will view this new plan of action as an answer, while others will regard it as a danger. Managers will be better prepared to answer questions, handle inquiries, and oversee assumptions if they are familiar with major research. Highlighting the benefits of crowdsourcing extends beyond its anticipated cost-effectiveness. It underscores the invaluable expertise, diverse perspectives, enthusiasm, and unwavering commitment that volunteers can bring to an organization.

11.2. Choose a strategy and specify goals with clarity.

Crowdsourcing initiatives should have clear objectives that are valuable to both the institution and its users, and these objectives should be transparently communicated in the invitation to participate. Managers can identify potential tasks for volunteers in an online setting by assessing existing procedures and objectives that currently exceed the organization's available resources. With numerous strategies in use, there's been a notable surge in crowdsourcing projects driven by LI. Managers can gain insights by casually analyzing some of these projects and assuming a brief role in their evaluation.

11.3. Identify the crowd and comprehend their objectives

Engaging subject matter experts and enthusiasts through crowdsourcing can be a compelling strategy. Project teams can develop a system tailored to user needs by reaching out to expert groups early on and seeking to understand their motivations for participation. Throughout the project, valuable insights about the crowd can be gleaned through client registration, online feedback channels, and volunteer reviews and surveys. This ongoing learning can inform further enhancements to the participation platform. While existing networks can provide a starting point for building an online community, it's essential to allocate sufficient resources to foster and sustain an active community, particularly for long-term projects.

11.4. Support investment and involvement

Crowdsourcing projects should be structured in a way that is logical, meaningful, and engaging for volunteers. Whether utilizing modified or custom-built crowdsourcing software, it's essential that it effectively and efficiently supports the project's goals and volunteer involvement. Familiarizing oneself with Simon's (2010) research is advised to grasp the core concepts of designing for participation. Allocating resources for the project should include hiring or outsourcing to individuals or companies with expertise in design and usability, as well as for volunteer support, moderation, and maintaining equilibrium throughout the project duration.

11.5. Assessment

Measuring return on investment (ROI) in crowdsourcing for LIS can be particularly challenging due to the novelty of the business concept and the lack of established best practices within the industry. While new venture groups may draw insights from past endeavors, there remains an element of trial and error. While crowdsourcing initiatives can enhance an institution's reputation and foster considerable commitment and engagement, they may also yield less cost-effectiveness than initially anticipated. To maximize ROI, managers should allocate resources for client/user testing during pivotal phases and utilize web-based tracking to monitor volunteer behavior. Equipping individuals with the necessary skills to evaluate outcomes and implement crucial upgrades is essential. Additionally, allocating resources for ongoing volunteer recruitment and promotion throughout the project's duration is vital.

12. Conclusion

Libraries are often referred to as the core of any organization. Organizations and technologies that provide trustworthy and authentic information are crucial in the information era. The abundance of information and the paradigm shift from physical to digital libraries has made it challenging for libraries and information centers to demonstrate their relevance in the digital age. Currently, the concept of crowdsourcing is pertinent to libraries as it allows them to delegate certain tasks to an anonymous group of individuals who assist in completing the task while fostering a virtual community.

In general, crowdsourcing, libraries, and digital humanities are interconnected as they all aim to promote knowledge accessibility and encourage collaboration and interaction. Libraries may promote Digital Humanities research and encourage a wider range of people to take part in knowledge generation and dissemination by utilizing the power of crowdsourcing.

Digital humanities practices in Indian libraries are still developing, but there are many fascinating projects underway that are assisting in improving public and researcher access to the nation's rich cultural history. It aids in corpus construction, which requires strengthening, as well as projects to improve digital humanities tools.

Moreover, there is a growing recognition and understanding of the potential for crowdsourcing for the preservation, accessing, and sharing India's rich social legacy and cultural heritage. In general, crowdsourcing activities in Indian libraries are diverse and expanding.

CS in Libraries

- New Added Customary Services
- Refurbishing Common Library Services
- Regovernance of Library

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Indian Express

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