

Design and development of public crowdsourced heritage portal: Enhancing community engagement in Heritage conservation

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Introduction

Heritage conservation has become increasingly important in preserving the cultural, historical, and natural assets of nations, especially in countries with rich archaeological and cultural history such as Sri Lanka. However, traditional methods of managing and conserving heritage sites have limitations, primarily due to the lack of resources, inefficient monitoring, and insufficient public involvement. A promising approach to overcoming these challenges is through crowdsourced heritage portals. These portals enable local communities, tourists, and citizen scientists to actively engage in heritage conservation by submitting data, photographs, and condition reports about various heritage sites.

The development of a Public Crowdsourced Heritage Portal is designed to address these issues by enhancing community engagement and fostering collective responsibility for the preservation of heritage sites. This digital platform integrates user generated content with expert validation workflows to ensure the reliability of the collected data. By leveraging the power of crowdsourcing, the portal aims to strengthen the conservation process, increase awareness, and improve the management of heritage resources.

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Research Questions

The primary research questions that this study seeks to answer are:

1. How can a crowdsourced heritage portal improve community engagement in the conservation and management of heritage sites?
2. What are the challenges and benefits associated with implementing crowdsourced data collection for heritage conservation?
3. How effective are the data validation mechanisms in ensuring the reliability and accuracy of user-generated content on the portal?

Methodology

The development of the Public Crowdsourced Heritage Portal follows a multi-phase methodology, which includes the design, development, and testing of the platform.

1. **Platform Design:** The initial design phase focused on creating an accessible and user-friendly interface for both mobile and web platforms. The portal allows users to submit photos, geolocated condition reports, and descriptive data of heritage sites. Features such as easy navigation, real-time submissions, and direct access to location-based information were prioritized to increase usability.
2. **Crowdsourcing and Data Collection:** The portal was developed with a focus on enabling various user groups, including local communities, tourists, and students, to contribute data. Community engagement strategies were implemented to encourage active participation. Additionally, guidelines and tutorials were provided to help users understand how to contribute meaningful content.
3. **Data Validation Workflow:** A robust data validation system was integrated into the platform to ensure the quality and accuracy of the data collected. Once a user submits data, it undergoes an automated verification process based on location accuracy and consistency. Subsequently, the data is reviewed by local experts or site managers before being approved for public access.
4. **Testing and Evaluation:** After the initial rollout, the portal was tested in selected regions with active participation from local communities. User satisfaction and engagement levels were measured through surveys and platform usage analytics. Data

accuracy was evaluated by comparing user-submitted reports with expert assessments.

Results and Discussion

The pilot deployment produced 118 verified submissions across 12 heritage sites, including structural condition reports, geo tagged photographs, and visitor observations. A detailed analysis of submission patterns showed that 62% of contributions were made by local community members, while 28% came from university students participating in field projects, and 10% from tourists. The specificity and completeness of reports improved after introducing in-portal reporting guidelines, increasing average data quality scores from 72% to 89%. Furthermore, expert cross-validation indicated that 93% of crowdsourced entries aligned with professional assessments, demonstrating strong reliability. Common errors included incomplete descriptions and inaccurate geo tags, both of which were mitigated through the automated validation workflow.

These findings align with previous literature that emphasizes the value of digital crowdsourcing in heritage documentation. Harrison & Gill (2020) highlight that community participation strengthens heritage management, a trend reflected in the increased sense of ownership expressed by contributors in this project. Similarly, Smith & Waller (2018) demonstrate that digital tools improve the efficiency of archaeological site monitoring, which supports our observation that expert review time decreased due to structured and geo-validated submissions. The challenges identified, such as declining long-term engagement, Baker & Thompson (2019), who note that sustained participation often requires incentive-based engagement models. The results suggest that while the platform effectively enhances initial community involvement, long term engagement strategies and scaling mechanisms are essential to align with best practices observed in existing heritage crowdsourcing initiatives.

References

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