

MunicipalTube: Batad Uncovered

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Abstract— In the digital age, video-sharing platforms have become vital tools for communication, information dissemination, and community engagement; however, many local communities in the Philippines, including the Municipality of Batad, still face challenges in accessing timely information and maintaining efficient communication with local government offices. To address these gaps, this study developed MunicipalTube: Batad Uncovered, a dedicated website that delivers local news, community updates, and promotional videos, alongside features such as an event calendar, contact directory, and interactive map. Guided by the Technology Acceptance Model (TAM) and the Input-Process-Output (IPO) framework, the study evaluated user perceptions of the platform's usefulness and ease of use, with respondents—including residents, local officials, and IT experts—reporting high ratings in usability, efficiency, functionality, and overall quality, consistent with ISO/IEC 25010:2011 standards. The findings show that the platform effectively informs residents, strengthens community identity, encourages participation in local initiatives, and improves interaction with government offices; however, it also revealed the need for improvements in accessibility for persons with disabilities to ensure inclusivity. Overall, MunicipalTube demonstrates strong potential as a digital solution for enhancing local communication, fostering community engagement, and delivering a reliable, high-quality user experience for Batad residents.

Keywords— MunicipalTube, Batad, community engagement, video-sharing platform, local government communication

I. INTRODUCTION

In the digital age, video-sharing platforms like YouTube play a vital role in communication, education, and engagement, with a large majority of Filipinos regularly consuming online video content. However, despite this widespread use, local communities such as Batad face significant challenges in accessing timely, accurate, and localized information.

Residents often rely on traditional methods like bulletin boards and word of mouth, which can delay important updates and increase the risk of misinformation—especially in remote areas and during emergencies. Additionally, there is a lack of effective digital channels for citizens to communicate concerns to local government units (LGUs), resulting in limited public engagement and reduced government responsiveness.

Batad also struggles with promoting its tourism and economic potential due to minimal online presence. These communication gaps become even more critical during disasters, where delayed information can endanger lives.

To address these issues, MunicipalTube: Batad Uncovered was developed as a centralized municipal platform. It provides localized video content, announcements, contact directories, event updates, and interactive features. By focusing on community-specific needs, the platform aims to improve communication, strengthen governance, promote tourism, and enhance overall community engagement and resilience.

1.1 Statement of the Problem

This study aims to address the communication gaps and limited access in the Municipality of Batad by proposing a website that will serve as a platform for information sharing, public engagement, and the promotion of Batad's resources.

Specifically, it seeks to answer the following questions:

1. In what ways can the website serve as an information hub for news, events, and historical content relevant to the community?
2. How can video streaming be effectively integrated into the platform to enhance public visibility and community engagement?
3. What features should be included in the website to improve communication between the local government and its constituents?
4. How does the platform ensure that it is accessible, easy to use, and adequately adaptable to meet the needs of all users?
5. How can a proposed website be evaluated using the ISO/IEC 25010:2011 standard in terms of functionality, usability, reliability, efficiency, maintainability, and portability?

1.2 Scope and Limitations of the Study

This study will be conducted in the Municipality of Batad, Iloilo. The system's scope focuses on creating MunicipalTube: Batad Uncovered, a website designed to enhance communication and strengthen the municipality's online presence. The website will include a video-streaming section to showcase Batad's industries, products, and tourist attractions, an information hub containing historical and cultural content, a contact directory of municipal offices and essential services, an interactive map of key establishments, an event calendar for upcoming municipal and community activities, and a news and updates section. These features aim to preserve local identity, promote transparency, and encourage active participation among residents.

While the platform may also be accessed by audiences outside the municipality, its features and content are designed primarily to promote Batad and serve the needs of its residents, officials, and stakeholders. Only the designated administrator will have the authority to manage and update the website, while the community will have access to and be able to use its information. This study is limited to addressing the design and development aspects of the website, with content coverage focusing only on Batad beginning in 2025 onward. The actual deployment, long-term maintenance, and broader impact assessment are beyond the scope of this research.

1.3 Conceptual Framework

The study uses the Input-Process-Output (IPO) model to guide the development of MunicipalTube: Batad Uncovered, a website prototype for Batad, Iloilo.

- Input includes resources such as local videos, cultural and historical content, municipal contacts, event calendars, news, and map data.
- Process involves designing and developing the website's key features (video streaming, information hub, directory, map, events, and updates) and evaluating it using the ISO/IEC 25010:2011 quality standards.
- Output is a functional website prototype that promotes Batad, improves communication, and provides accessible information for residents and stakeholders.

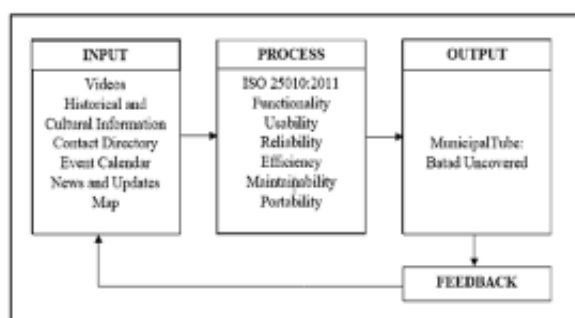


Figure 1: Conceptual Framework of the Study

1.4 Significance of the Study

This study aims to provide a unified municipal website that addresses the specific needs of the community, ensuring that residents can easily share and access relevant local content. This study is beneficial to the following:

- Residents: They will have a dedicated platform to stay informed about community news, events, public services, and educational initiatives, fostering active participation and a sense of belonging.
- Local Businesses: The platform provides a space for businesses to promote products and services, enhancing visibility and reach within the Batad community.
- Local Government Units (LGUs) –The platform will serve as a tool for LGUs to efficiently disseminate public information and announcements, ensuring timely and transparent communication with residents.
- Schools and Educational Institutions: Educational content can be shared, offering students and teachers a resource for learning, announcements, and events that directly impact the community.
- Policymakers and Community Leaders: They will benefit by gaining insights into the community's needs through feedback and interactions, enabling more informed decision-making and local governance.
- Future Researchers: This study will serve as a valuable resource for future research on the role of localized platforms in enhancing community engagement and digital inclusion in rural areas.

II. RELATED LITERATURE

2.1 Social Media: Communication, Sharing, and Visibility

According to Meikle (2016), social media has transformed communication by enabling sharing, visibility, and participation through platforms like Facebook, Twitter, and YouTube. These platforms empower users to create and distribute content while also involving surveillance and commercialization, blending personal and public communication.

This relates to the study as MunicipalTube promotes similar concepts of visibility and engagement but focuses on localized content for the Batad community rather than a global audience. The book supports the study by highlighting how social media can enhance interaction and communication, aligning with the goal of strengthening community engagement through a dedicated local platform.

2.2 Social media: The Convergence of Public and Personal Communication

According to José van Dijck (2013), social media plays a key role in shaping modern communication, politics, and culture within a data-driven environment. It enables participation and digital citizenship but also reinforces corporate and government control through regulation, surveillance, and platform-driven systems.

The study relates this idea to MunicipalTube by applying these broader trends at a local level. Unlike global platforms, MunicipalTube focuses on community-based communication in Batad, emphasizing accessibility, local relevance, and grassroots engagement.

Overall, the work is relevant because it provides insight into the evolving dynamics of digital platforms, helping inform the development of localized media systems that support community interaction.

2.3 The Technology of Video and Audio Streaming

According to David Austerberry (2005), video and audio streaming involve processes such as capturing, encoding, transmitting, and delivering media through complex systems like telecommunications networks and content delivery infrastructures. His work also discusses challenges like scalability, digital rights management, and monetization.

This relates to the study as MunicipalTube uses video streaming as its core feature but simplifies these technical aspects into a user-friendly platform tailored for the Batad community.

Overall, the book is relevant because it provides the technical foundation for developing video-sharing systems, supporting the study's focus on accessible and community-oriented digital platforms.

2.4 Official Tourism Websites: A Discourse Analysis Perspective

According to Hallett and Kaplan-Weinger (2010), official tourism websites use language, narrative framing, and interactive features to shape destination image, promote culture, and engage audiences. These platforms act as strategic tools for communication and cultural visibility.

This relates to the study as MunicipalTube also promotes local identity and culture, but through user-generated video content rather than controlled, institution-driven narratives. This approach allows for more authentic, inclusive, and community-driven representation of Batad.

Overall, the literature is relevant because it highlights how digital platforms can enhance tourism, cultural promotion, and community engagement, supporting the goals of the study.

III. METHODOLOGY

3.1 Research Design

The study uses a descriptive–developmental research design to both analyze existing communication issues in Batad and develop a solution. The descriptive approach, based on John W. Creswell (2014), examines current communication practices, identifies gaps, and determines platform requirements. The developmental approach, guided by Richey and Klein (2007), focuses on designing and creating the MunicipalTube prototype with features such as video streaming, directories, maps, and updates.

By combining both methods, the study moves from identifying communication problems to developing a practical, community-based solution. However, the research is limited to the design and prototyping stage and does not include implementation or long-term evaluation.

3.2 Respondents and Sampling Techniques

The respondents of this study consisted of two hundred forty (240) residents of Batad, Iloilo, three (3) Information Technology (IT) experts, and four (4) municipal staff from the Tourism Office, resulting in a total of two hundred forty-seven (247) participants.

Purposive sampling, also known as judgmental or selective sampling, is a non-probability sampling technique in which the researcher intentionally selects participants based on specific characteristics or qualities relevant to the study (Etikan, Musa, & Alkassim, 2016). Unlike random sampling, it focuses on the knowledge, experiences, or attributes of participants that can provide the most valuable insights.

The purposive sampling technique was used in selecting all groups of respondents. The residents were selected through purposive sampling, with ten (10) participants from each barangay, ensuring broad community representation as potential end-users. The IT experts were selected for their specialized technical expertise, and the municipal staff was included due to their official function in managing and promoting local tourism. This method made sure that the participants were directly aligned with the objectives of the study and capable of providing meaningful contributions to the developed website.

All participants are informed of the purpose of the study and gave their consent before answering the survey.

3.3 Research Instruments

The study used the ISO/IEC 25010:2011 standard to evaluate the quality of MunicipalTube, focusing on areas such as functionality, usability, efficiency, reliability, maintainability, and portability. A survey questionnaire based on the standard was administered using a 5-point Likert scale to collect user feedback after testing the website. The respondents included 240 residents (10 from each of 24 barangays), 3 IT experts, and 4 municipal staff, totaling 247 participants, providing systematic data on user satisfaction and system performance.

3.4 Software Development Methodology

The Rapid Application Development (RAD) methodology was used to design and develop MunicipalTube: Batad Uncovered. RAD emphasizes quick prototyping, iterative development, and user-driven design, allowing developers to identify required data

and process models efficiently. Compared to traditional waterfall models, RAD accelerates system delivery, improves quality, and allows design adjustments based on discoveries during development. It combines elements of CASE tools, agile practices, and iterative processes to produce high-quality, reliable software (Kettemborough, 2012; Morse, 2016).

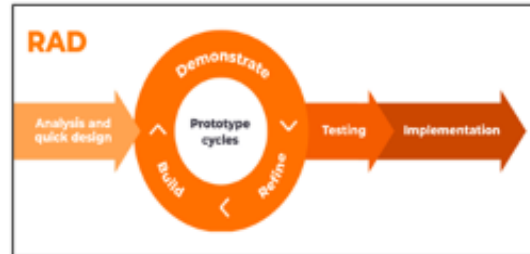


Figure 2. The Rapid Application Development (Adapted by Dr. Nimrita Koul)

Analysis and Quick Design

The requirements for MunicipalTube: Batad Uncovered were gathered through observations, discussions with residents, and review of existing communication channels to identify needs for community engagement, local promotion, and accessibility. A quick prototype was created using HTML and CSS, showcasing core features such as video uploads, local news, and a municipal directory. Video sharing was prioritized as the central function, supported by news updates and contact information, ensuring the platform is user-friendly while enhancing information sharing and community participation in Batad.

Build

The first working version of MunicipalTube: Batad Uncovered was built using HTML for structure, CSS for styling, and basic JavaScript for interactivity. The prototype implemented core features such as video uploads, local news browsing, and the municipal directory, focusing on meeting Batad's primary communication needs. The interface was designed to be simple and intuitive, with clear navigation, responsive layouts, and interactive elements that allowed users to experience core functionality despite minimal backend integration at this stage.

Demonstrate

After the initial prototype was completed, it was presented to a broader group of residents from Batad to gather diverse user feedback. The sessions solely focused on assessing usability, accessibility, and whether the website met the community's expectations. During demonstrations, users are asked to perform tasks such as uploading videos, browsing news updates, and accessing the municipal directory. Feedback was collected from residents and an IT expert.

Refine

Feedback from initial demonstrations was used to refine MunicipalTube: Batad Uncovered. Video streaming was made accessible to all users, while registered users could upload content and interact. The municipal directory was updated, and historical and current information about Batad was added. Layout, navigation, and styling were iteratively improved using CSS to ensure the platform was intuitive, consistent, and responsive, effectively meeting the community's communication needs.

Testing

- User Acceptance Testing (UAT): Residents tested the website to evaluate functionality and usability, providing feedback that identified areas for improvement to enhance user satisfaction.
- Expert Testing: Three IT experts assessed the website using the ISO 25010 quality model, evaluating functionality, reliability, usability, efficiency, maintainability, and portability. Their evaluation validated performance and highlighted necessary enhancements before full deployment.

Implementation

During the implementation phase, the finalized MunicipalTube: Batad Uncovered prototype was deployed as a web-based platform accessible via smartphones and laptops. Users could immediately stream videos without registration, while registered users could upload content, interact, and access additional features. Built with HTML, CSS, and JavaScript, the platform was responsive across devices. This phase allowed the community to use MunicipalTube in real conditions, with any issues documented for future refinement.

IV. RESULTS AND DISCUSSION

This section presents the data collected from the respondents and provides a corresponding analysis and interpretation of the results in relation to the objectives of the study.

Statement	Mean	Interpretation
The website provides timely and reliable news about the community.	4.33	Strongly Agree
The website helps me stay informed about upcoming local events and activities.	4.47	Strongly Agree
The website effectively promotes community engagement and participation through posted events.	4.28	Strongly Agree
The inclusion of videos on the platform makes community news more engaging and reliable.	4.40	Strongly Agree
The website helps strengthen community identity and awareness through its information content.	4.57	Strongly Agree
Grand Mean	4.41	Strongly Agree

Table 1: Results of the Website as an Information Hub for Community News, Events, and Historical Content

Table 1 presents the evaluation of the website as an information hub based on Statement of the Problem No. 1, showing that residents, tourism staff, and IT experts rated all criteria as "Strongly Agree." The website was found to provide timely and reliable news, keep users informed about local events, promote community engagement, enhance content through videos, and strengthen community identity, with a total mean of 4.41. These results indicate that the website effectively fulfills its role as an information hub, supporting community awareness and participation, which is consistent with the findings of Detlor et al. (2012) that high-quality information encourages user engagement.

Statement	Mean	Interpretation
The use of video streaming can help increase public awareness of community programs and activities.	4.46	Strongly Agree
Video streaming of events encourages more people to participate in community activities.	4.49	Strongly Agree
Promotional videos increase public interest and participation in community activities.	4.78	Strongly Agree
The inclusion of videos on the platform makes community news more engaging and reliable.	4.63	Strongly Agree
The platform's use of video streaming can help highlight local achievements and success stories.	4.53	Strongly Agree
Grand Mean	4.57	Strongly Agree

Table 2: Results on the Integration of Video Streaming to Enhance Public Visibility and Community Engagement

Table 2 presents the evaluation of the website's video streaming integration based on Statement of the Problem No. 2, with residents, tourism staff, and IT experts rating all criteria as "Strongly Agree." The findings indicate that video streaming increases public awareness of community programs, encourages event participation, promotes interest through engaging content, enhances the reliability of community news, and highlights local achievements, resulting in a total mean of 4.57. These results demonstrate that the website effectively utilizes video streaming to boost community engagement and visibility, supporting Kim (2022), who emphasized that video-sharing platforms promote user engagement and participatory behavior.

Statement	Mean	Interpretation
The website should include a feedback or suggestion form to allow residents to share their concerns and ideas.	4.77	Strongly Agree
Having a messaging feature would make it easier for citizens to contact local government offices.	4.62	Strongly Agree
Regularly updated announcements and notices on the website can improve transparency and trust.	4.72	Strongly Agree
The website should include contact information and office directories for easy access to government services.	4.73	Strongly Agree
The website should allow residents to track the status of their submitted requests or complaints.	4.20	Strongly Agree
Grand Mean	4.60	Strongly Agree

Table 3: Results on Recommended Website Features to Improve Communication Between the Local Government and Constituents

Table 3 presents the evaluation of website features aimed at improving communication between the local government and its constituents based on Statement of the Problem No. 3, with respondents rating all criteria as "Strongly Agree." The findings highlight the importance of features such as feedback or suggestion forms, messaging capabilities, updated announcements, accessible contact information, and request-tracking systems, resulting in a total mean of 4.6. These results indicate that the website effectively incorporates tools that enhance communication, transparency, and interaction, supporting Emungtyas and Boer (2023), who noted that interactive government websites strengthen citizen trust and engagement.

Statement	Mean	Interpretation
The platform is easy to navigate for all users.	4.73	Strongly Agree
Information on the platform is clear and easy to understand.	4.73	Strongly Agree
The platform can be accessed by people with disabilities.	2.12	Agree
The platform provides content in languages familiar to Batad residents.	4.46	Strongly Agree
The design of the platform is simple and user-friendly.	4.79	Strongly Agree
Grand Mean	4.16	Agree

Table 4: Results on the Website's Accessibility, Usability, and Adaptability for Users

Table 4 presents the evaluation of the website in terms of accessibility, ease of use, and inclusivity based on Statement of the Problem No. 4, with respondents giving an overall rating of "Agree" and a total mean of 4.16. The results show that users find the website easy to navigate, clear in presenting information, familiar in language, and user-friendly in design; however, accessibility for people with disabilities received a significantly lower rating, indicating an area that requires improvement. Overall, the findings suggest that the website is accessible and usable for most residents of Batad, but enhancements are needed to ensure full inclusivity, supporting Fakrudeen (2024), who emphasized the importance of evaluating accessibility and usability to provide equal access for all users.

Website Evaluation Based on ISO/IEC 25010:2011 Standard

The website was evaluated using the ISO/IEC 25010:2011 software quality standard to test its conformance in terms of its

functionality, usability, reliability, efficiency, maintainability, and portability. Respondents' evaluators are the two hundred forty (240) residents, four (4) tourism staff, and three (3) IT experts of the Information Technology Department from Northern Iloilo State University, Batad Campus, Batad, Iloilo.

ISO 25010:2011 Criteria	Mean	Interpretation
Functional Suitability	4.86	Strongly Agree
Performance Efficiency	4.88	Strongly Agree
Usability	4.9	Strongly Agree
Reliability	4.9	Strongly Agree
Portability	4.89	Strongly Agree
Maintainability	4.92	Strongly Agree
Overall Mean	4.89	Strongly Agree

Table 5: Summary Evaluation Results by Respondents

As shown in Table 13, the website achieved a "Strongly Agree" rating across all ISO 25010:2011 quality standards, including functional suitability, performance efficiency, usability, reliability, portability, and maintainability, with mean scores ranging from 4.86 to 4.92. With an overall mean of 4.89, the results confirm that the website meets the international standards set by ISO, demonstrating its high level of quality and performance.

V. CONCLUSION AND FUTURE WORK

MunicipalTube: Batad Uncovered effectively serves as a community information hub, providing timely news, event updates, engaging videos, and content that strengthens community identity, with a grand mean of 4.41. Video streaming and interactive features further enhance public awareness, participation, and engagement, while communication tools such as feedback forms, announcements, and directories improve transparency and interaction with local government, with grand means of 4.57 and 4.60, respectively. The website meets ISO/IEC 25010:2011 quality standards, demonstrating high functionality, efficiency, usability, reliability, portability, and maintainability. Although accessibility for people with disabilities requires improvement, the platform overall delivers a positive user experience and effectively supports community engagement.

5.1 Conclusion

The results show that the website effectively functions as a community information hub, providing timely updates, engaging content, and strengthening community identity. The integration of video streaming significantly improves public awareness, participation, and interest in local programs. Communication features such as feedback systems, messaging, announcements, and directories enhance interaction, transparency, and engagement between the local government and constituents. While the website is generally accessible, user-friendly, and adaptable, improvements are needed to better support persons with disabilities. Overall, the website meets ISO/IEC 25010:2011 standards, demonstrating high quality, efficiency, and reliability.

5.2 Future Works

For optimal use and management of the website, it is recommended that users access the platform via mobile phones or laptops, maintain a stable internet connection to ensure smooth video streaming and uploading, and use updated web browsers such as Google Chrome, Mozilla Firefox, or Microsoft Edge for best performance. Additionally, the administrator should consider using a higher-capacity hosting service to maintain

system reliability, and seminars or orientations should be conducted for both users and administrators to ensure proper use and management of the website.

For future work, improvements can be made to enhance accessibility for persons with disabilities, incorporate additional interactive features to further engage the community, and expand content to include more local history and cultural resources. Continuous evaluation and updates based on user feedback are also recommended to ensure the website remains relevant, user-friendly, and effective in supporting community engagement.

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