Designing a Content Management System-Based Village Profile Website for Tanjung Pule to Improve Transparency and Information Services

[1]Pamuji
[1]UIN Raden fatah Palembang, Indonesia

[1]Khalista Azzahara Pratamia*
[1]UIN Raden Fatah Palembang, Indonesia

[1]M Fahmi Abdillah
[1]UIN Raden Fatah Palembang, Indonesia

[1]Alif Ithisam
[1]UIN Raden Fatah Palembang, Indonesia

[1]Muhammad Fahri Utama
[1]UIN Raden fatah Palembang, Indonesia

Abstract,
The rapid advancement of information technology has created an urgent need for village governments to deliver information in a fast, accurate, and transparent manner. Tanjung Pule Village has significant local potential; however, it previously lacked an official digital platform to present its profile and publish information on village activities. This study aims to design and implement a village profile website based on a Content Management System (CMS) using the Next.js framework. The implementation methods consisted of field observation, analysis of the needs of village officials, system design and development, and a socialization phase to support its adoption by village administrators. The outcome of this community service activity is a dynamic, responsive, and easily manageable village information portal that does not require advanced programming skills for operation. The website has increased the efficiency of disseminating village programs and documenting community activities, including social initiatives such as cleaning places of worship and teaching the Qur'an. In addition, the website plays an important role in strengthening the digital presence of Tanjung Pule Village and improving transparency and public information services.

Keywords: Village Website, CMS, Digitalization

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*Correspondence: khlstzhraa.05@gmail.com
Correspondence author Khalista Azzahara Pratamia
Correspondence Author UIN Raden Fatah Palembang, Indonesia

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INTRODUCTION

The digital era demands that village governments provide fast, accurate, and transparent information to the public to improve the effectiveness of public services as a whole (Ovie Yanti et al., 2025). Increasingly sophisticated information technology has created computer-based information systems that simplify data processing and impact time efficiency and work effectiveness (Anggiawan et al., 2018). Current technological developments are crucial for development in the millennial era or the current digital era (Nafis et al., 2023). Villages are no longer simply the smallest administrative units, but entities with economic and social potential that need to be widely publicized. However, the reality is that many villages still face obstacles in conveying public information effectively. Tanjung Pule Village, as the location of the Community Service Program (KKN), has great potential but does not yet have an official digital platform. This lack of information media has resulted in publications regarding village profiles, organizational structures, and documentation of social activities being disorganized. The absence of an official website will severely limit the optimization of village potential promotion (Pratomo Manalu et al., 2026).

This community service activity aims to design and implement a *Content Management System* (CMS)-based Tanjung Pule Village profile website as an effort to accelerate the digitalization of information services. Content in a CMS refers to modifying the type of information in textual, graphic, image, or other formats (Ismawan et al., 2020). This activity strengthens several previous community service programs that have extensively digitized villages but often face challenges in post-KKN sustainability. As explained in the information system design concept, the use of a CMS is crucial for bridging the technical competency gap between developers and users in the field (village officials).

The novelty of this community service activity lies in the use of the modern **Next.js** *framework* integrated into the CMS system. The use of a **Next.js -based web** as a framework in building this site is the right choice, because **Next.js** enables fast, efficient web development and supports high performance (Hakeem & Pohan, 2024). This ensures that the village website remains light to access even in areas with limited internet connectivity, while still making it easy for village officials to update content independently. The internet has now become an inseparable part of our lives (R & Hasugian, 2022). With this approach, the village website is not just a digital display, but a dynamic instrument that can support the independence of information management in Tanjung Pule Village on an ongoing basis.

The Tanjung Pule Village profile website is designed with various functional features focused on providing comprehensive data and information services. The main features available include the Village Profile containing the history and vision and mission, the Village Apparatus Organizational Structure to transparently identify the village government ranks, and the News Portal feature that serves as a medium for the latest information on policies and activities in the village environment. In addition, there is an Administration Service feature that provides guidance on procedures for processing correspondence for residents, and a Contact feature that makes it easier for the public to contact the village directly. The presence of these various features is not merely a digitalization of static data, but a strategic step in governance. In addition to increasing the transparency of village government, this website is also expected to increase public involvement in the decision-making process, while also becoming a communication empowerment platform for villagers in the digital era (Bintara et al., 2024), building effective two-way communication between the village government and residents, especially in the increasingly developing digital era (Nur et al., 2023). With the availability of these features, the village government now has a powerful instrument to maintain an open and accountable flow of information to all elements of society.

METHOD

The implementation of this community service activity is carried out through a direct technological assistance approach to village officials by applying the *System Development Life Cycle* (SDLC) framework. The SDLC *Waterfall method* is one method that has the characteristic that the work on each *phase* must be done first before proceeding to the next *phase* (Steven et al., 2018), making it very ideal for application in designing information systems in the scope of village population administration. The (Rijanandi et al., 2022).course of this activity is specifically divided into several stages as follows:

1. The initial preparation stage was carried out through interview methods and direct observation in the field to identify business processes in village government and collect raw data regarding the profile of Tanjung Pule Village.
2. The analysis stage (*Requirements Analysis*) is carried out to process the data that has been obtained to determine the system functionality specifications, user needs, and content structure that will be presented on the village profile website.
3. The interface design stage (*Design Interface*) focuses on designing the layout *and* visual aesthetics of the website using *User Experience* (UX) principles so that it is responsive and easy to use by village officials and the general public.
4. The system development stage (*Development*) is carried out by implementing the design results into programming code using the Next.js *framework* which is integrated with a *Content Management System* (CMS) based on dynamic content management.
5. *testing and deployment* phase is carried out through functional trials to ensure that all features run without problems (*bug-free*) before the website is finally uploaded to the *hosting server* so that it can be accessed publicly.
6. The socialization stage is carried out by providing education and technical training to village officials on how to manage website content independently through the CMS admin panel as a form of system maintenance.
7. The final stage is the handover of access control and technical documentation of the website to the Tanjung Pule Village government as a sign of the completion of the main community service work program.

RESULTS AND DISCUSSION

The result of this community service activity was the creation of an official digital information portal for Tanjung Pule Village, accessible to the public. Through the SDLC stages implemented, this website successfully integrated various village information previously available only in physical form into a dynamic digital format. Websites are a form of new media that is the right choice for taking the first step (Wardhani et al., 2022). The discussion of the results of this activity is outlined based on the main achievements of each stage of the work program implementation.

Figure 1. Digital Information Portal of Tanjung Pule Village

In the initial stage, the results of the analysis and interface design showed that the main need of village officials was the ease of updating daily news and village profiles. Therefore, the interface was designed with simple yet modern navigation, prioritizing readability on mobile devices considering that the majority of villagers access information via mobile phones. Implementation using the Next.js *framework* provided significant results in page load speed (*load time*), which is crucial for accessibility in village areas with varying internet signal strengths, considering that Next.js has the advantage of stable performance on *Server Side Rendering.(Hermanto & Engel, 2025).*

Figure 2. Documentation of the Work on the Tanjung Pule Village Profile Website

The *Content Management System* (CMS) developed allows village administrators to manage content independently. A thorough testing phase was conducted to ensure the system's quality and functionality before full implementation. This testing process utilized the Black Box Testing method , *where* the authors focused on testing the input and output of each available feature, such as validating service form completion

and the accuracy of news content updates on the CMS admin panel. The Black Box Testing method is a method that tests the software that has been built, both testing small units and integrated results to test the software's functionality (Abdillah et al., 2023). Based on the functional testing , all features such as the profile menu, organizational structure, and news portal ran stably without any significant technical issues before finally being deployed *to* the public server.

The culmination of this activity was the socialization and training phase attended by village officials. Observations during the training showed an increase in digital literacy among village officials in operating the CMS admin panel. Village officials are now able to upload news articles independently without requiring technical assistance from developers. *The website* must be designed as economically as possible using human-centered design principles , making it easy for people to use (Mz, 2016). The *activity* concluded with a formal handover of the admin account to the Head of Tanjung Pule Village. The existence of this website is not only an information medium, but also a sustainable digital asset that supports the independence of Tanjung Pule Village in managing its information data in the future.

Figure 3. Group Photo and Website Submission to Village Officials

CONCLUSION

In conclusion, the community service activities carried out through the KKN program in Tanjung Pule Village successfully contributed to the digitalization of the village profile through the design and implementation of a Content Management System (CMS)-based website using the Next.js framework. This system offers a practical solution to the previous limitations in village information dissemination by providing a platform that is fast, responsive, and easy for village officials to manage independently. The successful completion of the SDLC stages, ranging from needs analysis and system design to implementation and socialization, demonstrates that the program not only produced a functional digital platform but also enhanced the digital literacy of village administrators and supported greater transparency in public information services.

For sustainability, the Tanjung Pule Village government is expected to maintain and regularly update the website content so that it continues to function as a relevant, accessible, and accountable source of information for the wider community. In the long term, this initiative may serve as an important step toward strengthening village digital governance and improving the quality of public services in the digital era.

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AUTHOR CONTRIBUTION STATEMENT

P supervised the project and provided guidance. MFU developed the system and technical solutions. MFA and MA I designed the program and research materials. KAP performed the data analysis and evaluation. MFU and KAP wrote the original draft. All authors reviewed and approved the final manuscript.

CONFLICT OF INTEREST AND FUNDING

There is no conflict of interest

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