Digital Transformation of Community Activity Governance through Web-Based Documentation System Development at Karang Taruna RW 012 Jatiwaringin

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ABSTRACT

Amid the growing demand for transparency, accountability, and efficiency in managing social activities, the adoption of digital systems has become a strategic solution for improving organizational governance through integrated data and documentation. This community service program was designed to support the digital transformation of Karang Taruna RW 012 Jatiwaringin by developing a web-based documentation system called RW Smart Hub. The program aimed to enhance administrators' digital literacy, improve the efficiency of activity management, and strengthen community engagement in the digital era. It was implemented through five participatory stages: socialization, training, technology implementation, mentoring and evaluation, and sustainability strengthening. Quantitative results showed that participants' understanding of digitalization concepts and documentation management increased significantly, from 25% before the training to 60% after, indicating a 35% improvement in digital literacy levels. Additionally, 80% of participants agreed that the system was easy to use, relevant, and beneficial for their organizational activities. The system implementation also enabled 50% of organizational activities to be documented and published digitally, contributing to improved accessibility and transparency. These outcomes demonstrate that digital transformation at the community level effectively enhances governance quality, inclusivity, and participation. This community-based digitalization model can serve as a scalable reference for improving transparency, efficiency, and participation in youth organizations.

INTRODUCTION

The rapid advancement of digital technology has transformed various aspects of social life and requires every segment of society to adapt, including youth-based organizations such as Karang Taruna. In the midst of global digitalization, the community's ability to manage activities in a modern, data-driven manner has become an important indicator of social progress (Firman, 2021; Sukmana, 2022; Triatmanto et al., 2024). Based on field observations conducted in RW 012, Jatiwaringin Village, Bekasi, Karang Taruna is identified as an active social community organization that consistently carries out various social, educational, and youth empowerment programs contributing to local social development. However, the management and documentation of activities within this organization are still carried out manually, without systematic digital integration. This condition limits the efficiency of internal operations and reduces the visibility of Karang Taruna activities in the digital public sphere.

These circumstances underline the importance of digital transformation for Karang Taruna to improve the quality of governance, transparency, and public engagement (Astna et al., 2025; Panai et al., 2025; Triatmanto et al., 2024). Therefore, this community service program was designed to facilitate the digital transformation process through the development of a web-based information system named RW Smart Hub. The system aims to assist administrators in managing activity schedules, documenting events digitally, and publishing reports and multimedia content effectively. The key objectives of this initiative are to enhance the digital capacity of administrators, build an integrated documentation system, and promote a culture of digital literacy and information transparency within the community (Prayitno et al., 2021; Sariningsih et al., 2024). By implementing this system, Karang Taruna is expected to adapt more effectively to technological developments and perform its social functions in a more efficient, transparent, and sustainable manner.

Community digital transformation has been proven to strengthen social inclusion and improve the efficiency of public governance—a study conducted by Y. Yusman et al. (Yusman et al., 2024) showed that the application of information technology at the community level can increase citizen engagement and the effectiveness of public services. Furthermore, Mayasari R et al. (Mayasari et al., 2025) emphasized that digital literacy has a significant influence on youth participation in social activities, while Nisa N et al. (Nisa & Nainggolan, 2024) explained that information technology functions as a catalyst in increasing the capacity of community organizations. Based on these studies, information system-based interventions at the RW level are considered relevant for use as a pilot model in building modern, participatory, and effective community governance.
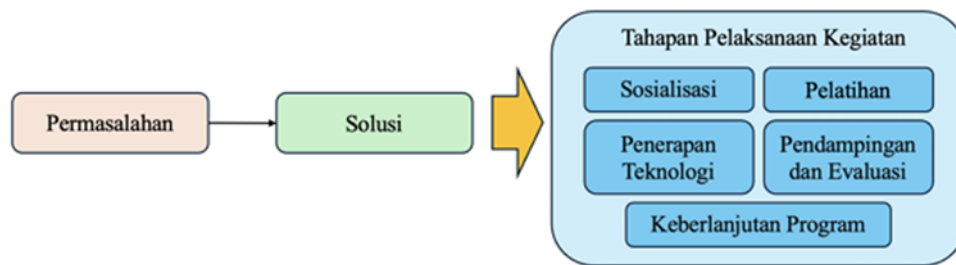
The implementation of this program was driven by the absence of a digital information system that could support Karang Taruna in managing its activities in a structured and efficient way. In addition, the limited ability of administrators to utilize information technology and the generally low level of digital literacy among younger members have hindered efforts to document and disseminate activities effectively in digital spaces. To address these challenges, this program proposes the development of a web-based RW 012 Jatiwaringin Information System, designed as a collaborative platform that enables administrators to manage activity schedules, documentation, and publication of digital content efficiently.

This initiative adopts a cross-disciplinary approach. The field of Information Systems contributes to the design and development of digital features such as data management, content organization, and user accessibility. Computer Science supports backend development, system testing, and digital performance optimization. Informatics Engineering ensures technological infrastructure readiness, including connectivity and device compatibility (Rullah et al., 2025). From a management perspective,

expertise is applied to training design, workflow formulation, and the sustainability of system implementation (Sulaeman, 2025). Meanwhile, Digital Business provides strategic input on content management, organizational branding, and optimization of online promotional channels (Manera & Muizu, 2025). Through training and mentoring activities, this community service initiative aims not only to enhance the technological competence of Karang Taruna administrators but also to provide an adaptive digital infrastructure tailored to the needs of the community. Ultimately, Karang Taruna is expected to transform into a strong, professional youth organization and a pioneer in promoting community digitalization models within the Jatiwaringin area.

METHOD

The implementation of solutions for Karang Taruna partners is carried out through systematic stages based on a participatory and sustainability-oriented approach (Figure 1). This process includes five main stages: socialization, training, technology implementation, mentoring and evaluation, and Program sustainability (Çevik et al., 2025). Each step is designed not only to resolve technical issues but also to foster understanding and independence in managing community digital systems.

FIGURE 1. Stages of Implementation of Activities at Karang Taruna RW 12 Jatiwaringin

Stage 1: Program Socialization

The initial phase of the program began with a socialization of the program to the Karang Taruna (Youth Organization) management and local neighborhood leaders. At this stage, the implementation team conveyed the program's objectives, benefits, and comprehensive activity plan so that all parties understood the direction and urgency of the activities to be carried out. Furthermore, the socialization session was used to explore partners' expectations and willingness to actively participate in each stage of the program. The results of this discussion served as the basis for agreeing on roles, determining the activity schedule, and establishing a collaborative commitment between the implementation team and partners to ensure the program ran effectively and met its targets.

Stage 2: Training

This training focused on improving the capacity of Karang Taruna administrators in managing digital documentation and publication of activities. The program was attended by 20 participants from the partner organization, Karang Taruna RW 012, and was conducted over two sessions, each lasting approximately five hours. Before the implementation, participants were asked to complete a pre-test to assess their initial understanding of digital documentation and publication processes. After the training, a post-test was administered to evaluate the improvement in participants' knowledge and to analyze the effectiveness of the training.

The training included workshops on using a digital dashboard for activity recording and documentation, as well as developing skills in creating simple digital content such as articles, social media posts (Instagram feeds), and short videos. Participants also engaged in system-use simulations to support managerial and publication needs, enabling them to independently apply the system after the training concluded.

Stage 3: Application of Technology

The implementation team implemented a web-based information system equipped with agenda management features, a documentation gallery, and activity news publications. Furthermore, Karang Taruna's digital publication channels were activated through the creation of a website and official social media accounts to expand the reach of information to the public. The system design was also adjusted to suit the characteristics, needs, and digital literacy levels of partners, ensuring optimal and sustainable use of the system.

Stage 4: Mentoring and Evaluation

Mentoring and evaluation, where the implementation team regularly provides mentoring to Karang Taruna administrators on data entry, content updates, and information system usage. Monitoring is carried out by observing achievement indicators such as the number of published content, the level of community participation, and the frequency of activity on the digital dashboard. At the end of the activity, a joint evaluation is conducted in the form of feedback and an assessment of the achievement of objectives, both from the implementation team and partners, to determine the effectiveness of the program.

Stage 5: Program Sustainability

As a final step, activities focused on program sustainability so that the results of the community service could continue to benefit Karang Taruna. The team developed a system usage guide and a digital management Standard Operating Procedure (SOP) document as a reference for administrators. Additionally, a local administrator was appointed to manage the post-program system, along with the development of a content plan and agenda for future activities to ensure Karang Taruna's digital activities continue to run and develop independently.

This program uses a collaborative-participatory approach, developing a web-based information system that responds to partners' actual needs. The scope of work is adjusted according to priorities, such as activity management, documentation, and publication. Active partner participation is key to the system's sustainability.

The series of activities to be undertaken aims to directly address the primary issue facing Karang Taruna RW 012 Jatiwaringin: the lack of a digital system to support community activity management and publications. These activities are divided into six main stages:

   Problem Identification and Verification

Direct observation of partner environments. Focus group discussions (FGDs) with Karang Taruna administrators. Problem mapping and prioritizing solutions based on real needs in the field.

- Technology Solution Design

Design a web-based information system for community activity management. Key features include: an admin dashboard, agenda management, visual documentation, and publication channels. Involve partners in the co-design process to ensure relevance and usability.

- System Development and Testing

System prototype development by students and lecturers. Limited trials with Karang Taruna administrators to test user experience and feature effectiveness.

- Training and Technical Assistance

Information system usage workshops for Karang Taruna administrators. Training in creating content for articles, social media feeds, and video documentation. Provision of guidance modules and regular technical consultation sessions.

- Implementation and Monitoring

Final evaluation by gathering feedback from partners. System refinement and development of advanced features. Development of standard operating procedures (SOPs) for system use and a post-program sustainability plan.

The active participation of Karang Taruna partners in RW 012 Jatiwaringin is the main foundation in the implementation of this program. From the initial stage, Karang Taruna administrators were involved in the process of identifying problems and developing solutions through structured discussions and a participatory approach. This involvement continued through the training and technology implementation stages, where partners helped operate the information system, enter activity data, and manage the community's digital channels. The direct involvement of partners in the digital transformation process has been proven to strengthen the sense of ownership of the system being built (Das, 2024), which is one of the keys to the success of community-based development.

Program evaluation is conducted periodically through monitoring monthly achievement indicators, such as the number of published content, the intensity of system use, and the quality of digital documentation. In addition to technical evaluations, the implementation team also records the development of partners' capacity in managing activities digitally and the level of community involvement. To ensure sustainability, the program prepares SOP documents for system use, provides independent follow-up training, and appoints administrators as local administrators. This sustainability model refers to the principle of community-driven development, which emphasizes the importance of knowledge and role transition (Zhou et al., 2025), so that the program's impact does not stop at the implementation period but continues to grow according to community needs.

RESULTS AND DISCUSSION

The community service program with Karang Taruna RW 012 Jatiwaringin will be implemented in stages from September to December 2025. The program will be implemented in stages using a participatory approach, involving Karang Taruna administrators as key partners in each process. The main stages include outreach, training, system implementation, mentoring, and sustainability evaluation.

Socialization and Needs Analysis

The socialization phase was conducted through an initial meeting in the neighborhood association (RW) hall, attended by administrators and community leaders. During this meeting, the implementation

team introduced the concept of the RW Smart Hub, a web-based information system to support digital organizational governance.

FIGURE 2. Socialization of Activities

The discussion revealed that youth organization administrators still manually record activities when publishing them. This finding confirms low digital literacy levels and the need for an integrated, user-friendly system for administrators.

In addition to conveying the program's goals and benefits, this session also produced a map of key feature needs, such as: an activity management dashboard, photo and video documentation gallery, activity news channel, and internal RW announcement features.

Digital Literacy Training

The digital literacy training involved 20 participants from Karang Taruna RW 012, conducted over two sessions, each lasting approximately five hours. To measure learning outcomes, participants completed a pre-test before the training and a post-test afterward. The pre-test evaluated their baseline knowledge of digital documentation, while the post-test assessed improvement in digital literacy and practical skills.

The training and mentoring stage is carried out through several training sessions, which include the use of digital dashboards for activity catalog management, training in creating activity articles and social media content, and a digital documentation management workshop.

FIGURE 3. Implementation of training

Results showed a substantial increase in participants' understanding of digitalization concepts and skills in activity documentation. Participants showed a significant increase in understanding from an average of 25% before training to 60% after training, reflecting a significant increase in digital competence. This improvement aligns with theories of participatory learning. The following tables summarize participants' responses before and after the training, a total of 20 participants (n = 20).

TABLE 1. Pre-Test Questionnaire Data (n=20)

Question	Yes	Enough	No
Was this training useful?	14	6	0
Does the digitalization system for managing Karang Taruna activities meet the needs?	11	9	0
Is the system easy to use?	0	0	0
Do Participants understand the concept of digitalization and content management skills?	5	5	10

TABLE 2. Post Questionnaire Data (n=20)

Question	Yes	Enough	No
Was this training useful?	16	4	0
Does the digitalization system for managing Karang Taruna activities meet the needs?	18	2	0
Is the system easy to use?	13	7	0
Do Participants understand the concept of digitalization and content management skills?	12	5	3

The training results confirmed that participants found the system easier to use and more relevant to their needs after the program. This demonstrates the effectiveness of a participatory training model that emphasizes practice and direct involvement, contributing to stronger engagement and confidence in digital implementation.

Digital System Implementation

During the technology implementation phase, the team deployed the web-based RW Smart Hub system using PHP and MySQL, accessible via computers and smartphones. The system integrates features such as agenda management, documentation uploads, a news publication module, and user access management. By the end of the program, approximately 50% of all organizational activities had been successfully documented and uploaded, supported by twelve trained administrators who could independently operate the system.

Evaluation results showed that administrators experienced increased efficiency in managing activities and improved visibility through digital publications. The development of articles, social media posts, and

short videos further encouraged youth participation and creativity in promoting community programs.

Sustainability and Local Management

To ensure program sustainability, a local administrator was appointed to manage the post-program system's operations, supported by Standard Operating Procedures (SOPs) and digital management guidelines. These documents serve as institutional references for maintaining the sustainability of digital governance. The presence of a local administrator and SOPs ensures that digital transformation is not merely achieved temporarily but also maintained as part of the Karang Taruna's operational culture.

Overall, the implementation of the RW Smart Hub system demonstrated measurable improvements in organizational governance, digital literacy, and administrative efficiency. The program successfully integrated participatory learning principles and sustainable digital management practices, positioning Karang Taruna RW 012 Jatiwaringin as a model for community-based digital transformation.

CONCLUSION

The implementation of the RW Smart Hub system at Karang Taruna RW 012 Jatiwaringin has proven to enhance the efficiency and transparency of community activity governance. Through this digital platform, administrative processes such as scheduling, documentation, and publication became more organized and accessible, contributing to improved accountability within the organization. In addition, the digital literacy training significantly increased the administrators' understanding of technology-based documentation, as reflected by a 35% improvement in participants' comprehension levels after the training. This improvement demonstrates the effectiveness of participatory and practice-oriented learning methods in strengthening digital competence. Furthermore, the program offers a scalable model that can be replicated by other Karang Taruna units or similar youth organizations seeking to implement digital transformation in community management.

This initiative is expected to contribute to the development of a sustainable digital ecosystem within the community. By integrating local administrators, standardized procedures, and ongoing digital mentoring, the program lays the foundation for continuous innovation and collaboration in digital-based governance, ensuring that Karang Taruna remains adaptive, transparent, and impactful in the digital era.

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