

# Digitization of Villages in Improving Public Services and Technology Based Archiving in Balikpapan Sub District

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**Abstract.** Improving public services and efficiency in archiving are important aspects of optimizing governance at the subdistrict level. In an increasingly advanced era of information technology, the digitization of subdistricts offers a promising solution to enhance the quality of public services and the effectiveness of archiving. This paper aims to describe the implementation of subdistrict digitization in enhancing technology-based public services and archiving in the Balikpapan District. This research utilizes a descriptive method by collecting data through literature review, observation, and interviews with relevant parties in the Balikpapan subdistrict. The research findings indicate that subdistrict digitization has successfully provided significant positive impacts in improving public services and archiving efficiency in the Balikpapan District. In terms of public services, subdistrict digitization enables easier and faster access for the community to obtain information and services from the subdistrict government. The utilization of technology-based applications such as public service portals and mobile applications allows the public to submit administrative requests, access essential information, and provide feedback online. This accelerates the service process and reduces excessive bureaucracy. Furthermore, subdistrict digitization also contributes to archiving effectiveness. By adopting a technology-based archiving system, important documents can be stored electronically and well-organized. The use of database technology enables more efficient document search and management, reducing the risk of document loss or damage, and improving the speed of information access. Although there are several challenges in implementing subdistrict digitization, such as limited resources and resistance to change, the efforts made by the Balikpapan subdistrict have proven the positive benefits of adopting this technology. Subdistrict digitization has made a significant contribution to enhancing public services and archiving in the Balikpapan District and can serve as an example for other subdistricts in optimizing technology-based governance.

**Kata Kunci:** Subdistrict digitization, Public services, Archiving, Information technology, Balikpapan District.

## 1. Introduction

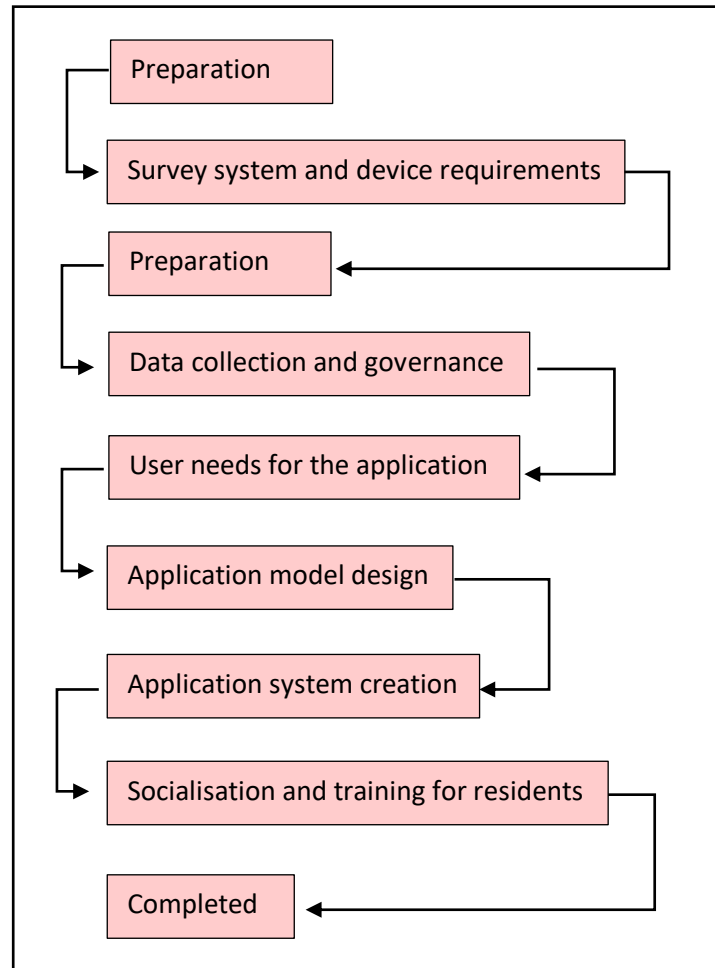
Digitization of Villages in Improving Public Services and Technology-Based Archiving in Balikpapan Sub-District. The digitization of villages plays a crucial role in enhancing public services and technology-based archiving in Balikpapan Sub-District. By leveraging technology, local communities can benefit from improved accessibility, efficiency, and transparency in various public services. Digitization can significantly enhance the delivery of public services in villages. For instance, digital platforms can be developed to streamline administrative processes, such as online registration for various permits and licenses. This eliminates the need for physical visits to government offices, reducing waiting times and increasing convenience for residents. Furthermore, technology-based archiving systems can ensure the efficient management of village records and documents. Digitizing and storing information electronically improves accessibility and reduces the risk of loss or damage to important records. Digital archives also facilitate easier retrieval and sharing of information, enabling faster decision-making processes.

In the context of RT (Rukun Tetangga) or neighborhood units, digital tools can enhance community engagement and communication. Online platforms or mobile applications can be developed to disseminate important announcements, gather feedback from residents, and coordinate community activities. This strengthens the sense of belonging and active participation among residents, contributing to a more vibrant and connected community. To implement successful digitalization initiatives in Balikpapan Sub-District, it is essential to ensure adequate infrastructure and technological resources. This includes establishing reliable internet connectivity, providing necessary hardware and software, and conducting training programs to enhance digital literacy among villagers. Additionally, it is important to address potential challenges related to data security and privacy. Proper protocols and safeguards should be in place to protect sensitive information and ensure compliance with relevant data protection regulations.

By embracing digitalization, Balikpapan Sub-District can leverage technology to improve public services, enhance archival practices, and foster community development. The digitization of villages empowers residents and strengthens the overall efficiency and effectiveness of local governance.

Conceptually, a digital village is a program aimed at transforming a village into a development area that empowers the community with adequate information technology infrastructure [1]. Essentially, the concept of a digital village consists of two important elements: community empowerment in the village and information technology [2]. The paradigm of internet-based rural development is crucial in the midst of the development of information and communication technology [3]. According to research conducted by Wardani [4], the existence of a village information system enables the community to have easier access to village planning and budget realization.

The implementation of this project will take six months, starting from February 2023 and ending in August 2023. The target of the project is Damai Bahagia Subdistrict located in Balikpapan City, East Kalimantan Province. To obtain information about village digitalization, in-depth interviews with village officials, Focus Group Discussions, surveys, and workshops will be conducted. The sequence of activities carried out during community service can be seen in Figure 1.



**Figure 1.** Action Flow

Early preparations are essential for meeting preparations and data needs surveys, as they ensure that the activities run effectively and produce valuable information. With good preparation, clear objectives can be set, and the meeting or survey can be directed according to the needs. This helps maintain focus and avoid irrelevant conversations. Preparation also improves time efficiency and ensures that the time spent in the meeting or survey is utilized to the maximum. Thorough preparation allows for determining relevant questions and topics to be discussed. By having appropriate and structured questions, specific and useful information can be gathered.



**Figure 2.** Preparation for meetings and data collection.

Preparation also helps identify unmet data needs, thus focusing on collecting the required information. It identifies and invites participants with relevant knowledge and insights regarding the data needs. Involving the right people allows for diverse perspectives and valuable input in meeting the data needs. With good preparation, it ensures that the questions and instructions posed during the survey are clear and easily understood by respondents. This helps avoid interpretation errors and minimizes inconsistencies in data collection. Thorough preparation also reduces the likelihood of errors during meetings, such as missing important topics or lacking relevant information. By understanding the importance of meeting preparations and data needs surveys, the obtained results can be maximized, and the resources allocated to these activities can be effectively utilized. Thorough preparation helps focus attention on relevant information, improves efficiency, and enables better decision-making based on the collected data.



**Figure 3.** Implementation of digitalisation

**Table 1.** Service variable data

Component	Variables
Village Administration	<ul style="list-style-type: none"> <li>▪ Administrative location</li> <li>▪ Government status</li> <li>▪ Name of the village head</li> <li>▪ Office address</li> </ul>
Annual Village Budget Report	<ul style="list-style-type: none"> <li>▪ Year</li> <li>▪ Plan</li> <li>▪ Realisation</li> <li>▪ Location Coordinates (GPS)</li> <li>▪ Photo</li> </ul>
Geography Location	<ul style="list-style-type: none"> <li>▪ Name of RT or Village</li> <li>▪ Name of road network</li> </ul>

## 2. Method

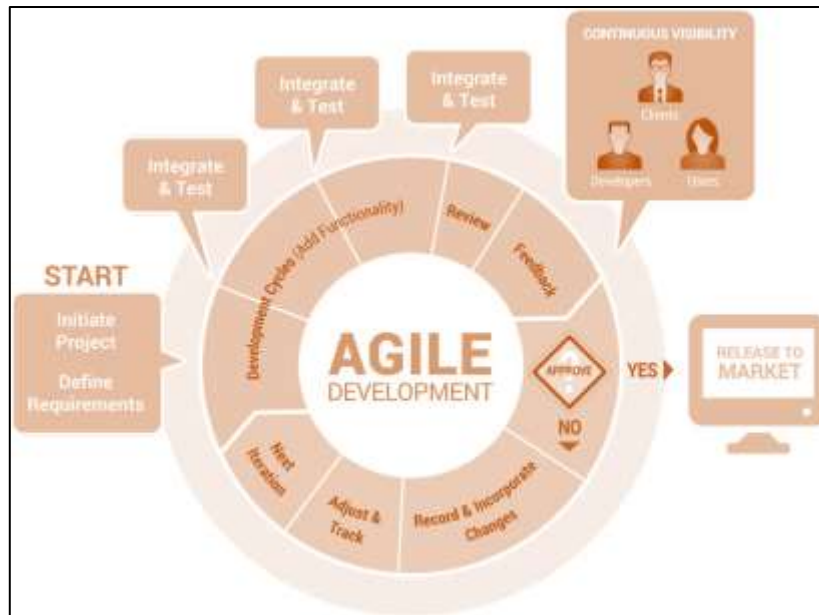
Rural digitalization refers to the process of leveraging digital technologies and connectivity to improve public services and archival systems in rural areas[5]. It involves the adoption and integration of various digital tools and platforms to enhance communication, service delivery, and information management [6].

Here are some methods commonly employed in rural digitalization to improve public service and archival systems:

- 1) **Broadband Connectivity:** Establishing reliable and high-speed internet connectivity is a fundamental requirement for rural digitalization. It enables access to online services, data exchange, and communication between rural communities and government agencies [7].
- 2) **Digital Service Delivery:** Government agencies can digitize public services, such as healthcare, education, agriculture, and utility payments. This enables rural residents to access these services remotely, reducing the need for physical travel and improving efficiency [8].
- 3) **Mobile Applications:** Developing mobile applications tailored to rural needs can facilitate access to government services and information[9]. These apps can provide services like agricultural guidance, healthcare advice, utility bill payments, and updates on government schemes [10].
- 4) **E-Governance:** Implementing e-governance practices allows rural residents to interact with government authorities online. This includes digital platforms for submitting applications, accessing documents, and tracking the progress of requests [11]. It streamlines administrative processes and enhances transparency [12].

- 5) Digital Archival Systems: Transitioning from paper-based archives to digital archival systems helps in efficient data storage, retrieval, and preservation. It involves digitizing existing records and implementing robust information management systems to ensure easy access and long-term preservation of important documents [13].
- 6) Cloud Computing: Utilizing cloud-based services can overcome resource limitations in rural areas. It enables government agencies to store and process large amounts of data, ensuring secure backups, and facilitating access to information from remote locations [14].
- 7) Capacity Building: Training programs and workshops should be organized to enhance digital literacy and skills among rural communities. These initiatives help individuals understand and effectively use digital tools, thereby enabling them to access public services and archival resources [15].
- 8) Public-Private Partnerships: Collaborating with private sector entities can accelerate rural digitalization efforts. Partnerships can focus on infrastructure development, service delivery, and technology adoption, bringing in expertise and resources to drive effective implementation [16].
- 9) Digital Inclusion: Ensuring equitable access to digital resources is crucial in rural digitalization. Special attention should be given to marginalized groups, such as women, elderly individuals, and people with disabilities, to bridge the digital divide and promote inclusivity [17].
- 10) Continuous Evaluation and Improvement: Regular monitoring, evaluation, and feedback mechanisms are essential to assess the impact of rural digitalization initiatives. This feedback loop helps identify challenges, address gaps, and refine strategies for sustained improvement [18].

By implementing these methods, rural areas can harness the benefits of digital technologies, enabling better public service delivery, efficient archival systems, and improved access to information for the benefit of their communities.



**Figure 4.** Agile Development Method

Agile Methodology is an approach that can be used in the digitalization of villages to enhance public services and technology-based archiving. Agile involves an iterative and collaborative development cycle, with a focus on flexibility [19], adaptability, and responsiveness to changes that occur during the development process [20]. Here are the steps that can be followed in using the Agile Methodology for the digitalization of villages:

- **Team Formation:** Form a team consisting of various stakeholders of the village, including representatives from the village government, the community, and other relevant parties. The team should have relevant expertise in technology, public services, and archiving [21].
- **Needs and Priorities Identification:** Next, conduct an analysis of the village's needs in terms of public services and archiving. Identify areas that require digitalization and prioritize them based on impact and urgency [22].
- **Iteration Planning:** Divide the village digitalization project into a series of smaller iterations. Each iteration should have clear goals, time constraints, and measurable deliverables [23].
- **Iteration Planning:** During iteration planning, the team should detail the tasks that need to be completed, required resources, and estimated time. Ensure that all team members understand and agree with the planning [24].
- **Collaborative Development:** Each iteration involves the development of software or systems that focus on public services or archiving. The team should work collaboratively, adopting Agile principles such as open communication, quick response to changes, and continuous testing [25].
- **Evaluation and Adaptation:** After each iteration is completed, evaluate the achieved results. Involve village stakeholders to provide feedback and suggestions. Use this feedback to make adjustments in the next iteration [26].

- **Gradual Implementation:** Implement the results of each iteration gradually. With this approach, the village can obtain the benefits of digitalization over time while continuously improving existing systems and processes [27].
- **Training and Socialization:** During and after the digitalization process, provide training to the community and relevant parties on the use of technology and changes in workflows [28]. Socialize the benefits of digitalization to the village community and encourage their participation in enhanced public services [29].
- **Monitoring and Evaluation:** Continuously monitor the implementation of digitalization. Evaluate the results, performance, and impacts that have been achieved. Use this information for improvement and better decision-making in the future [30].

The Agile Methodology provides the flexibility and adaptability needed to address changing needs and challenges that arise during the digitalization process in villages. With this approach, it is expected that technology-based public services and archiving can be continuously improved while ensuring the participation of the community and stakeholders in the process.

### **3. Result and Discussion**

Digitizing villages can provide many benefits in improving public services and technology-based archival at the neighborhood level (Rukun Tetangga or RT). The following are the results and discussions related to this matter:

#### **Improvement of Accessibility and Efficiency of Public Services:**

Digitizing villages allows residents at the RT level to access information and public services more easily and quickly through online platforms. For example, residents can electronically submit recommendation letters, check population information, access information about development projects, and so on.

Through digitization, RTs can provide more efficient public services because the required data and information can be accessed directly through the digital system. This can reduce the time and costs required for traditional administrative processes.

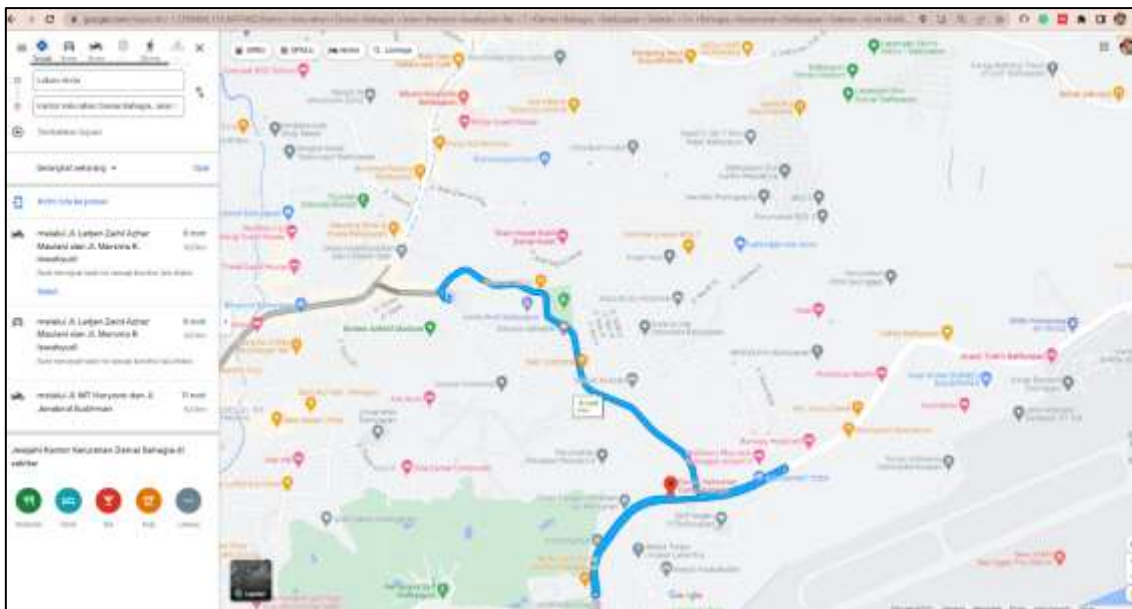
#### **Enhancement of Archival and Data Management:**

- Digitization enables RTs to store and manage data electronically. Important information such as population data, administrative records, and other documents can be securely stored in digital form.
- By using technology-based archival systems, document management and retrieval become easier and faster. Data stored in digital formats can be indexed and quickly searched using keywords or specific categories.
- Additionally, the use of technology can improve data security. Digitally stored data can be protected using encryption methods and access authentication, preventing unauthorized access and physical damage that may occur to physical documents.



#### Increase in Transparency and Community Participation:

- Digitizing villages can enhance transparency in public services and archival since data and information can be accessed more openly by the community. Residents can view and verify the information provided by RTs, including activities and budgets related to village development.
- Digital systems can also encourage more active community participation. The community can provide input, complaints, or suggestions through online platforms provided by RTs. This can help improve the quality of public services and strengthen the interaction between the community and the village government.
- In essence, digitizing villages at the RT level can improve public services by providing easier and more efficient access, improving archival management through technology adoption, and increasing transparency and community participation. However, the implementation of village digitization needs to consider aspects of data security, internet access availability, and the digital literacy of the community to achieve optimal results.



**Figure 5.** Location of community service at Balikpapan city point

#### 4. Conclusion

The digitalization of villages in improving public services and technology-based archiving at the neighborhood level (RT) has several significant benefits. By implementing digital technology in village governance operations, RTs can optimize public services and archive management. Here are some conclusions regarding the benefits of village digitalization at the neighborhood level:

- **Increased Accessibility:** Village digitalization allows RTs to provide public services that are more easily accessible to the community. With the existence of village applications or websites that provide important information, activity schedules, notifications, and online forms, people can access information and carry out administrative processes without having to come directly to the RT office. This facilitates individuals with limited time or mobility to stay connected with the village government.
- **Administrative Efficiency:** Digitalization enables RTs to automate various administrative tasks, such as recording residents' attendance, population data collection, and document archiving. By using software and information management systems, administrative processes can be done faster and more accurately. This helps reduce the workload for RT officers and allows them to focus on better serving the community.
- **Improved Archiving Management:** In the context of village digitalization, technology-based archiving management allows RTs to store, organize, and search for documents electronically. With the presence of centralized databases or cloud storage systems, important documents such as correspondence, activity reports, or population data can be easily archived and accessed when needed. This reduces the risk of losing or damaging physical documents and facilitates the process of searching for information.
- **Transparency and Community Participation:** Village digitalization can enhance the transparency of RT governance and encourage active community participation in decision-making. By publishing information related to RT activities, policies, and village finances through digital media, the community can easily access and oversee the governance processes. Additionally, through online platforms, the community can provide input, suggestions, or complaints to the village government more easily.
- Thus, digitalization of villages at the neighborhood level (RT) provides significant benefits in improving public services, administrative efficiency, archiving management, transparency, and community participation. However, it is important to consider the aspects of security and protection of personal data when implementing this digital technology.

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