

# Strategic Planning of Correspondence Service Information System using TOGAF ADM Framework

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## ABSTRACT

Rapid advancements in information technology have led to businesses and government organizations implementing information systems to improve corporate operations. One of the services provided by the village is correspondence, which includes creating letters of recommendation for application letters. In Leubatang Village, correspondence services are still conducted by hand, and data is gathered using physical books, which makes it difficult to locate data and leaves it susceptible to This study uses the TOGAF ADM framework to suggest strategic planning for Leubatang Village's communication information system. Architectural strategies, gap analyses, business architecture analyses, and technological needs analyses are all prepared using PEST analysis. This strategy planning can be implemented in two to three years, according to the blueprint. Leubatang Village's correspondence services can be developed using the information system architecture's design as a foundation for implementation and as a guide.

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## 1. INTRODUCTION

Information technology is developing quickly, and businesses are competing fiercely to satisfy consumer demand. This is a result of businesses beginning to employ IS/IT to improve business operations and boost their competitive edge[1]. Nonetheless, every business or organization has information technology and information system requirements that conflict with its goals and objectives[2].

One of the autonomous regions at the bottom of Indonesia's local government system is the village[3]. The Leubatang Village government's use of technology is still seen as insufficient for conducting administrative tasks. This is seen in Leubatang Village's correspondence services procedure, which continues to employ a conventional approach. For instance, data from the correspondence service is still used when creating birth certificates and gathering demographic data. This makes reporting challenging in the event of a disaster or damage to the ledger. The same is true for population data searches, where authorities must examine each population data set individually, making the procedure time-consuming and inefficient.

The public can independently apply for services through the internet thanks to the usage of information technology for administrative services[4]. Users can quickly search for letter archives and learn the most recent application letter status with this information system[5][6]. The transition of services to digital helps improve government services so that people can submit correspondence more easily and efficiently[7][8].

The village financial monitoring process began using the SISKEUDES (Village Financial System) application in 2020, but naturally, this technology cannot be used for the administrative process of correspondence services that the community needs, such as birth certificate, death certificates, land deed,

certificates of poverty, business certificates, identity card application letter, marriage license, family documentation certificates, wealth certificates, and land certificates.

In order to identify the primary needs and priorities, choose the best technology, and create an information system that can solve the issues Leubatang Village faces—particularly with the administrative business process of correspondence services—strategic planning of information systems is required. Determining the course and long-term plan for the development and application of information technology to support an organization's or company's objectives is known as strategic planning of information systems[9]. This study focuses on one of the main business processes of Leubatang Village, namely correspondence activities. By using the TOGAF ADM Framework to design the architecture of this information system. TOGAF provides a detailed method for building, managing, and implementing information architecture and systems, called the Architecture Development Method (ADM)[10][11]. ADM itself is a general purpose method that includes a series of processes used to model the development of architecture known as a guide or tool in planning, designing, developing, and implementing the information system architecture of an organization[12][13].

## 2. METHOD

The method used in this research is the TOGAF ADM framework using 2 supporting phases and 5 main phases of the 8 phases in TOGAF ADM in figure 1.

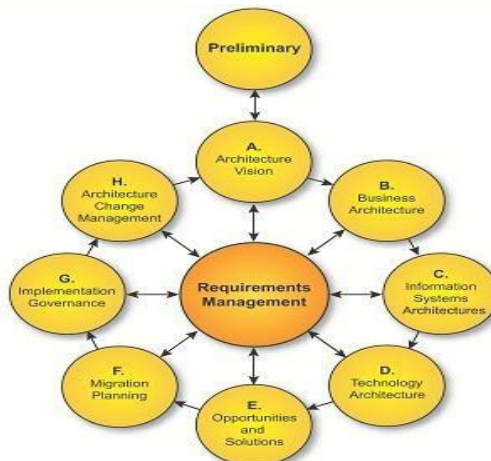


Figure 1. TOGAF ADM

- 1) Preliminary
 

The activities required to accomplish the architectural aims are included in this phase of preparation. Moreover, the stage that decides the architectural principles to be adhered to and creates the organizational setting[14]. During the initial phase, the SWOT (strengths, weaknesses, opportunities, and threats) analysis is done to determine the organization's strengths, flaws, opportunities, and threats. The What, Who, Why, When, and Where architectural mapping is also conducted.
- 2) Requirements Management
 

The objective of this phase is to determine the enterprise architecture that Leubatang Village, East Nusa Tenggara, requires. Based on the findings of the observations and interviews, these needs are noted and assigned to the appropriate category. Critical Success Factors (CSF) analysis is used in this phase to assist projects or organizations in determining which areas need to be prioritized in order to accomplish the primary objective.
- 3) Phase A: Architecture Vision
 

At this point, various viewpoints on the significance of architecture in accomplishing an organization's objectives start to surface. The company's written vision, mission, strategy, and goals are essential components of this stage since they are all required to create a new architecture and vision[15]. Value chain analysis is employed in this stage to determine the primary operations that contribute value to the company.
- 4) Phase B: Business Architecture
 

This stage includes business development, job descriptions or business activities, and basic business information. At this stage, methods and tools can be used to support a structured consensus vision. In this phase, two stages of analysis are used, namely the Five Forces analysis and the Gap analysis.
- 5) Phase C: Information Systems Architecture

This phase is known as the application architecture and data architecture model stages. Understanding how information system architecture activities can be produced is crucial at this point. Finding the primary data sources and kinds required to support the business is the aim of this step.

6) Phase D: Technology Architecture

Technical architecture will be developed at this phase, along with the necessary technical possibilities. Determine the gaps that require new advancements or solutions by comparing the state of technology today with the demands of the future using gap analysis.

7) Phase E: Opportunities and Solutions

This phase's goals are to concentrate on the architectural artifacts constructed in the preceding phase and develop a preliminary implementation strategy. The models made for the target architecture and the current architecture are also reviewed in this phase, and the primary projects that will be carried out to implement the target architecture are identified and categorized as either new development or reusing existing systems.

### 3. RESULTS AND DISCUSSION

#### 3.1. Preliminary

Determining the planning principles for the correspondence information system's architecture is the first step in the early phase. It is determined using 5W + 1H in accordance with these principles, and external business elements are examined using FEST analysis, which looks at the technological, social, political, and economic facets of the information gathered from the questionnaire[16].

Table 1. FEST analysis

Factor	Description
Politics	The East Nusa Tenggara government supports village digitalization initiatives, but strict regulations regarding data security are a major challenge that must be met to avoid sanctions.
Economy	Limited village budgets are a challenge in developing information systems. However, a more efficient system can reduce operational costs in the long term.
Social	The low level of digital literacy in Leubatang Village requires an intensive education program so that the community can adapt to the digital system. Support from the community and government
Technology	The technological infrastructure in the village is still limited, even though internet access is available. Further development is needed to improve hardware and networks to support optimal system operations.

#### 3.2. Requirements Management

According to the findings of 15 respondents' interviews, the requirement management stage seeks to ascertain the business process requirements in architectural planning in Leubatang Village, East Nusa Tenggara, where the mail service is subpar. Supporting policies aimed at developing and enhancing mail services in Leubatang Village is the plan outlined in this condition. This stage employs CSF analysis to pinpoint a number of crucial elements that will impact the information system development project's outcome.

Table 2. CSF analysis results

Critical Success Factors	Analysis	Recomendation
Leadership Support	Strong support and commitment from Village Heads and stakeholders is essential for the digitalization process, including resource allocation and prompt decisions.	To keep stakeholders' commitment strong, be proactive and give frequent updates on your progress.
Infrastructure Availability	IT infrastructure such as hardware, software, and stable internet connectivity are the main foundation. Lack of infrastructure can decrease satisfaction and adoption.	Evaluate existing infrastructure, identify improvement needs, and focus investments on areas that require development
Community Acceptance	The level of acceptance of new technologies by society determines the success of digital systems. If the system is difficult to use or not useful, adoption will be low	Conduct intensive education and socialization regarding the benefits and how to use the system. Ensure that the user interface is easy to use by all groups.
Data Security	Ease of access and downloading of administrative documents is a major benefit of digitization. If it is not easier than manual processes, the goal is not achieved	Make sure the download process is fast and easy with minimal steps. Conduct extensive testing to identify and fix potential bottlenecks

##### 3.2.1. Phase A: Architecture Vision

A value chain analysis was carried out to compile all of the operations in Leubatang Village in accordance with the stakeholders involved in the mail service process. Core and supporting activities are the two categories into which the value chain analysis grouping is separated. Figure 2 explains the implementation of value chain analysis in the architecture vision phase.

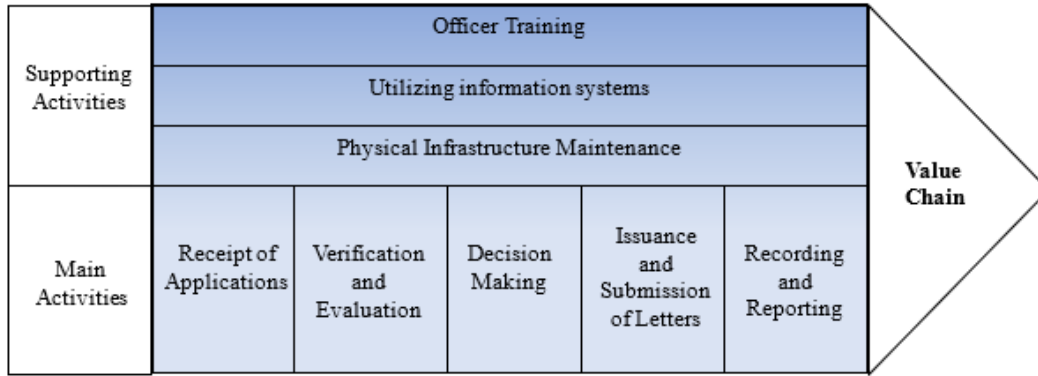


Figure 2. Value chain analysis

3.2.2. Phase B: Business Architecture

Leubatang Village's system was analyzed and found to be insufficiently capable of handling correspondence; as a result, the following information system was suggested in Figure 3.

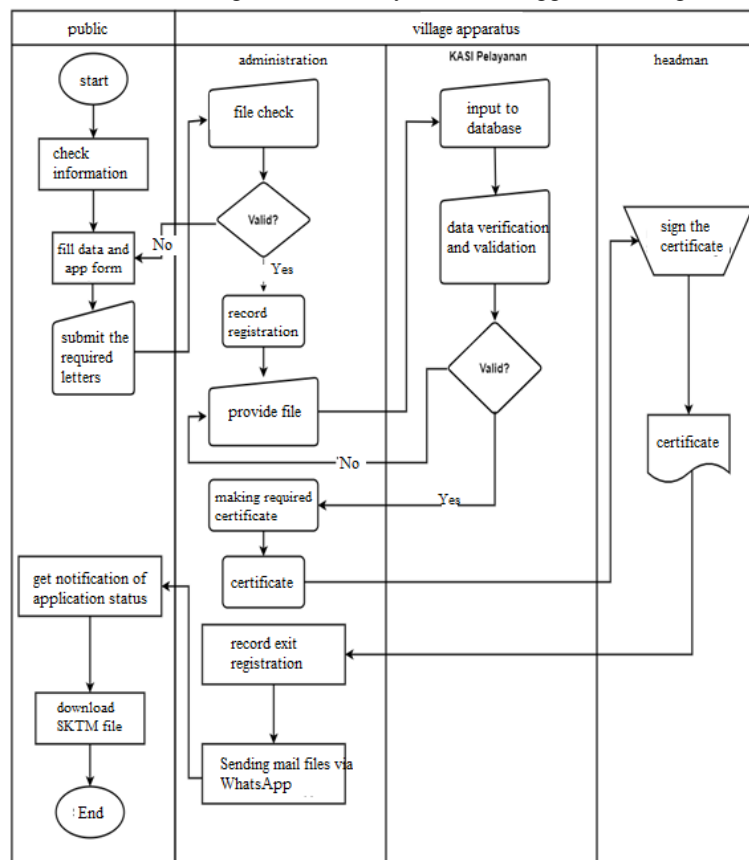


Figure 3. Flowchart of the proposed system

3.2.3. Phase C: Information System Architecture

Tabel 3 is an explanation of the information system currently, the information system in Leubatang Village is still in the Support quadrant, which means it only supports daily operations such as recording and writing letters. It is anticipated that a new information system will be developed and move into the Strategic quadrant, where it will serve as the primary catalyst for improving the effectiveness of village public services. For instance, integrating governmental services and putting in place an online registration system will yield more strategic advantages.

Table 3. McFarlan Portfolio Recommendations For Leubatang Village

<b>Strategic</b>	<b>High Potential</b>
Integrated public service information system	Registration system, online submission of certificates for public services
<b>Key Operational</b>	<b>Support</b>
Integrated data recording system	Electronic archive management information system

### 3.2.4. Phase D: Technology Architecture

Table 4 explains the use of basic hardware and software that can support the administrative operations and information systems to be developed.

Table 4. GAP analysis

Aspects	Current Conditions	Future Needs	GAP
Hardware	The demands of future information systems may exceed the capabilities of current hardware	Requires hardware upgrades, including more powerful servers and more secure data storage	Hardware upgrades are required, including servers and data storage
Network	Current network infrastructure may be limited in terms of speed and security	Network infrastructure needs to be improved, especially in terms of speed and security, to support web-based information systems	Network infrastructure upgrades are needed to meet speed and security needs
Data security	The current system has basic security features, with potentially high risks	The new system must have advanced security features such as data encryption, firewalls, and strong authentication protocols	Implementation of advanced security features to protect public data from security threats
Software	Using computer software, printer, hard disk and RAM	Software must be updated or upgraded to support more complex systems and the latest security features. Using Windows 7, XAMPP, MySQL, and Mozilla Firefox to help develop the latest system	Software upgrades that include the latest versions and additional features
Technical capability	The current system is limited to the use of simple applications and manual data processing. Technical capabilities are not optimal for more complex processes such as automation of document verification and archiving	The system must support service integration, data processing automation, and more advanced analytical capabilities. Use of web-based and cloud technologies for greater efficiency and accessibility	Improving technical capabilities to support an integrated and automated correspondence service information system

### 3.2.5. Phase E: Opportunities and Solution

Table 5 is the result of the analysis of strengths, weaknesses, opportunities, and threats in Leubatang Village. With this analysis, we can design more targeted solutions, utilize strengths and opportunities, and overcome existing weaknesses and threats.

Table 5. SWOT analysis results

Strengths		
Strength	Explanation	Benefits in solution
Government support	Strong community and village government support for the development of information systems	Make use of this assistance to secure more financial and technical resources
Basic infrastructure	Internet access is available, although limited	Using this infrastructure as a basis for developing digital information systems
Weaknesses		
Weakness	Explanation	Benefits in solution
Limited budget	Budgetary restrictions make it difficult to invest in staff training and technology	looking for more subsidies or financing sources and determining spending priority
Low digital literacy	The low level of digital literacy in society requires extra efforts in training and education	Develop training programs and educational campaigns to improve people's digital skills
Opportunities		
Opportunities	Explanation	Benefits in solution
Digitalization	Digitalization can increase the efficiency and transparency of administrative services for correspondence services	Developing a web-based information system to simplify the process of submitting and managing letters
Service innovation	New technologies can enable the development of additional services such as retrieving certificates submitted online through a pre-established system	Implementation of online download features on a system designed to make it easier for the public
Threats		
Threats	Explanation	Benefits in solution
Data security	The risk of cyber attacks and data breaches poses a threat to data integrity and confidentiality	Implement a strong security system, including data encryption and firewalls
Resistance to change	People who are less tech-savvy may resist the change to digital systems	Design a change management strategy that includes effective training and communication

The designed blueprint architecture for the Leubatang Village Correspondence Service System substantially overcomes the shortcomings noted in the Leubatang Village case study, as determined by the seven steps that have been completed. This blueprint provides a solution by substituting an integrated digital system for manual operations, enabling online letter submission, verification, and retrieval. This plan suggests creating a centralized database that guarantees information consistency and accessibility, as well as an application that complies with current circumstances, despite the infrastructure and financial constraints. This blueprint offers a practical and flexible way to increase the effectiveness and transparency of administrative services in Leubatang Village through a phased approach and training plan.

Table 6. Blueprint architecture

Blueprint architecture	
Correspondence services (Correspondence Submission System)	
Scope	Basic Instruction Document
Leubatang Village Correspondence Services	This blueprint provides strategic guidance for designing a mail service application that can be further developed according to the needs of Leubatang Village.
Organizational Strategy Direction	Business Architecture
Vision: To provide integrated, efficient, and transparent correspondence submission services for the entire community. Mission: To facilitate the process of submission, verification, and approval of correspondence by utilizing information technology.	<ol style="list-style-type: none"> <li>1. Letter submission process, The community submits a request for a Certificate of Information through the application by filling in personal data and uploading supporting documents. Thus, the request for a Certificate of Information is recorded in the system and awaits verification.</li> <li>2. Verification process, Officers verify the data and files submitted, ensure the completeness of the documents, with files that have been verified marked in the system, or if there are deficiencies returned to be completed.</li> <li>3. Approval process, The Village Head signs and approves electronically.</li> <li>4. File download process, The community can download files that have been approved through the application.</li> <li>5. Processing of incoming data, including editing, adding, and deleting data as needed, can be done through the application</li> </ol>
Data Architecture	Application Architecture
<ol style="list-style-type: none"> <li>1. Database Design, a centralized database that stores all information related to correspondence, including applicant data, letter type, submission status, and supporting documents.</li> <li>2. Development of an integrated centralized database to ensure information is consistently available and accessible to all village-related functions.</li> <li>3. Ensure data is stored safely and can be accessed efficiently by village officers for correspondence services</li> </ol>	<ol style="list-style-type: none"> <li>1. Letter Submission Application, Designing an application that allows people to submit various types of letters online.</li> <li>2. Verification and Validation Features, The application will have a module to make it easier for village officers to verify and validate letters electronically</li> </ol>
Technology Architecture	Opportunity and Solutions
<ol style="list-style-type: none"> <li>1. Infrastructure Design, the technology infrastructure that supports the application, including servers, networks, and other hardware needed to run the application effectively.</li> <li>2. System Security, design of security features to protect correspondence data from cyber threats, including data encryption, user authentication, and firewalls.</li> </ol>	<ol style="list-style-type: none"> <li>1. Online Application Solution, development of online application solution to facilitate mail service in Leubatang Village.</li> <li>2. Process Digitalization, recommendation to change manual process to digital to increase efficiency and transparency</li> </ol>

#### 4. CONCLUSION

Village officials can more easily create a correspondence service application, particularly for creating a certificate, by using the TOGAF ADM framework to organize the suggested information system strategy planning. This strategy planning can be implemented in two to three years, according to the blueprint. Leubatang Village's correspondence services can be developed using the information system architecture's design as a foundation for implementation and as a guide.

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