

Design and Construction of Tenant Establishment Permit Based on Google Sites at A.P.T. Pranoto Samarinda Airport

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Abstract

The tenant licensing system at A.P.T. Pranoto Airport in Samarinda was previously done manually, causing the process to be slow, inefficient, and prone to administrative errors. This study aims to design and develop a digital tenant licensing system using the Google Sites platform. It is an applied research study using the ADDIE model with a research and development (R&D) approach, which includes the stages of needs analysis, design, development, implementation, and evaluation. The developed system enables prospective tenants to register online by filling out digital forms, uploading required documents, and accessing comprehensive procedural information. Testing results indicate that the website functions well, with positive feedback received from users, airport managers, and IT experts regarding ease of use, appearance, and process effectiveness. The system successfully improves administrative efficiency and provides a modern alternative for tenant licensing services in the aviation sector. This research suggests that digitalizing public services in the aviation sector can accelerate the transformation toward the concept of a smart airport.



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1 INTRODUCTION

Airports serve as both air transportation hubs and centers of business activity that generate non-aeronautical revenue. Airport commercial activities include shopping, duty-free outlets, food and beverage outlets, passenger recreation facilities, and advertising [1]. At A.P.T. Pranoto Samarinda Airport, however, the tenant licensing system is still carried out manually. This leads to delays in document verification, administrative inefficiency, and a decline in the quality of public services. This situation is inconsistent with the principles of excellent service and digital transformation, both of which are currently the focus of airport sector management. Efficient licensing processes are crucial for supporting airport economic growth and realizing the concept of a smart airport that adapts to technological advancements. Technological and economic progress is marked by the advent of mobile technology, unlimited internet access, and cloud technology that supports various processes in the digital economy [2].

This study addresses the issue of designing a Google Sites-based tenant licensing system to replace the manual process at A.P.T. Pranoto Samarinda Airport. Additionally, the study examines the extent to which the final system's results can address users' and managers' needs in accelerating the tenant registration and verification process.

Specifically, this study aims to develop a web-based tenant establishment licensing system using Google Sites that can be accessed online by prospective tenants and airport managers. The main objective is to ensure that the system meets user needs [3], the system provides clear information, digital forms, and document upload features to expedite the verification process.

Thus, this research is expected to contribute to the improvement of airport service efficiency and the digitization of the licensing system within the Airport Management Unit.

2 METHOD

This study employs a Research and Development (R&D) approach based on the ADDIE development model. Research and Development (R&D) is research that aims to create and test the effectiveness of a product [4], design is a process that involves drawing, planning, and sketching or arranging various separate elements into a cohesive whole that functions effectively [5]. The ADDIE model (Analysis, Design, Development, Implementation, and Evaluation) highlights the importance of analyzing interactions between its components [6]. The following are the system design stages in this study, as outlined by the ADDIE method:

1) Analysis

- a. Identification and definition of the problem, the tenant registration system at A.P.T. Pranoto Airport is currently manual, requiring prospective tenants to submit a letter of cooperation and business proposal in person. This manual system causes problems, especially when there is missing data or documentation, which delays the registration process.
- b. Determination of the source of the problem, incomplete documentation caused by the manual system that is still in use. This manual system requires prospective tenants to submit documents in person without clear digital guidance.
- c. Search for solutions: To overcome existing obstacles, a digital solution for the licensing process that can be accessed online is needed. Digitization allows data to be converted into digital form so that it can be processed more easily using computer technology [7]. This system is expected to facilitate the registration process and support the principles of efficiency and accountability in public services.

2) Design

The design stage in the ADDIE development research model is a series of systematically arranged processes, which begins with determining the concept and material as the basis for the [8]. Design is a process of compiling technical designs based on the results of the analysis stage [9]. This stage focuses on creating a web-based system design using the Google Sites platform. Researchers compile page structures and links to digital forms. The interface design is made simple and easy to access by users. The digital form is created using Clappia and designed to accommodate the upload of important documents and automatically record data into Google Spreadsheet. Additionally, a flowchart is created as a reference for system development.

- a. System design, the following is a use case diagram obtained from system requirements analysis. This diagram is used as the basis for building use case modeling. This use case model includes the identification of actors and their objectives in interacting with the system. There are two actors in this system use case, namely the admin actor (service provider) and the user actor (prospective tenant applicant).

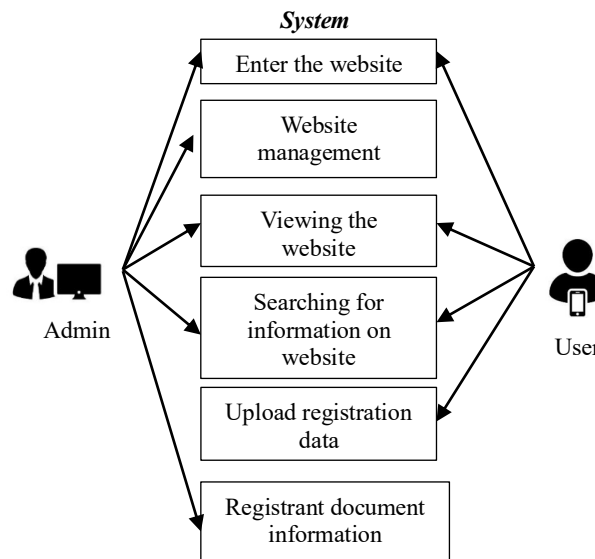


Figure 1. Use Case Diagram

- b. Website menu structure, this structure outlines the various menus that will be displayed on the website.

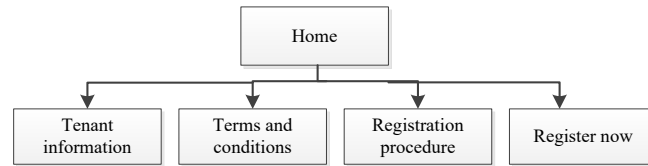


Figure 2. Website menu structure

- c. Digital form instruments. The digital form contains various instruments in accordance with the Standard Operational Procedure (SOP) of A.P.T. Pranoto Airport in Samarinda [10], with several instruments added to facilitate data processing.

Table 1. Digital form instrument

No.	Instruments
1.	Email
2.	Name
3.	Company Name
4.	Identity Card (KTP)
5.	Type of Lease
6.	Business Registration Number
7.	Company Deed of Establishment
8.	Taxpayer Identification Number (NPWP)
9.	Food Handler Certificate (Specific to food & beverage)
10.	Proof of tax payment for the last 3 (three) months
11.	Business proposal
12.	Design and technical drawings of the Booth/Business Premises (Civil, Electrical, Plumbing, Internal, etc.)
13.	Statement of willingness to comply with applicable regulations (Stamped)
14.	Service Level Agreement

- d. This website creation flowchart illustrates the workflow involved in designing a tenant establishment licensing system using Google Sites and Clappia. The process begins by opening the Google Sites platform and creating a website, to which tenant-related information is then added. Then, a digital form is created using Clappia and integrated with Google Spreadsheets for data recording. Once the form is complete, the system is connected to the site. The final stage is to publish the website so that it is ready for use by tenant applicants.

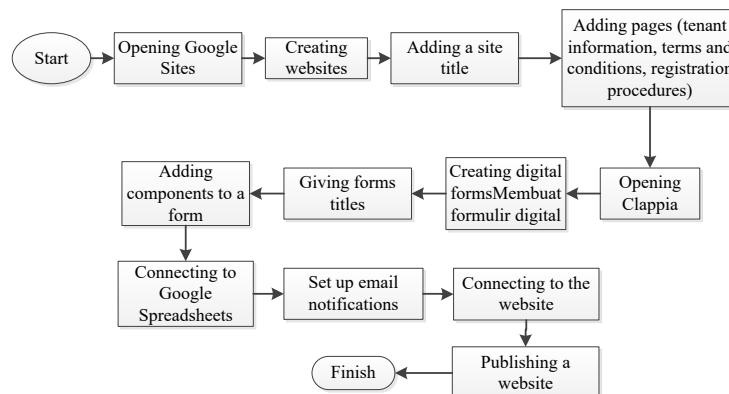


Figure 3. Website creation flowchart

3) Development

The development stage is the phase in which all of the previously designed systems are implemented into an operational system. [11]. During the implementation stage, the author conducted a socialization activity for the management of A.P.T. Pranoto Samarinda Airport regarding the use of the tenant establishment licensing website that had been designed. This socialization aimed to introduce the developed digital system and explain the usage flow and benefits of the system. After the socialization activities were conducted, the airport management was given the opportunity to try the website directly to assess the level of data compatibility within the system in supporting the online tenant licensing process.

4) Implementation

The implementation stage is the phase in which the developed system begins to be used by users to ensure that all features function in accordance with the original design [12]. During the implementation phase, the author conducted a socialization activity for the management of A.P.T. Pranoto Samarinda Airport regarding the use of the tenant establishment licensing website that had been designed. This socialization aimed to introduce the developed digital system and explain the usage flow and benefits of the system. Following the awareness-raising activities, the airport management was given the opportunity to directly test the website to assess the system's data compatibility in supporting the online tenant licensing process.

5) Evaluation

The evaluation stage is a process of assessing the implemented system to determine the extent to which it meets the development objectives [13]. This study conducted a comprehensive assessment of the developed system to determine its feasibility, effectiveness and potential for future development. Data obtained during the evaluation stage was collected through a validation process involving three groups of subjects: experts in information technology, internal airport personnel and end users.

3 RESULTS

The main result of this research is a web-based tenant establishment licensing system developed using the Google Sites platform and digital forms using Clappia, as well as the following website testing results:

1) Data collection system (digital forms)

One of the main outcomes of the system development is the availability of digital forms designed using the Clappia platform and integrated into the Google Sites website. These forms are used for filling in tenant applicant data and uploading required documents online. Access to the forms is provided via a direct link embedded on the website's main page, so users do not need to manually switch platforms.

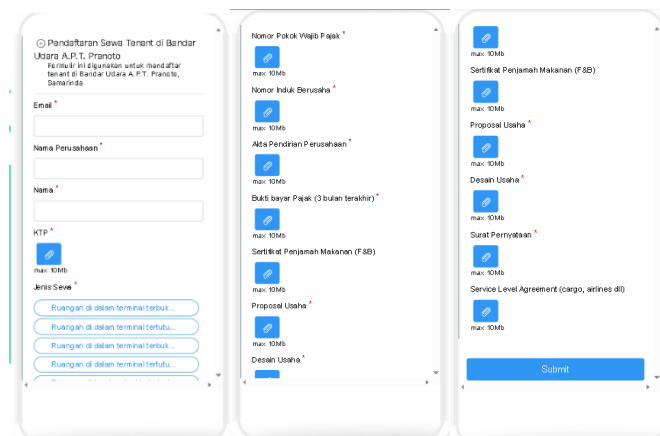


Figure 4. Digital form display

Figure 5 above shows the digital form for tenant registration, which contains the following fields:

- Email, used as the official contact for the applicant, who will receive notifications and confirmations related to the licensing process.
- Name, the personal identity of the applicant responsible for submitting the business license application.
- Company name, reflecting the business entity that will apply for business space rental in the airport environment.
- Identity Card (KTP), an official identity document required to verify the legality and validity of the individual as the applicant.
- Type of lease, informing the category of business space being applied for, such as rooms, ATMs, land, or advertising.
- Business Identification Number (NIB), proof of the company's legality showing that the entity is officially registered in the national licensing system.
- Company establishment deed, a legal document explaining the structure, ownership, and basis for the formation of the business entity.
- Taxpayer Identification Number (NPWP), the company's tax identification number indicating compliance with fiscal obligations in Indonesia.
- Food handler certificate, a mandatory document for businesses in the food and beverage sector as proof of compliance with food safety standards.
- Proof of tax payment for the last three months, used to assess the company's compliance in reporting and paying taxes on a regular basis.
- Business proposal, containing the business activities to be carried out, including the concept, products/services offered, and operational strategies.
- Booth/Business Premises Design and Technical Drawings, including technical documents in the form of soft drawings covering civil, electrical, plumbing, and interior aspects as part of the technical feasibility of the construction.

- m. Statement of compliance with regulations, an official document stating the applicant's commitment to comply with regulations applicable in the airport environment.
- n. Service Level Agreement (SLA), required for tenants from the airline sector or related services such as cargo.

Data submitted through this form will be automatically saved to a digital spreadsheet, allowing administrators to monitor and verify applications without having to check each one individually via email or physical documents. This feature not only shortens the administrative process, but also improves the accuracy and efficiency of managing incoming tenant data [14].

2) Information system (website)

This website is openly accessible to all users and contains pages with information about tenants, terms and conditions, registration procedures, and a special button that directs users to fill out the form online.

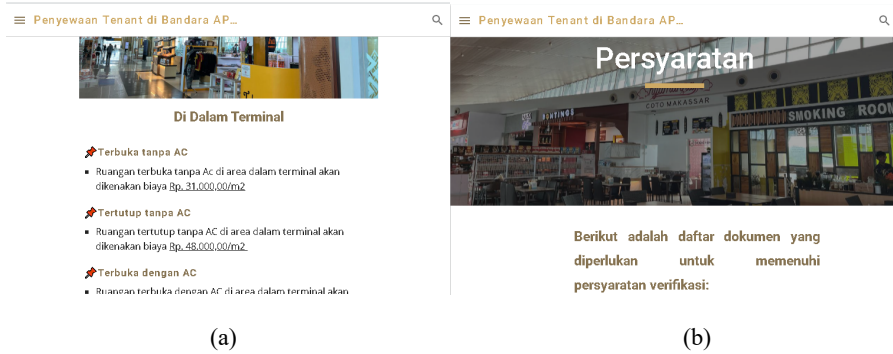


Figure 5. (a) Tenant information menu display (b) Terms and conditions menu display

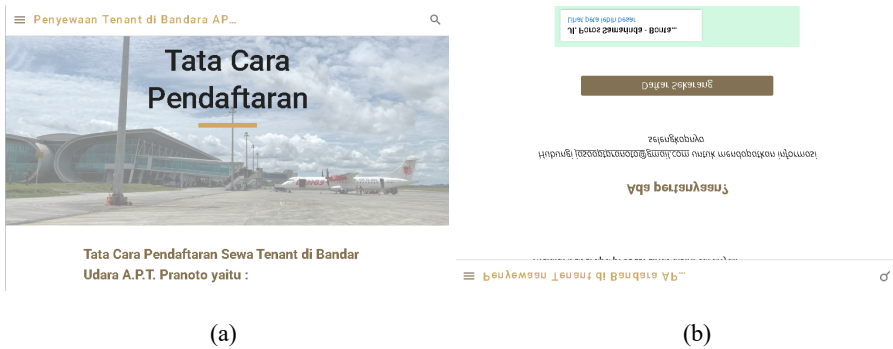


Figure 6. (a) Display of the registration procedure menu (b) Display of the register now button

Figures 6 and 7 show the website displayed at the address <https://sites.google.com/view/tenantaptpranoto/beranda> which is explained as follows:

- a. Tenant information page, as a means of conveying details regarding applicable fees.
- b. Terms and conditions page, a key guide for applicants in understanding all administrative and operational requirements that must be complied with in the process of applying for tenant rental at A.P.T. Pranoto Samarinda Airport.
- c. Registration procedure page, a guide for prospective tenant applicants to understand the steps that must be taken during the permit application process.
- d. Sign up now button, serving as direct access to the digital tenant registration form.

3) Data testing on the website

This test serves to check and ensure that the data contained on the website matches the data required at the research location. The test was conducted by the Cooperation Material Processing and Airport Services Staff at A.P.T. Pranoto Airport in Samarinda. The results of the data testing on the website are as follows:

Table 2. Data Testing Results

Data Testing Results		
Expected	Observation	Conclusion
Title aligns with airport requirements	Appropriate	Can run

Data Testing Results		
Expected	Observation	Conclusion
Data is relevant and consistent with on-site activities	Relevant and appropriate	Can run
The system supports the tenant licensing workflow	Can provide support	Can run
The system facilitates communication between staff and applicants	Can facilitate	Can run
The system accelerates the licensing process	Accelerate licensing	Can run
Does not violate internal or airport regulations	Does not violate	Can run

4) Product testing (website)

A comprehensive assessment of the developed system was conducted to determine its feasibility, effectiveness and future development potential. During the testing process, validators provided constructive feedback and suggestions for future system development. The assessment covered aspects of the website interface and digital forms. The complete results of the validation process can be seen in the following table:

Table 3. Product validation results

No	Assessed aspect	Components	Validator results				
			V.1	V.2	V.3	V.4	V.5
1.	Website	Website access	100%	100%	100%	100%	100%
		Homepage display	100%	100%	100%	100%	100%
		Menu navigation	100%	100%	100%	100%	100%
2.	Digital form	Digital registration form	100%	100%	100%	100%	100%
		Document upload	100%	100%	100%	100%	100%
		Data input validation	100%	100%	100%	100%	100%

Based on the results of testing and validation conducted by five validators, it can be concluded that the Google Sites-based tenant establishment licensing system has met the eligibility criteria in terms of website interface and digital form appearance. All components assessed received a pass rate of 100%, indicating that every element of the system is functioning as it should and is compliant.

CONCLUSION

Based on the research results, it can be concluded that the Google Sites-based tenant establishment licensing system successfully addressed the main problem of slow administrative processes caused by manual methods at APT Pranoto Airport in Samarinda. The system fulfilled the research objectives by providing digital services containing complete procedural information and forms, as well as automatic data storage via Google Spreadsheets. Test results showed that the system was considered functional and user-friendly. The practical implications of this research suggest that digitising services on a simple platform can enhance efficiency and transparency in the aviation sector. In theory, this research reinforces the role of R&D approaches in developing flexible, user-friendly, technology-based public service systems that do not require expensive computer networks or internet infrastructure [15].

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