

Model of City Planning Information System Sub Module Building Permits for Klungkung Regency Government

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Abstract – To adapt technology trends and work efficiency in public services, Indonesia Government in 2003 started to make a base foundation about how e-government system should be build on the upper government of each regency. Following that law, each regency started to implement their process and services to citizens into their own e-government system. Klungkung regency is a part of Bali Province that still have some parts of its services still going on conventional way, especially on buildings permit. While Klungkung Regency was separated by sea, and has a plan to increase its region documentation, this conventional way sometimes not effective to run. This research will propose a model about building permit system that can be build on top of city planning information system that Klungkung Regency has. Proposed model successfully done with requirements and specification from interview with the authorities, with implementation on user-interface design and technical design on the database.

Index Terms - System Information, E-Government, Building Permits,

I. INTRODUCTION

Technology revolution in system information made several impact in our lives. Indonesian Government via INPRES No. 3 Th. 2003 [1] arranged how the upper government in each regency should implement the e-government. Klungkung Regency in Bali has some part of its administration process still rely on conventional process. While Klungkung regency is separated by sea, this conventional process can take a long time to do. A City planning system build to manage this tedious task, but it lack 1 modules to provide administration for Building Permits. This research will take topic about how that sub system should be build on top of the current system while still following Ministry Of General Buildings of Indonesia on its Undang-Undang Nomor 28 Th 2002 about how the citizens should done their buildings permits [2] and hoping the result will help future works in “e-governmental” topic especially in building a permit system information.

II. RELATED TOPICS

A) Electronic Government (E-Government)

Researchers defined that e-government is referring to the usage of government information and communication technologies to deliver information and services to citizen, businesses and public agencies [3]. In 2000 David L. McClure, an Associate Director of the U.S. General Accounting Office stated specifically about e-government. He write in his report that, Electronic Government has a

potential to help build better relationships between government and the public by making interaction with citizen smoother, easier and more efficient [4]. It is clear that the main goals of implementing e-government is to give a clearer and manageable services towards citizens.

B) State of Indonesia E-Government

United Nation in 2018 published EGDI (E-Government Development Index) that came out as a result of survey in 2018 [5].

TABLE 1
SOUTH EAST ASIA E-GOVERNMENT DEVELOPMENT INDEX

World Rank.	Country	EDGI Level	EDGI Score
7	Singapore	Very High	0.8812
48	Malaysia	High	0.7174
59	Brunei	High	0.6923
73	Thailand	High	0.6543
75	Philippines	High	0.6512
88	Vietnam	High	0.5931
107	Indonesia	High	0.5258
142	Timor Leste	Middle High	0.3816
145	Cambodia	Middle High	0.3753
157	Myanmar	Middle High	0.3328
162	Laos	Middle High	0.3056

EGDI 2018 drawn in Table 1 shown that Indonesia is placed below Viet Nam at rank 107 worldwide, scored average 0.5258 while the highest index is owned by Singapore at 0.8812.

While research by Salahuddin & Rusli at 2005 stated about Information System Planning for E-Government in

Indonesia [6]. Continued research done by Sosiawan about a Challenges and Obstacles that happened in implementing E-Government at 2008[7]. They all stated that core problems in implementing E-Government at that time is there is no clear blueprints and so many regencies that adapting different rules and outcomes in e-government implementation. By 2018, we though Indonesia already overcome those obstacles until United Nation gave rating Very High in E-Government Adaptation.

C) Klungkung Regency

Klungkung is the smallest regency (Kabupaten) in Bali, Indonesia. It has an area of ± 315 km² [8] and population of approximately $\pm 174,000$ [9]. Klungkung Regency has a center city named Semarapura. Fig 1. Klungkung Regency Map drawn a map that shown this regency territorial is separated by sea, which makes it harder to citizen to get services in its center city. In this case implementation of E-Government in klungkung regency is very crucial to give better services to citizen.



Fig 1. Klungkung Regency Map

Currently it its government website system at <http://klungkungkab.go.id> serves many system services to citizen and internal government such as: E-Reporting to make financial report, E-Surat to manages the agenda of the mail system, Mesadu Klungkung is for citizen reporting tools about city problems, LPSE Online is for procurement process of lower government in village. But there are no recorded information about system for managing Building Permit exist, while Klungkung government has a plan to increase the region records each year.

III. RELATED RESEARCH

Related research section will explain about all research that has been conducted by other researchers that related to

e-government support system especially in Indonesia. Sutanta & Mustofa in 2012 did a research about Web Service for Data Synchronizations in E-Government information System for Bantul Regency Government in Yogyakarta[10]. They conclude that Web service is an ideal way to do data communication between 2 platform that running on the website platform. By conducting this research they helped Bantul Regency Government to connect their separated e-government system, especially the system that handles big data like community info database.

Second research is done by Pratiwi & Muslihudin in 2018. They did a research about building an e-government information system to increase Bumirejo Village potency in mobile web platform [11]. The system that they made for the village is purposely aiming to make village have presence in online area, that's why they made it on web platform because everybody can access information easily. User that access their website can see all the current information about village and give feedback about their experience in the village.

Third research is conducted by Prihartanto on 2011, he researched about Building a System Information and Management for Agenda to support BPPT (Indonesia Government Permit Departement) in Karanganyar Regency[12]. He built a system to changes the department way to managing their agenda (inbox mail, outbox mail, record task, delegating task). He successfully built a system on top of website platform and he conclude that the system can do more efficient work than conventionally do the mail recording on the book.

Those researches have some similarities and non-similar point with current research. On the top that differences, we shares same interest in terms of e-government and a system or a modules that was built in a part of it or beside that to support current e-government. All those researches agree and have same result about increased efficiency between implementing new system with the government conventional way.

IV. RESEARCH METHOD

This research methodology will consist of three steps that involving data gathering and making requirements as follows:

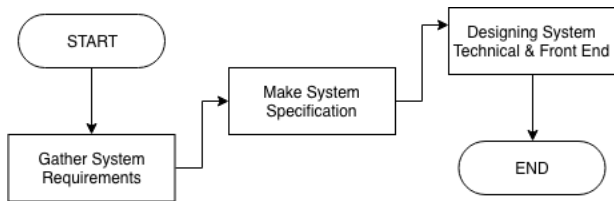


Fig 2. Flowchart Describing Research Method

Fig 2 explain about how we will conduct this research. First, we gather all of the system requirements by interviewing the Klungkung Regency authoritative on Land Permits, How the current conventional land permit process happened, and what they need to improvise and hope in this system development. After we gather enough information about all the system requirements into a specification documents that includes all the necessary information flow and requirements that we gather before. Third is designing system technical and front end. This part we apply all the system specification into detailed technical and user interface so we can ensure the proposed model of system can be applied in the real world problems.

V. RESULT

After we done three steps that we mentioned in Research Method part, we have some result in a form of system information flow, technical detail, and user interface design.

A) System Information Flow

Figure Fig 3 explain about how the information system will works across government and public. First on the request phase will be conducted by public, on this phase user should do permit request on the system and it will be checked automatically whether the required documents is enough or not.



Fig 3. System Information Flow

Second phase is assessment by the admin staff from the authoritative. On this assessment phase, after system determine does the documents is enough or not, admin staff will do manual checking about the legality of the documents. The legality of this documents will be determined in phase 3 which has 2 flows, Approved or Declined. Approving legality will make the permit published as a land permit

certificate, and declining permit will tell the user (public) to revise the documents.

B) System Information Context Diagram

Context diagram tell us about what will system get and give to its user as a data documents, also it tell us about how much entities (users) were involved in this document process. Context diagram were drawn in Data Flow Diagram Model.

Context diagram on Fig 4 show that there will be 2 entities that involved in this system. First is public and second is the authorities which is the system administrator. Based on the system flow earlier, the user submit the requirements document to system and system will process, does the document enough or not. After system confirmed that the document is correct, the requirement document will passed to the Administrator Staff.

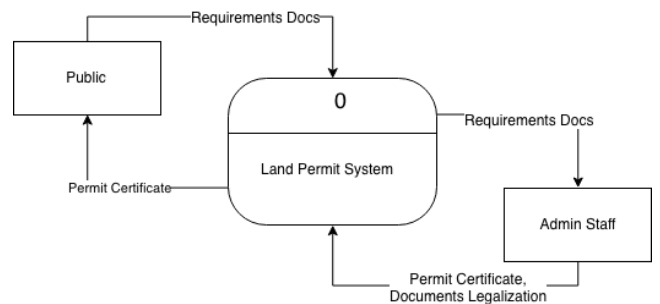


Fig 4. System Context Diagram

Administrator Staff who received the requirement document from the system then decide manually via the Document Legalization function to Approve or Reject the application. If Admin decided to decline the application, user should resubmit again the requirements, if Admin decided to approve the application, Admin then should upload the Permit Certificate so user can print it by requesting with their application ID.

C) System Database Design

This model database design will talk about how that stored data will be managed or manipulated to get the exact output that user need.

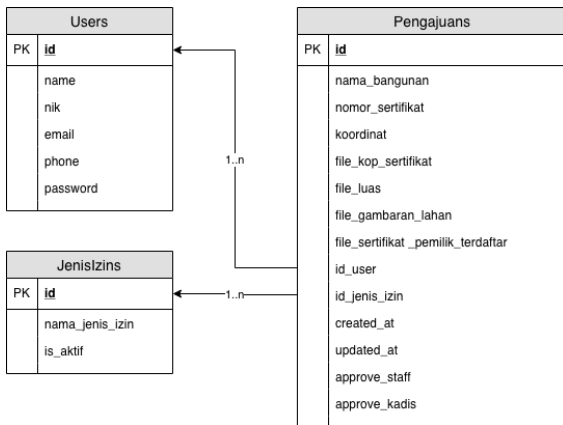


Fig 5. Database Design

Fig 5 explain about the database design of this proposed model. Table *Pengajuans* contain all the required information and documents that need to submit an application to the system. Table *Users* will contain all information about user login and self data, and last informational table named *JenisIzins* will explain what kind of buildings permit will be processed by users.

D) User Interface Design

This part will explain about how user interface design will be done. At the first time user will have to do login and input their username and password, if they didn't have the credentials, they should do register on other page.

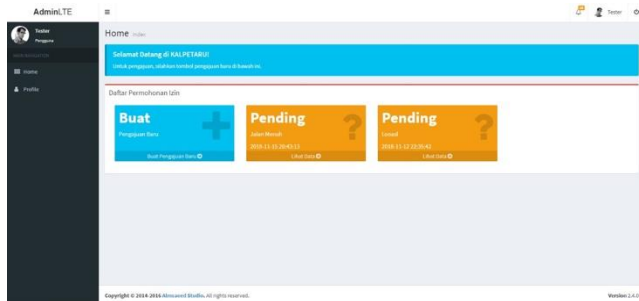


Fig 6. Main Screen

After logged in user will face Main Screen like described in Fig 6 in this main screen user can see statuses of their current building permit applications. User can click 'Buat' to make a new application and submit new one. Other application that still on process is labeled as 'Pending'.

To make a new Application after clicking 'Buat', user will served a form to input all the necessary information and documents regarding to their own buildings.

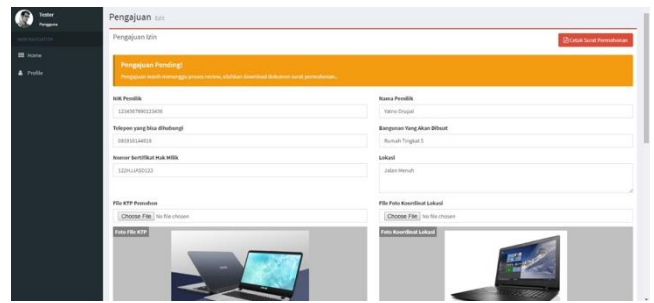


Fig 7. New Application

Fig 7 explain about form 'Pengajuan' that should be filled if user wanted to make a new application. Some form need input text and some form need an uploaded file pdf file for legal building space information.

E) PIECES Analysis

PIECES Analysis covered about how system should perform compared to current conventional system. PIECES analysis is separated by 6 points, which is:

1. Performance
In term of performance, because this system is build on top of the web technology. Goals of Klungkung Government to has at least 100 applications approved is possible to executed. By its conventional way, Klungkung Government only can finish about 37 application per months.
2. Information
Information that user give and user see can be transparently see on the system. Everybody can access and see its application progress without needing to come to the government office.
3. Economic
Just by going to the government office, user in Klungkung regency that separated by sea can cost many for citizen. This system cut that cost part, because information can be accessed anywhere anytime as long user can connected to internet.
4. Control
Controlling the flow of administration in conventional way is hard because so many authorities involved. This system will be easier to control in term of transparency and eligibility to provide information to user.
5. Efficiency
In terms of efficiency, other than cutting time and economic cost. This system will also help efficiency in printing the certificate. If on the conventional way user should wait 2-1 month to get the print, now they can print certificate of Building permit by themselves.
6. Service
All that cost cut, efficiency, time cut will boils down into one purpose, a good service. With a transparent information, and controllable flow system a service can be done better to the citizens.

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VI. CONCLUSION

While its important to set a goals to increase a target works, the authorities should also think about how it should be efficiently done. This research conclude that proposed models about sub modules building permits can be done by knowing what was the specific need of each flow and how much entities or users will be involved. We also found that this system is fit to be used in Indonesia Village Management System (SIMDESA) in it part of its module and connected to central regency system. Future works from this research should be about implementing this model into real-life works.

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