



## Analysis and Design of KOMINFO Mail Handling System Based on Mobile Application

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### ABSTRACT

The development of increasingly sophisticated technology encourages the government to implement digitalization of all administrative activities as a form of optimizing the services provided both within the government and in the community. The purpose of making this paper is to discuss the application of mail handling system named Simaya which is used by the Ministry of Communication and Informatics (KOMINFO). In addition, this application can improve the efficiency of users in accessing the system and provide users in receiving and facilitate information quickly and can be accessed anywhere and anytime. The research method used to analyze all the requirements needed in making mobile applications, namely testing systems, conducting analysis and experiments on features that have been available on web-based simaya systems that have previously been used by KOMINFO. In designing the mobile applications based on requirements that have been collected previously, literature studies look for sources related to this paper through journals, books, articles, and e-books. Axure RP8 is the tools that used in designing the user interface (UI) of the system. Simaya Mobile is expected to be able to help employees more optimally in making agreements. New features designed to make it easier for users to communicate with other users directly. The main features found in the simaya mobile dashboard present a user-friendly feature.

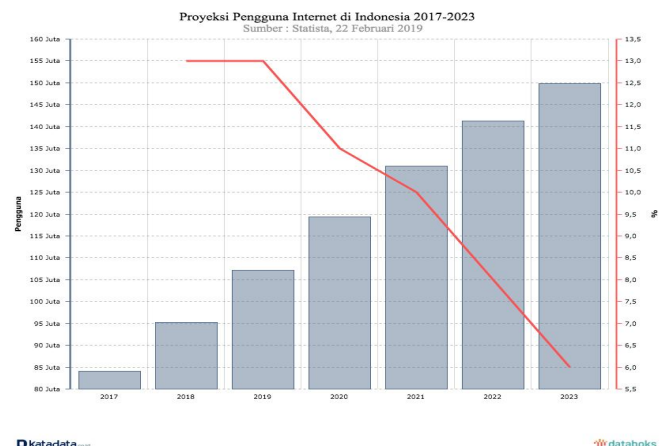
**Key words :** Mobile, Simaya Kominfo, UI.

### 1. INTRODUCTION

The development of information systems that are very fast provides many benefits that can facilitate every activity in everyday life. With the development of information systems, each of these activities is done online using the internet. Since the beginning of the development era of the use of the internet, application development has been carried out so quickly [11]. The development of increasingly sophisticated and modern information technology certainly makes information technology a basic necessity for everyone today

and makes people very dependent on technology. Information technology is a media that has an important role in the dissemination of information and communication, it can make the process of facilitating communication to be faster, effective, efficient and without having distance and time limits [1].

Indonesia is one of the third largest internet users in Asia according to internetworldstats data. Based on research reported by Statista Data 2019 on databoks.katadata.co.id, in 2019 the number of internet users in Indonesia is projected to grow 12.6% compared to 2018 which is 107.2 million users. In the following year, internet users in Indonesia will increase with an average growth of 10.2% in the 2018-2023 period [2].



**Figure 1:** Internet User Statistics in Indonesia

The rapid use of the internet in Indonesia certainly encourages the government to improve the quality of communication and office administration services both within the internal government and in the Indonesian community. The development of e-government is a step in digitizing conventional office activities that utilize information and communication technology within government institutions, both central and regional governments, to improve the quality of services that are effective, efficient, and transparent [7]. E-government is a

communication technology that belongs to the government and is used to interact with the public to improve services provided by the government and can distribute information through online services to the public using e-government. These are four main types of e-government services, namely government to citizen (G2C), government to business (G2B), government to government (G2G), government to employee (G2E). Utilization of technology in government agencies is needed for daily needs ranging from office matters to public services provided by the government to the community [7].

One example of e-government development carried out by the Ministry of Communication and Information is the development of the SIMAYA application. This system helps facilitate employees in managing letters, inputting incoming letters, outgoing letters, and making dispositions. This study focuses on the interaction between government to government (G2G) because simaya provides services that are used to support the performance of internal government employees in managing the KOMINFO internal mail management system. Thus, in an effort to follow up on the dissolution of the Minister of State Apparatus Empowerment and Bureaucratic Reform (MENPAN-RB) No.6 of 2011 on the general guidelines for Electronic Service Manuscripts (TNDE), encourage the development of governance of correspondence from conventional to digital so that the administrative process becomes more effective, efficient and fast [4]. Conventional correspondence processes cause ineffectiveness which results in hampered productivity of employee performance in carrying out letter management and carrying out assigned tasks [4]. Therefore, this is the main factor driving the design of mobile-based simaya applications. The effectiveness the use of the system can be measured through employee performance, which can be seen from the efficiency and effectiveness of the performance carried out [12]. The presence of simaya mobile is expected to help users or employees to be more flexible in following up on incoming letters, making letters, and making dispositions.

## 2. LITERATURE REVIEW

### 2.1 Information System

Information systems are a set of components that related to one another that collect data, process, store and provide as output the information needed to fulfill business activities [5]. Information system is a set of interconnected components where the components collect, store, manipulate, and disseminate data, information, and provide a reciprocal mechanism in such a way as to achieve a goal [8].

### 2.2 Analysis

Analysis is a set of activities that allow people to understand and determine what must be achieved by the new system that is built. System analysis describes in detail what must be done by the system in order to satisfy needs and solve problems [6].

### 2.3 System Design

System design describes how the system works and determines in detail all the components of the system solutions and how they work together. Systems Design contains a series of activities that enable a person to be able to explain in detail how the system can be implemented so as to provide solutions to meet the needs [6].

### 2.4 Mobile Apps

Mobile applications are programs that are designed for users who can move from one place to another and are used anywhere and anytime.

### 2.5 User Experience

User Experience is a broad concept that applies to all aspects of a person's interactions with products or services. When the product is a software application, UX includes actions, responses, perceptions, and feelings that a person has when he uses or anticipates the use of that software application. It is important for designers to think about the overall user experience because they consider the design of new systems and specifically the user interface [6].

### 2.6 User Interface

User Interface is the input and output directly involving the application user. The user interface is a system that depends on three main factors such as the purpose of the interface, the characteristics of a particular interface device, and the characteristics of the user [6]. User Interface (UI) is a form of display that is directly related to the user, and the function of the user interface is to connect between the user and the operating system so that the computer can be operated [2]. There are eight golden rules for designing interactive interfaces as follows [5]:

- Strive for consistency
- Enable frequent user to use shortcuts
- Offer informative feedback
- Design Dialogs to yield closure
- Simple error handling
- Permits easy reversal of actions
- Support internal locus of control
- Reduce short-term memory load

### 2.7 Waterfall Methodology

Waterfall model is one of the most well-known SDLC methods and is often used in system development. This modeling method illustrates a sequential approach of several stages which is usually called the waterfall model. The waterfall model is a software life cycle that consists of analysis, coding design, testing and support stages [5].

## 2.8 The Unified Modeling language

UML is a standard construction models that used to define a notation by the Object Management Group [5]. Unified Modeling Language (UML) is a method for describing software designs that have industry standard modeling notation for object-oriented system visualization and also as a platform to accelerate the application development process and offer a standard for designing a system model [10].

## 2.9 Prototyping

Prototype is defined as a version of a potential system that provides ideas for developers and potential users, how the system will function in its completed form. The process of making this prototype is called prototyping [9]. Prototype stages are as follows:

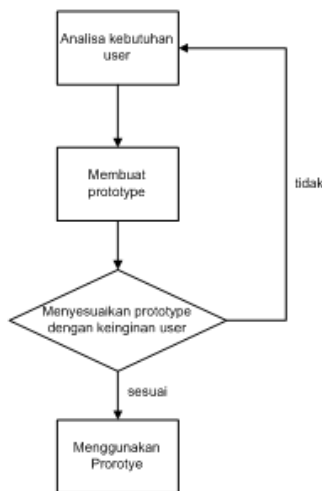


Figure 2: The Steps of Prototyping

## 3. RESULT AND DISCUSSION

### 3.1 Current System

SIMAYA is a cloud-based mail handling system that can be used by all Ministry of Communication and Information employees. With this cloud computing system, user can login using username and password that already registered ini KOMINFO portal system [13]. The main purpose of developing the SIMAYA system is to improve the mail handling system to be more effective and efficient. This system helps facilitate employees in managing letters, inputting incoming letters, outgoing letters, and disposition.



Figure 3: Simaya 5.0 Website Version

Based on the existing problems, the design of a mobile apps simaya mail handling system is the development of a website-based system that is already available. The development carried out aims to facilitate employees in accessing the virtual system anywhere and anytime. Employees can easily and quickly convey and pass on information and assignments received. Employees can directly download and access the mobile apps and login without having to use a web browser. Some additional features such as notifications can immediately bring up information on the mobile phone screen that is used so that it can speed up the process of delivering good information about receiving incoming letters, notification of sending outgoing letters by the administration, making dispositions, receiving copies of letters and of course can be easily known by users.

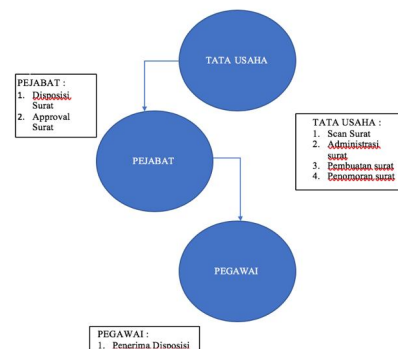


Figure 4: The Bisnis process of Simaya

### 3.2 The Solution

Based on the problems that occur, it is proposed to make the design of the mobile apps user interface that is created using Axure RP8. There are several additional features that are made, namely the chat feature that can facilitate employees in communicating. Here is a Use Case Diagram which illustrates the activities carried out between the user and the system.

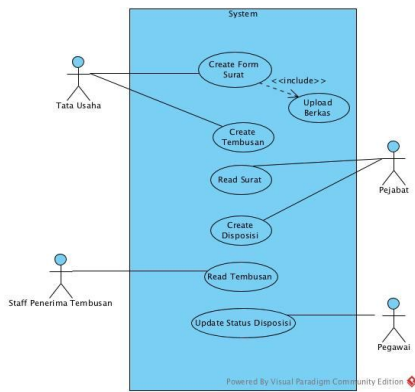


Figure 5: Use Case Diagram of Simaya

### 3.3 System Features

This is the user interface design of simaya mobile application. There are some additional features that are easy to use and can help employees get information.

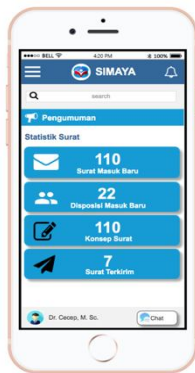


Figure 6: User Interface of Simaya Mobile Apps

### 3.4 Chat Feature

The chat feature is a medium for sending short messages between fellow simaya mobile application users. This feature can make it easier for users to communicate and distribute important information. Not only sending short messages, users can send pictures or photos, files, and voice notes.

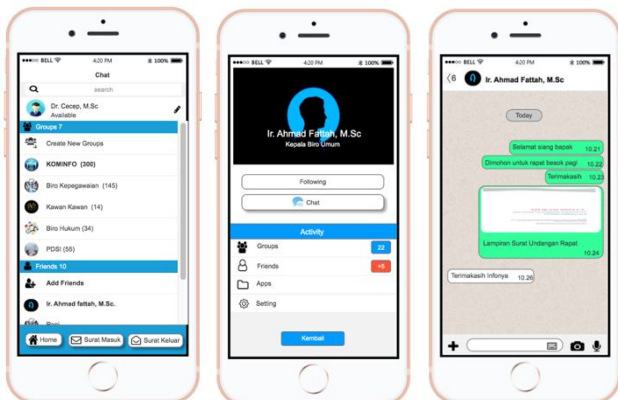


Figure 7: Chat Feature of Simaya Mobile Apps

## 4. CONCLUSION

Based on the results obtained from the discussions that have been agreed upon in the above discussion, simaya Mobile is expected to be able to help employees more optimally in making agreements. New features designed to make it easier for users to communicate with other users directly. The main features found in the simaya mobile dashboard present a user-friendly feature. The design of the cellular application is expected to assist KOMINFO in further developing the mobile application-based simaya application.

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