

Implementation of Design Thinking Method on User Interface Design of Digital Police Information System Application (SIPOLDI)

Sari Yuliani¹, Evi Fadilah^{*}

^{1,2} Information Systems Study Program Faculty of Science and Technology Raden Fatah State Islamic University Palembang

Abstract

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This research aims to design the User Interface of the POLDA Digital Information System by implementing the Design Thinking method. In the research, the Design Thinking method was used. Design Thinking is an innovative approach that focuses on human needs, adopted from design practices, and integrates aspects such as user needs, technical possibilities, and success requirements. The results showed several key issues, including difficult system navigation, suboptimal document search features, and the absence of automatic notifications. These issues were the main concerns in the user interface design, and solutions to these issues included simplifying navigation, developing a more efficient search feature, and adding automated notification elements. By implementing these solutions, SIPOLDI is expected to improve the user experience of this application.

Keywords: Design Thinking, User Interface, Digital Police Information System.

(*) Corresponding Author: sariyuliani51@gmail.com

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INTRODUCTION

In the growing digital era, information systems as one of the digital technologies have become an important means for various companies, agencies, groups, and individuals to store, manage data, make decisions, analyze markets, and generate information. One of the agencies that use technology is the Indonesian National Police (POLRI). In facing the era of openness to information that has arrived, POLRI is given directions to improve performance optimally and professionally in order to provide the best service to the community (Wiranatha et al., 2024).

POLRI as an agency that has an important role in regulating security, order, and services to the community needs to follow the development of information system technology order to carry out its duties effectively and responsively to changing times (Pagang, 2024). One of the technologies used by POLRI as a form of service to the community is information systems. For the police, a good information system has an important value in building agencies towards a safer, more efficient, and effective digital ecosystem.

South Sumatra Regional Police (POLDA SumSel) as part of POLRI, took part in creating various innovations that can help police duties, especially police in South Sumatra. Some of them are the Rank Ascension Information System (SIKEPANG), the POLDA SumSel Website, the Police Assistance Message (BANPOL) application, and many other systems and applications.



South Sumatra Police has several different work units, one of which is the public relations (PR) work unit. This work unit plays a role in bridging communication between the police and the community. The tasks of the public relations unit include providing public information about the activities and programs conducted by the police, building good relations with the mass media, managing the official social media of the police, and conducting public awareness campaigns.

Public Relations of POLDA South Sumatra as a division related to multimedia is currently still doing activities manually, it is difficult to find data and does not have a centralized application to help speed up activities carried out. Good for making reports, correspondence, schedule reminders, organizational structures including member identities, and storage of materials and *Design* products to be distributed through social media owned by POLDA SUMSEL. Therefore, researchers are interested in conducting research with the title "Implementation of the *Design Thinking* Method in *Designing* the *User Interface of the* POLDA Digital Information System Application (SIPOLDI)".

The digital POLDA information system application (SIPOLDI) was created to speed up and facilitate activities carried out in the public relations unit of POLDA SUMSEL, researchers used the *design Thinking* method in this study because the method used focuses on solving problems creatively and understanding user needs in depth with emphasis so as to produce procedures such as, *Empathize, Define, Ideate, Prototype, Test*.

RESEARCH METHOD

In the research used the Design Thinking method, the *design thinking* approach was introduced in 1990 by David Kelley and Tim Brown from the IDEO company, a design consulting company that focuses on product design innovation, *Design Thinking* is an innovative approach that focuses on human needs, adopted from design practices, and integrates aspects such as user needs, technical possibilities, and success requirements Kelley and Brown (2018).

Design Thinking can be interpreted as a comprehensive thinking process that focuses on creating Solutions This approach begins with the empathy stage, where attention is paid to understanding specific human-centered needs (Haniifah et al., 2021). The design thinking approach process is it is an iterative process that involves identifying and understanding the user as a human being to solve the problem at hand (Nasution & Nusa, 2021), which has five stages whose processes are not much different, but with an emphasis on some parts to produce procedures.



Figure 1. Design Thinking Method

1. *Empathize*: A process that involves consulting with experts to learn more about the area of concern through observation, participation and sympathy with others, to understand more clearly about the problems in the object of research.
2. *Define*: The stage of gathering information that is obtained and collected in the *empathize* process.
3. *Ideate*: this stage is for generating ideas
4. *Prototype*: this is the stage that aims to identify the best solution for each problem identified.
5. *Test*: The final stage of design thinking, to test the Prototype application that has been created and evaluate it.

Design Thinking is an iterative process of trying to understand users, by providing a Solution-based approach to preventing problems, which is a simple and clear way of working and thinking.

RESULTS AND DISCUSSION

A. Empathize Stage

Stages carried out to find user needs through interviews and observations related to user needs. Interviews were conducted with the Creative Product Section of the Multimedia Subbid, related to the procedure for making reports and designs with the aim of clarifying application needs. This observation is carried out to find a suitable application model to be applied to the interview question system, the results of the interview in Table 5.1.

Table 1. Interview Questions

No	Interview Results
1.	According to Narasumbser, the application is better to be mobile- based, so that it can be accessed anywhere and anytime.
2.	Interviewees want the application to be used for the South Sumatra POLDA PR subid
3.	The materials to be designed are few and are still uploaded on gdrive and are paid.
4.	Application users have an account created by the admin and only the admin can change the password.
5.	Interviewees stated that it would be good if there were activity reminder notifications
6.	The interviewee stated that if this application is run, hopefully it can be useful properly and make work easier.
7.	

B. Define Stage

The define stage is to identify core requirements. The core needs include a list of user requirements, business process flowcharts and using figma as a design and prototyping tool. Identification of user needs is done to become the basis for making UI/UX.

Table 2. List of User Requirements

No.	User Needs
1.	Mobile-based application
2.	User covers Special Members of Public Relations of South Sumatra POLDA
3.	User Has an account on the app
4.	User can change personal data
5.	Admins can upload, change, and delete data.
6.	Users can view the Report Generation Process
7.	Activity reminder notifications for users.
8.	Only admins can change user passwords

C. Ideate Stage

The stage to gather ideas to come up with a Solution, here's a list of problem solvers.

Table 3. problem solving needs.

No.	User Needs		Problem Solving			
1.	Application mobile	Built on	Mobile-based application design.			
2.	User includes Specialized Public Relations Member of South Sumatra Police		The owner of the application account is a public relations member of South Sumatra POLDA.			
3.	User Has an account on the app		<ul style="list-style-type: none"> Admins who register and create User accounts Users can login with the username and password that has been registered by the admin. 			
4.	Users of can Change personal data		Users can add and personal profile data.	hange	heir	wn
5.	Admin can upload, modify, and delete data.		Admins can fully manage data from users.			
6.	Users can view the Report Generation Process		Users can see the process of the submitted report.			
7.	Availability of Activity reminder notifications for users.		Users can add reminder notifications for activities.			
8.	Only Admin can Change Password user		Only admins have full access to change user passwords.			

A. Prototype Stage

This stage is the creation of the application display by implementing the ideas that have been obtained and the results of the prototype in the form of a final design that is tested.

1. App Start View

The initial page display has the same appearance for all users, displaying the logo and name of the application as well as a start button that functions to start the application and a public relations logo will appear to wait for the *login* display.



Figure 2. Initial View of the Application

2. App *Login* Page Display

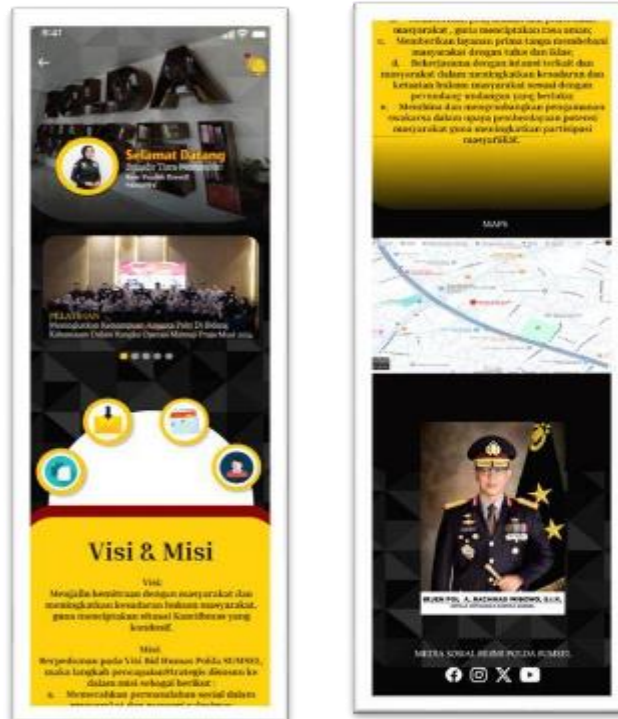
This display has the same appearance for all users, namely in the Public Relations Office to log in (Log in) displaying the email and *password* that has been registered to be able to access SIPOLDI.



Figure 3. Application Login View

3. Home *page* display

The main page display has the same appearance for users and has 4 main features, namely, organizational structure features, activity schedule features, report and letter making features, as well as uploading materials and design products produced. The main page also displays user identity, notifications



of public relations activities, vision, mission, and *maps of* POLDA Sumsel.

Figure 4. Home page display

4. Profile *view* and notifications

Displays the profile of the user in the form of Nrp, Name, Position, Work Unit and subbid. While the notification page displays all , and schedules that have been made.

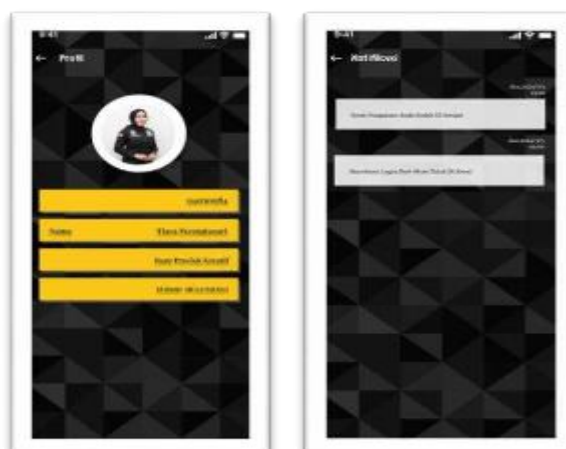


Figure 5. Profile and Notification Display

5. Organizational Structure View

This organizational structure page provides information on members of each subbid, namely Penmas subbid, Multimedia subbid, PID subbid and Renrim. This organizational structure view displays the identity information of each member in the South Sumatra POLDA Public Relations Unit.

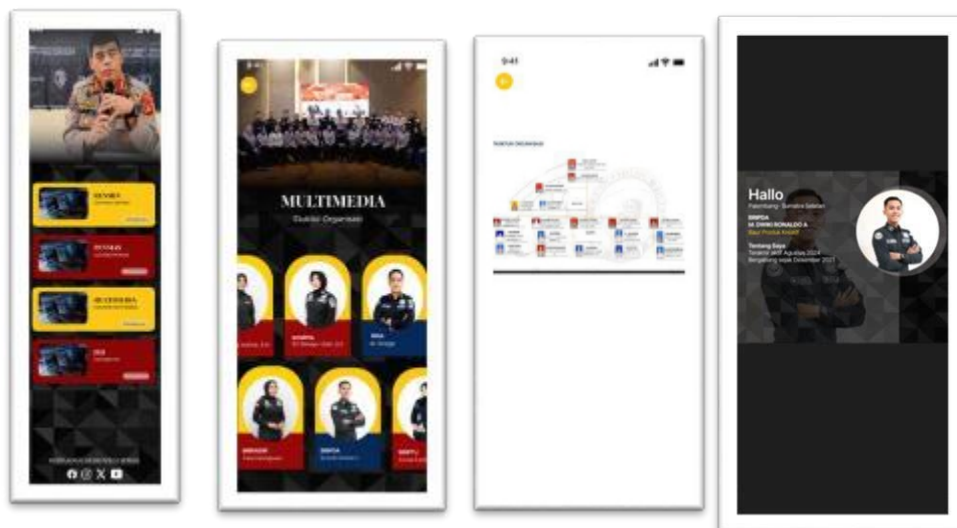


Figure 6. Organizational structure display

6. Schedule Notification Display

This schedule page allows users to see the complete schedule, starting from the date, the person in charge, what to do, and the assigned team, users can also see the script if the schedule is content creation.

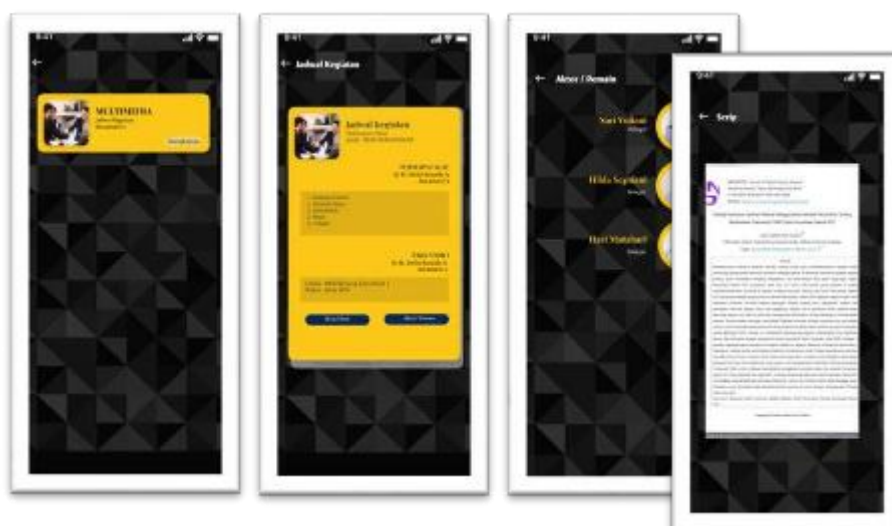


Figure 7. Schedule/Activity Display

7. Report generation view

The report creation page is very important to facilitate users in making reports with the *Tampalte* of various reports and letters that can be created

easily, users can select the type of report or letter then users can fill in according to existing data needs, if finished the user can send and save the letter that has been created.

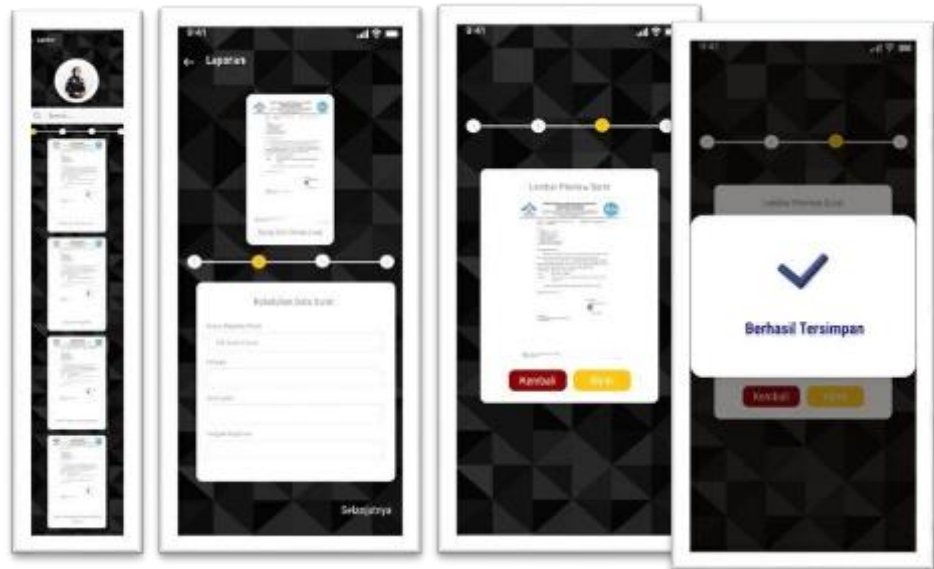


Figure 8. Report Generation View

8. Initial View of Material and Product *Upload*

This material and product upload start page displays two options, namely *uploading* materials and *uploading* products.



Figure 9. Initial view of uploading materials and products

9. Design Material *Upload* View.

On this page users can *Upload* (upload) materials to make designs, pengguna can add titles and date information and *descriptions of designs* that must be made. Users can also save materials that have been *uploaded*.

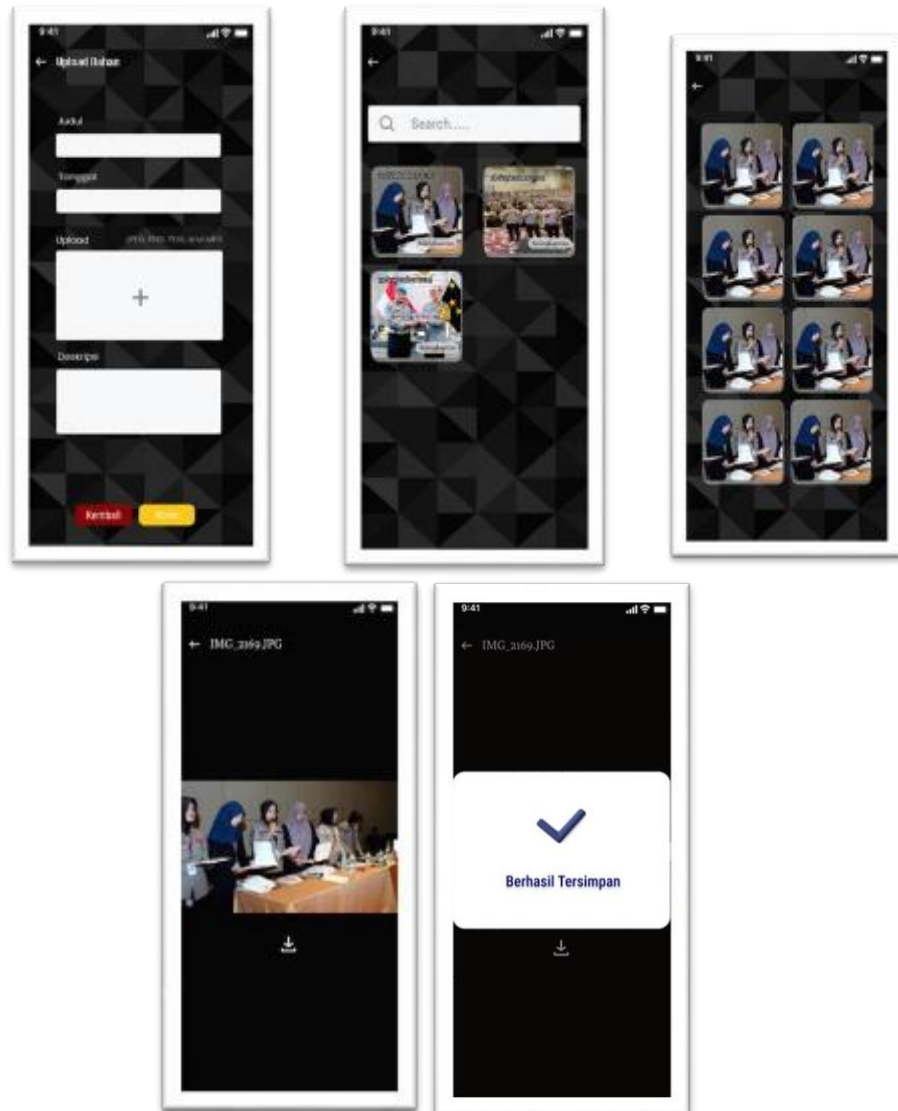


Figure 10: Upload view of design materials

10. Product Display Design

This page shows the products that have been *designed*. Users can submit products with the title, date of *upload* to POLDA social media and *caption* when shared on social media.

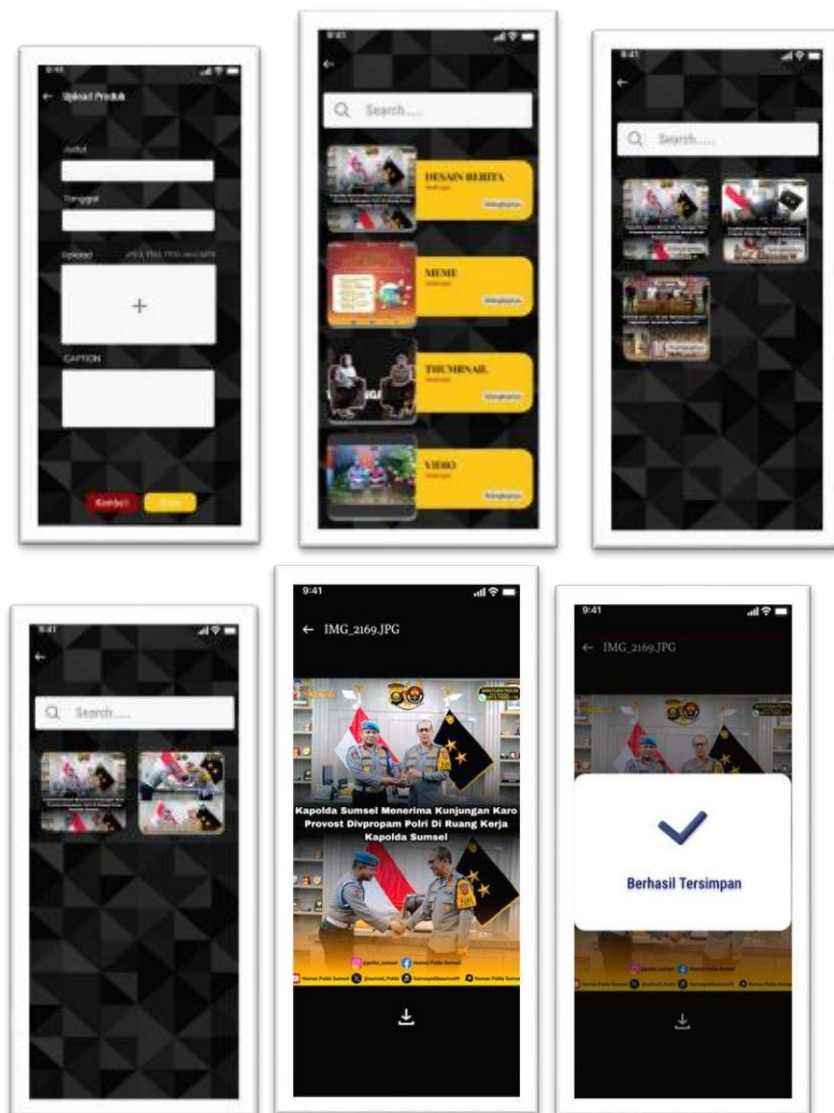


Figure 11. Design Product View

Tahap ini adalah pembuatan tampilan aplikasi dengan mengimplementasikan ide yang sudah didapat dan hasil dari prototype berupa desain akhir yang di uji coba.

CONCLUSION

The Digital Information System (SIPOLDI) application uses the Design Thinking method to understand user needs and problems to be addressed. To ensure that the application can be optimally used by its users in the future, designing a good user interface is essential, even though the application is still at the proposal stage and has not yet been fully implemented. The results showed several key issues, including difficult system navigation, sub-optimal document search features, and the absence of automatic notifications. These issues were the main concerns in the user interface design, and solutions to these issues include simplifying the navigation, developing a more efficient search feature, and adding

automated notification elements. By implementing these solutions, SIPOLDI is expected to improve the user experience of this application.

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