

THE DESIGN STUDIES OF USER INTERFACE AND USER EXPERIENCE ON THE MOBILE APPLICATION OF CIMAHY MALL

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ABSTRACT

The Covid-19 outbreak has caused losses to the economy, especially sectors such as development centers or malls. Operational adjustments at Cimahi Mall during the implementation of community activities resulted in a drastic decrease in income levels. Coupled with the needs of people who are now no longer dependent on shopping offline. Therefore, a Cimahi Mall mobile application can be a new medium in providing information and used as a marketing strategy in tenant promotion programs and other mall events. The design method used is Design Thinking which focuses on user needs and experience.

Keywords: UI/UX Design, Mobile App, Mall

1. PREFACE

Entering the globalization era that's identic with the term of modernization, every aspect of life will resemble change. This change follows the evolution of technology that is considered very fast. Nowadays, technology is a very big offer for everyone. Globalization is one of the processes of renewing that considers all aspects of life, using technology as one of its main mediators. Evolution of technology in the 4.0 era that's getting faster is requiring us to be able to innovate in creating a technology product, whether it is a mobile based technology or a website-based technology.

Mobile apps or cellular are the softwares that operate in mobile devices or cellular (example being smartphones or tablets). To obtain mobile applications or cellular needed, users can download them through certain sites already existed in their devices (Android or iOs). Google Play and iTunes are one of the many examples that offer applications for Android and iOS users to download applications that they need [1].

In the process of evolution in a mobile app, there are things that need to be paid attention to, such as user interface and user experience. User interface is the visual part of a website, software application, or device hardware, but it is not only about color or shape, but about assuring how an user interacts with the application or said website and how the information is presented on the assigned screen to fill its purpose [2]. Outside of good information infrastructure and interaction design, user interface is also about caring towards visual elements which are: (a) layout; (b) typography; (c) icon and symbols; (d) affordability; (e) graphic; (f) color; (g) animation and transition.

Through the user interface design is where a fully designed mobile application can be used correctly and increase the user experience which that the user can feel pleasure and comfort. So,

in order to increase the user experience, to where it can be meaningful and relevant, it is needed for a user experience process where this process includes aspects of design that goes in depth regarding accessibility and accommodation of potential, and also the user's physical limitations, such as layouts that don't confuse people, color usage, and the size of the letters.

Shopping centers or malls are one of the many sectors that are most tested in the span of the Covid-19 pandemic. From as long as the past year, Cimahi Mall has experienced severe decline in income, especially for the businesspeople in mall sectors, restaurants, and even tenants. On top of that, Community Activities Restrictions Enforcement (CARE) also changes the operational hours and limits the max amounts of visitors that are allowed in a mall at once. This regulation impacts not only the income of Cimahi Mall, but also one by one, the tenants start to become unoperational due to the shortage of mall visitors, therefore the tenants are unable to cover the rental and operational costs. Because of that, there needs to be a new breakthrough as to how the tenants can still hold their ground and keep up the sales activity and expand their marketing reach. In this case, the evolution of technology can be utilized to form a digital media that can build a sales line virtually between tenants and mall visitors that will increase income and insight, even until the situation returns to normal.

2. RESEARCH METHOD

The method used here is Design Thinking. Design thinking is a process that solves issues by prioritizing user needs on top of everything. This process depends on observation, empathy, how people are interacting with their surroundings, and using a repetitive and direct approach to come up with an innovative solution [3]. The process of Design Thinking branches into 5 steps, which are:

- a. Emphasize
Empathy means considering what the user may feel or what they think about. This data will be collected through interviews, questionnaires, and other methods.
- b. Define
The conclusion of data obtained from the first step will be analyzed to target a specific type of users and come up with a solution for it.
- c. Ideate
After the issue is identified, start to come up with a way to solve it. For example, start brainstorming ideas regarding how to solve the issue that has been identified.
- d. Prototype
The step that turns the idea into a real solution. The prototype can be anything that takes a physical or digital form.
- e. Test
After giving out the prototype to consumers, proceed to analyze how they interact with it. This step is where said producers are to collect feedback towards design [4].

3. RESULT AND DISCUSSION

Analysis of Target Audience

A. Geographic

- a) Region : Cimahi, Jawa Barat

B. Demographic

- a) Gender : Male and Female
- b) Age : 18-45 years old

- c) Occupation : Students, Employee, Entrepreneur, Housewife
- d) Economic Status : SES B-A

C. Lifestyle

People who like to spare time to enjoy entertainment, and release boredom. This is related with the entertainment field where people will go to malls to stroll around or find products to purchase.

D. Behavior

According to the psychography factor, the target audience are people with dynamic lifestyles, people who follow the development of the times, and people who are active and social. This also includes people with many friends, modern people, and those who use their smartphones as their daily auxiliaries.

SWOT Analysis (Market Audience)

A. Strength

- a) Cimahi Mall management is managed by those who are experienced in the Property field.
- b) Mall with the concept of a mall for families or young people.
- c) Many tenants with know names in the general public.
- d) Many tenants with varied categories that are in accordance with general needs.

B. Weakness

- a) Parking space around the entrances are limited. The main entrances are located in the main street which is Gandawijaya Street, and the exit is located in the second street, which makes it difficult to drop off mall visitors.
- b) Has yet to have a professional website or mobile app that can be used to mediate information for visitors.
- c) Tenants such as the Giant Supermarket are now gone, which caused a severe decline in mall visitors.
- d) Has yet to have a cinema or main entertainment objects for families or young people.
- e) The Funstation that was a place for young children to have fun in has been closed due to the pandemic.

C. Opportunity

- a) The Cimahi Mall is the biggest mall located in the center of the city Cimahi, which is in Gandawijaya Street where the area is also a shopping center.
- b) Located in a very strategic location, where the traffic from Bandung and other cities heading towards Padalarang will cross Cimahi Mall.

D. Threat

- a) Alternative options such as online shopping or online delivery.
- b) Many people in the community who are still concerned about the Covid-19 pandemic, which leads to people avoiding crowded places such as malls.

SWOT Analysis (App Mobile)

A. Strength

- a) Easily downloadable and does not require a certain currency.

- b) More modern due to the change in the digital era that counts more on smartphones.
- c) More updates on information than using other media platforms to indicate things such as the locations of tenants, or even new promotions held by the mall.

B. Weakness

- a) The need of internet connection. Not every provider has enough signal in the same place and time.

C. Opportunity

- a) Can be turned into a media for brand new information and promotions due to mobile applications being designed dynamically, which means the content of the application can be changed as needed.
- b) Can persuade regular visitors of Cimahi Mall to keep visiting the mall with features such as a lottery system, stamps, vouchers, and other features.
- c) A new concept of purchasing items between tenants and customers. Tenants can turn the platform into a new media of promotion. Customers can also use said features to benefit themselves, such as redeeming vouchers and such.

D. Threat

- a) Many people aren't up to date on the evolution of technology, for example being older people that don't have the access to smartphones or have the ability to recognize digital products or services in the form of mobile applications.

Design Concept

Media Concept

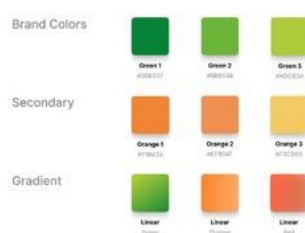
The UI Design style of the Cimahi Mall mobile app will be picked according to the age on the target audience. From observation, it is found that the age range of the Cimahi Mall mobile app users range from 18 year olds to 45 year olds, therefore the writer will pick a design based on attraction, user friendliness, modern, and simple so that users will be able to adapt easier and obtain the information needed faster.

Color Concept

The color picked will be the color green (the color of the visual identity in Cimahi Mall) that has the meaning of update and growth. The color orange will also be picked that comes from the mall color itself, which has the meaning of happiness, fresh, and reachable by many types of people. A mixture of black and white will also be used to support neutralism, and color combination with user experience. With making this application, the UI will have characteristic identification of the visual identity in Cimahi Mall, and so the color effect used will be linear gradient.

Figure 1

Guideline Colors



Typography & Layout

The font used will be Roboto with settings listed in this picture:

Figure 2

Typography



The software used to create this application will be figma. The basic media format used here will be android with the ratio of 9:16, and the size of 360 x 640, which can be developed with the ratio of 9:19 and the size of 360 x 760, and also with the format of 9:19,5 and the size of 360x780 in accordance with the development on the size of androids in this time around.

Figure 3

Format Media



Button & Icon

Buttons are divided into long and short buttons that is usually used in accessing the next page. General buttons consist of the back button that will navigate the user to the previous page.

Figure 4

Buttons



Icons are a representation of a function in a name. Icons in an application has functions such as a pathfinder that lets the user navigate through the application.

Figure 5

Icons



Flowchart

The beginning of designing is determining the flowchart of the mobile application. Main bottom navigation consist of home, tenants, upload, history, and account. Each one has its own functions in serving information.

Figure 6

Flowchart



Use Case

Determining Use Case to capture the functional needs in the system that's relevant, Use Case explains interaction that happens between the 'actor' - initiator from the system interaction itself with the existing system, a Use Case is represented with a chain of simple steps.

Figure 7

Use Case



User Flow

After that, designing User Flow is used to draw up the steps that users take to finish tasks when using a product. Here is listed the steps:

Figure 8
User Flow Login & Register

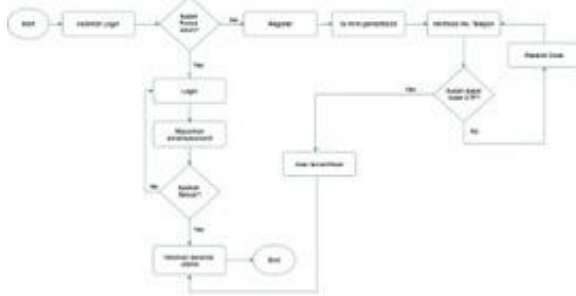


Figure 9
User Flow Login as A Guest

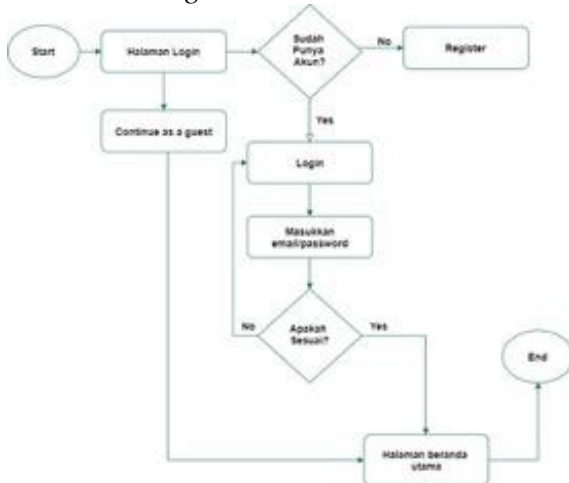
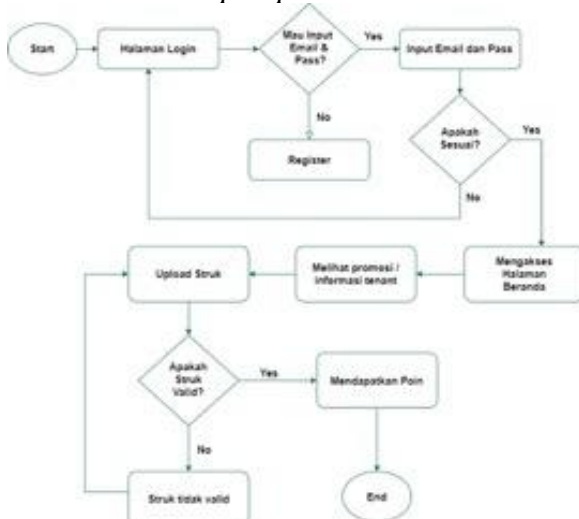


Figure 10
User Flow Receipt Upload



Information Architecture

Information Architecture is a method used to manage all genres, content, and design conditions in an application.

Figure 11
Architecture Information



Wireframe

Followed by wireframe designing which focuses in problem solving, for example, what is doable by users and the procedures in many different scenarios.

Figure 12
Lo-Fi Wireframes



High fidelity wireframes are completed designs from the work in progress application. Wireframes are the detailed version of low fidelity wireframes, details like color, icons, and other needs are added onto this wireframe.

In a high fidelity wireframe, the appearance from the concept will be drawn on with more detail visually, especially the color layouts, icons, and other aspects.

Figure 13
Hi-Fi Wireframes



Picture

Visual Results

Figure 14

Splash & Onboarding Screen



Figure 15

Register

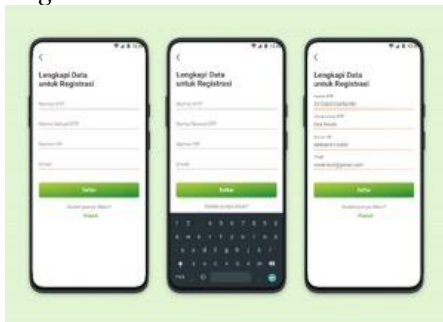


Figure 16

Login

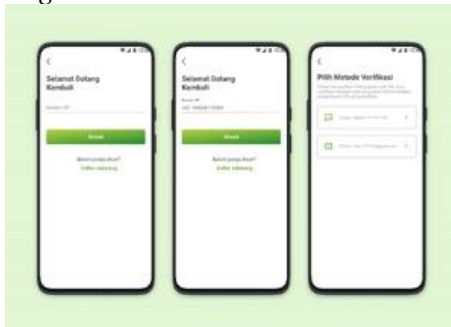


Figure 17

Verification & OTP Method

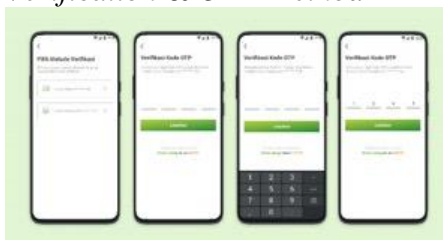


Figure 18
Error Message Register, Login, and OTP

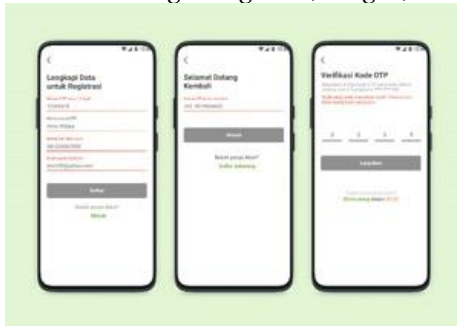


Figure 19
Home-Screen Registered User and Guest Mode



Figure 20
Number of Points & History of Points

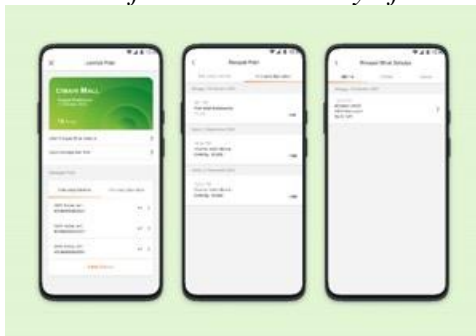


Figure 21
Rewards & Voucher



Through the background of the existing problems, it can ensure that the number of visitors decreases and shopping activities are reduced due to the pandemic. In this design, the digitalization process is carried out in this modern era as well as at the same time helping clients' problems now and in the future. The design of this mobile app aims to be a bridge so that visitors come with various promotional offers, events, and programs held by Cimahi Mall.

Acknowledgement

1465

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