

Application UI UX Design Selling Laptops Online (SLO) Using The Design Thinking Model

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Abstract

Nowadays, there are several online payment systems over the internet to serve the needs of online businesses. Buying and selling laptops online has become popular due to its convenience, wider selection, and competitive prices. Customers can browse various brands and models, compare features and prices from various sellers on e-commerce platforms. The purpose of this research is to design a mobile-based online laptop selling application that can make it easier for users to order laptops that are more efficient by using design thinking modeling. After designing the user interface, further testing is carried out using the System Usability Scale (SUS) approach which obtained a score of 65 which is at grade D, so it can be concluded that the design of the user interface of this laptop selling application is okay to be developed into a mobile-based application.

Keywords: Design Thinking, Selling Laptops, User Interface, User Experience.

1. Introduction

Buying and selling laptops online has become popular due to its convenience, wider selection, and competitive prices. Customers can browse through different brands and models, compare features and prices from various sellers on e-commerce platforms. However, one needs to be careful in choosing a trusted seller, should check reviews from previous buyers, and make sure to understand the return policy and warranty offered before buying. Also, make sure to conduct transactions through secure and trusted sites to protect your personal and financial information.

The increasing use of the internet by the public is characterized by a surge in customers and business people. This includes the opportunity to sell commoditized goods online. One of the most important things in business over the internet is how profits can be obtained safely and easily. Currently, there are several online payment systems through the internet to serve the needs of online businesses.

Business people generally still conduct business transactions manually through face-to-face or over the phone. Unfortunately, sometimes this method is not very effective, because not everyone knows the company's phone number. Even if they know, it is very rare for customers to want to write a phone number let alone memorize it. Customers always want the easiest way to order or purchase. From the shop side, employees are required to always be on the spot to fulfill order requests from customers. On the other hand, it is also difficult for employees to make sales reports because they still use conventional methods where employees have to reopen sales archives. Difficulties that also occur in business are where companies have difficulty marketing products and finding the right buyers. Likewise, the customer has difficulty in finding the products needed.

Something that users interact with as part of the experience is the user interface (UI), and the UI is not just about aesthetics, it is about providing users with the right tools to meet their needs. A poor UI can frustrate users and affect usage [1]. User interface is the study of graphic design layouts for website or application displays. It focuses on the aesthetic appearance of a website or application, and UI designers are tasked with placing text elements, colors, lines, buttons, images, and all other elements of a website or application display [2]. Something that users interact with as part of the experience is the user interface (UI), and the UI is not just about aesthetics, it is about providing users with the right tools to meet their needs. A poor UI can frustrate users and affect usage [1]. User interface is the study of graphic design layouts for website or application displays. It focuses on the aesthetic appearance of a website or application, and UI designers are tasked with placing text elements, colors, lines, buttons, images, and all other elements of a website or application display [2].

Today's technological developments have made it possible to use digital means to design products with optimal appearance and user experience. User Interface (UI) design and User Experience (UX) are key elements in creating products that are not only aesthetically pleasing, but also provide comfort, convenience, and efficiency to the user. The importance of the user interface is very visible in the operation of almost all aspects of the application, making it an integral part of the entire application system [3].

Design Thinking is a valuable approach to UI/UX development. Design Thinking is an innovation-focused approach to designing software products based on exploring ideas or solutions that address user challenges. In the design thinking process, the identified problem is

processed and classified to determine the solution. The solution is then translated into a prototype form that can be further developed [3]. Figma is a design tool commonly used to create the appearance of mobile applications, desktops, websites that can be used on Windows, Linux, or Mac operating systems with an Internet connection [4].

2. Research Methods

The research methodology is the stages carried out during the research. This research starts from problem identification where researchers find several problems including information related to the sales information system. information related to the current sales information system, namely SLO, has used a web/application based system where buyers can interact and see the desired items without having to come directly but are afraid that the items selected and purchased when they reach the buyer's hands do not match what is expected. Data collection in this study begins with a detailed analysis of user needs related to online laptop sales, where all data collected is based on several scientific journals related to online laptop sales. The next step is to design the user interface with design thinking modeling using FIGMA. This design thinking modeling starts with the following stages Emphasize, Define, Ideate, and Prototype and Test. After the user interface design is completed, the last step is to is testing using the System Usability Scale (SUS). Outline The methodology of this research can be seen in Figure 1 below

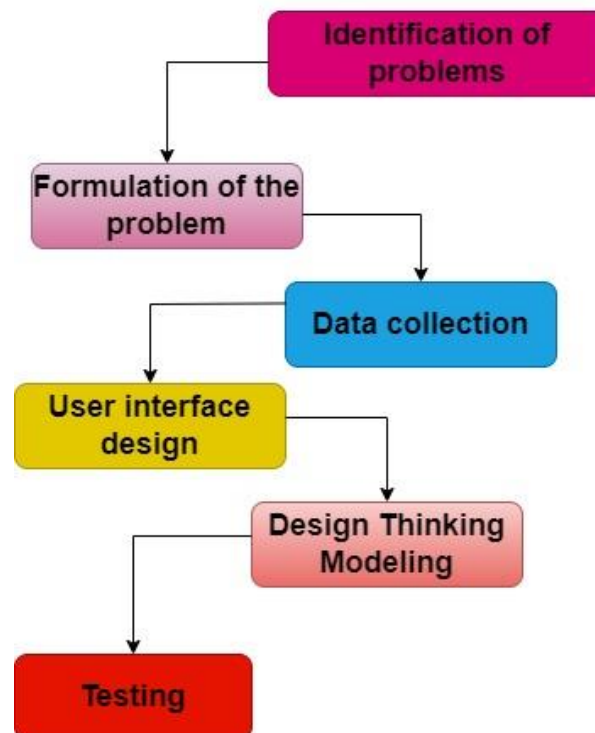


Fig. 1: Research Methods

3. Results

3.1. User Interface Design

This User Interface design explains how to analyze the application in solving a problem and shows what the application and the user do. shows what the application and the user do. the design of this application starts when the user who has previously registered enters the username and password. who has previously registered enters his username and password. If the user logs in successfully, then it will If the user has not registered, the user must register first. Then the user can choose the type of laptop that is the cheapest and closest to the user's location. user's location. After the type of laptop has been selected, the user must then make a payment by entering the payment code. Then the application will verify the payment. If payment is successful, then the laptop purchase has been successfully made. More details design of this application can be seen in Figure 2 below.

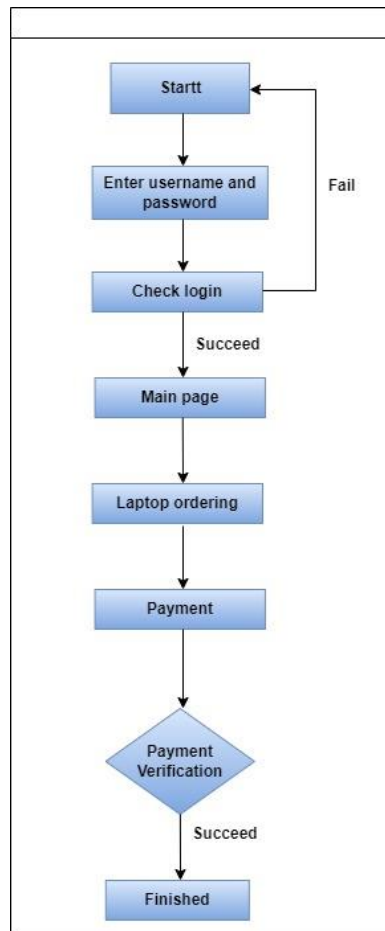


Fig. 2: User Interface Design

3.2. Design Thinking

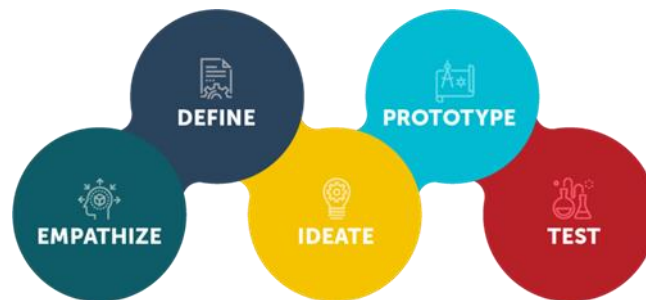


Fig. 3: Design Thinking

3.2.1. Emphatize

Emphatize phase is the phase where you approach the user and understand their needs [5]. This phase looks for problems in the research by understanding or empathizing with the difficulties of potential app users. The purpose of the problem set is to help you find and understand the problem you want to solve [6]. In purchasing a laptop directly (face to face) makes someone lazy to travel due to several factors. Therefore we provide an online Laptop Selling application to make it easier for buyers to make transactions without traveling enough at home to shop online.

3.2.2. Define

The purpose of this phase is to categorize all the collected material, derive the problem as a research perspective, and determine the need [7]. During this phase, you develop your problem and problem statement, and use the data you receive during the empathy phase to consider how this can be achieved [8]. After carrying out the empathy stage on user problems, it can be concluded that there are several problems experienced by users, including

- Limited information media in purchasing laptop
- Limited types of laptop choices that are desired
- The distance of the address of the intended store makes buyers reluctant to shop
- Lack of product brand comparison

5. There is no contact person to contact to ask whether the laptop to be ordered is available or not

3.2.3. Ideate

During this phase, the design thinking approach focuses on gathering and developing creative ideas in the context of a pre-defined problem solution. This phase is a transition from understanding the problem to solving it. This is also the phase that can generate ideas that can be turned into prototypes, the ideas generated are collected in brainstorming sessions and tested to find the best one [9]. Some of these ideas are:

- In designing the application, users can register an account if they don't have one before, then log in to the main page.
- In the account that has been created, the user can see the name, username, email, address, and password that has been created.
- Then the user can choose the type of laptop that is on the main page
- And can order a laptop by clicking on the cart
- And then the user can see the history of orders made

3.2.4. Prototype

This prototyping process is the implementation process of the ideas obtained. This phase creates a product that is ready to be test [10]. The next stage is Prototyping where researchers and research subjects turn ideas into a fast and easy physical form so that we can live and interact with the idea, the researcher implements it into the "SLO" Online Buy and Sell design process begins. The following is a view of the SLO application using the Figma application

A mobile app registration screen with a light blue background and decorative green leaf-like shapes in the corners. At the top, it says "BUAT AKUN" in bold black text, followed by "Jual Laptop Online" in a smaller font. Below this are five input fields with labels: "Nama", "Username", "Email", "Alamat", and "Password". Each field is a rounded rectangle with a light blue border. At the bottom, there is a rounded button labeled "DAFTAR" in black text.

Fig. 4: SLO App Registration Page

A mobile app login screen with a light blue background and decorative green leaf-like shapes in the corners. At the top, it says "JLO" in large bold black text, followed by "Jual Laptop Online" in a smaller font. Below this are two input fields with labels: "Username" and "Password". Each field is a rounded rectangle with a light blue border. At the bottom, there is a rounded button labeled "MASUK" in black text. Below the button, there is a link that says "Anda Belum Memiliki Akun? Daftar Disini" in a smaller font.

Fig. 5: SLO App Registration Page

Before entering the main page, the user must register first as shown in Figure 5. After successful registration, the user can login by entering email and password as shown in Figure 6. If the login is successful, the main page of the SLO application will appear. However, if the information entered by the user is invalid, the system will provide an error message and re-login.



Fig. 6: Main Page

The process of using the SLO application begins with selecting a brand or type of laptop, then the system will process the page and display the types of laptops, if you have chosen the type of laptop then the user will be directed to the most popular or favorite laptop recommendations then the user will be displayed with various menus and options.



Fig. 7: Lenovo laptop page

If the user presses one of the laptop icons in Figure 6, one type of laptop will appear with details of name, price, description, stars and purchase cart. the user can press the purchase cart to buy the laptop.



Fig. 8: Checkout page



Fig. 9: Payment Method Page

To checkout a laptop, the user must go through several steps as shown in Figure 8 and for payment methods the user can choose a payment method as shown in Figure 9.

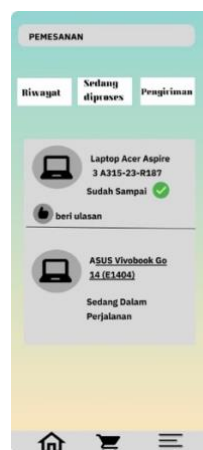


Fig. 10: Order Page

Then if the user wants to see the order history the user can click on the order history menu. After the ordering process the user can see whether the item has been processed by the seller or not if the user can see on the menu being processed. And if the seller has sent the item, the user can see it on the shipping menu. Then if the item has reached the buyer, the purchase history will appear an icon with the words laptop ordered has arrived.

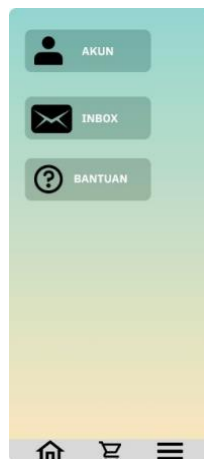


Fig. 11: settings menu



Fig. 12: menu account

After the SLO process is complete, the buyer can view the account by opening or clicking the three \equiv lines in the lower right corner, such as the following menu.



Fig. 13: Inbox Menu

3.2.5. Testing

After creating a prototype, the last stage of this design thinking process is testing. In this test, researchers used testing with the System Usability Scale (SUS) method. System Usability Scale (SUS) is the most widely used method to conduct software tests because it is very easy to use this method and the results can be used for consideration [11]. The SUS questionnaire will be given 10 question items that use 5 points. Respondents are asked to provide Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree with the assessment of each respondent with the assessment of each respondent. In testing the user interface, researchers involved 20 respondents by answering 10 questions from the questionnaire given. The results of the SUS score calculation on 20 respondents can be seen in table 1 below.

Table 1: SUS Score Calculation Results

Calculated Score (Sample Data)										Total	Score (Total x 2.5)
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10		
4	3	3	1	3	3	3	3	3	1	27	67.50
3	1	3	1	3	2	2	1	2	0	18	45.00
4	4	4	4	4	4	4	3	4	2	37	92.50
4	3	3	1	3	3	3	3	3	1	27	67.50
2	3	2	1	3	3	2	2	2	0	20	50.00
4	3	3	2	3	3	3	3	2	2	28	70.00
4	0	4	1	3	1	4	3	3	1	24	60.00
4	3	3	2	3	3	3	3	3	2	29	72.50
3	2	2	3	2	3	2	2	2	2	23	57.50
1	1	1	1	2	1	2	1	3	1	14	35.00

0	2	3	1	3	1	3	3	2	1	19	47.50
3	3	3	2	3	2	3	3	2	2	26	65.00
4	3	3	1	3	2	3	3	3	1	26	65.00
3	4	4	3	3	3	4	3	3	3	33	82.50
4	3	3	4	4	3	3	3	3	3	33	82.50
2	3	3	3	3	3	3	3	2	1	26	65.00
4	3	3	3	3	3	3	3	3	2	30	75.00
4	0	4	3	3	3	3	3	1	2	26	65.00
3	2	3	3	3	3	3	3	3	3	29	72.50
2	2	2	2	3	3	4	2	4	2	26	65.00
Average Score (Final Result)											65.13

Based on the SUS score results above, the number 65.13 is obtained which is in grade D for the average value on the SUS score of the laptop selling application. so it can be concluded that the design of the user interface of this laptop selling application is okay to be developed into a mobile-based application.

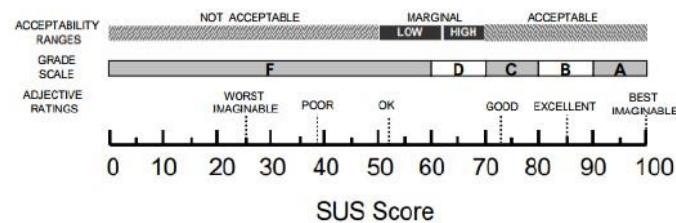


Fig. 14: SUS Score

2. Conclusion

1. SLO is an online buying and selling application which aims to make it easy for consumers to find the various laptop products they want from anywhere and at any time with a stable internet connection. Consumers can have access to various laptop brands, models and laptop specifications from various sellers on one platform, and can compare better products. The presence of this application can encourage innovation in the market and increase competition between sellers, and ultimately provide benefits for consumers in terms of price and quality.
2. SLO is a Design Thinking application which is a method generally used by designers to create innovative products, adapt to new environments, and find solutions to complex problems
3. Data collection used in this research begins with a detailed analysis of user needs related to selling laptops online, where all the data collected is based on several scientific journals regarding selling laptops online.
4. SLO is also designed to be very easy where users can log in by opening the application, then entering the user and password after that the user can choose the laptop they want.
5. With the SLO application, users don't need to leave the house to buy an item (laptop), just by opening the application, transactions can be done anywhere and anytime very easily.

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