DESIGNING E-BUKHARY SHOP APPLICATION USING THE BUSINESS TO-BUSINESS (B2B) MODEL BASED ON A WEBSITE

Rusman RM, Ihwana As’ad, Erick Irawadi Alwi

Abstract—Ongoing technological developments have brought progress in the form of online sales applications. This online sales technology is often also referred to as E-Commerce. Services at the Sinar Bukhari Store for resellers who want to buy goods are still manual and simple, the sales process still uses the WhatsApp group, making it difficult for resellers and also for the shop if there are purchases of goods simultaneously. Resellers also have trouble ordering if the admin they contact is inactive, if new items are sent via the WhatsApp group, the old items will be buried in the group, making it difficult for resellers to order items that have been stockpiled. Then the solution to the problem where the E-Bukhary shop application will be made with a website-based business to business (B2B) model uses the application of prototyping techniques which make plans quickly and gradually so that potential users tend to be quickly assessed. In the E-Bukhary shop application, there is a shop feature that involves admins and resellers to simplify the sales process according to the items available, through trials using black box testing in terms of interface scale 1-5 the value is 88% with very good assessment criteria, in terms of application performance a score of 88.8% is included, including very good criteria. In terms of the application database, a score of 86.6% was generated which included very good assessment criteria, then on the missing or damaged application function aspect, a value of 90% was produced in very good criteria, the last on the termination aspect resulted in a value of 86.2% or in very good criteria.

Index Terms— goods, resellers, sales, prototyping, business to business.

I. INTRODUCTION

The ongoing development of technology has brought advancements in the form of online sales applications, which have become increasingly popular as time goes by. In the past, business progress relied on human labor, but now, with a growing number of individuals interested in starting their own businesses, sales applications play a significant role in streamlining their operations and enhancing work efficiency [1].

Electronic business trading can involve the use of the internet to market and sell products to consumers. This technology for online sales is often referred to as E-Commerce [2]. E-Commerce or online sales platform is a concept that has rapidly evolved in the internet world. It is implementation benefits various parties involved, including consumers, producers, and sellers. With E-Commerce, transactions can be conducted faster, and the online store concept significantly reduces operational costs since sellers don't need a physical store [3].

Sinar Bukhari store is a store selling shoes, hats, bags, and sandals located in Sinjai regency, established on May 20, 2001. Sinar Bukhari store markets its products from various sources with the purpose of reselling them and making a profit from the sales. Resellers play a crucial role in online sales as they can help increase sales volume, promote products, and contribute to brand Fig building [4]. Resellers operate within the E-commerce Business to Business (B2B) model, which refers to transactions between one business and another [5]. B2B is an E-commerce business model where trade is conducted via the internet between businesses, meaning buyers are not end consumers but companies or individual enterprises that will further process or directly sell the purchased products to end consumers [6].

The service process at Sinar Bukhari store for resellers who want to purchase goods is still manual and straightforward. The sales process still involves using WhatsApp groups, where product photos are sent to the group, which can create difficulties for both resellers...
and the store when simultaneous purchases occur. Resellers also face challenges when placing orders if the admin they contact is inactive [7]. Additionally, when new products are sent through the WhatsApp group, older items get buried, making it difficult for resellers to order items that have been buried. The text appears to discuss the development of an online sales application to assist both resellers and the store in handling bulk orders. The application aims to address the challenges faced by the admin in handling large orders, especially from resellers who come from outside the local area [8]. The lack of direct access to information about the store's available stock has been a hurdle for some buyers. To tackle this issue, an online sales application called "E-bukhary shop" is proposed, adopting the Business-to-Business (B2B) model and utilizing the System Development Life Cycle (SDLC) with a prototyping approach. The prototyping method allows for the rapid and gradual development of the software, enabling users and clients to evaluate and provide feedback on the system's prototype during its creation [9]. This active interaction fosters effective communication between developers and clients, leading to a better understanding of the application's needs and goals, resulting in a more accurate implementation [10]. Additionally, the process of evaluation and feedback from potential users allows for quick adjustments and improvements, leading to a final application that better meets expectations and desired needs [11]. Overall, the E-bukhary shop application with the B2B model based on a website and developed using the prototyping approach is proposed as a solution to enhance the online sales process and improve communication and efficiency between resellers and the store.

II. THEORETICAL FOUNDATION

A. Software

Software is a crucial element in computer usage. It doesn't have a physical form that can be held but can be operated by users. Computer software, also known as software, is a collection of electronic data stored and organized by a computer [12]. With software, computers can perform various tasks according to the given instructions [13].

B. Reseller

A reseller is someone who purchases products from a seller and then exchanges them at a higher price. Examples of reseller activities include selling various items such as snacks, clothing, shoes, bags, scarves, extras, trinkets, etc. Product sales can be done offline, online, or a combination of both. In this arrangement, goods are purchased up close and personally, then exchanged through web-based media such as websites, online business platforms, or virtual entertainment [15]. The benefits of being a reseller include having the opportunity to sell various products without worrying about production issues. However, there is a risk of loss if products do not sell well or experience a decline in quality due to not being sold over an extended period [14].

C. Prototyping Method

The prototyping technique is a way to face programming advancements that emphasize rapid and gradual planning so that clients can quickly evaluate them [16]. Using this strategy, designers and clients can collaborate during the framework prototype creation process. Sometimes, clients only provide the general meaning of requirements without referring to the intricacies of information and cycles resulting from the framework to be built. To address this confusion, excellent collaboration between the designer and the client is crucial so that the designer can easily understand the client's needs. This will result in a smart and ideally fitting framework plan [15]. The prototyping method can also produce a basic version of the system that needs to be further developed according to user needs.

Fig 1. Prototyping Phases

The explanation of the above prototyping method stages is as follows:

1. The first stage in the prototype model is requirements gathering and analysis. In this stage, the system's requirements will be determined in detail. The client and the development team will hold meetings to discuss the system details desired by the users.

2. The next stage is quick design. A simple design will be created to provide a brief overview of the system to be developed. This design is based on the results of the requirements analysis stage.

3. After the quick design is approved, the next step is to build the actual prototype. This prototype will serve as a reference for the development team to start building the program or application.

4. After building the prototype, the stage of early user evaluation will be conducted. The prototype will be presented to the client for evaluation. The client will provide feedback and suggestions on what has been created.

5. Based on the evaluation from the client, the prototype will be refined. If the client has revision notes on the prototype, the evaluation and refinement stages will repeat until the client fully agrees with the system to be developed.

6. In the final stage, the product will be implemented and maintained. Programmers will develop the product based on the final prototype. After that, the system will be tested and handed over to the client. Maintenance stages will also be conducted to ensure the system runs smoothly without any issues [16].
III. RESEARCH METHODOLOGY

A. Research Stage

Fig 2 Stages of research activities.

The explanation of the research stages in Fig 2 is as follows:

1. Problem Identification
   The initial stage in this research is to identify the problem that will be the focus of the study, which is related to the lack of a sales and marketing system that facilitates Resellers and the store management at Sinar Bukhari Store.

2. Literature Review
   The next stage is to search for references from various sources such as books, national journals, and international journals related to the research that will be conducted.

3. Requirements Gathering and Analysis
   Next, the author communicates with the store management to identify the overall goals of the software to be developed. In this stage, the author also analyzes the desired specifications requested by the store management.

4. Quick Design
   A rapid planning is done with the main purpose of representing all aspects of the software that will be seen by end-users, such as user interface design or display formats. This quick design will serve as a foundation to start building the system prototype.

5. Build Prototype
   In this stage, the author develops a website-based application in the form of a prototype using programming languages. This prototype will serve as a reference in the development process.

6. User Evaluation
   The prototype is then handed over to users for evaluation. Users will provide valuable feedback to expand the requirements specifications.

7. Refining Prototype
   If there are any needs that do not meet the expectations of users or the store management, the author will evaluate and refine the application to align it with their desires.

8. Implement Product and Maintain
   After the application is implemented at Toko Sinar Bukhari and evaluated by users, the author will ensure that all application components function according to the desired functionalities and requirements. Subsequently, maintenance will be carried out to ensure the smooth operation of the application.

9. Report
   The researcher carried out a final project report which contained all research activities that had been carried out during the research which was carried out from February to June 2023

B. Research Design

This study applies a Case Study Research Design. This research approach examines a problem by analyzing a case involving a single unit, Sinar Bukhari Store, as the subject of this research. The challenges faced by Sinar Bukhari Store prompted the author to conduct research by designing a B2B-based E-Commerce Application on a website. The purpose of this sales application is to assist resellers and the store in conducting business activities more efficiently.

1. Flowchart

   Fig 3. Login System Flowchart

In Figure 3 is a system flowchart which will be done when logging in to the application sales to resellers.
First, we open the application and then choose whether we want to log in as a reseller. We enter our email and password, while the admin enters the admin password and email.

The Admin System Flowchart in Figure 4 is the system flowchart that the admin will carry out in the sales application for resellers, namely first the admin can input item category data such as name, description and image of the category that he wants to enter, secondly the admin can input item product data by entering the name, category, price, weight, description, size, stock and images of goods, thirdly, you can confirm orders from resellers who have ordered goods by looking at the order table. Finally, the admin can input application user data by entering the user's name, email, password and picture.

In Figure 5 is a flowchart of the system that buyers will use in the sales application for resellers. Here the reseller enters the application, after which the application displays a home page which displays some of the item data that has been input by the admin, the reseller can also be embarrassed when ordering the goods he wants to order, then the reseller inputs the ordered goods, order number, order size, order address, delivery courier, payment method.

2. Use case
In Figure 6 the Use Case of the running system explains that the system can be run by two users, namely the Admin can log in as admin then input product category data, input product data, confirm orders from resellers, and also manage user data while the reseller can also log in and view the data categories in the application, view product data, input orders, confirm the order you want to buy, input the address and courier after that make the order.

IV. RESULTS AND DISCUSSION

A. RESEARCH FINDING

The research conducted over approximately 4 months has resulted in an E-bukhary Shop application based on a website, using the prototyping method. This application has been implemented for several resellers at Sinar Bukhary store in Sinjai Regency, with the aim of assisting in the sales process for the resellers. The successful application of the prototyping method has led to the creation of an application that meets the desires and needs of both the resellers and the store.

The implementation of the Business-to-Business (B2B) concept in the development of the E-bukhary Shop website application for the resellers of Sinar Bukhary store in Sinjai Regency has facilitated a smooth sales process and expanded marketing opportunities with the aid of the application. Below are the visual displays of the E-bukhary Shop application that has been created and implemented for the resellers of Sinar Bukhary store in Sinjai Regency.

1. Admin Panel

![Fig 7. Admin page](image)

In figure 7 is the admin main menu display, here the admin manages the data that he wants to display in the application, such as inputting product category data in the category feature, inputting product data in the product feature, confirming orders in the checkout feature and managing reseller data in the application in the account feature.

![Fig 8. Category feature](image)

In Figure 8, there is a category feature where the admin can add categories of goods that he wants to sell in the application by filling in the category data input form, namely filling in the category name, adding information and adding images that match the category.

![Fig 9. Product Features](image)

In Figure 10, there is a product feature for adding items you want to sell in the e-bukhary shop application by filling in the product data input form where the admin enters the name of the product you
want to include, category, product price, weight, description and product image according to the item being purchased. want to sell in the application.

Fig 10. Checkout feature
In Figure 10, there is a checkout feature where the admin can see orders from resellers and then confirm the order. If the reseller has made payment, the goods will be sent according to the order from the reseller once it is complete.

Fig 11. Account Features
In Figure 11 there is a feature where the admin can manage user data such as adding users and can also edit the application user profile as desired. By entering your name, email address, password, and also adding an image.

2. Reseller Page Overview

Fig 12. Reseller main page
In Figure 12 is the reseller's main page after logging in and there are various features such as Home which is the initial display of the application, the shop feature where in this feature the reseller orders goods, the About feature is a page that contains a brief history of the application, the Contact feature is a feature for resellers who want to communicate with the shop.

Fig 13. Shop Features
In Figure 13, there is a shop feature for resellers to choose categories and also items they want to buy. In this feature, resellers can also select and view items in more detail on the description page. Before placing an order.

Fig 14. Description page
In Figure 14, this page shows that resellers can choose the size and number of items they want, then put them in the shopping basket, then confirm the order in the order basket, whether the order matches what they want.

Fig 15. Basket page
In Figure 15, there is a shopping cart page. On this page, the reseller checks the goods before checking out whether the goods are appropriate or if there is anything they want to add. If there is an order that is not appropriate, the reseller can delete the order and if it is appropriate, the reseller can click the blue checkout button.

Fig 16. Item Checkout page
In Figure 16 is the checkout page where the reseller can add the desired address and shipping options by filling in the form to enter the address and also the desired courier. Once appropriate, the reseller can click the checkout button then the reseller will enter.

![Fig 17. Payment Method Page](image)

In Figure 17 is the payment method page. On this page, the reseller can choose the desired payment method, be it bank transfer, credit/debit card and Gopay. After making payment, the order will be confirmed by the admin, then the admin will send the goods to the reseller.

![Fig 18. About feature](image)

In Figure 18 of the about feature, in this feature there is a brief history of the shop and also the reason why the E-bukhary application was created. In this feature, resellers can also see the background of the Sinar Bukhary shop and the reason why the Sinar Bukhary shop had to create an e-Bukhary shop application, namely to make it easier to use. carry out transactions with resellers.

![Fig 19. Contact feature](image)

In Figure 19, there is a contact feature where resellers can contact the shop if they have questions, such as whether the order sent by the admin is correct or not, the stock of goods available in the shop, and also ask about the goods in the e-bukhary shop application.

3. Black Box Testing

The testing method used is black box testing to ensure the entire system is thoroughly tested and functions properly, including its functionalities, interfaces, data models, and data access.

<table>
<thead>
<tr>
<th>No</th>
<th>Component Test</th>
<th>Test Case</th>
<th>Test Data</th>
<th>Expected results</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Page Login</td>
<td>Login Check email and password in the database after clicking the login button</td>
<td>• Email • Password</td>
<td>It is hoped that the application will be able to check Email and Password data, if successful, then go to the main page application according to the type of admin or reseller account.</td>
<td>The results are as expected</td>
</tr>
<tr>
<td>2</td>
<td>Register Page</td>
<td>Create a new User Account that can be used in the application</td>
<td>• Name • Email address • Password</td>
<td>It is hoped that the application will be able to create a new user account in order account can be used to login to the application.</td>
<td>The results are as expected</td>
</tr>
<tr>
<td>3</td>
<td>Add category</td>
<td>Add a category of goods to be sold in the application</td>
<td>• Category name • Category Relation</td>
<td>The application can add product categories</td>
<td>The results are as expected</td>
</tr>
<tr>
<td>4</td>
<td>Edit category</td>
<td>Change category data and save to database after pressing apply button</td>
<td>• Category Name • Category Caption • Category Image</td>
<td>The application can change the product category data</td>
<td>The results are as expected</td>
</tr>
<tr>
<td>5</td>
<td>Add Product</td>
<td>Add products to be sold in the application</td>
<td>• Product name • Product category • Product price • Product stock • Product rate • Product image</td>
<td>It is hoped that the application can add products to be sold.</td>
<td>The results are as expected</td>
</tr>
<tr>
<td>6</td>
<td>Add stock</td>
<td>Add product stock for sale</td>
<td>• Product name • Product stock • Product size</td>
<td>It is hoped that the application can add stock of products sold</td>
<td>The results are as expected</td>
</tr>
</tbody>
</table>
In black box testing, various types of errors are looked for including functions that do not work correctly or are missing, errors in the interface, errors in data structures or access to external databases, performance errors, and errors in initialization and termination. Through this method, research will try to identify and correct these errors to improve the quality and performance of the software being developed.

B. Discussion

This research resulted in an E-Bukhary shop application which was then implemented at resellers at the Sinar Bukhary Shop, Sinjai Regency by applying the Prototyping method. The author carried out the Requirements Gathering and Analysis stage by communicating with partners twice, namely on 29 February and 2 April 2023. The purpose of this meeting was to discuss in detail the system desired by the user. In addition, data collection and clarification regarding the problems faced by resellers and shop parties were also carried out. Next, move on to the quick design stage, which will begin on April 28, 2023. Then, prototypes will be made on May 1 – June 25, 2023. Next is the user evaluation step where prospective application users first examine the prototype of the application to be implemented and then provide an evaluation to the developer regarding improvements or suggestions for the prototype. So that by applying this method the application made will be in accordance with the wishes and needs of prospective application users, in this case the reseller and the Sinar Bukhary Shop, Sinjai Regency, the refining prototype stage (Refining the Prototype) is carried out by involving potential users. If the prospective user does not have a revision record of the prototype that has been made, then the development team will continue the process. However, if the potential user has a record of system improvements, this stage will be repeated until the potential user fully agrees with the system to be developed. After the E-bukhary shop application is complete, the author then moves on to the Implement Product and Maintain stage. At this final stage, the programmers will immediately create an application based on the final prototype, then the system will be tested and handed over to potential users on July 10, 2023.

The concept applied to the E-bukhary shop application is Business to business (B2B) so that it makes the transaction process between the reseller and the shop easier with the help of this application. In addition, there are many features that resellers can use, such as checking the stock of goods in stores.

V. CONCLUSIONS AND SUGGESTIONS

A. Conclusion

Based on the results of research that has been carried out on resellers at Sinar Bukhary shops, Sinjai Regency, it can be stated that the E-bukhary shop application as a means of selling goods with the prototype method can help resellers in the process of purchasing goods at Sinar Bukhary shops. Therefore, it can be concluded as follows:

Table 1. In this research, the black box testing method is used because this method focuses on testing software functionality. The purpose of black box testing is to test how the software operates, whether input data has been processed correctly, and whether the integrity of the stored information is maintained. This test is to verify that the functions, input and output of the software comply with the specified specifications.
1. With the E-bukhary shop application, it can make it easier for resellers to make the process of purchasing goods because the application is equipped with a shop feature where resellers can choose the items they want to buy at Sinar Bukary stores without having to come to the store.

2. The E-bukhary shop application can make it easier for the shop to find out orders from resellers and then process them quickly and be able to find out the benefits that are obtained.

B. Suggestion

Based on the conclusions above, the authors provide suggestions that can be used as input, namely, among others:

1. We recommend that you add features to the application that can be useful, such as promo features, new product information and also a return policy feature if the items purchased are not appropriate

2. We recommend that the E-bukhary shop application be further developed into a mobile application so that it can be more useful for resellers and shop parties without having to access the website link.

REFERENCES


