

Implementation Of A Website-Based Digital Marketing Information System With Interactive Custom Design Features

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ABSTRACT

The rapid development of information technology encourages business actors, including the garment manufacturing sector, to adopt digital information systems in order to improve marketing effectiveness and customer service quality. Faiz Konveksi, a micro, small, and medium-sized enterprise engaged in garment production services, still faces various challenges related to marketing, design communication, ordering, and payment processes that are not yet systematically integrated. This study aims to design and implement a website-based digital marketing information system equipped with an interactive custom design feature to facilitate customers in independently customizing product designs, improve the effectiveness of design communication, and integrate ordering and payment processes into a single platform. The research method consists of needs analysis, system design, system implementation, and system testing. The developed system supports three user roles, namely customer, administrator, and super administrator, and provides key features including a product catalog, three-dimensional interactive custom design, order management, online payment services, WhatsApp notification services, and sales and order reports. The results of implementation and system testing indicate that the proposed system is able to increase ordering efficiency, reduce design communication errors, and assist Faiz Konveksi in managing order and transaction data in a more effective and structured manner. Therefore, the website-based digital marketing information system is expected to enhance service quality, customer satisfaction, and the competitiveness of Faiz Konveksi in the digital era.

Keywords: *Information Systems; Digital Marketing; Websites; Custom Interactive Design; Convection.*

INTRODUCTION

The rapid advancement of information technology in the digital era has significantly transformed business management and marketing strategies across various industries. Website-based digital marketing information systems have become an important solution for businesses to improve information delivery, expand market reach, and build a professional and trustworthy brand image. Beyond functioning as promotional media, websites also serve as integrated platforms for communication, transactions, and customer services, allowing businesses to present product information in a structured, visual, and interactive manner that enhances customer understanding and engagement.

The garment manufacturing industry is one of the sectors strongly affected by this technological development. Increasing competition requires garment businesses to provide fast, accurate, and customer-oriented services. However, many micro, small, and medium enterprises still rely on conventional methods for marketing, design communication, ordering, and payment processes. Faiz Konveksi, a garment service enterprise, faces similar challenges, including limited utilization of website-based marketing, unstructured design communication, repeated design revisions, and non-integrated ordering and payment processes. These conditions often lead to inefficiencies, miscommunication, longer production times, and reduced customer satisfaction.

Previous studies on digital marketing systems generally focus on online promotion, electronic catalogs, or transaction management. However, limited research has addressed the integration of interactive custom design features that allow customers to independently customize garment designs while simultaneously supporting structured communication, ordering, and payment within a single system. This gap indicates the need for a more comprehensive digital marketing information system

tailored to the specific characteristics of garment service businesses.

This study aims to support and extend previous research by developing a website-based digital marketing information system equipped with an interactive custom design feature. The proposed system integrates product catalogs, design customization, order management, and payment processing to improve service quality and operational efficiency. Therefore, the objective of this research is to design and implement an integrated digital marketing information system that enhances design communication effectiveness, simplifies the ordering and payment processes, and strengthens the competitiveness of Faiz Konveksi in the digital era.

METHOD

This study employed a system development research approach to design and implement a website-based digital marketing information system with an interactive custom design feature at Faiz Konveksi. A qualitative descriptive research design with a system development orientation was applied to analyze business processes, user requirements, and system functionality. The system was developed using the Waterfall method, which consists of the following stages:

- **Requirement Analysis**
This stage focused on identifying system requirements by analyzing existing business processes and user needs. Data were collected through interviews with the business owner, direct observation of marketing, ordering, and design communication activities, and documentation of current workflows. Functional requirements such as product catalogs, interactive design customization, online ordering, payment processing, and role-based access control were defined.
- **System Design**
The system design stage involved designing the overall system architecture, user interface layouts, and database structures. This included defining system modules, designing responsive user interfaces for customers and administrators, and creating database schemas to manage products, users, orders, and design data.
- **Implementation**
At this stage, the system design was translated into a functional application. Web technologies were used for front-end and back-end development, and a relational database was implemented for data storage. Core features such as interactive product design, order management, user authentication, and payment integration were developed.
- **Testing**
System testing was conducted using black-box testing to evaluate system functionality based on input and output behavior. This testing ensured that all features operated according to the specified requirements and that no critical functional errors occurred.
- **Maintenance**
After system deployment, maintenance activities were carried out to fix bugs, improve system performance, and accommodate minor changes based on user feedback.

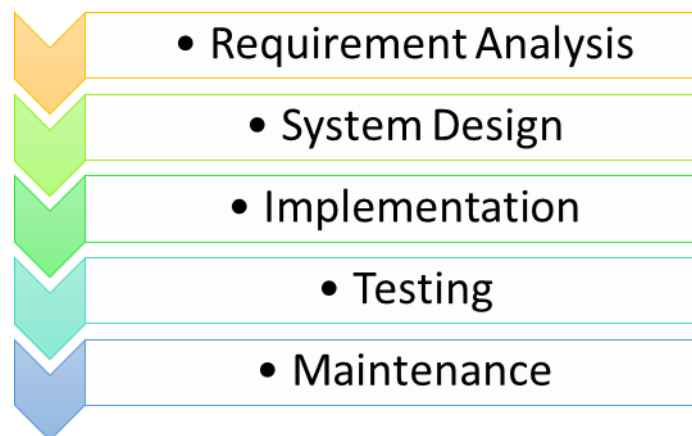


Figure 1. Stages of the Waterfall Method

RESULT AND DISCUSSION (font size 12pt)

Result

The Website-Based Digital Marketing System for Faiz Konveksi consists of sixteen main features that support customer interaction and administrative management. For customers, the system provides a Login Page, Home Page, Product Catalog Page, Product Pre-Order and 3D Design Preview Page, Add Design Options Page, Add Element Options Page, Product Pre-Order Form Page, Payment Gateway Page with Virtual Account display, WhatsApp Notification Page, and Order History Page. These features allow customers to independently customize product designs, place orders, make payments, and receive real-time notifications. For system management, the platform provides a Super Admin Dashboard, Category Menu Page, Product Menu Page, Product Design Menu Page, Product 3D Model Page, and an Admin View/Read Orders Page. These administrative features allow the management to monitor orders, manage products and designs, and ensure smooth operations. The implementation of the system was carried out following a structured development process and all features were tested using the Black Box method to ensure proper functionality. The following sections present each implementation feature along with its user interface and functional description.

1. Implementation of the Login Page (Customer)

The customer login page is implemented as the initial gateway to access the system using a registered WhatsApp number and password. This authentication process aims to ensure that only customers with official accounts can access the ordering, custom design, and transaction history features in accordance with their respective account data.

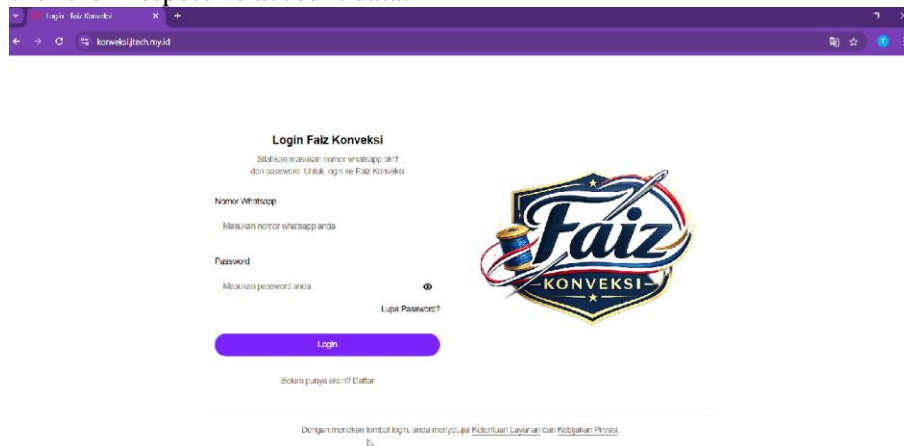


Figure 2. Implementation of the Login Page (Customer)

2. Home Page Implementation (Customer)

The customer home page displays a summary of order activities in a table containing information on order codes, product names, order statuses, total payments, order dates, and completion dates. This page helps customers monitor order progress in a centralized and easy-to-understand manner.

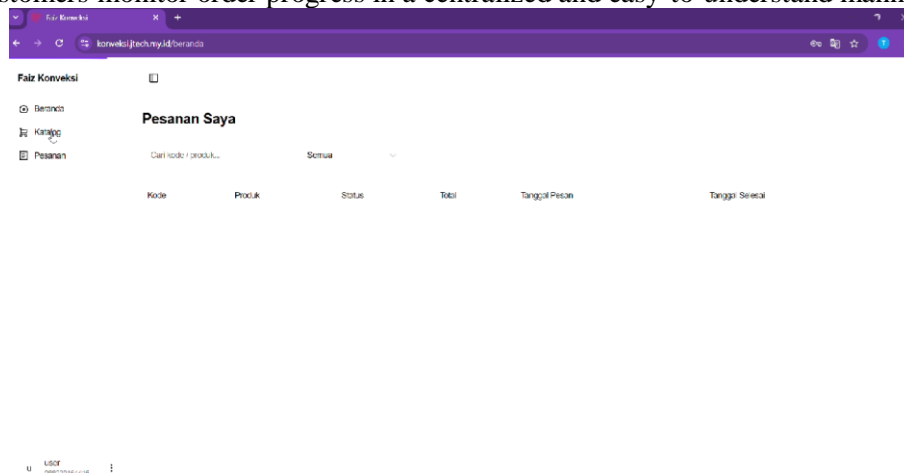


Figure 3. Home Page Implementation (Customer)

3. Catalog Page Implementation (Customer)

The catalog page is implemented to display a list of available clothing products, such as plain T-shirts, PDH shirts, jerseys, and vests. Each product is displayed with an image and price for customers to consider before proceeding to the ordering and custom design process.

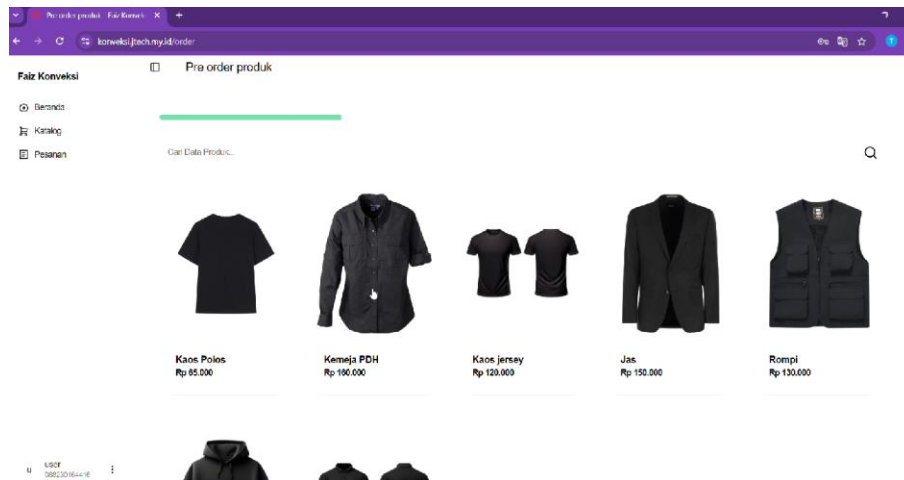


Figure 4. Catalog Page Implementation (Customer)

4. Implementation of Product Pre-Order Page and Design Preview (Customer)

The product pre-order page provides customers with the facility to order products and view the design results visually. This page displays a preview of the design in three dimensions so that customers can see what the final product will look like before proceeding to the next stage..

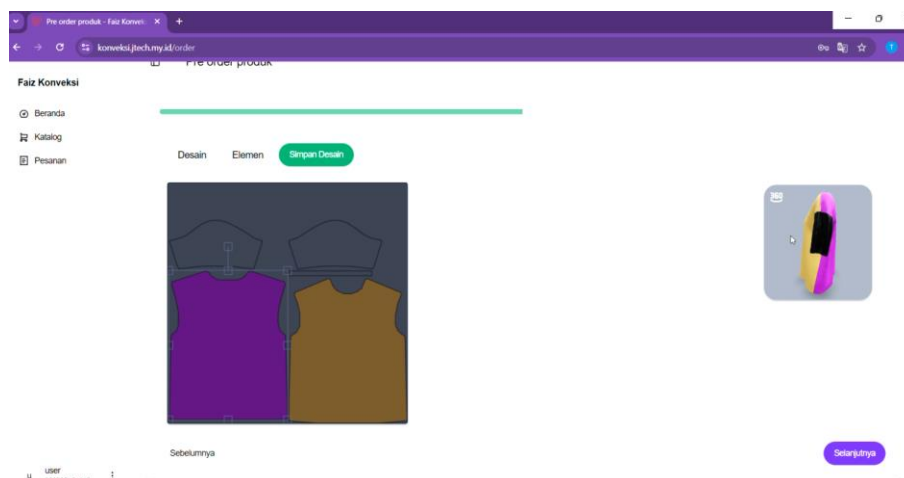


Figure 5. Implementation of Product Pre-Order Page and Design Preview (Customer)

5. Implementation of the Add Design Options Page (Customer)

This page allows customers to add product designs, either by selecting designs that are already available in the system or by uploading their own designs. This feature aims to provide flexibility and freedom to customers in determining product designs according to their needs

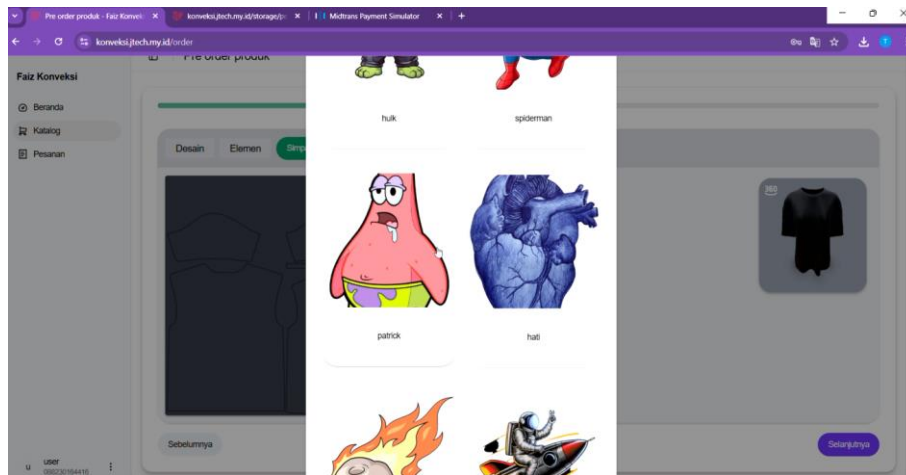


Figure 6. Implementation of the Add Design Options Page (Customer)

6. Implementation of the Add Element Options Page (Customer)

On the add element options page, customers can add various design elements such as text, lines, boxes, and circles. The implementation of this feature supports an interactive custom design process so that customers can directly customize the appearance of their products.

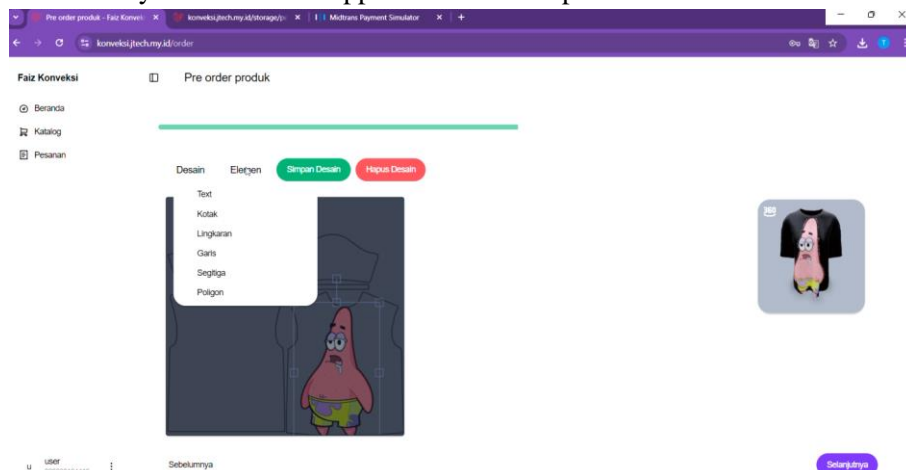


Figure 7. Implementation of the Add Element Options Page (Customer)

7. Implementation of Product Pre-Order Form Page (Customer)

The product pre-order form is used to input order details such as order quantity (QTY), full address, and additional description. The data input on this page will be stored as part of the order information before the payment process is carried out.

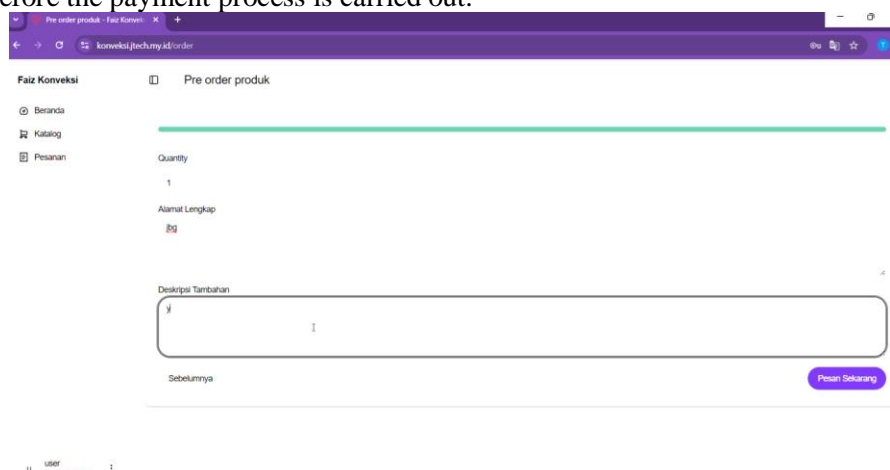


Figure 8. Implementation of Product Pre-Order Form Page (Customer)

8. Implementation of Payment Gateway Payment Page and VA Display (Customer)

The payment page is implemented with payment gateway integration that provides various payment methods, including virtual accounts and digital wallets. The system automatically displays the virtual account code according to the method selected by the customer to complete the payment transaction.

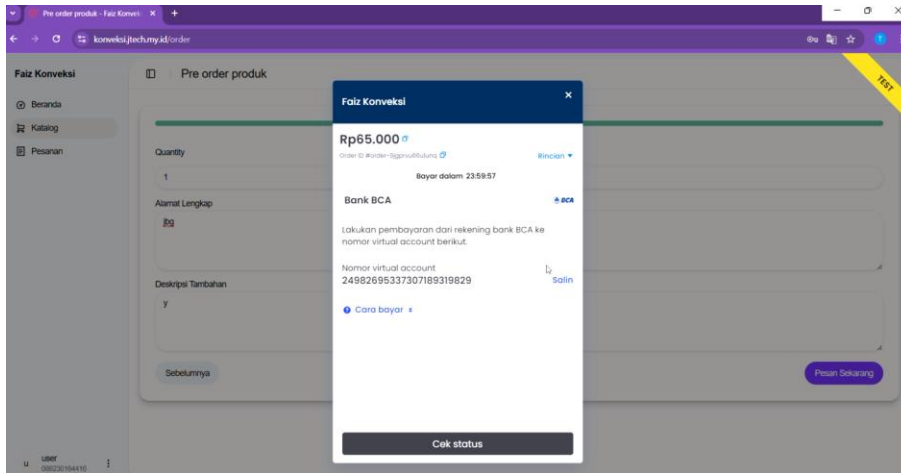


Figure 9. Implementation of Payment Gateway Payment Page and VA Display (Customer)

9. Implementation of Notification Pages to WA (Customer)

The implementation of WhatsApp notifications aims to provide real-time information to customers. Notifications are sent automatically when orders are awaiting payment confirmation and after successful payment, so that customers always receive the latest information without having to open the website.



Figure 10. Implementation of Notification Pages to WA (Customer)

10. Implementation of Order History Page (Customer)

The order history page displays all transaction history ever made by the customer. The information is presented in a table format as proof that the customer has made an order and payment through the system.

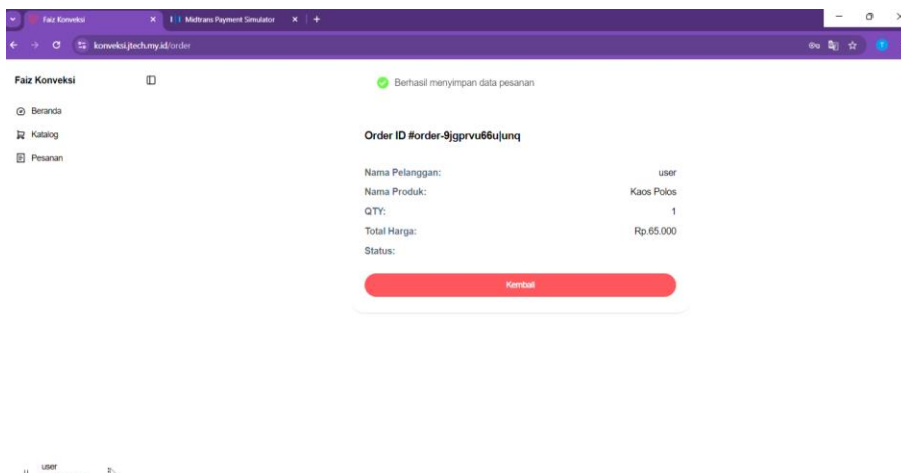


Figure 11. Implementation of Order History Page (Customer)

11. Dashboard Page Implementation (Super Admin)

The super admin dashboard displays data summaries in the form of graphs showing total orders, total revenue, and order success rates. In addition, the dashboard provides a feature for downloading reports in Excel format based on specific periods.

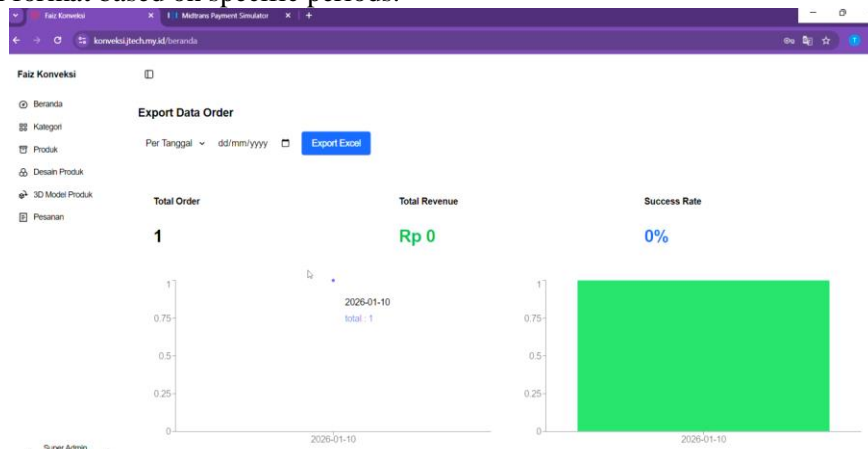


Figure 12. Dashboard Page Implementation (Super Admin)

12. Implementation of Category Menu Page (Super Admin)

The category menu is used to add and manage product categories such as T-shirts, PDH, jackets, and alumni shirts. This category data forms the basis for grouping products in the system.

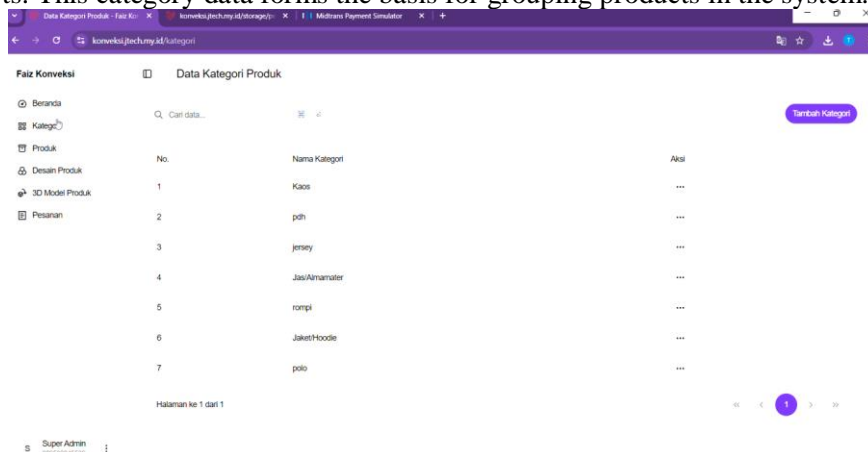


Figure 13. Implementation of Category Menu Page (Super Admin)

13. Product Menu Page Implementation (Super Admin)

The product menu page displays a complete list of products with information on codes, categories, status, and product photos. Super admins can manage product data according to business needs.

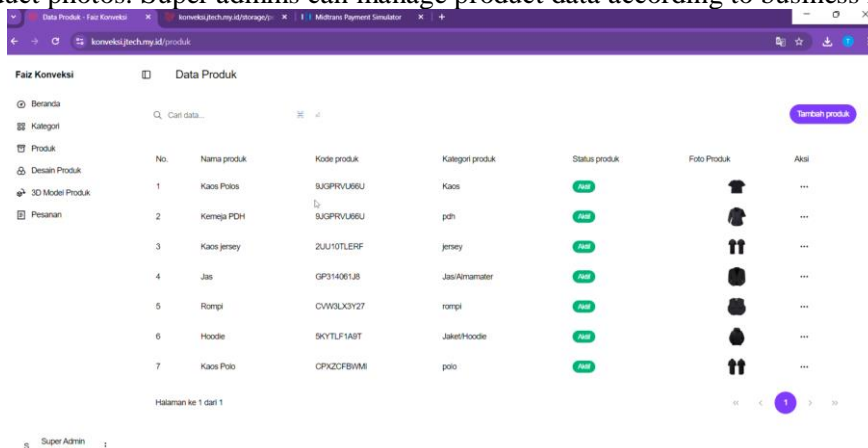


Figure 14. Product Menu Page Implementation (Super Admin)

14. Implementation of Product Design Menu Page (Super Admin)

The product design menu allows super admins to manage design elements that can be used by customers when customizing product designs.

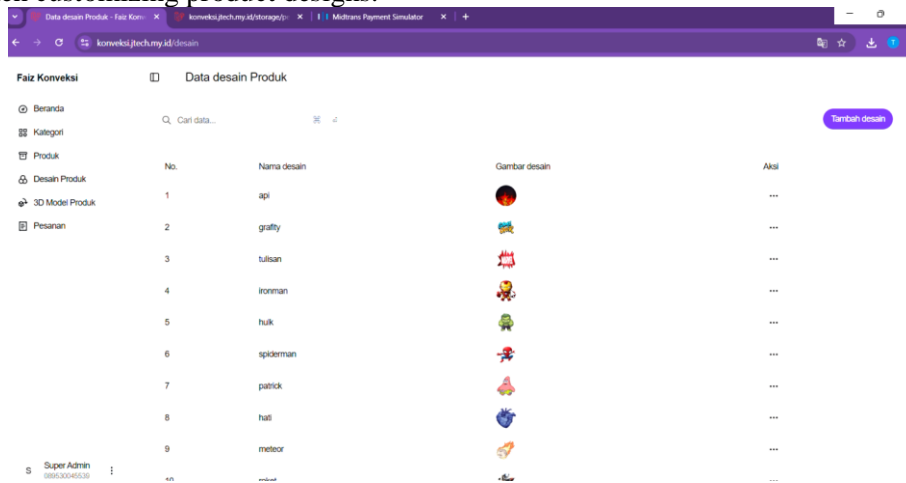


Figure 15. Implementation of Product Design Menu Page (Super Admin)

15. Implementation of Product 3D Model Page (Super Admin)

The product 3D model page is used to manage three-dimensional models based on product categories. These models are used as a preview medium for customer designs.

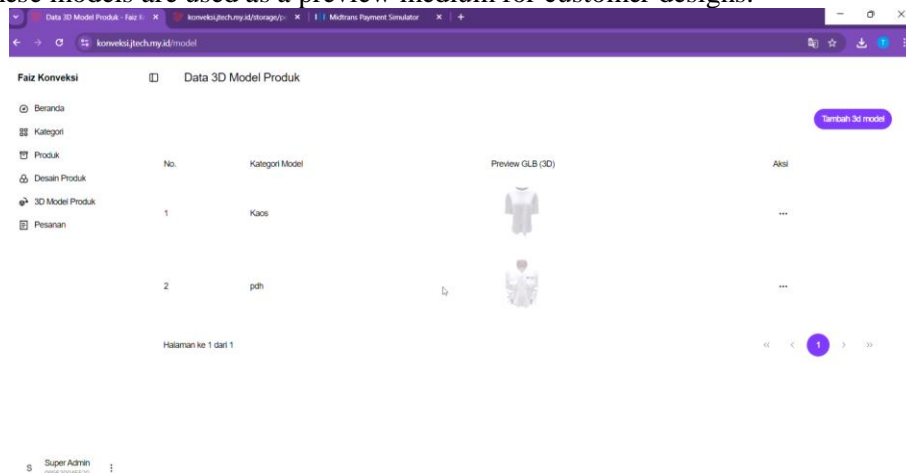


Figure 16. Implementation of Product 3D Model Page (Super Admin)

16. Implementation of the View or Read Orders Menu Page (Admin)

This page allows admins to view order details without being able to change the status or order data.

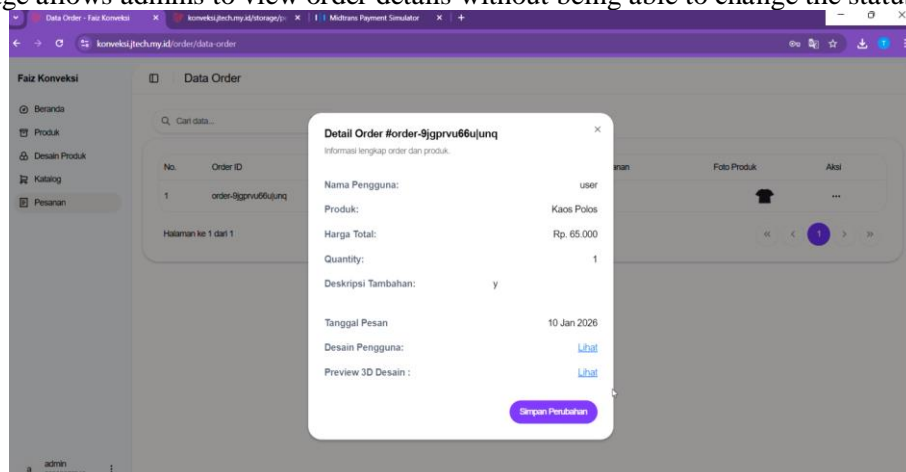


Figure 17. Implementation of the View or Read Orders Menu Page (Admin)

Discussion

At this stage, website testing is discussed. The purpose of this website testing is to thoroughly test the operation of the Website-Based Digital Marketing Information System for Faiz Konveksi that has been developed. The objective of testing is to detect errors or bugs that may occur and are not identified during the system development process.

System testing is carried out using the Black Box method. In this method, testing is carried out by providing various inputs to each feature of the system without looking at the internal processes of the system itself. The goal is to ensure that the output produced is in accordance with functional requirements. If the output is as expected, then the feature is declared to be functioning properly. Conversely, if the output is not as expected, then there are errors that need to be corrected.

Black Box testing was performed on all major features of the Faiz Konveksi website, including Customer Login, Home Page, Product Catalog, Product Pre-Order and 3D Design Preview, Add Design Options, Add Element Options, Pre-Order Form, Payment Gateway, WhatsApp Notification, Order History, as well as administrative features such as Super Admin Dashboard, Product and Category Management, Product Design Management, 3D Product Model Management, and Admin View Orders. The test inputs covered various usage scenarios, ranging from account registration, product ordering, design customization, to payment and notification checking.

The aspects tested included the functionality of each feature, navigation between pages, display responsiveness, integration between components, and user data security. Testing results are used to improve and refine the system so that all features run smoothly and optimally meet user needs. With comprehensive testing, it is hoped that this website will provide an effective, efficient, and reliable user experience to support marketing and order management at Faiz Konveksi.

CONCLUSIONS

Based on the results of system requirement analysis, design, implementation, and testing of the web-based inventory management information system, the following conclusions can be drawn:

- The developed web-based inventory management information system successfully transforms inventory management processes from manual or spreadsheet-based methods into a structured, integrated, and well-documented digital system, thereby improving data consistency and management transparency.
- The system effectively fulfills the core functional requirements, including inventory data management, recording of incoming and outgoing items, role-based user access control (admin and super admin), and automated inventory reporting, which aligns with the objectives outlined in the introduction.
- System testing results indicate that all main functionalities for both admin and super admin roles operate as intended, demonstrating functional reliability and system readiness for real-world implementation without significant functional errors.
- The implementation of the system contributes positively to operational efficiency, enhances data accuracy, enables real-time stock monitoring, and supports managerial decision-making related to inventory control and planning.
- Despite its effectiveness, the system still presents certain limitations, such as dependency on internet connectivity and the absence of advanced supporting features. These limitations provide opportunities for future system enhancement and further research development.

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