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Development of an Interactive Website for Product Information and Ordering at Raja *Konveksi* Engineering Aceh

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ABSTRACT

This study focuses on the development of an interactive website designed to function as an information and product ordering medium for Raja Konveksi Engineering Aceh MSME. This research was conducted in response to the absence of an official online platform, where promotional activities and product orders were previously handled manually through photo sharing and direct communication, resulting in limited efficiency and reach. The system was developed using the Waterfall method, encompassing requirement analysis, system design, implementation, testing, and maintenance stages. The website was built using PHP with the CodeIgniter framework, supported by a MySQL database, and integrated with HTML, CSS, JavaScript, and Bootstrap to enhance interactivity and responsiveness. System evaluation was carried out through a user satisfaction questionnaire involving 25 respondents. The findings indicate a satisfaction rate of 95.52%, categorized as very high. This result demonstrates that the developed website effectively supports information delivery and online product ordering. The implementation of this system is expected to strengthen digital promotion, broaden market access, and improve the efficiency of the ordering process for Raja Konveksi Engineering Aceh.

I. Introduction

The development of digital technology has become an important factor in supporting the competitiveness of micro, small, and medium enterprises (MSME), particularly in expanding their marketing reach and improving the effectiveness of customer service through the use of website-based systems that are easily accessible to the public. According to [1], the digitization of MSME through integrated digital platforms can facilitate business activities such as promotion and transactions more effectively than the manual methods still widely used by MSME players in Indonesia. In line with this, [2] argue that the quality of MSME websites is determined by four main dimensions, namely system quality, information quality, e-service quality, and company image, where e-service quality has the greatest influence on user loyalty. However, in practice, many MSME have not yet optimally utilized technology and face obstacles in managing and developing structured and professional information systems. This condition shows that the development of integrated interactive websites is an important strategy for MSME to enter a wider market and improve service quality to customers.

The development of information and communication technology has had a significant impact on almost all sectors of life, including the world of business and trade. The use of digital technology allows businesses to expand their market reach, improve operational efficiency, and build faster and more effective interactions with customers. One form of digital transformation is the use of websites as a modern, integrated, and easily accessible medium for promotion and communication for the wider community.

Various studies emphasize the importance of websites and web-based information systems in supporting the digital transformation of MSME. [3] states that the development of a web-based sales

information system with a UI/UX approach can improve the efficiency of data recording and transaction processes, thereby making MSME operations more systematic. In addition, [4] reveal that the use of websites as a promotional medium not only helps to present product information in a more complete and professional manner, but also contributes to building consumer trust and encouraging online purchasing interest. However, in reality, many MSME still experience limitations in optimally utilizing information technology, particularly in managing digital ordering systems and user interactions.

In the local context, [5] reported that although digital marketing such as social media and e-commerce has made a positive contribution to increasing the competitiveness of culinary MSME in Banda Aceh, the level of website utilization is still relatively low. This is due to the lack of interactivity and attention to user experience aspects. These findings emphasize that MSME websites should not only be informative but also designed to be interactive and user-friendly in order to enhance the effectiveness of digital communication between businesses and consumers.

Raja Konveksi Engineering Aceh is one of the MSME engaged in the production and sale of ready-to-wear clothing. In its operations, the company still relies on social media and manual communication for product promotion and ordering. Although these methods are still relevant, the unstructured system and reliance on personal communication often cause problems such as delayed responses, inconsistent product information, and potential errors in order recording [6]. This condition poses a serious challenge in improving the company's professionalism and competitiveness in the digital era. Although various studies have examined the use of web-based systems to support business processes, most of them still focus on general e-commerce platforms or digital tools for marketing, rather than the specific operational needs of MSME in the garment sector [7]. Previous research has indeed confirmed the role of digitization in improving the competitiveness of MSME, but empirical evidence regarding user acceptance and satisfaction with interactive websites tailored to the operational context of MSME is still limited. Therefore, research that not only develops functional interactive websites but also evaluates their usefulness and acceptance from the user's perspective is still very much needed [8].

This study contributes both theoretically and practically by presenting a real example of interactive website development specifically designed for MSME in the garment industry, which integrates key features such as company information, product catalogs, and online ordering into a single integrated platform [9]. In addition, this study also includes a systematic evaluation of user satisfaction, thereby producing empirical evidence regarding the level of acceptance and ease of use of the website. These findings can be used as a reference for other MSME digital transformation initiatives [10]. Unlike previous studies, which generally only emphasized the adoption of digital systems, this study emphasizes both system development and user-based evaluation.

Based on these issues, a system is needed that is capable of supporting online product promotion and ordering activities in a more structured, efficient, and attractive manner. One solution that can be implemented is the design of an interactive website that can present company information, product catalogs, ordering features, and contact information in an integrated manner. This study uses a descriptive quantitative approach that aims to describe user perceptions of the developed website through numerical data from questionnaires.

Therefore, this study aims to design, develop, and evaluate an interactive website as a medium for information and product ordering at Raja Konveksi Engineering Aceh MSME, with a focus on measuring user satisfaction to assess the feasibility and effectiveness of the system. This article is structured as follows: Section II explains the research methods, Section III presents the results and discussion, and Section IV contains the conclusions.

II. The Proposed Method/Algorithm

This section describes the proposed system through a use case approach, which is used to illustrate the relationship between actors and the main functions of the Raja Konveksi Engineering Aceh interactive website. Use cases were chosen to visualize how the system works from the perspective of users and administrators, so that the flow of information services and product ordering can be clearly

understood. The proposed system involves two main actors, namely customers and administrators. The client acts as a service user who accesses information and places orders, while the admin acts as the website manager who manages content and order data. All system functions are designed based on the needs of these two actors.

A. Customer use Case

On the customer side, the system allows users to access the website's main page, view business profiles, browse product catalogs, and read product details. This feature aims to provide clear and easy-to-understand information before customers place orders.

When customers want to place an order, the system provides a login or account registration mechanism. After successfully logging in, customers can select products, fill out the order form, and submit order data through the system. The information submitted will be stored in the database and can be further processed by the admin. With this flow, customers no longer depend on manual communication, as the ordering process is carried out in a more structured manner through the website. The overall customer use case is shown in Figure 1.

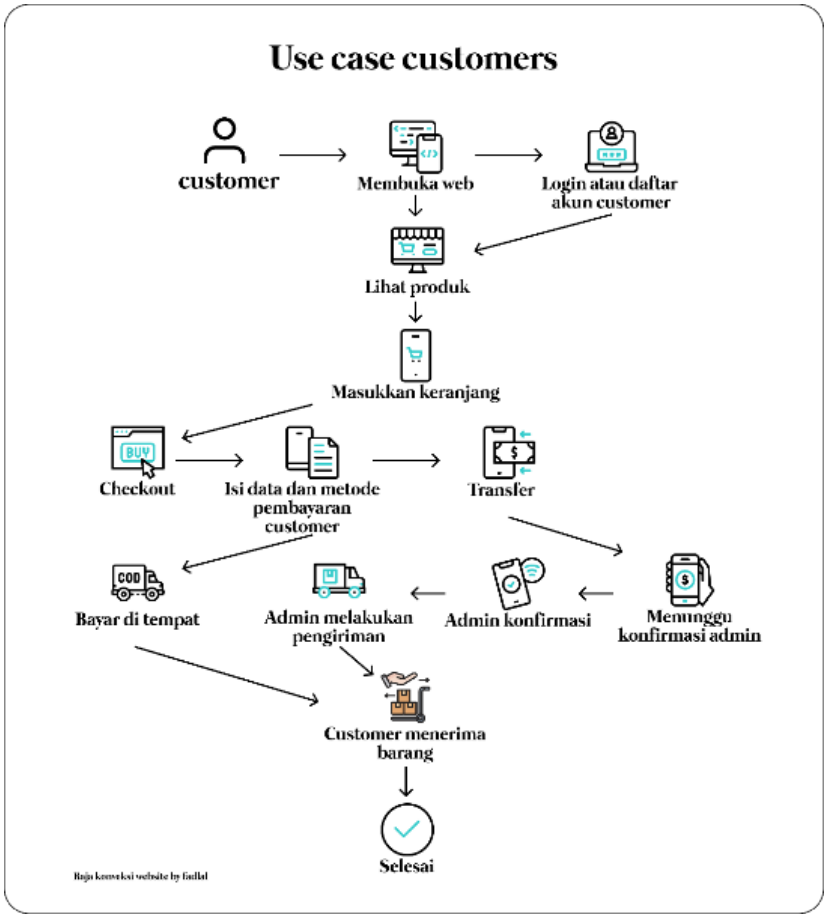

Fig. 1. Customer Use Case Diagram

B. Admin use Case

The admin plays a role in managing all content and data within the system. After logging in, the admin can access the dashboard to add, change, or delete product data. This process ensures that the information displayed to customers is always accurate and up to date.

In addition to product management, the admin can also view incoming order data, check order details, and manage messages or requests from customers. Through this feature, the admin can monitor ordering activities and follow up on them according to the operational needs of Raja Konveksi Engineering Aceh. The overall admin use case is shown in Figure 2.

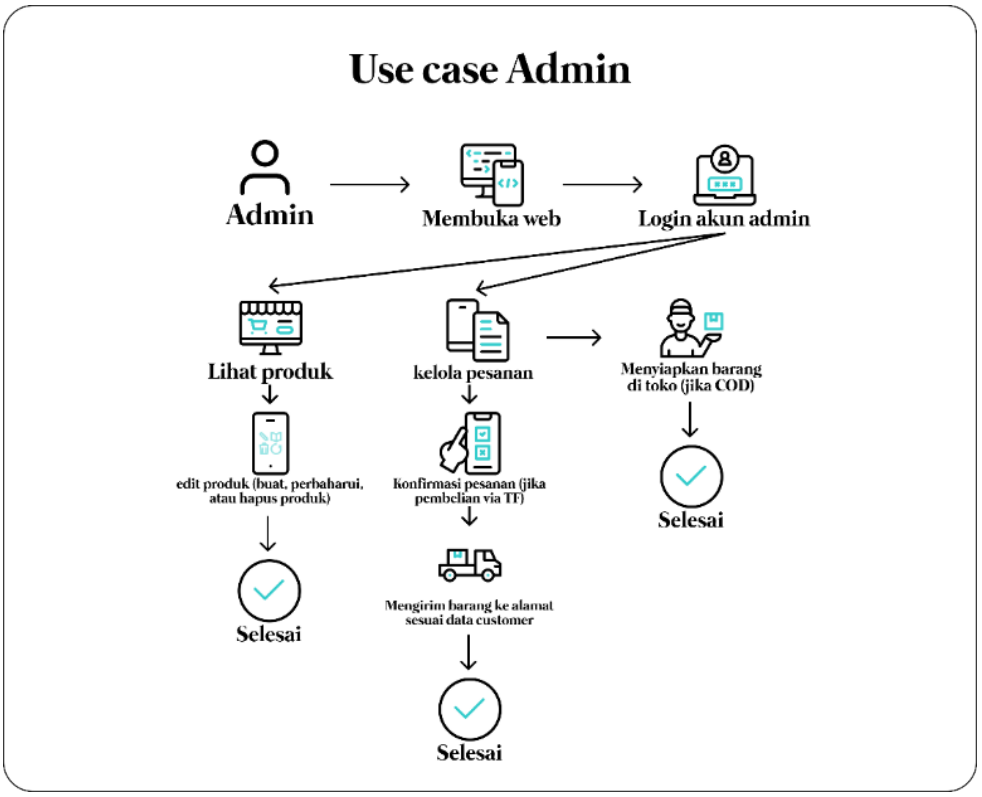

Fig. 2. Admin Use Case Diagram

Based on the designed use case, interactions between customers and administrators are connected through a centralized system. Customers focus on accessing information and submitting order data, while administrators are responsible for managing data and services. This relationship forms a website workflow that supports the process of promoting and ordering products online, while strengthening the role of the website as a digital service medium for MSME.

III. Method

This study uses a descriptive quantitative approach combined with a system development method [11]. The focus of the study is to develop an interactive website as a medium for information and product ordering at Raja Konveksi Engineering Aceh MSME. Quantitative data was collected to measure user perceptions and satisfaction levels with the developed system.

The object of this study is an interactive website, while the subject of the study is the users who tested the system. A total of 25 respondents were involved in assessing the usability and functionality of the website.

The website was developed using the Waterfall model, which applies a structured and sequential development process. The stages involved included needs analysis, system design, implementation, testing, and maintenance. In the needs analysis stage, data was obtained through observation and interviews with business owners to identify operational and system requirements [12]. The design stage focused on system modeling, interface design, and database design. The implementation stage involved translating the design into a website using PHP with the CodeIgniter framework and a MySQL database. Testing was conducted to ensure that each feature worked properly and met user needs. The maintenance stage included minor repairs after the system was put into use [13].

Data collection was conducted by distributing user satisfaction questionnaires after respondents used the developed website. The questionnaire was designed to measure user perceptions regarding ease of use, system functionality, and overall satisfaction. Each statement on the questionnaire was measured using a Likert scale, ranging from strongly disagree to strongly agree or a value (1–5). This instrument was used to obtain quantitative data based on user responses to the system [14].

The collected questionnaire data was analyzed using descriptive quantitative analysis. Each answer was converted into a numerical score which was then calculated to obtain the percentage of user satisfaction. The level of satisfaction was interpreted based on predetermined criteria to determine whether the developed website had met user expectations. The final results of the analysis were used to assess the feasibility and acceptance of the interactive website as a medium for information and product ordering.

IV. Results and Discussion

This section describes the results of system development, the implementation process, functional testing results, and user evaluations of the interactive website developed for Raja Konveksi Engineering Aceh.

The main result of this research is an interactive website developed as a medium for information and product ordering at Raja Konveksi Engineering Aceh MSME. This system is designed to accommodate two main actors, namely customers and administrators, with different access rights. The website provides key features such as company information, product catalog, product detail pages, online order forms, and administrator dashboards. These features are designed to replace manual processes and support more structured information delivery and order management. The results of the interactive website display are shown in Figure 3.

Fig. 3. Home page website

After the development stage, the website was deployed online so that it could be accessed and used by users in the evaluation process. The system was implemented using PHP with the CodeIgniter framework and supported by a MySQL database. The interface design focused on simplicity, ease of navigation, and responsive design so that users could access the system optimally through various devices.

All system modules were successfully integrated. Customers can browse products, view detailed information, and place orders online. Administrators can manage product data, monitor incoming orders, and respond to customer messages through the admin panel. Additionally, the system is designed to store all order data in a structured manner within the database, facilitating the management and retrieval of information. This implementation demonstrates that the website is ready to be used as a digital service platform for Raja Konveksi Engineering Aceh. The website's appearance is shown in Figure 4 and Figure 5.

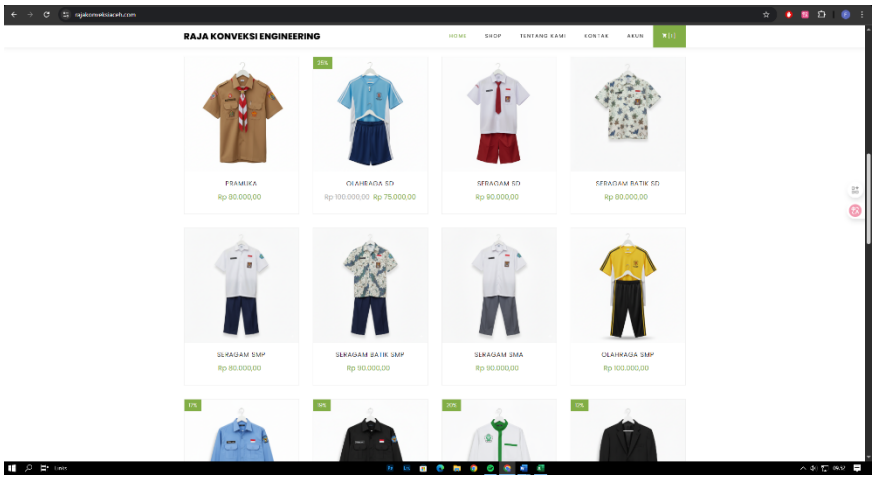

Fig 4. Product catalog page

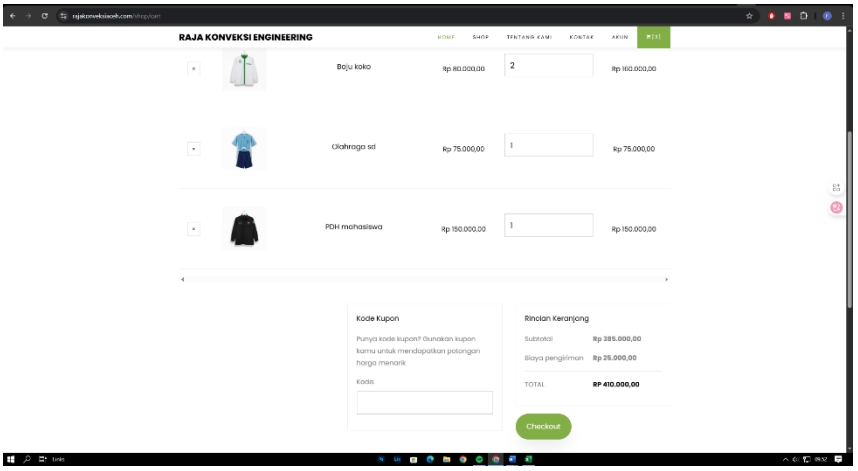

Fig 5. Order page

Black box testing was conducted to evaluate the system's functionality based on user interactions without examining the internal code structure. The testing focused on key features such as login, product management, ordering processes, and data storage.

The results of the testing indicate that all functions operated as expected. User inputs were processed correctly, and the system provided responses in accordance with user requirements. Furthermore, no functional errors were identified that could hinder the system's usability. This demonstrates that the developed website has met the functional feasibility criteria and is ready to be used as a platform for information and product ordering.

No	Fitur yang Diuji	Deskripsi Uji	Input	Output yang Diharapkan	Hasil Uji	Keterangan
1	Login Admin	Memastikan admin dapat masuk ke dashboard	Username dan password benar	Admin berhasil masuk ke halaman dashboard	Berhasil	Valid
2	Login Customer	Memastikan pengguna dapat masuk ke akun	Email dan password benar	Berhasil masuk ke dashboard customer	Berhasil	Valid
3	Registrasi Akun	Menambah akun baru ke sistem	Data pelanggan baru	Akun tersimpan di database dan bisa login	Berhasil	Valid
4	Tambah Produk (CRUD)	Menambah data produk baru	Data produk lengkap (nama, harga, foto)	Data produk tersimpan dan tampil di katalog	Berhasil	Valid
5	Edit Produk	Mengubah data produk	Data produk diubah	Data produk diperbarui di sistem	Berhasil	Valid
6	Hapus Produk	Menghapus data produk	Klik tombol hapus	Produk terhapus dari database	Berhasil	Valid
7	Pemesanan Produk	Pelanggan melakukan pemesanan	Pilih produk + isi form pemesanan	Data pesanan tersimpan di database	Berhasil	Valid
8	Lihat Data Pesanan (Admin)	Admin meninjau pesanan pelanggan	Buka menu pesanan	Data pesanan tampil lengkap di dashboard	Berhasil	Valid

Fig. 6. Results of black box testing of the website

User evaluation was conducted through a satisfaction questionnaire administered to 25 respondents who had used the developed website. The instrument consisted of ten statements covering aspects such as interface appearance, clarity of product information, ease of navigation, system speed, login and registration processes, ordering functionality, clarity of order status, design suitability, system

usability, and overall satisfaction. Each statement was measured using a five-point Likert scale, with a maximum total score of 1250.

Data analysis revealed that the website obtained a total score of 1194, equivalent to 95.52% of the maximum score. This value indicates a very high level of user satisfaction. High scores were achieved across almost all assessment aspects, particularly the clarity of product information, ordering functionality, and ease of use of the system. These findings indicate that the developed interactive website has successfully met user needs as a medium for online product information and ordering. Details of the assessment results are presented in Table X.

Table 1. User Satisfaction Questionnaire Results (n = 25)

No.	Evaluation Aspect	Maximum Score	Obtained Score
1.	Website interface is attractive and easy to understand	125	123
2.	Product information is clear and complete	125	124
3.	Website navigation is easy to use	125	122
4.	Website loading time is fast	125	117
5.	Registration and login process is easy	125	120
6.	Online ordering feature functions properly	125	124
7.	Order status information is clear	125	118
8.	Website design fits user needs	125	116
9.	Website helps in finding and ordering products	125	115
10.	Overall, I am satisfied using this website	125	115
	Total	**1250**	**1194**

Overall user satisfaction score: 95.52% (very satisfied category).

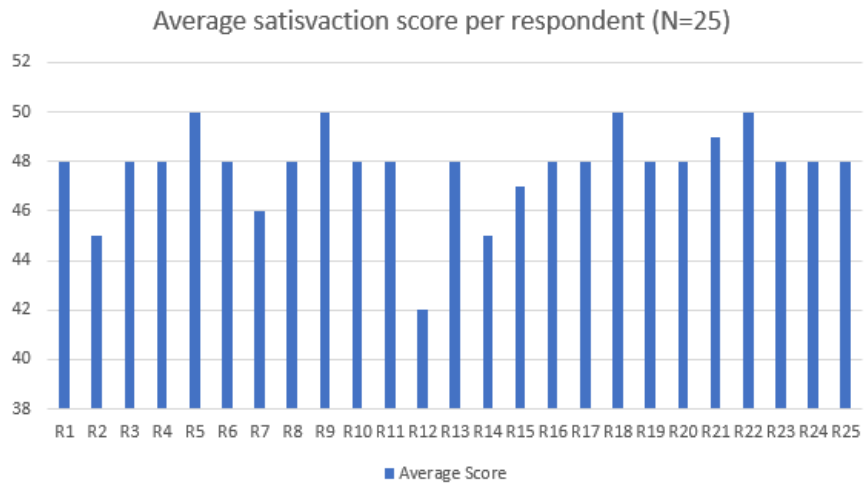

Fig. 7. Average satisfaction score of each respondent (n = 25)

The results of the study show that the interactive website developed is capable of supporting Raja Konveksi Engineering Aceh in providing digital-based product information and ordering services. The structured presentation of products, accompanied by descriptions and visual displays, makes it easier for users to understand the services offered. The integrated order form allows customers to make transactions directly through the system, thereby reducing dependence on manual communication and increasing service speed.

From a management perspective, the admin system plays an important role in helping business owners centrally manage product data, orders, and customer messages. This encourages a more organized and systematic recording process, while minimizing the potential for data errors. Thus, the website not only functions as a promotional medium, but also as an operational support tool that can improve work efficiency and service quality. The black box test results show that all main functions, such as login, product management, ordering process, and data storage, work as designed. These findings indicate that the website has met the aspects of functional feasibility and stability for use. The

success of this test proves that the developed system is capable of supporting user needs from both technical and operational aspects.

Furthermore, the user satisfaction test results, with a percentage of 95.52% in the "very satisfied" category, indicate that the website has been very well received [15]. High scores in the aspects of appearance, ease of navigation, clarity of information, and ordering functions confirm that the system not only functions technically but also provide a positive user experience. Overall, this interactive website has the potential to become an effective digital medium in supporting the digital transformation of MSME and increasing the competitiveness of Raja Konveksi Engineering Aceh.

V. Conclusion

This study successfully designed and developed an interactive website as a medium for information and product ordering at Raja Konveksi Engineering Aceh MSME. The developed system integrates product information, online ordering features, and an admin management panel, thereby providing a more structured and efficient digital service. The implementation of this website overcomes the limitations of manual promotion and ordering processes by providing an accessible, centralized, and responsive platform.

Functional testing using the black box method showed that all the main features of the system worked well according to requirements. This indicates that the website is technically feasible and ready for implementation. In addition, the results of a user satisfaction evaluation involving 25 respondents showed a satisfaction level of 95.52% in the "very satisfied" category. These findings show that the website not only functions well but also meet user expectations in terms of ease of use, clarity of information, and convenience in placing orders.

Overall, the interactive website that was developed has great potential in supporting the digital transformation process of Raja Konveksi Engineering Aceh through improved service quality, expanded promotional reach, and ease of product ordering. Further research is recommended to develop additional features, such as online payment system integration, order tracking automation, and mobile application development to improve system functionality and user experience.

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