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# Design and Implementation of a Digital Marketing Information System for KOHAN_YA (Hans Jaya Garment SME)

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**ABSTRACT**

***Objective***: *This study aims to design and implement a web-based information system for KSI Hansjaya, a garment production business, to serve as both an information dissemination medium and an efficient online promotional tool.* ***Method***: *The system development process followed the Software Development Life Cycle (SDLC) using the Waterfall model, which includes stages such as requirements analysis, system design, implementation, testing, and maintenance. The system accommodates two user categories: administrators and general users.* ***Results***: *The system features were tested and evaluated through functionality testing and a questionnaire distributed to 20 respondents. The results showed that 70% of respondents strongly agreed, and 30% agreed that the system is feasible as a digital promotion medium, with all features functioning optimally according to user requirements.* ***Novelty***: *This web-based system offers a responsive single-page website interface that allows administrators to manage product categories, details, and company contact information, while general users can access product information, ordering guidelines, and contact details. The developed website significantly supports KSI Hansjaya's promotional activities and contributes positively to the business's digital growth.*

## INTRODUCTION

Along with the rapid development of information technology, the world of real estate is experiencing significant changes in various aspects. Nevertheless, Micro, Small and Medium Enterprises (UMKM), especially in the convection sector, still face challenges in utilizing digital technology to manage markets and improve the efficiency of their rational operations [1]. Internet marketing as part of digital transformation has changed the way humans do activities, making them faster, more efficient and practical. One of the most relevant uses of technology in the business world today is digital marketing. Digital marketing is a strategic strategic approach that uses digital technology—especially internet—as the primary means of building and maintaining relationships between products and consumers in a mutually beneficial way [2], [3].

Through this strategy, business actors can reach a wider market, communicate more interactively with customers, obtain consumer behavior data more accurately, and save promotional budgets significantly [4]. Integration between web-based information systems and digital marketing strategies is seen as a strategic solution in increasing the competitiveness of UMKM amidst increasingly dynamic business competition [5], [6].

One of the effective implementation methods of digital marketing is the use of websites as a promotional medium as well as a direct product delivery service platform [7]. A website not only serves as a means to convey product information, but also functions as an interactive medium that supports digital business operational activities, especially for UMKM. In this case, Hansjaya Convection—also known as "Koonly"—is still experiencing various obstacles in the application of digital technology. The product sales process is still carried out manually in physical stores, while promotional methods still depend on conventional methods such as distributing brochures. This condition limits the reach of promotions, especially towards potential customers who are outside the marketing area. Apart from that, a lack of understanding of the concept of digital marketing also becomes an obstacle in the digitalization process of a business.

This reality emphasizes the importance of digital transformation in UMKM's marketing strategy, especially through the implementation of web-based information systems. A number of previous studies have shown that the implementation of proven we$b-based systems can improve promotional efficiencies and ensure market coverage for UMKM [8], [9], [10]. Based on the background of this research, this research was carried out by carrying out "Digital Marketing Information System Design at KOHAN_YA (Hans Jaya Convection)", with the aim of developing a web-based system that integrates digital marketing strategies as information and media. management, to support the operational efficiency and growth of UMKM businesses in a sustainable manner.

## RESEARCH METHOD

### Research Framework

The conceptual framework in this study serves as a theoretical basis for identifying core problems based on relevant factors, as well as a basis for developing a theory that is in line with research objectives [11]. Based on the results of observations, it is known that Hansjaya Convection requires a web-based information system that can be utilized to support digital product promotions. In order to answer the $needs, this research is designed systematically with stages starting from problem identification, goal setting, system design, implementation, to evaluation of the final results. The flow of this research is depicted in Figure 1.

### Identification of problems

Hansjaya Convection as a UMKM player still relies on traditional promotional methods, such as distributing brochures and direct sales in stores, which limits pan market coverage—especially for consumers outside geographic reach. Based on the observation findings, it can be concluded that a web-based information system is needed to support more extensive and efficient online product promotion.

### Data collection

The data processing stage is carried out to understand the needs of the system in a way to organize the information system, which is the basis for designing the

information system. This process is carried out through three main methods, as visualized in Figure 2.

**Interview**

Carried out by the owner of the Hansjaya Convection directly to obtain information regarding operational activities, obstacles in promotion, and challenges to the system that will be developed.

**Observation**

Observations are carried out directly at the company's location in order to understand the work flow and promotional media currently used.

**Documentation**

Data is collected from various documents such as brochures, photos of company activities, sales archives, as well as promotional materials that are relevant to be used as a reference for system design.

**System Architecture Design**

The design of this web-based information system is focused on meeting the needs of two types of users: users (users) and administrators (admins). General users can access product catalogues, place orders, and obtain information related to business profiles. Meanwhile, administrators are responsible for managing product data, order processing, and promotional content.

In this stage, various modeling tools and systems are used to describe the structure and work processes systematically.

Flowcharts are used to explain the logic and flow of processes in the information system being developed. This diagram is useful in explaining the relationships between processes in a structured manner and facilitates the understanding of the system by users and developers [12]. The flowchart includes user and admin flows with process paths that correspond to their respective access rights. The visualization is shown in Figure 3.

Data Flow Diagrams (DFD) function as a planning tool that represcribes the flow of data in a system and helps identify core processes, external entities and data storage elements involved in the information system being developed [13]. This research presents Data Flow Diagrams (DFD) in two levels, namely DFD Level 0 which represents the context diagram, and DFD Level 1 which describes the process in more detail.

Figure 4.a presents an illustration of DFD Level 0 which depicts the interaction of the system in a comprehensive way with external entities. visualization is the function of showing global interactions between systems and external entities. This diagram depicts the entire operation of the m system in one first process, which is given the number "0", and shows the input and output data for u$m. For example, administrators input category and product data, while users access store and product information as an output from the system.

Meanwhile, DFD Level 1 has the function of breaking down the primary process at Level 0 into several more specific and detailed processes. This diagram presents the data flow between system internal processes and the interrelationships between entities in more depth. With this visualization, every flow of data entering and leaving the

process can be mapped clearly, thereby providing a more comprehensive understanding of the data structure and function of the system being built.

The database structure is visualized through ERD which describes the relationships between entities and attributes logically and systematically [14]. This diagram makes it easy to model promotional and order data storage. Visualization can be seen in Figure 5.

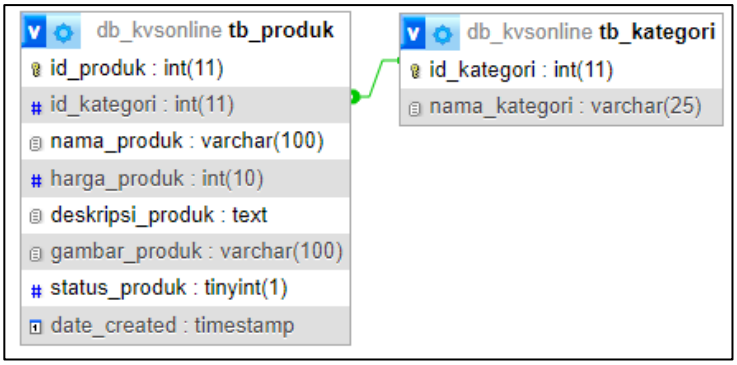


**Figure 5.** Entity Relationsip Diagram (ERD)

The user interface is designed based on the principles of understanding, ease of navigation, and a communicative display to improve the user's experience in accessing information and carrying out orders [15], [16]. Figure 6 presents the initial design of the interface for the system being developed.

The admin accesses the system via the login page which functions as authentication. After entering, the admin is directed to the first dashboard which contains category management. Here, admins can add, edit, delete, and display a list of product categories. The next page is product management, which allows admins to add new product information, as well as edit or delete existing data. All of these $features help me manage content in an efficient manner.

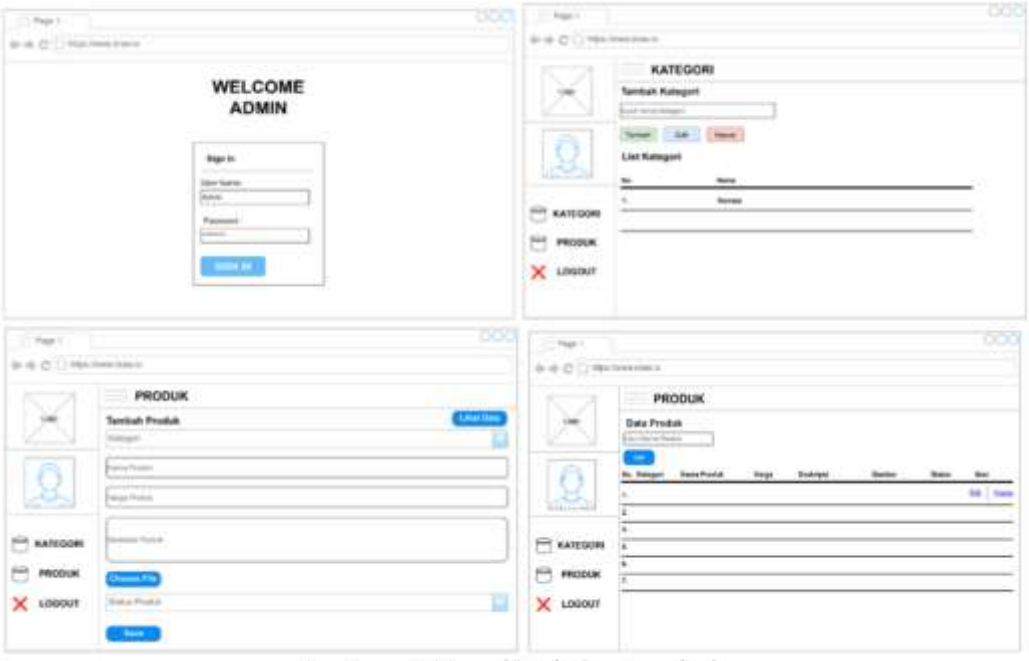


**Figure 6.** Admin page view

The system is designed using a single page shortening so that all the information and features can be accessed via one page using simple navigation. In Figure 7 the user interface is shown, which starts from the dashboard page containing a summary and quick access to the main features. Users can view products by category, access the order guide, and read the FAQ page containing questions and answers for you. The contact page provides important information such as your company's address, e-mail, telephone number, and social media links to facilitate communication with your company's customers.

## RESULTS AND DISCUSSION

This section discusses the results of implementing a web-based promotional system designed for Hansjaya Konvection MSMEs. This system was developed as a digital solution to overcome the limitations of promotions and orders which were previously only carried out manually and were limited by geographic location factors.

During the implementation stage, the system is evaluated based on the functional performance of each component, both from the administrator and user side. Testing includes the feature of managing product data, categories and order information. Apart from functional aspects, the system is also tested in terms of interface design, page access speed, and level of ease in user navigation.

The aim of this discussion is to assess the extent to which the system is able to answer the needs that have been identified at an early stage, while at the same time assessing the capabilities and limitations of the system based on the results of tests carried out in this manner. comprehensive.

### 1. Admin View: Home

This page functions as the first display that appears after the administrator successfully carries out the login process into the system. On this page, a summary of information is displayed for you as well as quick access to various features, such as category management, product data management, and contact information management. The system also provides a logou$t button to exit safely. The visualization of the admin home page is shown in Figure 8.

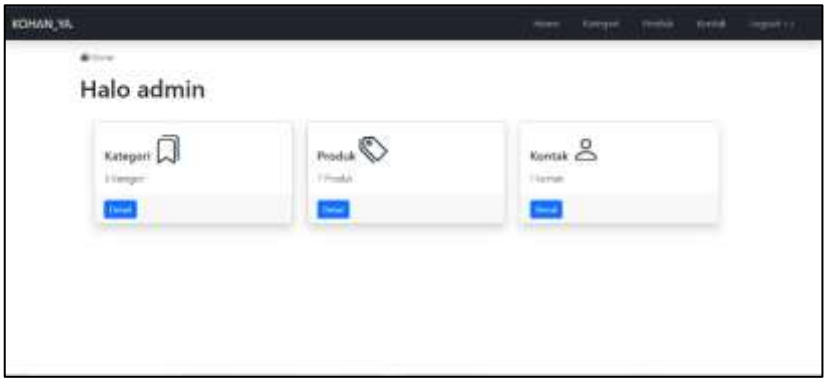


**Figure 8.** Home admin view

**2. Admin View: Add, List, and Edit Product Categories**

Administrators have the $ability to add new categories that are tailored to the types of products available in the system. Apart from that, the admin can also display a list of categories that have been created so far, as well as perform editing or deletion of categories if necessary. This feature serves to ensure that product data is well managed and remains organized. The implementation of the system display in the features of adding, listing and editing categories by the admin is shown in Figure 9.

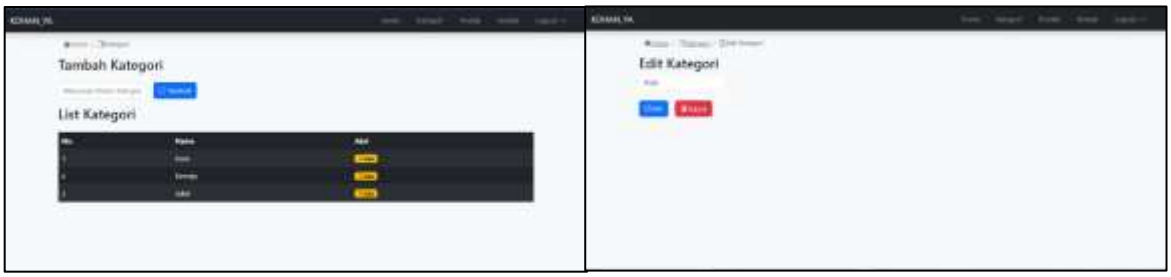


**Figure 9.** Display of the add, list, and edit admin category features

**3. Admin View: Add, List and Edit Products**

This feature is designed to facilitate administrators in managing product data in a way that allows administrators to manage product data. Admin can add new product information, including product name, product description, price, and short description. In addition, the admin has access to display a list of products that have been detected, as well as carry out edits or deletions of product data if necessary, for example when there is a change in stock material or other information. The implementation of the features of adding, registering, and managing product data by the admin is shown in Figure 10.

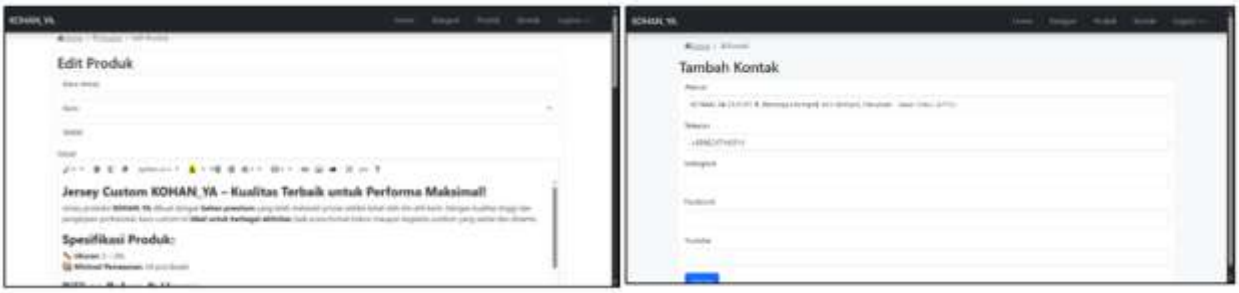


**Figure 10.** Display of the add, list, and edit product admin features

**4. Admin View: Log Out and Log In Features**

Functions to safely terminate admin sessions to maintain system security from unauthorized access. The admin login and logout implementation is shown in Figure 11.


**Figure 11.** Admin log out and log in display

**User Appearance: Home and About Us**

The homepage displays general information and an "About Us" section containing a brief profile, vision, and advantages of Hansjaya Convection. The implementation of the homepage and about us is shown in Figure 12.

**Display to User: Category List and Product List**

Users can search for categories of products available, then view a list of products of their choice. Each product displays detailed details such as description, price and photos. The implementation display of the list of user categories and products is shown in Figure 13.

**Display to User: Product Details and Related Products**

This page displays product details such as descriptions, prices and images, and suggests related products as additional recommendations for users. Implementation of the related product display can be shown in Figure 14.

**System Testing**

Testing of a web-based promotional information system is carried out to ensure that all components developed function in accordance with the objectives and initial design. This test includes evaluation of two user specifi cs, namely administrators and user users. The main objective is to assess whether the user interface and interactive features provided are running optimally, and to identify possible system errors (bugs) before the system is fully implemented.

The testing process is carried out through direct simulation of the first features in the system, both in terms of the appearance of the interface and the functionality offered. The results of this testing process are presented in two tables, namely Tabe 1 for display aspect testing and Table 2 for system functionality testing.

Testing via a questionnaire was carried out to collect user feedback regarding their experience of using the Hansjaya Konvection promotional website. The questionnaire is distributed online via Google Form, complete with a link to the site so that respondents can try it directly before completing the assessment.

The respondents involved in filling out the questionnaire consist of customers and potential potential customers. They were asked to answer a number of questions that included three main aspects, namely the convenience of your interface, the ease of using the system, and the benefits of the system in supporting promotional activities. Details of

the questions asked in the questionnaire can be seen in Table 3, while a summary of the responses from 20 responses is presented in Table 4.

## CONCLUSION

**Fundamental Finding** : The website-based promotional information system for Hansjaya Konvection has been successfully developed, utilizing a single-page application approach. The system meets user needs with two main interfaces for admins and users, providing functionality such as product viewing, category management, and contact information display. The system functions as intended, and user feedback indicates positive acceptance as a promotional medium. **Implication** : This system enhances Hansjaya Konvection's marketing efforts by providing an accessible and responsive platform, effectively expanding its digital reach. It also offers insights into user preferences, laying the foundation for further digital marketing initiatives. **Limitation** : The current system lacks advanced e-commerce features such as online shopping systems and digital payment integrations. Additionally, the absence of interactive features like live chat or chatbot limits real-time customer engagement. **Future Research** : Future development should focus on integrating e-commerce capabilities, adding interactive communication tools, and incorporating customer data reporting and traffic analysis. Research could also explore how these enhancements would impact customer satisfaction, sales, and business growth.

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