**MIoSA : Machine Intelligence for Societal Advancement**
**Volume 1, (1) 2026, p. 10-16**
**E-ISSN : XXXX-XXXX**


# Design and development of a web-based umkm promotion and information system for mattcholic

Lorenza Alisyah [a,1*], Alpin Athoriq [a,2], M Sofwan Muzzaki [a,3], Ari Kurniawan [a,4], Tabah Prianto [a,5]

[a] Department of Software Enginering, Universitas Lembah Dempo, Indonesia
[1]lorenzaalisyah@gmail.com, [2]alpinattoriq568@gmail.com, [3]muzakkysofwan@gmail.com, [4]ari.kurniawan@gmail.com, [5]pipinwle@gmail.com
* corresponding author

**Article Info**

**Article History:**

Received: Jan 13, 2026
Revised: Jan 21, 2026
Accepted: Feb 04, 2026

**Keywords :**
*Digital Promotion, MSME, Prototype Method, Web Technology, Website Development*



***Abstract***

*The rapid development of information technology has significantly influenced various sectors, including the growth of Micro, Small, and Medium Enterprises (MSMEs). However, many MSMEs still rely on conventional marketing methods, which limit their ability to reach a wider market. Therefore, the use of digital platforms such as websites can provide an effective solution to support product promotion and information dissemination. This study aims to design and develop a web-based platform that assists MSMEs in promoting their products digitally and improving customer access to product information. This research applies the prototype method, which allows system development through several stages, including requirement gathering, system design, prototype development, and system evaluation. The website was developed using web technologies such as HTML, CSS, and JavaScript to create an interactive and user-friendly interface. The results show that the developed website successfully provides several main features, including a homepage, product menu page, and product detail page. These features allow users to easily access product information and explore the products offered by the MSME. The implementation of the website also improves the presentation of product information in a more structured and attractive manner. In conclusion, the developed website provides an effective digital platform for product promotion and information delivery. The system is expected to help MSMEs expand their marketing reach and improve their competitiveness in the digital business environment.*

## 1. Introduction

The rapid development of information technology has significantly influenced various sectors, including business and economic activities. The use of digital technology enables businesses to expand their market reach and provide better services to customers. One of the technologies that plays an important role in business development is the website, which can function as a medium for information dissemination and product promotion. A website allows businesses to display products and services in an organized and accessible manner, enabling customers to obtain information easily through the internet [1].

**MIoSA : Machine Intelligence for Societal Advancement**
**Volume 1, (1) 2026, p. 10-16**
**E-ISSN : XXXX-XXXX**


Micro, Small, and Medium Enterprises (MSMEs) play an important role in supporting economic growth and job creation in many countries, including Indonesia. MSMEs contribute significantly to local economic development and community empowerment. However, many MSME businesses still rely on conventional marketing methods such as direct selling and word-of-mouth promotion. These traditional marketing methods often limit the ability of MSMEs to reach a wider market and compete with larger businesses that have already adopted digital technologies [2].

The development of web-based information systems has become an effective solution for improving business promotion and accessibility. Through a website, MSMEs can present product information, promotional content, and business profiles in a more structured and professional manner. In addition, the use of digital platforms can increase business visibility and allow customers to access product information at any time without geographical limitations [3].

In this research, the author develops a web-based MSME platform called Mattcholic, which functions as a promotional and informational website for the business. The website is designed to provide product information, display product menus, and present detailed descriptions of available items [4]. The system interface is designed to be simple and user-friendly so that customers can easily navigate through the website and obtain the information they need. The purpose of this research is to design and develop a website-based system that can support MSME product promotion and improve accessibility for customers. By implementing web technology in the promotion process, MSMEs are expected to increase their marketing reach and improve their competitiveness in the digital business environment.

Recent studies have shown that web-based information systems play an important role in supporting the digital transformation of Micro, Small, and Medium Enterprises (MSMEs). According to [5], the adoption of digital technology enables MSMEs to expand their market reach and improve their competitiveness in the modern business environment. By utilizing web-based platforms, businesses can provide product information, promotional content, and service details in a more accessible and structured manner.

Previous research conducted by [6] discussed the design of a web-based information system for small business promotion, the study emphasized that a website can function as an effective marketing tool that allows businesses to present product catalogs, company profiles, and promotional information to customers through online platforms, the implementation of such systems helps improve communication between businesses and customers.

Another study by [7] implemented the prototype method in the development of a website for small business promotion, the research highlighted that the prototype model allows developers to build an initial system and improve it through continuous feedback from users, this approach ensures that the developed system meets user requirements and improves system usability. In addition, research conducted by [8] showed that web-based marketing systems can improve product visibility and increase customer engagement.

The study concluded that implementing web technology for MSME promotion provides significant benefits, including wider market reach, improved product presentation, and better customer interaction. Based on these previous studies, it can be concluded that web-based systems provide an effective platform for business promotion and information dissemination. Therefore, this research focuses on developing a web-based promotional system for the Mattcholic MSME using the prototype development method.

## 2. Research Methodology

The research method used in this study is the Prototype Method. The prototype method is a system development approach that involves creating an initial version of a system which is then evaluated and improved through several iterations before the final system is implemented [9]. This method allows developers to interact with users during the development process in order to obtain feedback and ensure that the developed system meets user requirements [10]. The first stage in the prototype method is requirement gathering. In this stage, the researcher collects and analyzes information regarding the needs of the system to be developed. This process involves identifying the main features that should be available in the MSME website, such as product information, menu display, navigation systems, and product

descriptions. Requirement analysis is an important step in ensuring that the developed system can effectively support business promotion and provide useful information for customers [11].

The second stage is system design. In this stage, the structure and layout of the website are designed based on the results of the requirement analysis. The system design process includes designing the user interface, determining the structure of the website pages, and organizing the navigation flow of the system. The design process aims to create a user-friendly interface that allows users to easily access the information provided by the website [12]. The third stage is prototype development. In this stage, the initial version of the website is developed using web technologies such as HTML, CSS, and JavaScript. These technologies are used to build the structure, appearance, and functionality of the system. The prototype version represents the main features of the website and allows users to interact with the system before the final implementation is completed.

The final stage is system evaluation and refinement. In this stage, the developed prototype is tested to determine whether the system functions properly and meets the user requirements. The evaluation process focuses on usability, functionality, and system performance. If any problems or limitations are identified during testing, improvements and modifications are carried out until the system meets the expected objectives and can function effectively as a digital promotion platform for MSMEs.

### 2.1 System Architecture

The system architecture of the developed MSME website is designed as a simple web-based platform that allows users to access product information through a browser. The system consists of two main components, namely the user interface and the web content structure. The user interface is responsible for displaying information to users in an attractive and interactive format, while the web structure organizes the pages and navigation within the system [13].

The website architecture follows a client-side approach where users access the system through a web browser. The browser interprets and displays the web pages developed using HTML, CSS, and JavaScript. HTML is used to define the structure of the web pages, CSS is responsible for the visual layout and styling, and JavaScript is used to provide interactive elements on the website [14]. This architecture allows the website to be easily accessed by users without requiring additional software installation. By using standard web technologies, the system ensures compatibility with various devices such as desktop computers, laptops, and mobile devices. As a result, customers can conveniently access product information from anywhere and at any time.

### 2.2 System Implementation

The implementation stage focuses on developing the MSME website based on the system design that has been previously created. The website is implemented using fundamental web development technologies including HTML, CSS, and JavaScript. HTML is used to create the structural components of the website such as headings, images, navigation menus, and product descriptions. CSS is used to design the appearance of the website, including layout structure, typography, color schemes, and responsive design elements [15]. Through CSS styling, the website interface becomes more visually appealing and easier to use. JavaScript is used to enhance the functionality and interactivity of the system, allowing dynamic elements such as navigation behavior and user interaction. The implementation process results in several main pages of the website, including the homepage, product menu page, and product detail page. Each page is designed to provide clear and organized information to users, ensuring that customers can easily explore the products offered by the MSME.

### 2.3 System Testing

System testing is conducted to ensure that the developed website functions properly and meets the expected requirements [16]. The testing process focuses on evaluating the functionality, usability, and accessibility of the website. Each feature of the system is tested to confirm that it operates according to its intended purpose. Functional testing is performed to verify that the navigation menu, product display, and page transitions work correctly. Usability testing is also carried out to ensure that users can easily interact with the website and access the information they need without confusion [17]. In addition, the website is

MIoSA : Machine Intelligence for Societal Advancement
Volume 1, (1) 2026, p. 10-16
E-ISSN : XXXX-XXXX


tested on different browsers and devices to ensure compatibility and consistent performance. The results of the testing process indicate that the website operates properly and is capable of presenting product information clearly. The system successfully provides a digital platform that supports MSME product promotion and improves customer access to business information.

## 3. Results and Discussion

This section presents the results obtained from the development of the MSME website called Mattcholic. The website was developed to provide an online platform that helps promote products and makes it easier for customers to access information about available menus. The system was implemented using web technologies such as HTML, CSS, and JavaScript to create a responsive and user-friendly interface. The developed website provides several main features, including a homepage, product menu display, and product detail page. These features are designed to allow users to easily explore available products and obtain information related to the MSME business.

The system interface emphasizes simplicity and ease of navigation so that users can interact with the website without difficulty. The homepage of the website serves as the main interface that users see when accessing the system. This page provides an overview of the business and introduces the products offered by the MSME. The homepage is designed with a visually appealing layout to attract user attention and encourage them to explore further information available on the website. Fig. 1. Homepage Display of Mattcholic Website.

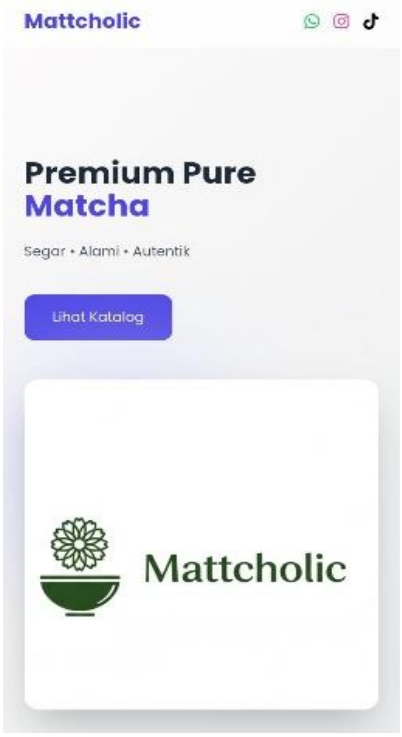


**Fig. 1.** Homepage Display of the Mattcholic Website

The homepage contains important information about the business, including branding elements, navigation menus, and promotional content. The navigation menu allows users to access different sections of the website easily. By presenting clear and organized information, the homepage functions as an effective entry point for users who want to learn more about the available products. Another important feature of the system is the product menu page. This page displays a list of products offered by the MSME along with images and brief descriptions. The product menu page helps customers quickly browse through available items and select products that match their preferences. Fig. 2. Product Menu Display.

**MIoSA : Machine Intelligence for Societal Advancement**
**Volume 1, (1) 2026, p. 10-16**
**E-ISSN : XXXX-XXXX**


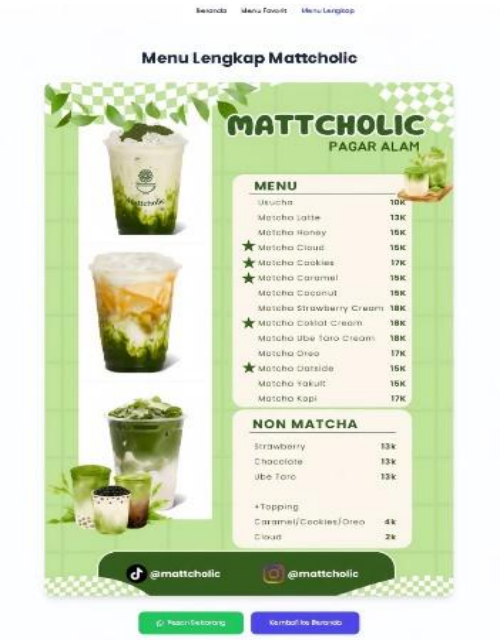


**Fig. 2.** Product Menu Display

The product menu page is designed with a simple layout to improve usability and make navigation easier. Each product is displayed with its name, image, and a short description so that users can obtain basic information before deciding to view more details about the product. In addition, the system also provides a product detail page that displays more complete information about each menu item. This page includes detailed product descriptions and visual images that help customers better understand the product before making a purchase decision.

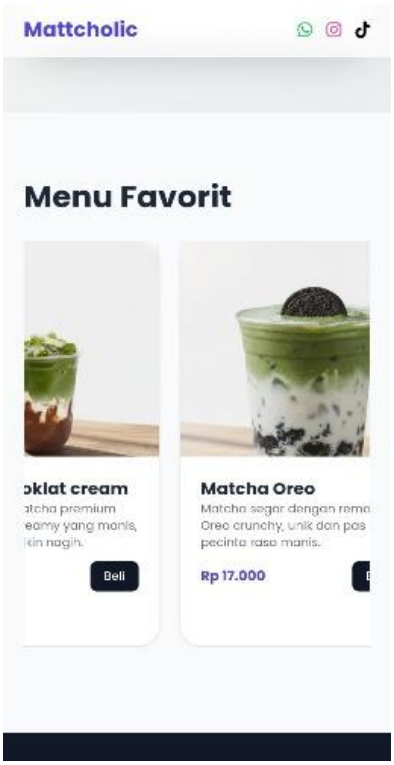


**Fig. 3.** Product Detail Display

MIoSA : Machine Intelligence for Societal Advancement
Volume 1, (1) 2026, p. 10-16
E-ISSN : XXXX-XXXX


The product detail page allows users to see more comprehensive information related to the selected product. The visual presentation of the product helps attract customer interest and improves the overall user experience when interacting with the website. Based on the implementation results, the developed website successfully provides an effective digital platform for MSME promotion. The system allows business owners to present their products in a structured and attractive way while enabling customers to easily access product information through an online platform. The implementation of this website is expected to support the digital transformation of MSMEs and improve their ability to compete in the modern business environment.

**System Testing Result**

To ensure that the developed website functions properly, system testing was conducted on several main features of the Mattcholic MSME website. The testing process aims to evaluate whether each feature works according to the expected functionality. The results of the testing process are presented in Table 1.

**Table 1.** System Testing Result

| No | Feature Tested | Expected Result | Test Result |
|---|---|---|---|
| 1 | Homepage Display | The homepage can be displayed properly when the website is accessed | Success |
| 2 | Navigation Menu | The navigation menu can direct users to different pages correctly | Success |
| 3 | Product Menu Page | The product menu page can display available products with images and descriptions | Success |
| 4 | Product Detail Page | The product detail page shows detailed product information | Success |
| 5 | Page Navigation | Users can move between pages without errors | Success |

Based on the testing results shown in Table 1, all main features of the website function properly and meet the expected system requirements. The homepage can be displayed correctly, the navigation menu works effectively, and the product information can be accessed without errors. These results indicate that the developed system is able to provide a functional and user-friendly platform for presenting MSME product information.

## 4. Conclusion

Based on the results of this study, the development of the Mattcholic MSME website has successfully provided a digital platform that can assist business owners in promoting their products more effectively. The website was developed using the prototype method which allows the system to be designed, developed, and evaluated through several iterative stages to ensure that it meets user needs. The implementation of the website provides several important features such as a homepage, product menu display, and product detail page that enable customers to easily access information about the products offered by the MSME. Through the use of web technologies including HTML, CSS, and JavaScript, the system is able to present an attractive and user-friendly interface that improves the overall user experience. The results of this research indicate that the implementation of a web-based promotional platform can help MSMEs expand their marketing reach and improve product visibility in the digital environment. Therefore, the developed website is expected to support the digital transformation of MSMEs and help small businesses compete more effectively in the modern digital marketplace. Future research can further enhance the system by integrating additional features such as online ordering systems, payment gateways, and customer feedback systems to improve functionality and user interaction.

**MIoSA : Machine Intelligence for Societal Advancement**
**Volume 1, (1) 2026, p. 10-16**
**E-ISSN : XXXX-XXXX**


## References

[1] C. E. Wihardja and M. H. Widianto, "E-Commerce Website : A Systematic Literature Review," in *2023 International Conference on Informatics, Multimedia, Cyber and Information Systems (ICIMCIS)*, 2023, pp. 648–652. doi: https://doi.org/10.1109/ICIMCIS60089.2023.10349018.

[2] S. Hariyanti and D. Kristanti, "Digital Transformation in MSMEs: an Overview of Challenges and Opportunities in Adopting Digital Technology," *J. Manaj. Bisnis, Akunt. dan Keuang.*, vol. 3, no. 1, pp. 37–46, 2024. https://doi.org/10.55927/jambak.v3i1.8766.

[3] M. P. V Gonçalves, F. A. F. Ferreira, and M. Dabić, "' Navigating through the digital swamp ': assessing SME," *Rev. Manag. Sci.*, vol. 18, no. 9, pp. 1765–1788, 2024, doi: https://doi.org/10.1007/s11846-023-00704-2.

[4] S. Amsl, I. Watson, and S. Wood, "Presenting products on websites – the importance of information quality criteria for online shoppers quality," *Int. J. Retail Distrib. Manag.*, vol. 51, no. 2, pp. 1–26, 2023, doi: https://doi.org/10.1108/IJRDM-04-2023-0266.

[5] G. Wijayanto, Jushermi, A. Nursanti, A. Novandalina, and Y. Rivai, "The Effect of E-commerce Platforms , Digital Marketing , and User Experience on Market Reach and Competitiveness of Indonesian MSMEs," *Int. J. Business, Law, Educ.*, vol. 5, no. 1, pp. 811–823, 2024, doi: https://doi.org/10.56442/ijble.v5i1.492.

[6] M. Daniar, N. Prastyo, and F. Rochman, "Making a Website Company Profile as a Promotional Media Using CMS Wordpress at MAB Screen Printing in Jember City," *Manaj. Bisnis*, vol. 03, no. 01, pp. 30–38, 2025, doi: https://doi.org/10.22219/mb.v15i01.42084.

[7] A. R. Triani and Y. Rahman, "Evaluation of Website Prototype Based on Basic UI / UX Principles ( Case Study: Eigen Natur Indo )," *Ultim. Vis. Commun. J.*, vol. 17, no. 2, pp. 127–137, 2024. https://doi.org/10.31937/ultimart.v17i2.3829.

[8] D. P. Sakas, D. P. Reklitis, N. T. Giannakopoulos, and P. Trivellas, "The in fl uence of websites user engagement on the development of digital competitive advantage and digital brand name in logistics startups," *Eur. Res. Manag. Bus. Econ.*, vol. 29, pp. 1–18, 2023, doi: https://doi.org/10.1016/j.iedeen.2023.100221.

[9] A. Susanto and Meiryani, "System Development Method with The Prototype Method," *Int. J. Sci. Technol. Res.*, vol. 8, no. 07, pp. 141–144, 2019.

[10] J. Buchan, M. Bano, D. Zowghi, S. Macdonell, and A. Shinde, "Alignment of Stakeholder Expectations about User Involvement in Agile Software Development," in *the 21st International Conference on Evaluation and Assessment in Software Engineering*, Karlskrona: ACM Press, 2017, pp. 334–343. doi: https://doi.org/10.1145/3084226.3084251.

[11] M. N. Akbar, D. P. Pratama, K. Alexander, and Suzanna, "User Requirement Analysis on Sales Information System at PT . MITRA INDOLINK GROSIR," *Int. J. Comput. Sci. Humanit. AI*, vol. 1, no. 1, pp. 1–6, 2024, doi: https://doi.org/10.21512/ijcshaijournal.v1i1.12135.

[12] M. F. Fhalosa, D. Dwi, J. Suwawi, and R. R. Riskiana, "User Interface Design for Baduy Ecotourism Website Using User Centered Design Method," *Sink. J. dan Penelit. Tek. Inform.*, vol. 7, no. 4, pp. 2679–2691, 2023. doi: https://doi.org/10.33395/sinkron.v8i4.12859.

[13] J. Pugatch, E. Grenen, S. Surla, M. Schwarz, and H. Cole-lewis, "Information Architecture of Web-Based Interventions to Improve Health Outcomes : Systematic Review Corresponding Author :," *J. Med. Internet Res.*, vol. 20, pp. 1–11, 2018, doi: https://doi.org/10.2196/jmir.7867.

[14] Q. Wang, Y. Fang, A. Ravula, F. Feng, X. Quan, and D. Liu, "WebFormer : The Web-page Transformer for Structure Information Extraction," in *Proceedings of the ACM Web Conference 2022 (WWW '22)*, Lyon: Association for Computing Machinery, 2022, pp. 1–20. doi: https://doi.org/10.1145/3485447.3512032.

[15] K. Kikuchi, N. Inoue, M. Otani, E. Simo-Serra, and K. Yamaguchi, "Generative Colorization of Structured Mobile Web Pages," 2023. doi: https://doi.org/10.1109/WACV56688.2023.00364.

[16] M. Niranjanamurthy, S. Navale, S. Jagannatha, and S. Chakraborty, "Functional Software Testing for Web Applications in the Context of Industry," *J. Comput. Theor. Nanosci.*, vol. 15, pp. 1–7, 2018. doi: https://doi.org/10.1166/jctn.2018.7632.

[17] M. Sobri, M. T. Ijab, and N. Mat Nayan, "Usability Evaluation of Heart Disease Monitoring Mobile Applications: A Comparative Study," in *Advances in Visual Informatics*, Springer, Cham, 2019, pp. 653–662. doi: https://doi.org/10.1007/978-3-030-34032-2_58.