

Effective Website Development Model for MSMEs to Encourage Innovation in Smart Cities

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Abstract. Micro, Small and Medium Enterprises (MSMEs) are an important sector in the Indonesian economy. However, many MSMEs face obstacles in accessing digital technology to improve competitiveness and innovation. With the development of the Smart City concept, which integrates technology to improve quality of life and access to public services, MSMEs in areas that adopt it have the opportunity to utilise digital technology. Madiun City, as part of the Smart City initiative, has great potential in developing an inclusive digital ecosystem for MSMEs. This research aims to formulate an effective website development model for MSMEs in Madiun City, to support product innovation and marketing and improve competitiveness in the digital market. The analysis shows that website development can improve MSME competitiveness and innovation, with benefits such as wider market access and integration with digital marketing technology. However, the main challenges faced are limited digital knowledge, development costs, and security threats. Therefore, support from the government and related institutions is needed to provide training and resources for sustainable website management.

Keywords: Digital Innovation, Market Competitiveness, MSME Website Development, Micro, Small, and Medium Enterprises (MSMEs), Smart City

1. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) have long been the backbone of the Indonesian economy (Ningsih & Tjahjono, 2024). As a sector that absorbs a lot of labour, MSMEs play an important role in reducing poverty and increasing economic equity (Irawan Agung Prasetyo Nugroho Wicaksono et al., 2023). However, along with the times and changes in people's lifestyles that are increasingly dependent on technology, MSMEs in Indonesia face great challenges in adapting to the rapid digital development (Eka et al., 2021; Robby Novianto & Maryam, 2022). One of the biggest challenges for MSMEs is the limitation in accessing and utilising digital technology to improve competitiveness and innovation. On the other hand, the development of information and communication technology (ICT) has created new opportunities for MSMEs to grow their business through digital platforms, one of which is a website (Effendi et al., 2022). A website not only serves as a marketing tool, but also as a means to introduce products, manage inventory, and interact with customers more efficiently.

Along with the development of the Smart City concept, which integrates technology to improve people's quality of life and facilitate access to various public services, MSMEs in areas that adopt this concept should be able to utilise digital technology to accelerate innovation and grow their business. Madiun City, as part of the Smart City initiative, has

great potential to develop a more inclusive digital ecosystem for MSMEs. However, based on initial observations, many MSMEs in Madiun City have not fully utilised digital technology, especially websites, as part of their marketing strategy. Some of the obstacles often faced by MSMEs are limited technical knowledge on how to manage and utilise websites effectively, as well as a lack of understanding on how websites can be used to drive innovation in the products and services they offer.

The importance of website development for MSMEs is also in line with various government policies that encourage the digital transformation of MSMEs. The Indonesian government through the Ministry of Cooperatives and SMEs, as well as various other agencies, has launched various programmes to assist MSMEs in adopting digital technology. One example of such a policy is the 100 Smart City National Movement, which aims to encourage the use of technology in various sectors, including the MSME sector, in cities that are part of the programme.

However, despite various policies and programmes that support the digitalisation of MSMEs, the main challenge is the low level of digital literacy among MSME players, especially those in small and medium-sized cities such as Madiun City. Most MSME players do not fully understand how websites work, how to optimise them for business purposes, and how websites can drive innovation in their products and services. Therefore, developing an effective website model that suits the needs of MSMEs in Madiun City is very important to increase their capacity to innovate and compete in the digital market.

In this context, this research aims to formulate an effective website development model for MSMEs in Madiun City, which can support the innovation process in products and marketing and improve their competitiveness in the digital market. This model is expected to not only provide practical solutions for MSMEs, but also contribute to efforts to build a stronger digital ecosystem within the Smart City, by integrating technology as part of the local economic development strategy.

2. LITERATURE REVIEW

A. Concept and Definition of MSMEs

Micro, Small and Medium Enterprises (MSMEs) in Indonesia have a very strategic role in the economy, both in providing employment and in contributing to Gross Domestic Product (GDP)(Syakur Novianto et al., 2023). MSMEs cover various

economic sectors, ranging from trade, manufacturing, to services. According to Law No. 20/2008 on MSMEs, MSMEs are defined based on certain criteria, such as annual turnover and number of workers (Peraturan Menteri Koperasi Dan UMKM, 2017). While MSMEs play an important role in creating economic equity, they often face challenges in terms of access to capital, markets, and technology.

B. Utilisation of Digital Technology in MSMEs

Along with the development of the digital era, many MSMEs have begun to turn to digital technology as part of their business strategy (Akhmad Supriyanto et al., 2017; Feta et al., 2021; Rahmat et al., 2019). Digital technology is not only limited to hardware or software, but also includes the use of social media, e-commerce platforms, and websites as marketing and business management tools (Eprilianto et al., 2020). According to a number of studies, the application of digital technology in MSMEs can improve operational efficiency, expand market reach, and introduce products to consumers more widely. Website as one of the components of digital technology has a very important role in strengthening branding, increasing visibility, and providing convenience in interacting with customers. A well-developed website can be a tool to promote products, manage transactions, and provide relevant information to consumers. A website can also be integrated with various features such as online payment systems, product catalogues, and direct communication features with customers.

C. Website as a Tool to Encourage MSME Innovation

Websites for MSMEs not only function as marketing tools, but can also encourage innovation in various aspects, such as products, business processes, and services. By utilising existing digital technology, MSMEs can be more flexible in innovating, both in creating new products, improving product quality, and in improving ways of doing business (Fauzi et al., 2018; Goesderilidar, 2021). Through websites, MSMEs can Develop New Products, Introduce New Services, Improve Business Processes, Websites also allow MSMEs to utilise the data and information collected to analyse market trends, consumer behaviour, and marketing effectiveness, which in turn can improve their ability to innovate.

D. Smart City Concept and its Effect on MSME Development

Smart City is a city management concept that integrates information technology to improve quality of life, operational efficiency, and sustainable resource management. In the context of Smart City, technology is used to optimise various public services, ranging from transportation, security, to community services (Centenaro et al., 2016). MSME development is also an important part of Smart City initiatives, where technology can be utilised to support local economic growth and development.

Madiun City, as one of the cities adopting the Smart City concept, has great potential to develop a digital ecosystem that supports MSMEs. Good digital infrastructure, fast internet access, and technology-based services can help MSMEs in Madiun City to grow their business and adapt to increasingly digitalised market changes. Government programs that support technology development for MSMEs, such as the National Movement of 100 Smart Cities, aim to accelerate digitalisation and improve the competitiveness of MSMEs in the globalisation era.

3. METHODS

[Figure 1](#) shows this research method, which uses a mixed-methods approach. This method combines qualitative and quantitative data that can provide effective results to assess the impact of website development on MSMEs in Madiun City (Isaias & Issa, 2015; Jaspers, 2009). The research design consisted of four main phases: needs assessment, model development, implementation and training, and evaluation.

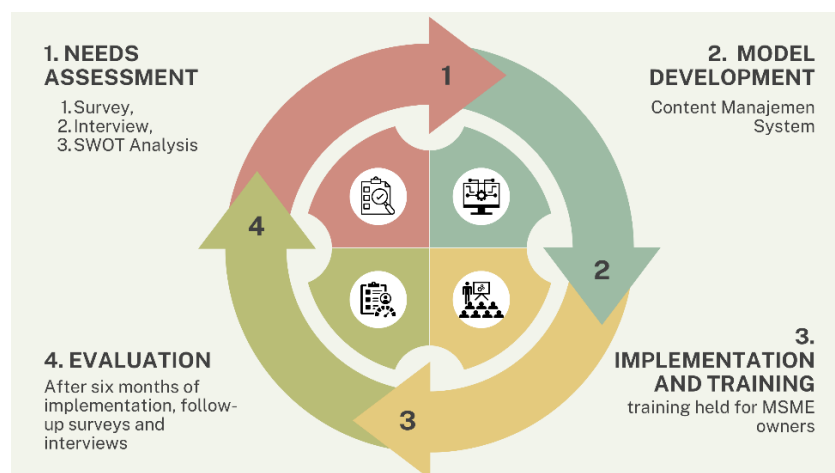


Figure 1. Research Method

1. Needs Assessment:

- a. A survey was conducted with 35 MSME owners in Madiun City to understand their digital needs, current website usage, and barriers faced in adopting technology.
- b. In-depth interviews were also conducted with selected MSME owners to gain deeper insights into the challenges they face in using digital platforms and their expectations of the proposed website model.
- c. Using SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis to assess the internal and external conditions of MSMEs in terms of technology adoption and website development. This analysis will help in designing appropriate strategies for each MSME.

2. Model Development:

- a. Based on the assessment results, a prototype website model was developed that includes e-commerce, digital marketing (SEO, social media integration), and content management system (CMS) features that are easy to use by MSMEs.
- b. The website model was designed to provide an optimal user experience, as well as support digital marketing activities and secure online transactions.

3. Implementation and Training:

The website model was implemented with the help of a local technology partner, and training sessions were held for MSME owners to enable them to manage the website and utilize the digital marketing features effectively.

4. Evaluation:

After six months of implementation, follow-up surveys and interviews were conducted to evaluate the effectiveness of the website model in improving MSME operations, market reach, and innovation.

4. RESULTS

A. Needs Assessment

The needs assessment section generates a SWOT analysis that helps design the right strategy for each MSME. Based on the results of the SWOT analysis, it can be concluded that website development for MSMEs in Madiun City has great potential to improve competitiveness and innovation by capitalizing on existing strengths such as access to wider markets and integration with digital marketing technologies. However,

the main challenges faced are limited digital knowledge, development costs, and potential security threats that must be considered.

For this reason, there needs to be support from the government and related institutions in providing the training and resources needed by MSMEs. In addition, to overcome the threats and weaknesses, MSMEs should be involved in the education process on cybersecurity, digital marketing and be given assistance in planning and managing their websites on an ongoing basis.

B. Model Development

Based on the results of the needs identification, [Figure 2](#) is a website model developed that fulfills the criteria desired by MSME actors. The website created has a responsive and attractive appearance, is easy to use, and is equipped with important features such as an e-commerce system, product pages, and integration with social media as shown in [Figure 3](#). Many MSMEs have successfully launched their websites, and some of them have started to feel the benefits of this digital platform, such as an increase in the number of customers and ease of transactions.

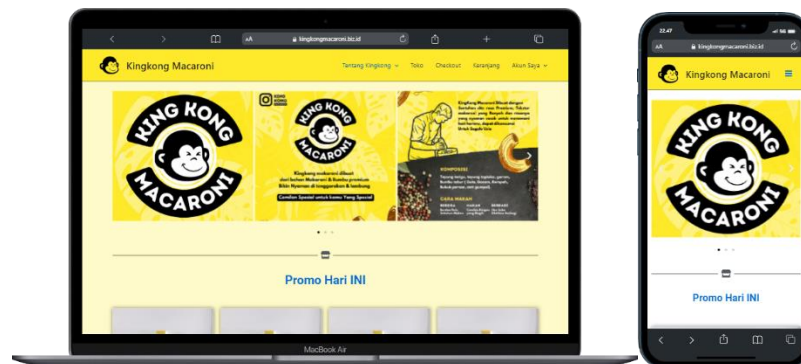


Figure 2. Web Commerce MSMEs

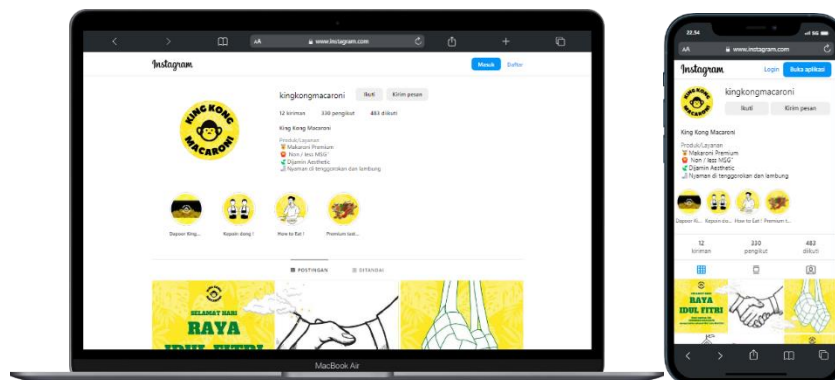


Figure 3. Social Media MSMEs

C. Implementation and Training

[Figure 4](#) and [Figure 5](#) As part of the training program, MSME players in Madiun City have received training on the basics of website creation and management. Most of the participants showed a better understanding in using digital platforms to manage their websites. The training not only covers how to create and update a website but also how to optimize the use of SEO, online payment systems, and the utilization of social media to expand the market.



Figure 4. Implementation and Training



Figure 5. Implementation and Training

D. Evaluation

The success of the website development model can be evaluated from the following key indicators:

a. Increased Sales and Revenue

One of the main indicators of the success of the website model is the increase in sales and income of MSMEs that adopt it. Based on the data collected,

most of the MSMEs that have implemented the website reported an increase in transactions, both through the integrated e-commerce platform and through direct interaction with customers through their website.

b. Improved Operational Efficiency

The developed websites also provide benefits in terms of operational efficiency as seen in [Figure 6](#). MSMEs can manage products, stocks, and transactions in a more structured and automated manner. The use of an easy-to-use content management system allows MSME players to update information quickly and accurately without having to rely on third parties.

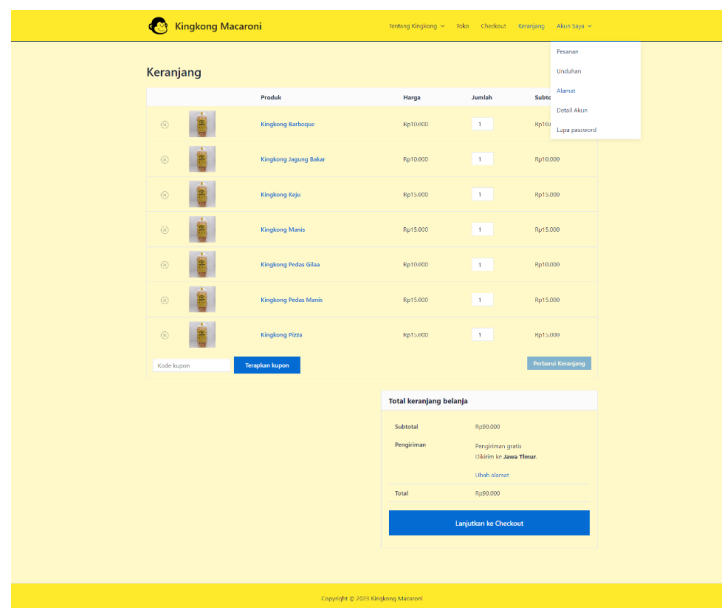


Figure 6. webpage cart

c. Customer Satisfaction Level

Collecting feedback from customers shows that many consumers are more satisfied with the convenience offered by the website, such as the ability to see product information clearly, order easily, and use various payment methods. This contributes to increased customer loyalty and strengthens MSMEs' position in the market, which is also indicated by the results of interactions on MSMEs' social media in [Figure 7](#).

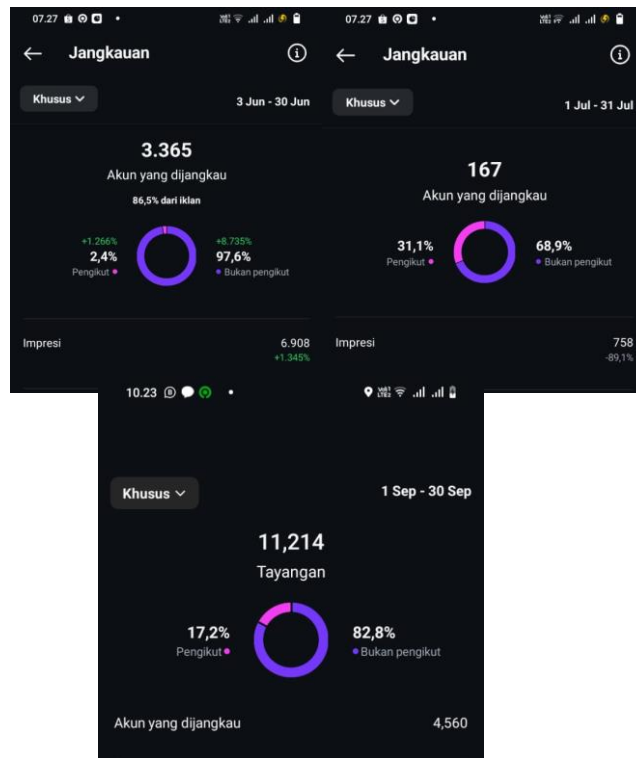


Figure 7. Media Social Analys

The results show that the implementation of the website model for MSMEs in Madiun City has a significant positive impact on operations and innovation. Key findings include:

1. Improved Operational Efficiency: MSMEs reported a 23% reduction in manual administrative work thanks to the use of the website for transactions and inventory management.
2. Expansion of Market Reach: 31% of MSMEs using the website were able to reach customers from outside Madiun City, with an average sales increase of 75%.
3. Innovation in Products and Services: Websites allow MSMEs to introduce new products through e-commerce platforms, as well as provide more responsive customer service through chatbot features and customer management systems.

5. DISCUSSION

The website model developed shows that digitalization can improve the competitiveness of MSMEs by utilizing websites as digital branding implementation, but

challenges remain, especially in terms of website management and digital skills (Setiawan et al., 2023; Tejo et al., 2023). Some MSMEs have difficulty in managing their websites effectively, and there is a need for ongoing training to enable them to utilize the full potential of digital technology.

With several obstacles or difficulties, it is necessary to evaluate MSME web commerce using the System Usability Scale method to improve the user experience of MSME websites (Asnawi et al., 2023).

In addition, although the implementation of e-commerce brings clear advantages in terms of increased sales, challenges in terms of logistics and payment systems are still a major obstacle for MSMEs to develop further.

6. CONCLUSION

Based on the results of the research and the implementation of the website model, several main conclusions can be drawn: Website development for MSMEs in Madiun City has proven to be effective in providing easier access to a wider market, increasing business credibility, and supporting more efficient business management. The training provided to MSMEs has increased their knowledge on the use of websites and other digital technologies. The implementation of the website has a positive impact on increasing sales and income of MSMEs, and the website model developed provides a strong foundation for MSMEs in Madiun City to continue to innovate and develop their products and services.

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