



# Website Development To Strengthen The Capabilities Of Micro And Small Businesses (Case study: Usaha Keripik Doyan Ngemil)

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**Abstract.** In today's digital age, having an online presence is essential for business survival and growth. A well-designed website serves as a virtual storefront, enabling micro and small businesses to reach a wider audience, increase brand awareness, and enhance customer engagement. Website development is a pivotal strategy for empowering micro and small businesses. It enhances their online visibility, marketing capabilities, and credibility while providing valuable insights and opportunities for growth. As the business landscape continues to evolve in the digital era, investing in a well-designed website is no longer a luxury but a necessity for the sustained success of micro and small businesses. Micro and small businesses play a vital role in the global economy, contributing to job creation, innovation, and economic growth. However, many of these businesses face numerous challenges, including limited resources, low visibility, and reduced access to markets. To address these challenges, this paper explores the significance of website development as a powerful tool to strengthen the capabilities of micro and small businesses.

**Keywords:** website development, micro and small business, strategy, global economy.

## 1 Introduction

Micro and small businesses constitute a vital segment of the global economy, serving as engines of innovation, job creation, and community development. Their contributions are particularly pronounced in emerging economies, where they often form the backbone of economic activity [1].

However, despite their economic significance, micro and small businesses face a myriad of challenges that can hamper their growth and sustainability. To effectively empower and support these businesses, it is crucial to gain a comprehensive understanding of their unique needs, aspirations, and the hurdles they encounter along their entrepreneurial journey.

## 1.1 The Challenges Faced by Micro and Small Businesses

Deep understanding of the challenges that micro and small businesses encounter is instrumental in devising effective strategies for their empowerment. These challenges can encompass:

1. Micro and small business (MSBs) in developing nations typically manufacture conventional products of subpar quality, resulting in limited productivity. Their primary focus is on serving small local markets. Consequently, rapid technological advancements over a short period create challenges for MSBs in attaining a competitive edge in the global market [2].
2. Limited access to capital and financial resources often restricts the ability of micro and small businesses to invest in critical areas such as technology and marketing[1].
3. In a competitive marketplace, these businesses may struggle to differentiate themselves and gain visibility, particularly when facing more substantial competitors with greater advertising budgets[3]
4. Expanding into new markets, whether regional or international, poses substantial logistical and financial challenges for businesses with constrained reach and resources.
5. Embracing and implementing technology effectively can be daunting for businesses without dedicated IT departments, putting them at a disadvantage in the digital era [4].
6. Managing cash flow, securing loans, and navigating financial uncertainties are persistent challenges that can significantly impact the viability of micro and small businesses.

## 1.2 Web Framework

A web framework offers a user-friendly programming model to implement MVC (Model-View-Controller) for software developers, significantly reducing development time [5]. It enhances the overall quality of web application systems by promoting component and code reusability, minimizing module interdependence, enhancing module cohesion, and preventing redundant programming and resource wastage. This leads to improved system stability and operational efficiency [6]. A well-established web framework typically possesses the following attributes:

1. Abstraction of API Complexity: A mature web framework allows software developers to work without the need to directly interact with lower-level APIs; they only need to write essential code. This streamlines the development process, leading to enhanced system stability and operational efficiency.
2. Dedicated Development Teams: Each established web framework is supported by a dedicated team that offers continuous framework development and support free of charge, reducing development costs.
3. Simplified Development Model: It simplifies the development model, facilitating the separation of user interface and navigation from business logic.

4. **Structured System Design:** A well-designed web framework provides a clear system structure, promoting increased system cohesion. This structured approach makes it easier for new team members to join the projec.
5. **User-Friendly Resources:** An easy-to-use web framework typically includes examples and documentation to help users optimize their practices.
6. **Tested and Reliable Code:** The code of a mature web framework has often undergone rigorous testing in various application environments, simplifying the software developers' code testing process.

## **METHODOLOGY**

The initial introduction of Kanban into software development is associated with David J. Anderson [7], who was enlisted by Microsoft to help improve the visualization of work processes and control the workflow within one of their smaller teams. This effort yielded five well-established principles for implementing Kanban successfully. The journey to successful adoption commences with the embrace of these fundamental foundational principles:

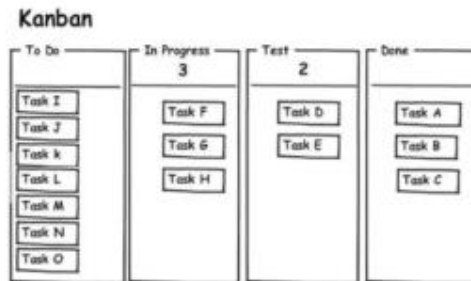
- Start with what you have now – that is your current process.
- Agree to pursue an evolutionary approach to change and improvement
- Respect the current roles and responsibilities of the team/ organization

Kanban is a popular agile framework for managing work in software development and other knowledge work domains. It emphasizes visualizing work, limiting work in progress (WIP), and optimizing the flow of work items through a development process [8]. Kanban is often implemented using software tools that help teams and organizations track and manage their work effectively. Here's how Kanban is typically applied in software development using software tools:

1. **Creating a Kanban Board:** The first step in Kanban software development is setting up a Kanban board. A Kanban board is a visual representation of the development process. It consists of columns representing different stages of work, often starting with "To Do," "In Progress," and "Done." You can create a physical board on a whiteboard or use digital tools for this purpose.
2. **Work Item Cards:** In Kanban, each work item is represented by a card on the Kanban board. These cards contain essential information about the task, such as its title, description, assignee, and due date. Digital Kanban tools allow you to create, move, and manipulate these cards easily.
3. **Limiting Work in Progress (WIP):** One of the core principles of Kanban is to limit the number of work items that can be in progress simultaneously. This helps prevent overloading the team and ensures that work is completed before starting new tasks. Kanban tools often allow you to set WIP limits for each column.
4. **Visualizing Flow:** As work items progress through the different columns of the Kanban board, it provides a clear visual representation of how work is flowing through the development process. Team members can quickly see which tasks are in progress, which are completed, and which are waiting to be started.

5. Pull System: Kanban operates on a pull system, meaning that work is pulled into the next column only when there's capacity and demand for it. This prevents overcommitting and encourages a more efficient workflow.
6. Continuous Improvement: Kanban promotes continuous improvement by analyzing metrics and making data-driven decisions. Software tools often include features for collecting and displaying metrics such as lead time, cycle time, and throughput. Teams can use these metrics to identify bottlenecks and areas for improvement.
7. Collaboration and Communication: Kanban software often includes collaboration features such as commenting, tagging team members, and attaching relevant documents or links to work items. This facilitates communication and collaboration among team members.
8. Integration: Many Kanban software tools can integrate with other development tools such as version control systems (e.g., Git), issue trackers, and project management tools, allowing for a seamless workflow.

Kanban is a flexible framework that can be effectively implemented in software development using various software tools to visualize work, manage workflow, and continuously improve the development process[9].



**Fig. 1.** Example Kanban Board

Figure 1 shows example of "virtual Kanban board" to ensure that Work-In-Progress is visible, constraints are identified, and Work-In-Progress is restricted to a single item. In contrast to the traditional software development approach of "pushing" work through the development process, in this method, each individual focuses on just one task at a time, and work is "pulled" into the process after the completion of the previous task.

## 2 Result And Discussion

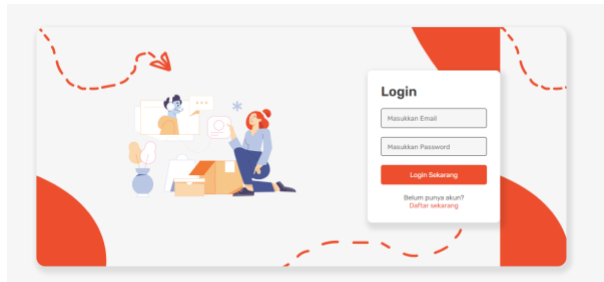
This website will be used by two actors who have their respective roles: the end user as a buyer and the admin as a user manager.

Actor	Role
<b>End user</b>	<ul style="list-style-type: none"> <li>- register a user and login account</li> <li>- View the product catalog</li> <li>- Purchase and add products to the shopping cart</li> <li>- Perform transactions</li> </ul>

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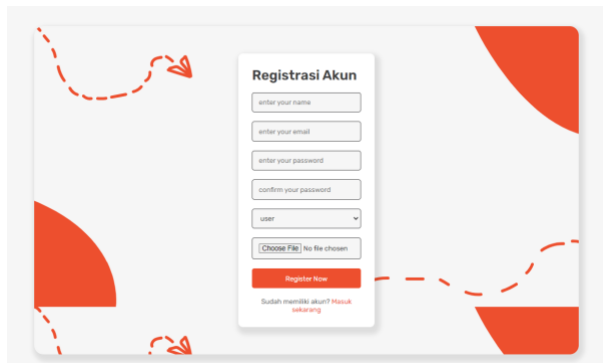
	- Provide feedback
<b>Admin</b>	- Perform login
	- Manage user data
	- Manage product data, prices, and stock
	- Manage order data

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**Fig. 2.** Login Page

Figure 2 shows A login page on a website is a crucial component that allows users to access restricted or personalized content by verifying their identity. End user and admin who had a username and password can login in this page. Otherwise, Actors can access register page if they haven't account yet.



**Fig. 3.** Registration page

Figure 3 shows registration page for add a new account. User have to fill some information like name, email, password, role and upload photo profile.

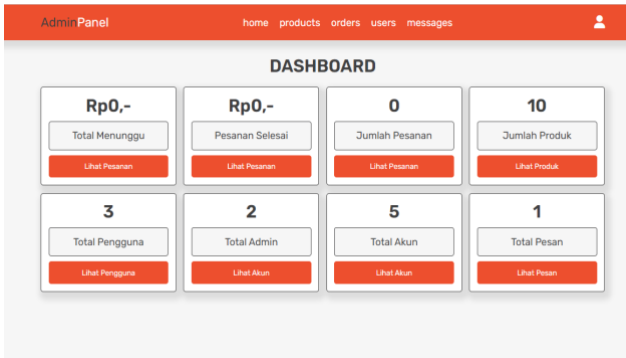


Fig. 4. Dashboard Admin Panel

Figure 4 shows about dashboard admin panel. In this page, admin can do user management, product management like price and stock and also user can manage order from user.

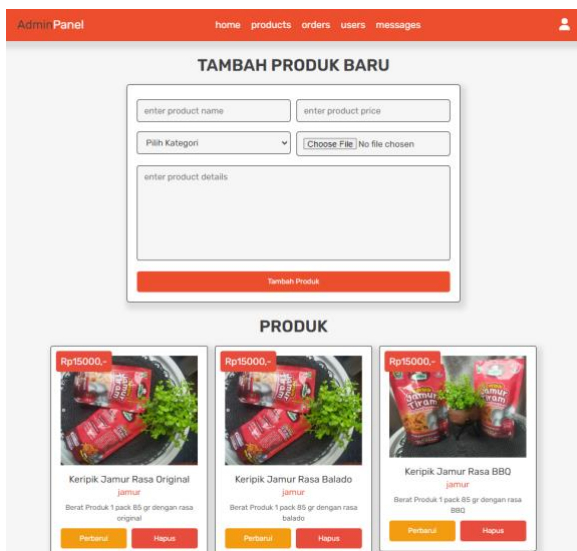


Fig. 5. Add Product Page

Another role of admin, they can add the product in add product page. In this page, admin must add some information regarding the product description such as product name, product price, category product and picture of product. Admin also can manage user account. Some features of this page (show in figure 6), this page is management user which can delete user and show all active account.

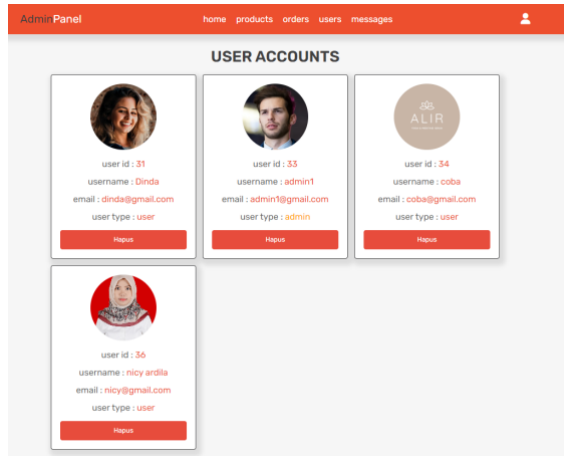


Fig. 6. User Management Page

On the homepage, users can see the categories of products being sold. On this page, users can also order products they want to buy on the product page and then click the "add to cart" button (seen in figure 8) to proceed to the transaction page.

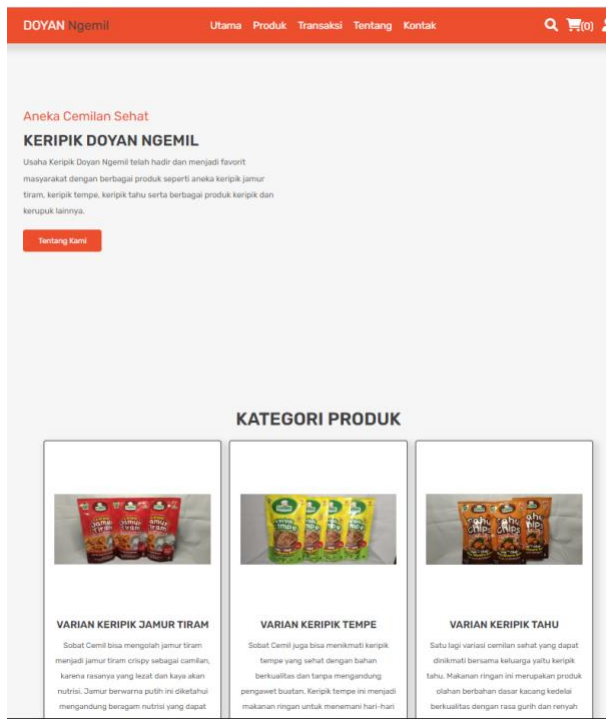


Fig. 7. Homepage

Figure 8 shows the products and their prices that are being sold, and the buyer can purchase products according to their preference and add each desired product to the shopping cart.

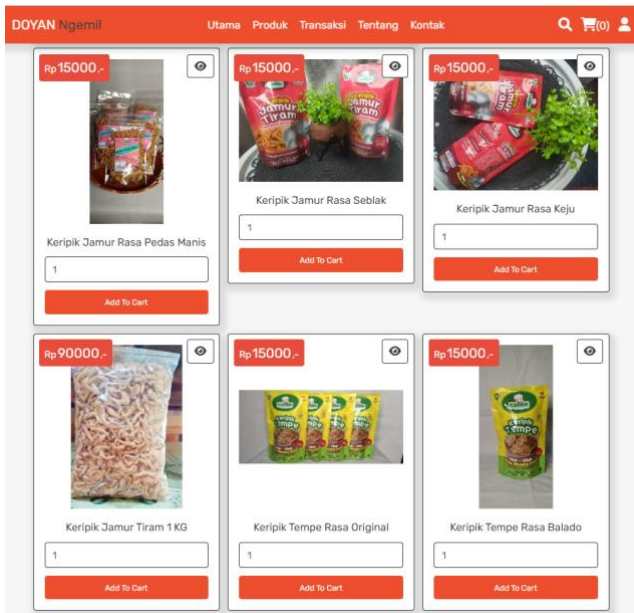


Fig. 8. Product Page

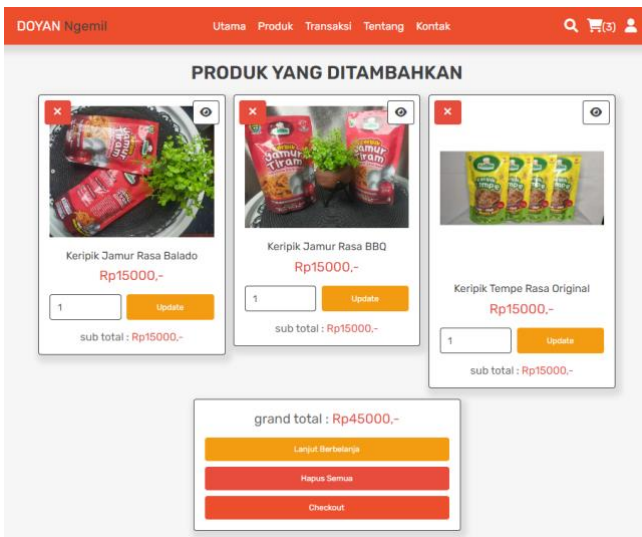


Fig. 9. Shopping cart page



DOYAN Ngemil    Utama   Produk   Transaksi   Tentang   Kontak    🔍 🛒 👤

Keripik Jamsur Rasa Balado (Rp15000.- x 1)    Keripik Jamsur Rasa BBQ (Rp15000.- x 1)

Keripik Tempe Rasa Original (Rp15000.- x 1)

grand total : Rp45000.-

**PESANAN KAMU**

Nama :     No. HP :

Email :     Metode Pembayaran :

No. Rumah :     Nama Jalan :

Kota :     Provinsi :

Negara :     Kode Pos :

**Buat Pesanan**

**Fig. 10.** Checkout Page

After the user adds the products, they want to buy, the buyer can press the shopping cart icon, which will take them to the page showing the total products to be purchased (see figure 9), then proceed to the checkout process for the buyer's order, as shown in figure 10.

### 3 Conclusion

Website development is a powerful tool for micro and small businesses to strengthen their market presence, increase sales, improve customer relations, and adapt to the evolving digital landscape. A well-designed and functional website can be a cornerstone in enhancing the overall capabilities and competitiveness of these businesses in today's dynamic business environment. For businesses offering products, an e-commerce website allows them to sell directly to consumers online. This widens their market reach and can significantly increase sales without the need for a physical store expansion.

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