Konsienti: Community Services Journal
https://journal.takaza.id/index.php/konsienti
Vol. 03, No. 02, 2025, pp. 43-50
E-ISSN: 3025-1532
E-mail: konsienti@takaza.id

Towards Digital and Efficient MSMEs: The Case of GusMie at Pasar Kayu Jati Rawamangun

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Article History:
Received: 01-06-2025
Revised: 10-06-2025
Accepted: 10-06-2025

Keywords: *UMKM; digital transformation, operational efficiency, order management, business management.*

Abstract: *Micro, Small, and Medium Enterprises (UMKM) in Indonesia often struggle with operational inefficiencies due to manual processes, impacting their growth and competitiveness. GusMie, a noodle and meatball eatery known for its fresh, preservative-free noodles, faces challenges in order duplication, slow financial reconciliation, kitchen workflow bottlenecks, stock mismanagement, and delivery delays. This study proposes integrating a POS system, Kitchen Display System (KDS), and automated inventory management to optimize GusMie's operations. These solutions will ensure more precise tracking of customer orders, improve financial accuracy, streamline kitchen sequencing—especially for its high-demand mie ayam—and enhance stock control to prevent waste of fresh noodles with limited shelf life. Using a case study approach, findings demonstrate that digital transformation significantly improves service speed, order accuracy, stock efficiency, and customer satisfaction, helping GusMie scale sustainably within Indonesia's competitive food service industry.*

Introduction

Micro, small, and medium enterprises (MSMEs) are vital contributors to Indonesia's economic growth, especially in the culinary sector, where they offer affordable, diverse, and culturally significant food products (Tambunan, 2019; Kementerian UKM RI, 2022). However, many MSMEs still rely on manual systems for managing customer orders, recording transactions, and handling kitchen workflows, which often leads to inefficiencies, delays, and customer dissatisfaction (Fadly & Sopian, 2021; Wulandari & Wahyuningsih, 2022). These operational bottlenecks are exacerbated during peak hours and can limit the scalability and competitiveness of MSMEs in the increasingly digital marketplace.

GusMie, a noodle and meatball business in Rawamangun, Jakarta, exemplifies these challenges. Despite experiencing rapid growth and expanding to multiple branches, GusMie's continued dependence on manual processes—such as handwritten order records and uncoordinated delivery management—creates errors, delays, and stock management issues (Fadly & Sopian, 2021; Wulandari & Wahyuningsih, 2022). Previous research has highlighted the benefits of digital solutions like point-of-sale (POS) systems and integrated kitchen display systems (KDS) for MSMEs, emphasizing their potential to streamline operations and enhance service quality (Dumas et al., 2018; Weske, 2012).

However, existing studies often emphasize the technical implementation of these systems without offering a comprehensive case study analysis that connects process modeling, system design, and operational challenges within a real-world MSME context (Bryman, 2016; Miles et al., 2014; Patton, 2015; Seale, 2018). This creates a gap in the literature regarding how MSMEs can effectively transition from manual to digital systems while addressing unique operational pain points, such as order duplication and stock management for perishable items.

This study addresses that gap by conducting an in-depth case study of GusMie, analyzing its current processes using business process modeling, and proposing tailored digital solutions that align with its specific challenges. The novelty of this research lies in its holistic approach: it not only models GusMie's existing and improved workflows using Business Process Model and Notation (BPMN) but also integrates qualitative insights from field observations and interviews to recommend practical, implementable digital solutions. By doing so, this study contributes to the literature on MSME digital transformation and offers a replicable framework for similar businesses seeking to modernize their operations and remain competitive in Indonesia's culinary sector.

Research Methods

This study adopted a qualitative case study approach to analyze the operational processes at GusMie, a noodle and meatball MSME in Rawamangun, Jakarta. Field observations, interviews, document analysis, and process modeling were combined to identify key operational challenges and develop digital solutions (Johnson & Stake, 1996; Miles et al., 2014).

Field observations were conducted at GusMie's main outlet to document daily workflows, focusing on order-taking, kitchen activities, and service delivery. These observations captured real-time bottlenecks caused by manual systems (Merriam & Tisdell, 2016; Patton, 2015). Semi-structured interviews were administered to the business owner and staff to explore experiences with order management, transaction recording, and stock control, using open-ended questions to elicit detailed responses.

Document analysis included handwritten transaction records and WhatsApp order logs to triangulate findings from observations and interviews. Business Process Model and Notation (BPMN) diagrams were created to map the existing ("as-is") processes and to design proposed ("to-be") processes integrating digital solutions, highlighting areas for improvement (Allweyer, 2016; White & Miers, 2008). The Business Model Canvas (BMC) was applied to analyze the overall business strategy, identifying

opportunities where digital interventions could add value, particularly in customer relationships, channels, and key resources (Blank & Dorf, 2013).

Qualitative data from interviews and observations were coded thematically, focusing on challenges related to order management, transaction recording, kitchen workflow, and stock management. BPMN diagrams guided the identification of process inefficiencies and informed the development of tailored digital solutions to enhance efficiency and service quality.

Results and Discussion

Overview of Current Business Processes (As-Is Condition)

GusMie operates through multiple order channels, including in-person transactions, WhatsApp orders, and third-party delivery applications. These orders are recorded manually without an integrated system, which leads to duplication, miscommunication, and delays. WhatsApp orders require manual entry into a notebook, often causing processing errors and slower fulfillment times. Customers sometimes cancel orders after confirmation, further complicating workflow efficiency.

Payments at GusMie primarily rely on cash transactions, with handwritten receipts serving as the primary method of financial documentation. Occasional digital payments are processed through QR codes, but these transactions are not linked to a centralized tracking system. Financial reconciliation becomes difficult due to inconsistent manual record-keeping, increasing the likelihood of errors and discrepancies.

The kitchen workflow follows a traditional process, where food preparation lacks real-time prioritization. Orders are manually transferred to kitchen staff, creating confusion about which tasks should be completed first, especially during peak hours. Without a structured queue system, meal preparation and delivery coordination suffer, leading to longer wait times and inefficiencies.

Food delivery operations depend entirely on third-party couriers, but GusMie lacks an internal tracking system. Orders placed for delivery do not integrate with kitchen workflow, making it difficult to prioritize tasks efficiently. Coordination between kitchen staff and delivery personnel is slow, often causing late deliveries and reduced customer satisfaction.

Stock management at GusMie remains manual, with ingredients recorded on paper or informally tracked by staff. Fresh noodles, which have a shelf life of only 24 hours, require careful monitoring to avoid waste, but the absence of a digital tracking system makes it difficult to estimate demand accurately. Occasional shortages and spoilage further disrupt operations, affecting profitability and service consistency.

The absence of digital systems across order processing, payment handling, kitchen management, delivery tracking, and stock control creates significant bottlenecks. Errors in manual documentation affect financial accuracy, while kitchen inefficiencies slow down service. The lack of automated inventory management leads to frequent disruptions in ingredient availability, making daily operations less reliable. These factors highlight the urgent need for digital interventions to streamline processes and enhance GusMie's overall efficiency.

Table 1. Summary of Operational Challenges

Process Area	Identified Issues
Order Management	Manual recording leads to duplication and delays
Transaction Recording	Handwritten receipts cause financial discrepancies
Kitchen Workflow	No queue system, inefficient prioritization
Food Delivery	No real-time tracking, slow coordination
Stock Management	No digital system, frequent shortages and waste

Business Model Canvas

GusMie operates within a traditional business framework, relying heavily on manual processes for order management, payment handling, kitchen workflow, and inventory control. Its key partners include ingredient suppliers, third-party delivery services such as GrabFood and GoFood, and local vendors who provide fresh noodles and vegetables. These partnerships are informal and lack integrated systems, making supply chain coordination inefficient.

The business's key activities revolve around food preparation, order processing, customer service, and financial management. However, most operations remain manual, which slows efficiency and creates bottlenecks, especially during peak hours. GusMie's value proposition is rooted in providing authentic noodle dishes at affordable prices, attracting a loyal customer base that appreciates its fresh ingredients and traditional recipes. However, the absence of automated systems hinders scalability and consistency.

Customer segments primarily consist of walk-in diners, WhatsApp order customers, and food delivery app users. Despite this diverse audience, the business does not actively engage in structured digital marketing or loyalty programs, limiting its ability to expand beyond local customers. Orders are received through different channels, but the lack of a centralized system results in uncoordinated workflows and occasional order duplication.

The customer relationship model is built on personalized service, but the absence of automation prevents seamless engagement. Customers rely on manual communication to place orders and provide feedback, making service interactions time-consuming and prone to human errors. Revenue streams come from direct sales at physical locations, WhatsApp orders, and third-party app transactions, though inefficiencies in financial tracking reduce profitability.

Operational costs primarily consist of ingredient procurement, labor expenses, and third-party delivery commissions. Due to manual inventory tracking, the business occasionally faces stock shortages and food wastage, adding to unnecessary financial losses. The dependence on handwritten documentation for payment reconciliation also increases administrative workload, limiting overall efficiency.

Although GusMie offers strong culinary value, its reliance on manual processes restricts growth potential. Implementing digital solutions such as integrated order management, automated transaction recording, and predictive inventory tracking would improve workflow coordination, minimize financial discrepancies, and enhance customer engagement. With a more streamlined operational framework, GusMie could strengthen its market position and ensure long-term sustainability.

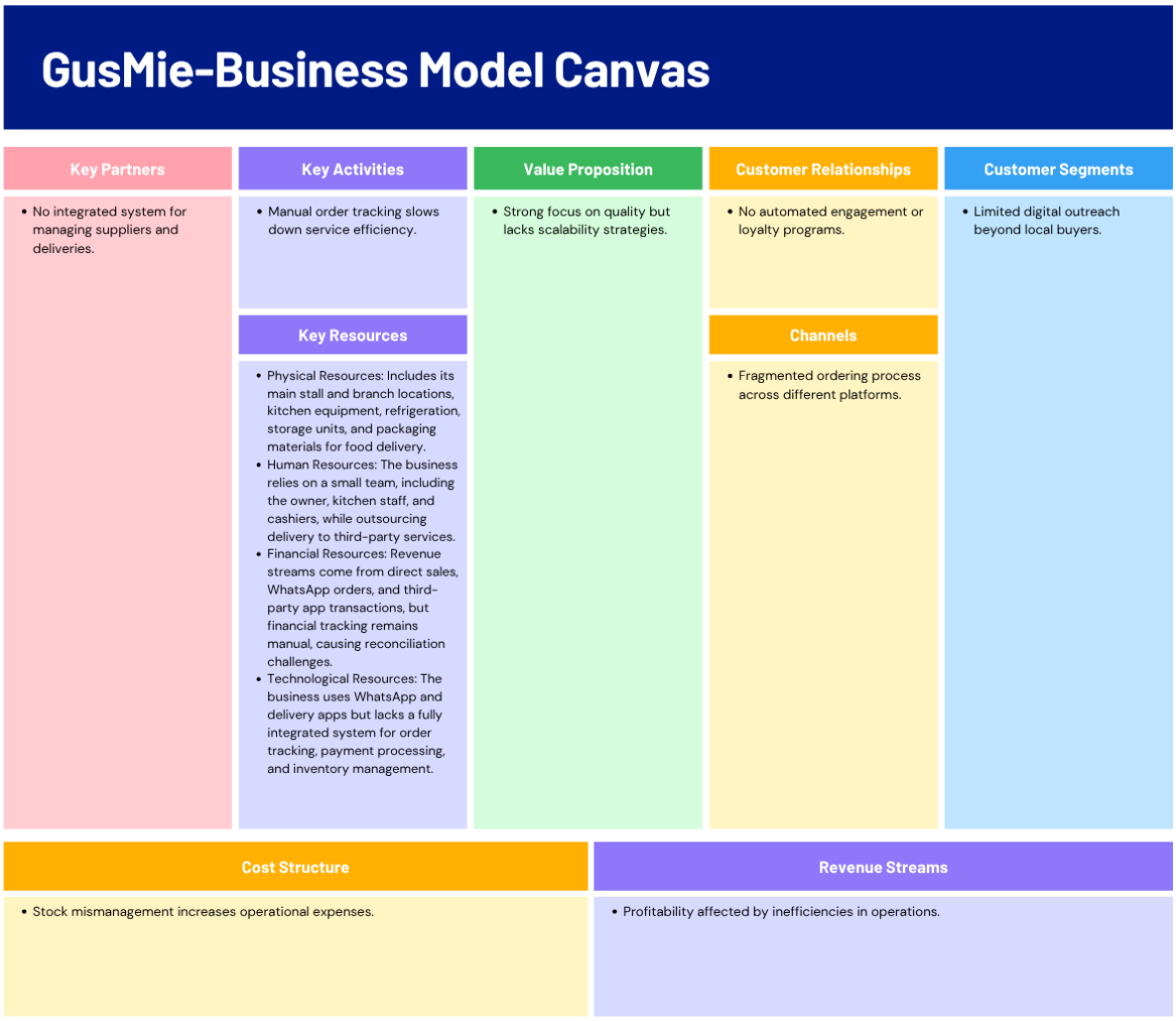

Figure 1. Business Model Canvas of GusMie

Proposed Process Improvements (To-Be Condition)

The improved process model addresses the operational inefficiencies identified in GusMie's current workflow. By transitioning to digital solutions, the business can streamline order management, enhance kitchen operations, and optimize inventory control.

GusMie's new "to-be" process map restructures order intake, payment processing, kitchen prioritization, and inventory monitoring through automation. The integration of a digital POS system consolidates all order sources, eliminating duplication and improving transaction tracking. Orders from in-person customers, WhatsApp, and third-party apps will be processed within a single system, ensuring accuracy and faster fulfillment.

A Kitchen Display System (KDS) will provide real-time order visibility, reducing manual coordination errors. This system enables kitchen staff to prioritize tasks efficiently based on order timestamps and preparation requirements. By replacing verbal confirmation with automated tracking, bottlenecks during peak hours can be minimized.

Introducing digital inventory management allows for real-time stock monitoring. This system tracks ingredient usage, expiration dates, and replenishment schedules, preventing shortages and reducing

food waste. Predictive analytics can also support better purchasing decisions, ensuring consistent availability of fresh noodles and other perishables.

Table 2. Proposed Digital Solutions and Expected Benefits

Proposed Solution	Expected Benefits
Digital POS System	Unified order management across multiple sales channels. Eliminates duplication and streamlines transaction tracking.
Kitchen Display System (KDS)	Real-time order prioritization and workflow optimization. Reduces confusion and enhances service speed.
Digital Inventory Management	Automated tracking of stock levels and expiration dates. Minimizes food waste and prevents shortages.

Discussion

The digital transformation of small businesses, particularly in the food service industry, is increasingly critical for operational efficiency and long-term sustainability. GusMie, a noodle and meatball eatery, exemplifies the challenges faced by businesses that rely on manual processes for order management, payment tracking, inventory control, and customer service. These inefficiencies create operational bottlenecks, increasing the likelihood of errors, delays, and financial mismanagement. As research suggests, digital integration can significantly improve small business performance by streamlining workflows and reducing administrative burdens (Dumas et al., 2018; Weske, 2012).

One of the primary areas requiring improvement at GusMie is its order management system. Currently, orders arrive through multiple channels, including in-person transactions, WhatsApp messages, and third-party delivery applications. The lack of an integrated system results in duplication, miscommunication, and inconsistencies in tracking customer preferences. Studies indicate that adopting digital POS systems can centralize order intake, minimizing duplication and improving service speed (Evans, 2017; Lim et al., 2018; Suryanto, 2022; Taiminen & Karjaluoto, 2015). By implementing such technology, GusMie can streamline order processing, ensuring better accuracy and faster turnaround times.

Additionally, financial tracking at GusMie remains largely manual, with handwritten receipts serving as the primary method of documentation. This approach complicates reconciliation, introducing discrepancies in revenue reporting and limiting visibility into cash flow trends. Research highlights the benefits of digital financial tracking, particularly in reducing errors and enhancing reporting precision (Dumas et al., 2018; Iswanto, 2013). Integrating digital financial tools will allow GusMie to monitor transactions in real time, reducing reconciliation errors and improving financial transparency.

Another critical area of improvement involves inventory management. Currently, stock tracking is conducted manually, leading to frequent shortages or waste, especially given the short shelf life of fresh noodles. Automated inventory management systems have been shown to mitigate such inefficiencies by providing predictive tracking and real-time monitoring (Evans, 2017; Weske, 2012). By leveraging digital solutions, GusMie can ensure optimal stock availability while minimizing waste and excess costs.

Finally, the coordination between the kitchen and delivery providers lacks real-time tracking, leading to delays and service inconsistencies. Research suggests that implementing kitchen display systems (KDS) improves workflow efficiency, allowing staff to prioritize orders systematically and reduce

confusion during peak hours (Iswanto, 2013; Suryanto, 2022). Establishing digital delivery management systems can further enhance coordination between the kitchen and third-party couriers, reducing delays and improving service quality.

In essence, GusMie's reliance on manual processes significantly limits efficiency and scalability. Digital integration across order management, financial tracking, inventory control, and kitchen coordination presents an opportunity for improvement. Studies demonstrate that businesses adopting digital workflows experience enhanced accuracy, better financial tracking, reduced waste, and improved customer engagement (Dumas et al., 2018; Evans, 2017). By embracing these solutions, GusMie can refine its operations, optimize resource allocation, and establish a more sustainable growth model in an increasingly competitive food service industry.

Conclusion

The operational challenges at GusMie highlight inefficiencies in order management, transaction recording, kitchen workflow, stock control, and delivery coordination. The reliance on manual systems slows processes, increases the likelihood of errors, and limits scalability. By implementing digital solutions such as an integrated POS system, Kitchen Display System (KDS), and automated inventory tracking, GusMie can significantly improve efficiency, reduce waste, and enhance customer satisfaction. These improvements will strengthen the business model, optimize key activities, and create more seamless interactions with customers and suppliers. With a more structured and technologically supported framework, GusMie can ensure long-term sustainability and competitiveness in the food service industry.

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