

## **The Application of Management Information Systems and Digital Transformation in Chicken Crunchy Roll MSMEs to Improve Operational Efficiency and Data Security**

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**Abstract:** This study aims to provide an example of the application of a Management Information System (MIS) and digital transformation in the Micro, Small, and Medium Enterprise (MSMEs) Chicken Crunchy Roll, which previously operated using manual methods. This effort is intended to improve operational efficiency, data security, and financial information management within the enterprise. The study employs a descriptive qualitative approach through observation and direct interviews with the business owner to obtain an overview of the enterprise's condition and its MIS implementation. The results indicate that financial recording at Chicken Crunchy Roll MSMEs is still conducted manually and not performed on a regular basis. However, the enterprise has utilized social media, specifically Instagram, as a promotional tool, and adopted QRIS-based digital payments for non-cash transactions. The owner has not yet implemented a point-of-sale (POS) application or cloud computing technology, which limits the business's ability to manage data efficiently and streamline administrative processes. The implementation of an MIS is considered capable of enhancing operational effectiveness, data protection, and the accuracy of financial reporting. Therefore, it is necessary to develop digital transformation strategies for MSMEs to enable adaptation to technological changes and strengthen their competitive advantage.

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## **Introduction**

In today's modern era, MSMEs are required to keep up with the times, one of which is in accepting orders through cashiers. According to (Shiam et al., 2021), developments in cashier technology have also advanced so that calculations are now very fast and accurate. Manual sales systems have many shortcomings, one example being frequent errors during the recording process and the difficulty of finding data because it must be searched for manually. In addition, customers are often disappointed because the items they order are not available. This is due to the lack of a real-time inventory information system (Iqbal Mustofa et al., 2023a).

According to (Siti Aisyah1\*, 2023), an application is a program designed for a specific purpose. The use of a cashier application will make it easier for administrators to create sales reports and display inventory to minimize human error and present data accurately and in real time (Rudi Hermawan1, 2021). According to (Putri Dwi Novrina1, 2024), the quality of a good financial report can be seen from the presentation of information in the report, which is easy to understand and unambiguous. Financial reports can also be compared with previous years so that they can be used as evaluation material and a reference for decision making.

## **Research Method**

This study uses a descriptive qualitative approach with observation and interview methods. This approach was chosen to gain a direct understanding of the implementation of the management information system (MIS) at Chicken Crunchy Roll MSMEs. Primary data was obtained through direct observation of business operational activities and interviews with owners to find out their experiences and obstacles in implementing MIS. Meanwhile, secondary data was obtained from literature and scientific journals related to information systems and MSME digitalization.

## **Results and Discussion**

Chicken Crunchy Roll MSMEs record sales and purchase transactions manually using traditional methods in notebooks without utilizing available digital tools such as Excel or cashier applications. Although manual recording is used, it remains an important basis for monitoring the business's cash flow. However, financial data such as turnover, profit, and operating costs are not recorded regularly and are recorded using ordinary books with inconsistent frequency. This shows that although there is an awareness of the need to record finances, the regularity of recording needs to be improved so that the data obtained is more accurate and reliable.

Information from manual financial records is still used for business decision-making. For example, financial data is used to determine product selling prices, plan promotions, and manage raw material purchases. Thus, even though recording is not done routinely and manually, the available data still plays an important role in business management. No significant obstacles were found in the management of financial data and food raw material supplies.



This shows that the use of manual and irregular recording methods is capable of managing data and inventory smoothly without significant obstacles. However, to improve efficiency and accuracy, MSMEs can consider using more structured and regular recording methods in the future. Chicken Crunchy Roll MSMEs currently only use social media, namely Instagram, as their sole form of digital technology for online marketing.

This MSME has not utilized online motorcycle taxi applications, marketplaces, or digital payment systems for the sustainability of its business. Even though it is limited to Instagram, the use of technology has had a positive impact on increasing sales and business efficiency. Promotion through Instagram allows businesses to reach more potential buyers at a relatively low cost and is processed quickly compared to traditional promotion.

In implementing technology, Chicken Crunchy Roll has not encountered major obstacles such as difficulties in using high costs or labor limitations. However, there are challenges in terms of social media content management, such as a lack of ideas for creating new content, which limits the frequency of posts. This can affect the effectiveness of promotions and interactions with customers, as regular and interesting content is very important to maintain audience attention on digital platforms.

Currently using social media as a promotional tool, business owners feel that there is no need to further increase digitization. To support future business development, the research team recommends undergoing digital transformation to assist in developing more creative and consistent content strategies on social media. In addition, the use of other digital technologies such as marketplaces or digital payment systems is also an appropriate step to expand the market and facilitate transactions for customers as well as record keeping and reporting.

More comprehensive digitalization can help businesses adapt to technological developments and increasingly fierce business competition. Chicken Crunchy Roll MSMEs already use digital payment services, especially QRIS as a means of payment in non-cash transactions, making it easier for customers to make quick and easy payments. This technology makes the transaction process more efficient and secure. To date, MSMEs have never experienced digital security issues such as hacked marketplace accounts, online fraud, or customer data leaks. This shows that the use of digital payment services is running well without any significant security issues.

In addition, MSMEs do not conduct transactions that require detailed customer data such as phone numbers or sender addresses. Therefore, customer data management and protection are not a major focus in current business activities. In terms of specific measures to reduce digital risks, these MSMEs have not implemented certain actions such as only using official applications and backing up data. This shows that there is still a need to increase understanding and awareness of the importance of maintaining data security and anticipating digital risks so that businesses can be better protected from potential threats in the future.

Chicken Crunchy Roll SMEs have not utilized cloud-based applications such as Google Drive, online cashier applications, cloud-based marketplaces, or online accounting applications in running their business activities. The entire data recording and administration process is still carried out manually using traditional methods without the support of digital data storage and



management technology. Because they do not use cloud-based applications, these MSMEs also do not enjoy the various benefits offered by this technology, such as access to data from anywhere, better data security, and minimal risk of data loss due to device damage.

Similarly, they have not yet faced the challenges that usually arise, such as internet connection problems, application subscription fees, or limited available features. Although they have not yet implemented cloud-based technology, the existence of this technology in the future will be very important to encourage business growth. With cloud applications, MSMEs can increase efficiency in data management, facilitate coordination, and accelerate administrative processes and financial reporting. Therefore, in the future, Chicken Crunchy Roll MSMEs need to consider adopting cloud-based technology in order to be more competitive and able to manage their businesses digitally in a more optimal manner.

## Discussion

### 1. Overview Before the Implementation of the Management Information System

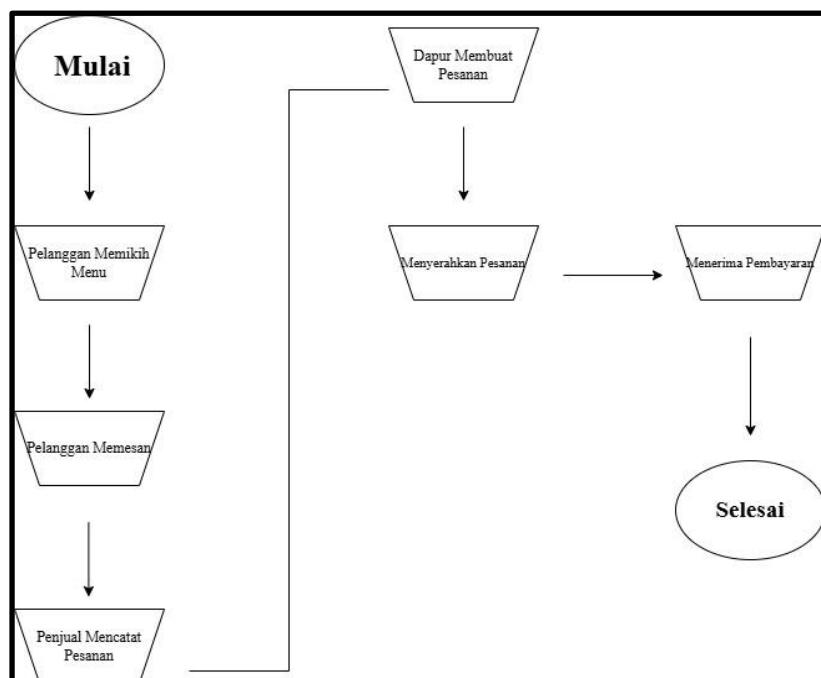


Figure 1. Flowchart before improvement

Before implementing the management information system (MIS), operational processes at Chicken Crunchy Roll SMEs were still carried out manually. The process began with customers selecting a menu and then placing their orders directly with the seller. The seller recorded the order manually in a notebook or on paper, which was then forwarded to the kitchen for processing. The kitchen immediately prepared the order according to the recorded order. Once the product was ready, the order was delivered to the customer, who then made the payment.

This manual system has a number of weaknesses, ranging from irregular recording, which often leads to input errors such as mixed-up orders or incorrect quantities. Transaction recording and financial reporting at Chicken Crunchy Roll SMEs are still done manually, requiring more time for daily recapitulation and raw material stock evaluation.

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Thus, the manual system is inefficient and does not support quick and accurate decision making.

## 2. Implementation of Management Information Systems and Digital Applications

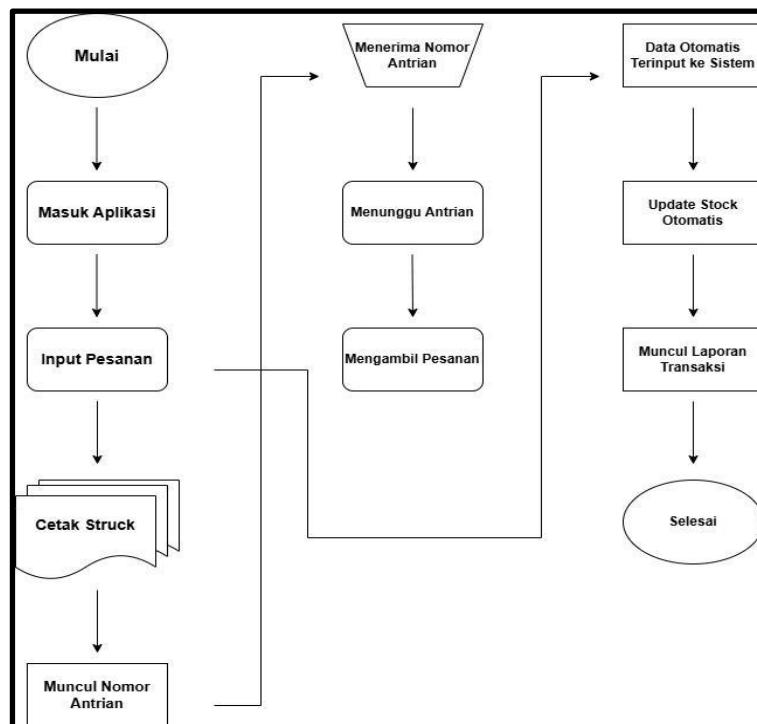


Figure 2 Flowchart After SIM Implementation

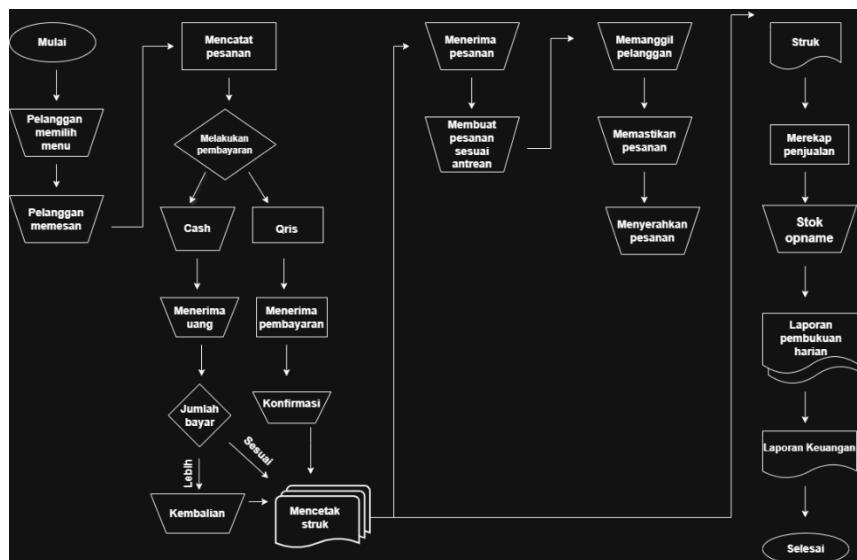


Figure 3 Flowchart of Digital Application Implementation

After implementing the management information system (MIS), there were significant changes in workflow and operational efficiency. Flowchart Figure 2 shows the use of a cashier application utilizing a free cashier. Flowchart 3 shows the operational flow of MSMEs after the implementation of the management information system to facilitate sales.



The first step in inputting transactions is to open the application and enter customer orders, which the application will then automatically input into the system. After recording the order, the system will automatically print a receipt and display a queue number that can be monitored by both customers and sellers. The kitchen will receive orders based on the queue order to facilitate a regular production process with digital order recording. Once the order is completed by the kitchen, the transaction data is automatically stored in the system, and the raw material stock is also automatically updated. This minimizes the risk of recording errors and helps owners know the current stock levels without having to perform manual calculations after each transaction or every day.

Flowchart image 3 shows Chicken Crunchy Roll MSMEs after implementing SIM using a cashier application. It explains that the entire process of ordering, payment, production, and financial reporting is integrated. The process begins with customers selecting a menu and ordering directly at the cashier. The cashier records the order directly on the cashier application so that customers can immediately make payments, either in cash or non-cash.

If the customer chooses a cash payment method, the cashier will receive the money and give change according to the payment amount. If the customer makes a payment using QRIS, the cashier needs to ensure that the system has automatically received and successfully processed the payment. After the transaction is complete, the system will automatically print a receipt that will later be used as proof of payment and sales data input, which will become archive data for customers, cashiers, and the finance department.

The cashier will provide the order data to the kitchen so that the kitchen staff can immediately prepare the customer's order based on the customer's queue number. After the kitchen staff completes the order based on the queue number, it can then be handed over directly to the customer. Transactions that occur automatically will be recorded in the cashier application so that sales data, raw material stock, and daily financial reports are automatically recorded with each transaction.

The implementation of SIM allows integration with digital payment systems. The application provides payment options so that sellers can easily monitor their income. The system will automatically record the payment amount and transaction status, making it easier for cashiers to process transactions. Business owners can view financial data in real-time through the menu available in the application. Thus, the process of monitoring, sales analysis, and cost control becomes easier to do.

### 3. Implementation of Cybersecurity in Information Systems

Cybersecurity is very important for maintaining data confidentiality and integrity. MSMEs that switch to digital systems face potential challenges such as data loss, data theft, and transaction information leaks. Therefore, cybersecurity is implemented through the following steps:

#### a. Use of authentication systems and secure passwords

Each admin account has a unique username and password to access the system. Two-step authentication is implemented so that only verified users can access the main system.



b. Automatic data backup to the cloud

Data is stored in the cloud periodically so that in the event of device damage or data loss, reports remain secure and can be recovered.

c. Regular system updates and monitoring

The cashier application and database system are updated regularly to maintain data security. In addition, login and transaction activities are monitored to identify suspicious activity.

The implementation of cybersecurity has a positive impact not only on data protection but also on increasing customer trust. Customers feel safer when making digital payments because they know their data is protected. On the other hand, owners also feel more at ease because financial reports cannot be changed without permission. The implementation of digital security also helps maintain operational continuity. In the event of a disruption or data loss, the cloud backup system ensures that business activities continue without losing transaction records. With integrated data management and strong protection, MSMEs are able to adapt to digital challenges more professionally and competitively.

### **Conclusion and Recommendations**

The implementation of a Management Information System (MIS) at Chicken Crunchy Roll SMEs will help improve operational efficiency, transaction recording accuracy, and financial clarity. Digital transformation through the introduction of cashier applications and the QRIS payment system will help real-time business processes and make it easier for owners to make decisions. In addition, SMEs need to implement cybersecurity through cloud backup and system updates to improve security and business data protection.

Based on the results of the discussion regarding the implementation of the management information system at Chicken Crunchy Roll SMEs, there are several recommendations that can be given to SME actors and future researchers, as follows:

1. Improve the consistency of financial records by focusing on recording turnover, profits, and operational costs regularly and in a structured manner, either manually or digitally. This is useful for generating more accurate financial data that can be used for long-term business analysis.
2. Develop a social media content strategy to increase the effectiveness of promotions by creating a content calendar, following digital trends, and engaging customers in interactions to ensure consistent and interesting posting frequency.
3. Utilize marketplace platforms such as digital payment systems other than QRIS to expand market reach and facilitate customer transactions.
4. Utilizing cloud computing-based applications such as Google Drive, online cashier applications, or software to help improve recording efficiency, maintain data security, and facilitate access to information from various devices.

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