



The Role of Management Information Systems in E-Commerce-Based Business Decision Making at Giga Laundry

Andi Indriani Ibrahim^{1*}, Erna Pujianti², Masni³, Suhartini⁴, Nini Andriani⁵, Ayu Putri Utami⁶

^{1,5,6} Management Study Program, Faculty of Economics and Business, Tadulako University

^{2,3,4} Accounting Study Program, Faculty of Economics and Business, Tadulako University

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ABSTRACT

This study aims to analyze the role of Management Information Systems (SIM) based on the Smartlink application in supporting business decision making in e-commerce-based MSMEs, with a research focus on Giga Laundry. In the digital era that demands accuracy and speed of information, SIM functions not only as a means of recording transactions, but also as a strategic instrument in providing real-time data for operational planning and control. This research uses a descriptive qualitative approach, with data collection through in-depth interviews, direct observation, and documentation studies of Giga Laundry's business activities. The results showed that the implementation of the Smartlink application is able to improve operational efficiency, speed up the service process, and support more accurate and measurable decision making. The app provides financial reports, customer data, and service demand trends that are used as the basis for business evaluation and strategy development. In addition, integration with digital payment systems such as QRIS and bank transfers also strengthens customer trust. This study concludes that SIM plays an important role in encouraging the competitiveness of MSMEs in the digital era and provides recommendations for system development towards a Decision Support System (DSS) in the future.

Corresponding Author:

Andi Indriani Ibrahim

Management Study Program, Faculty of Economics and Business, Tadulako University

Email: andi_indriani@untad.ac.id

INTRODUCTION

The development of information and communication technology in recent years has driven major changes in the way businesses are run, especially in the Micro, Small and Medium Enterprises (MSMEs) sector. MSMEs are an important part of Indonesia's economic structure, as they absorb a large number of workers and contribute significantly to the Gross Domestic Product (GDP). Based on the classification stipulated by Law No. 20/2008, MSMEs are differentiated based on the amount of assets and annual turnover, where micro enterprises have the smallest scale, followed by small enterprises, and then medium enterprises.

An important transformation that MSMEs are undergoing is the adoption of e-commerce in their business activities. E-commerce refers to the process of transacting products and services through digital media such as websites or mobile applications, and has provided great opportunities for businesses, including MSMEs, to reach a wider range of consumers without geographical restrictions (Titasari, 2024). In the context of MSMEs, the utilization of e-commerce allows for increased operational efficiency, cost savings, and increased access to new markets that were previously difficult to reach. However, in the midst of the opportunities offered by e-commerce, MSMEs also face major challenges, especially in terms of mastery of technology and the ability to manage information effectively. The increasingly open competition in this digital era requires businesses to be able to make quick, accurate, and data-based decisions. Inappropriate decision making can cause various business problems, ranging from decreased operational performance to financial losses (Yuliasianty et al., 2023).

Management Information System (MIS) plays an important role. SIM is an integrated system that functions to collect, process, and present information needed by managers in the decision-making process. This system is able to integrate various data from business functions such as sales, finance, stock, and human resources, so as to produce reports and analysis that can be used in strategic planning and operational control (Panjaitan & Nasution, 2024) . In e-commerce-based businesses, the speed and accuracy of information is key, and SIM plays an important role in supporting the process in real-time.

Giga Laundry as one of the MSMEs engaged in laundry services has adopted digital technology in its business operations, including the use of cashier applications and integration with digital payment systems such as QRIS. The use of this technology shows that Giga Laundry has started implementing a management information system that helps in data-based decision making. However, the extent to which the implementation of SIM supports the effectiveness of business decisions and the sustainability of its business needs to be studied more deeply.

Therefore, this research aims to analyze the contribution of Management Information Systems in e-commerce-based business decision making, with a case study on Giga Laundry. This research is expected to provide a clear picture of how SIM can improve work efficiency, support marketing strategies, and optimize the process of service to consumers. In addition, this research also aims to identify the barriers faced by MSMEs in implementing SIM and how appropriate solutions can be designed to overcome them in the context of digital business.

LITERATURE REVIEW

Management Information System

Management Information System (MIS) has an important role in supporting business decision making, especially in the growing digital era. According to Sabban et al., (2024) SIM serves as a tool that assists management in collecting, managing, and analyzing data to support planning, monitoring, and decision making, especially in the context of e-commerce-based MSMEs. The results of their research show that SIM can increase effectiveness and efficiency in managing business data, thus providing a strong foundation for more precise and rapid decision making. Similar findings were also put forward by Fitriani & Hwihanus, (2023) which emphasizes that the integration of SIM with e-commerce platforms is able to provide added value in developing business strategies, including in facilitating the sales process, promotion, and interaction with customers online.

Components of SIM

The three main components of a SIM include:

Hardware: such as computers and network devices.

Software: application systems or data processing programs.

Brainware: such as managers, system analysts and end users.

All three work together to ensure the system is effective in managing data and producing the information needed by the organization.

Implementation of SIM in Laundry Business

The implementation of a web-based Management Information System (MIS) has made a real impact in improving the operational efficiency of a business. With an integrated system that is easily accessible at any time, business processes become faster, more accurate, and transparent. One of the main benefits of this system is its ability to support more informed decision-making, as the required data is available in real-time and can be processed more efficiently.

For example, in the context of a laundry business, the implementation of a computerized information system can replace manual processes that are time-consuming and error-prone. Through this system, management can easily monitor cash flow, periodically monitor sales performance, and evaluate customer satisfaction levels based on data collected (Cahyono, 2024) . This not only helps improve productivity, but also strengthens data-driven strategic decision-making.

Data and Information

Data processed through SIM will become quality information that helps the organization set its strategic direction. One of the key benefits of SIM in a business context is its ability to support data-driven decision making. It provides comprehensive and detailed reports, which can be used as a basis for evaluating business performance, planning marketing strategies, and setting service prices. SIM helps laundry owners monitor order status, analyze customer demand, and dynamically adjust service strategies through a web-based information dashboard (Pradana & Hermansyah ., 2024)

SIM and E-Commerce Based Decision Making

SIM in an e-commerce environment plays a strategic role as business decision support. SIM is able to assist MSMEs in managing customer data, online transactions, and analyzing business performance through an automated report dashboard (Fitriani & Hwihanus, 2023) . This helps businesses like Laundry Giga in making real-time promotion, pricing, and service development decisions. SIM combined with Decision Support System (DSS) and Transaction Processing System (TPS) enables rapid detection of market changes and provides alternative decisions systematically (Rulis & Hwihanus, 2022) .

Relevance to Laundry Giga

Laundry Giga as an MSME that adopts an e-commerce-based system has great potential to improve operational efficiency and service quality through the implementation of SIM. By implementing a web-based SIM, Laundry Giga can automate transaction recording, monitor cash flow, track customer orders, and generate accurate financial reports in real-time. This not only speeds up the decision-making process, but also increases customer satisfaction and expands market reach through digital media.

METHODOLOGY

This research uses a qualitative descriptive approach. The purpose of this approach is to understand and describe thoroughly how Management Information System (MIS) is used in supporting e-commerce-based business decision making, especially in Giga Laundry business. With this approach, researchers try to directly observe the real conditions in the field and capture in-depth information from business actors. Descriptive qualitative research aims to understand and reveal the meaning behind human behavior, actions, and social interactions in depth, by emphasizing the natural context of the object under study (Sugiyono ., 2021)

This research was conducted at Giga Laundry, a laundry business located at Soekarno Hatta Street, Tondo Village, Mantikulore District, Palu City, Central Sulawesi. The research implementation time lasted for two weeks, namely on July 7 to July 20, 2025. The informants selected by the researcher in this study include the business owner, operational manager, and administrative staff, because they are the ones who best understand how SIM is applied in daily business processes, including in recording transactions, digital promotions, and managing customer data through applications such as Smartlink and QRIS payment methods and bank transfers.

Data collection was conducted through three main techniques:

In-depth interviews: Researchers conducted direct questions and answers with informants to gather information related to the role of SIM in business operations, how decision-making is done, and digital strategies used to reach customers.

Direct observation: The researcher observed the daily activities at Giga Laundry, especially in the process of using the digital cashier application, customer service, and daily financial reporting. This was done to ensure that the data obtained was in accordance with the conditions in the field.

Documentation study: Researchers also reviewed available documents, such as transaction reports, financial records, and promotional content published through social media (WhatsApp and Facebook). This documentation helped strengthen the data that had been obtained through interviews and observations.

After all the data was collected, the researcher conducted thematic analysis, namely by looking for patterns, meanings, and trends from the information obtained. This analysis aims to explain how the role of management information systems contributes to efficiency, accuracy, and speed in decision-making at Giga Laundry which adopts an e-commerce-based business model.

RESULTS

The Role of Management Information Systems in E-Commerce-Based Business Decision Making at Giga Laundry

Giga Laundry as one of the micro businesses in the laundry service sector has adopted a management information system (MIS) to support its business sustainability in the digital era. The use of digital-based systems such as the Smartlink cashier application is the backbone of daily operations. Through this application, every transaction is automatically recorded and stored in the database, making it easier for business owners to monitor cash flow, the number of customers, and the most frequently used services.

In practice, the SIM at Giga Laundry does not only serve as an administrative tool, but also an important tool in decision-making. The data collected from the Smartlink app is then processed into relevant information, such as daily revenue reports, service demand trends, and the effectiveness of ongoing promotions. This information is very useful for business owners in determining strategic steps, such as when is the right time to give discounts, add employees on certain days, or even purchase raw material stocks such as detergents and deodorizers more efficiently.

The system also facilitates integration with digital payment services. Most of Giga Laundry's customers already use payment methods through QRIS, bank transfers, or digital wallets such as OVO and

Dana. This ease of payment not only speeds up the transaction process, but also increases customer comfort and trust in Giga Laundry's services. All incoming payment data is immediately recorded in the system and can be accessed again for financial reporting needs.

The main advantage of this SIM implementation lies in its ability to present complete and real-time data. Within a day, the business owner can clearly see how many orders have come in, how much revenue has been earned, and how the daily performance of the business is running. This data clarity makes the decision-making process faster and more accurate. Business owners no longer rely on manual records or estimates, but actually use actual data as a basis for policy making.

Equally important, the success of SIM utilization is also determined by the involvement of human resources who run the system. At Giga Laundry, employees have been trained to use the digital cashier application properly. They understand how to record transactions, manage receipts, and convey information to customers regarding the types of services, promos, or payment systems available. The skills and readiness of employees in operating the system make the service process to customers run more neatly and professionally.

Moreover, SIM also plays a role in building an e-commerce-based marketing strategy. Giga Laundry actively utilizes social media such as Facebook and WhatsApp as communication and promotion channels. Content such as service information, customer testimonials, and seasonal promos are published regularly. Data from the SIM is used to develop more targeted promotional strategies, for example by offering discounts to customers who have not used the service for a long time or creating a loyalty program for loyal customers.

A management information system is not only a technical tool, but also a strategic tool in supporting business growth and decision-making. For Giga Laundry, the implementation of SIM has brought positive impacts in improving operational efficiency, accelerating services, strengthening customer relationships, and increasing competitiveness in the midst of increasingly fierce business competition.

a. Management Information System in Decision Making at Giga Laundry

Decision-making is a vital part of running and developing a business, and service-based MSMEs like Giga Laundry are no exception. The decisions made by business owners are not only related to daily operational activities, but also to long-term business strategies that will determine the sustainability of the business in the midst of increasingly fierce competition. In this context, a Management Information System (MIS) is present as a tool that supports a faster, more precise, and data-driven decision-making process.

At Giga Laundry, the use of Smartlink digital cashier application is part of the SIM implementation that has been integrated with modern payment systems such as QRIS, bank transfers, and e-wallets. The app records every transaction automatically and compiles it into reports that can be accessed by the business owner at any time. From these reports, owners can review business performance, analyze which services customers are most interested in, and determine promotional strategies or price adjustments that are more in line with market conditions.

The data collection done by SIM through Smartlink is very helpful in providing relevant information. The data obtained includes the time and frequency of transactions, the type of service most frequently used (express wash, iron only, shuttle), and the most common payment method chosen by customers. In addition to internal data, Giga Laundry also gets input from customers through reviews on social media or direct messages which then become part of the consideration in making service decisions. In the decision-making process, the owner of Giga Laundry no longer relies on assumptions or estimates, but instead uses factual information from the system. For example, when the number of customers decreases on a particular day, Smartlink reports can show whether the decrease is due to weather, service delays, or lack of promotions. Thus, decisions to increase promotions on that day or provide discounts on services can be made more quickly and accurately.

One of the advantages of SIM implemented at Giga Laundry is the ability to present data in an easy-to-understand form. Daily, weekly, and monthly revenue reports can be viewed in the form of concise graphs or tables. This information becomes the basis for business evaluation and planning. If it is found that a service is not in high demand, the business owner can decide to replace, improve the quality, or even remove the service. Not only that, SIM also supports strategic decision-making. For example, in considering business expansion, opening new branches, or adding employees, the owner of Giga Laundry relies on customer trend data and service capacity recorded in the system. This proves that the information system is not just an administrative tool, but an important component in the managerial process.

Giga Laundry can develop this system towards a Decision Support System (DSS) to support more complex decision-making. Although not all DSS functions are currently used, the potential to implement them is quite large, especially if the business expands to a wider scale. DSS will allow owners to run decision simulations, make comparisons of alternative strategies, and predict their impact based on historical data stored in the system. With the support of an application-based SIM such as Smartlink, decision-making at Giga Laundry has become more systematic and responsive to market dynamics. Not only does it improve

operational efficiency, but it also strengthens Giga Laundry's position in facing competition through informed business decisions.

Decision-Making Concept in Implementing Smartlink Application-Based Management Information System at Giga Laundry

In managing a service business like Giga Laundry, decision-making is one of the most important managerial processes. Every decision made-whether related to daily operations, promotional strategies, or financial management-has a direct impact on the sustainability and development of the business. Therefore, a business owner is required to have the ability to think critically, analytically, and be responsible for every decision made, including facing the risks that may arise as a consequence of the decision.

The implementation of a Management Information System (MIS) based on the Smartlink application at Giga Laundry has made a major contribution in facilitating the decision-making process. The app automatically records all transactions, presents data in easily accessible reports, and stores sales history and customer preferences in an organized manner. This makes it easy for Giga Laundry owners to not only run the business, but also objectively assess business performance based on accurate and real-time data.

Giga Laundry follows a number of stages in decision-making in order to run effectively and efficiently in achieving business goals at Giga Laundry:

Table 1. Decision Making Stages

Stage 1	Problem identification and formulation. For example, when there is a decrease in the number of customers in consecutive days, business owners should be able to identify the underlying cause, not just based on assumptions, but through the data available in the system. Through Smartlink reports, daily trends in the number of customers, types of services used, and payment methods chosen can be seen.
Stage 2	Data collection and analysis. Transaction data, customer frequency, and peak or off-peak times are analyzed to find patterns that may inform decision-making. From the analysis, business owners can develop alternative decisions, such as organizing discounts at certain hours, adding shuttle services, or changing marketing strategies.
Stage 3	Once the alternatives are developed, the owner of Giga Laundry will evaluate each option. This evaluation considers various factors such as cost, time, impact on customers, and workforce readiness. This process is not done haphazardly, but based on valid and actual reports and information that have been obtained from the Smartlink application. The selection of the best alternative is done after all options have been thoroughly analyzed. For example, if the data shows that the majority of customers use the express washing service in the afternoon, then the decision to strengthen the workforce during these hours is one of the alternatives chosen. Once the decision is made
Stage 4	Implement the plan that has been designed while preparing for obstacles that may arise in the field.
Stage 5	Evaluate the results of decisions on a regular basis. This evaluation is based on the latest reports and data provided by the Smartlink system. If the decision results do not show the expected improvement, then a re-analysis process is carried out to improve or adjust the decision to the existing conditions.

The implementation of Smartlink application-based SIM has clearly helped Giga Laundry in carrying out a more systematic, structured, and data-based decision-making process. The existence of this system makes the decision-making process no longer intuitive, but truly based on factual information. This not only improves operational efficiency, but also provides a strong foundation for future strategic policy making. With SIM, Giga Laundry is able to manage equipment stock information, record customer preferences, monitor cash flow, and analyze which services are most in demand. All of this supports decisions that are not only responsive to changing conditions, but also aligned with the long-term goals of the business.

DISCUSSION

The findings show that the implementation of Management Information System (MIS) through the Smartlink application at Giga Laundry has a real impact on the effectiveness of business management and improving the quality of decision making. In the context of service-based MSMEs that are required to move quickly and adaptively in the digital era, the existence of SIM is able to answer the main challenges of business actors in obtaining relevant information quickly, accurately, and integrated. Through this system, transaction recording is no longer done manually, but is automatically recorded and stored in a digital database that can be accessed at any time as needed. This capability provides a distinct advantage for business owners because it allows them to monitor financial conditions, operations, and service trends in real-time, so that business decisions can be made more targeted, measurable, and based on actual data.

On the operational side, SIM makes it easy to manage daily data such as the number of customers, the type of service most chosen, and the payment method used. The information is then processed into reports that support the business evaluation process. When the number of customers decreases or transactions decrease at a certain time, business owners no longer guess the cause, but directly examine concrete data. This is where data-driven decisions are born, whether in the form of new promotional strategies, adjusting work schedules, or rearranging priority services.

The system also brings about a change in the way businesses view customer data. Not just as an administrative record, but as a source of insight to design more personalized service and marketing strategies. Customer data is used to develop loyalty programs, identify customers who have not used services for a long time, or design special promos based on service usage patterns. Thus, interactions with customers become more targeted and have the potential to strengthen customer retention in the long run.

Another aspect that is also strengthened is time efficiency and accuracy in financial reporting. Automatic recording of every incoming transaction allows daily, weekly, and monthly cash reports to be compiled without the need for time-consuming manual reconciliation. Business owners can immediately access the data and understand the financial position thoroughly. This feature proves to be very helpful, especially when the owner has to make strategic decisions in a short time, for example related to adding new services, changing prices, or planning business expansion.

System integration with digital payment methods such as QRIS, bank transfers, and digital wallets also adds advantages in terms of flexibility and customer convenience. The payment process becomes faster and more practical, while encouraging the creation of a transparent recording system and minimizing the risk of errors. At the same time, this convenience also increases customer trust because it shows that businesses are able to keep up with technological developments and provide modern services.

The success of SIM implementation depends not only on the software and technology used, but also on the readiness of human resources. Giga Laundry employees have been provided with adequate training to operate the system, record transactions, and interact with customers through available digital features. The collaboration between the system and reliable operators makes the service process more professional and efficient.

The utilization of social media such as WhatsApp and Facebook to support promotions is also inseparable from the data generated by SIM. Business owners use data from the system to determine the most appropriate type of promotional content, frequency of promotion, and target customers. This step proves that SIM is not only useful in the cashier's room or back office, but also influences broader marketing strategies.

The SIM currently used at Giga Laundry has the potential to be upgraded to a Decision Support System (DSS) in the long run. With further development, the system will not only present data reports, but can also be used to project decision scenarios, compare various alternative strategies, and provide recommendations based on historical patterns. Development in this direction is very relevant for MSMEs that want to grow sustainably and no longer just survive within the scope of simple operations.

Giga Laundry's experience in adopting SIM is a clear example that digitalization of information systems is not something that is exclusive to large companies. With the right approach and technology support that suits the scale of the business, MSMEs can also utilize this system to improve efficiency, strengthen competitive advantage, and create better quality business decisions. Ultimately, SIM serves as a bridge between traditional business processes to more modern, structured, and accurate data-based business management.

CONCLUSION

Based on the results of the research and discussion, it can be concluded that the implementation of Management Information System (MIS) based on Smartlink application at Giga Laundry has made a significant contribution in supporting the business decision-making process in a more systematic, fast, and data-based manner. SIM is not only used as a transaction recording tool, but has developed into a strategic component capable of providing accurate and real-time information, which is needed in daily business management as well as in long-term planning.

The Smartlink app allows Giga Laundry to monitor cash flow, most frequently used services, transaction frequency, and customer preferences. This data is then processed into reports that support business owners in making more informed decisions, such as setting work schedules, promotion strategies, choosing payment methods, and planning for future business development. With complete and accurate information, decisions are no longer based on assumptions, but on facts that can be accounted for.

In addition, the implementation of SIM also helps improve operational efficiency, speed up the service process, and strengthen customer trust through an integrated digital payment system. Employees have also become more organized in carrying out their duties as they have become accustomed to using digital applications in daily operations.

Thus, Smartlink-based SIM has proven to play an important role in improving Giga Laundry's competitiveness in the digital era, both in terms of managerial, service, and business strategy. In the future,

developing the system towards a Decision Support System (DSS) is the right step to maximize the potential of SIM in supporting more complex business decisions and oriented towards sustainable business growth.

RECOMMENDATION

Based on the findings and discussion that have been presented, the researcher makes several recommendations that are expected to strengthen the role of Management Information Systems (MIS) in supporting business decision making in MSMEs such as Giga Laundry in the digital era.

First, it is strongly recommended that the management information system that has been used can be further developed towards the Decision Support System (DSS). DSS is an advanced form of SIM that not only presents data, but also provides analytical capabilities, scenario projections, and alternative decision comparisons that allow business owners to design more careful and long-term policies (Panjaitan & Nasution, 2024).

Second, there is a need to increase the capacity of human resources in terms of digital literacy and technical skills in managing data and system-based applications. Local governments and educational institutions can play a role through training, mentoring, and workshops that focus on strengthening the digital competencies of MSME actors (Sabban et al.), 2024. This will strengthen the foundation of digital transformation and ensure that technology adoption is equitable and sustainable.

Third, Giga Laundry's success in implementing SIM based on the Smartlink application can serve as an inspirational model for other MSMEs. For this reason, multi-stakeholder collaboration between the government, academics, businesses, and application developers is needed to spread this good practice through digital business incubation, innovation competitions, and CSR programs based on digital transformation of MSMEs (Nurizah et al., 2025).

Fourth, the use of customer and operational data that has been collected in SIM should not only be used for administrative purposes, but also utilized to encourage service innovation. For example, customer data can be used to create loyalty programs, personalized offers, or subscription-based services. The use of such data will increase added value and create a more personalized and relevant customer experience.

Fifth, the development of the Smartlink app and similar systems needs to continue to be tailored to the specific needs of MSMEs. Application developers' support for user-friendly features, such as data visualization dashboards, AI-based notifications, and social media integration, will make it easier for business owners to conduct analysis without having in-depth technical expertise (Yogatama & Sudarmilah, 2022).

By implementing these recommendations, MSMEs are expected to maximize the role of information systems in making decisions that are effective, efficient, and adaptive to the dynamics of the digital market. Digital transformation is not only a response to the times, but also a key strategy in creating sustainability and sustainable competitive advantage.

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