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# Comparison of Manual and Digital Management Information Systems in the Strategic Planning Process

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**ABSTRACT**

This study aims to obtain a more comprehensive picture of the differences in the effectiveness of management information systems in supporting the strategic planning process, as well as to evaluate the advantages and limitations of each system in the strategic planning process in two coffee shops. This study uses a qualitative research method with a descriptive approach. The results of the study indicate that digital MIS consistently outperforms manual MIS in every strategic aspect of the business. This difference positions digital MIS as a crucial tool in facing the dynamics of modern business.

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## INTRODUCTION

The rapid development of information technology has driven a shift in management information system management, from manual systems to more integrated digital systems. This transition is an interesting topic for research, particularly because of its significant implications for operational efficiency and decision-making quality. Digital transformation has opened opportunities to develop strategies more quickly, accurately, and responsively to changes in the dynamic business environment. One concrete form of the digitalization process is investment in intangible assets, particularly software that supports information systems, process automation, and the development of technology-based products and services (Andriani et al., 2025).

Research by Rahayu and Veri (2025) confirms that the implementation of a digital-based management information system in MSMEs can improve operational efficiency, accelerate decision-making processes, and minimize errors that often occur in manual systems. Meanwhile, Shehzadi (2025) conducted a comparative analysis of manual versus digital accounting practices in SMEs and found that digital systems have a significant positive impact on operational efficiency, decision-making quality, and overall financial health.

Manual management information systems refer to data management processes that are carried out without the direct use of digital technology, usually through physical records or printed documents. These systems are relatively simple, low-cost, and do not require high technological skills, but tend to be slow, inefficient, and prone to errors. In contrast, digital management information systems rely on computer technology and software to process, store, and present information in a systematic manner. Digital systems offer advantages in terms of speed, transparency, and data flexibility, which greatly support *real-time* strategic planning processes. However, these systems require the availability of technological infrastructure and human resources to operate them optimally. Additionally, the adoption of digital technology in the business world also requires mature financial readiness, as this transformation often necessitates significant investments (Andriani et al., 2025).

The comparison between manual and digital management information systems has important implications, especially for small businesses. Given this situation, it is important to examine the extent to which the two systems influence the determination of appropriate information management strategies to support sustainable strategic planning processes. This study was conducted on two coffee shops with different management information system approaches, namely Nerr Coffee, which still uses a manual system, and Sugi Coffee, which has switched to a digital system. The selection of these two cases aims to provide a more comprehensive understanding of the differences in the effectiveness of management information systems in supporting strategic planning processes, as well as to evaluate the strengths and limitations of each system within the operational context of coffee shops.

## Literature review

Management Information System (MIS)

Management Information Systems (MIS) are a set of tools and processes designed to collect, process, and present information needed by management to make effective and timely decisions. MIS integrates technology and data so that it can become the "eyes and ears" of managers to see the overall condition of the business. Research by Widjaja & Sardjono (2024) confirms that the implementation of systems such as *Enterprise Resource Planning* (ERP), which falls under the MIS category, positively contributes to the performance of small and medium-sized businesses, including improved decision-making speed and quality thanks to more structured information.

In general, management information systems are divided into two main approaches, namely manual systems and digital systems. Manual MIS is an information management system that is carried out without the aid of computer technology, usually using physical records, paper books, document archives, and manual recording through forms or ledgers. Digital MIS, on the other hand, is based on technology such as computers, software, databases, and integrated networks. Within digital MIS, there are several types, including *transaction* processing systems (*TPS*), *management* information *systems* (*MIS)*, *decision support systems (DSS)*, and *executive* information systems (*EIS)*. Each type serves to meet information needs at various management levels, from operational to strategic.

Research by Hartono et al. (2024) highlights that the adoption of digital transformation among MSMEs, particularly in the creative sector in Yogyakarta, before, during, and after the COVID-19 pandemic was hampered by low digital literacy and immature perceptions of value. However, during the pandemic phase, the urge to survive triggered rapid adoption of *e-commerce,* digital payments, and customer relationship management (CRM) systems, as well as logistics and marketing collaboration. After the pandemic, many SMEs began to view digital transformation as a core strategy, with increased investment in digital skills, infrastructure, and long-term planning that support scalability and sustainable growth. Many MSMEs have failed to maximize the use of digital systems due to weak mastery of technological aspects and a lack of understanding in managing integrated data flows, particularly in the processing and feedback stages (Yuwono et al., 2024).

The main function of a management information system is to help businesses run their activities in a more focused and efficient manner. MIS can improve operational efficiency by speeding up administrative processes, reducing duplication of work, and minimizing human error. MIS provides accurate and *real-time* information that is essential for decision-making at various levels of management. MIS also plays a role in supporting strategic planning and control processes, as it enables organizations to monitor the progress of activities on a regular basis and make adjustments when necessary. Research by Al-Shukri et al. (2024) explains that an integrated MIS can accelerate decision-making processes and make strategic planning more adaptive by providing accurate, relevant, and reliable data.

Strategic Planning

Strategic planning is a systematic process used by business entities to determine long-term direction, set goals, and design steps to be taken to achieve those goals effectively and efficiently. This process includes analyzing internal and external situations, selecting the right strategies, and adjusting resources to align with the organization's future direction. Strategic planning serves as the main guide for making the right decisions,

forms the basis for implementing programs and procedures to improve quality, and is also used as a reference for monitoring and evaluating implementation on an ongoing basis (Tarifi, 2021).

The stages of strategic planning are a series of systematic steps that help organizations develop a structured long-term direction. This process begins with formulating a vision and mission that form the basis for all strategic decisions. The vision describes the future goals of the business, while the mission explains its role and reason for existence. Following this, the organization must conduct an analysis of its internal and external environment using the SWOT (*Strengths,* Weaknesses*, Opportunities, and Threats)* approach to identify the strengths, weaknesses, opportunities, and threats that will influence future strategies. The next stage is to establish clear, realistic, and measurable strategic objectives as the basis for all of the organization's programs and activities. Then, strategies are formulated based on the results of the analysis and the objectives that have been set, which include effective ways to achieve the objectives. The strategy is then translated into an action plan or implementation, which involves developing work steps, determining implementation timelines, assigning tasks, and allocating resources. The final stage is monitoring and evaluation, which serves to assess the extent to which the strategy is being implemented as planned, and to make adjustments as necessary to ensure that strategic objectives are achieved optimally.

Every business needs the right info to make a solid strategic plan. This info helps them understand where they are, spot opportunities, and anticipate challenges. Data can be collected from within the business, such as performance, resources, or work structure, as well as from external sources, such as industry trends, competition, government policies, or technological changes. With comprehensive information, strategic decisions can be made more accurately and in a more targeted manner. The information gathering process must also be carried out regularly, not just once at the beginning of planning, so that the strategies implemented remain in line with current conditions.

The Role of Management Information Systems in Supporting Strategic Planning

In the strategic planning process, decision-making is highly dependent on the quality of available information. Management Information Systems (MIS) help collect, manage, and present information from various parts of a business so that leaders can see the overall situation objectively. With MIS, organizations can monitor internal performance, analyze market trends, evaluate previous achievements, and identify emerging challenges and opportunities. MIS also facilitates the SWOT analysis process by providing structured and integrated data from various departments. This information is very useful in formulating a vision, setting strategic goals, and developing realistic action plans. MIS also supports the evaluation of ongoing strategies. This system allows business entities to conduct regular monitoring, measure results against set targets, and make strategic adjustments if necessary. Without the support of a well-organized information system, the strategic planning process will be slower, less accurate, and prone to decision-making errors. Research by Damayanti et al. (2025) found that the implementation of strategic information planning using the *Ward and Peppard* method in the Onde-Onde Darti Susilah SME resulted in the need for ten types of information systems, including inventory management, financial systems, CRM, and promotional websites. According to them, the implementation of this system can improve operational efficiency, expand market share, and strengthen customer relationships, thereby helping SMEs enhance their competitiveness.

## METHODOLOGY

This study employs a qualitative research method with a descriptive approach. This approach was chosen because its primary focus is to understand and describe in depth how manual and digital management information systems are implemented in the strategic planning process at two coffee shops with different operational characteristics, thereby enabling the exploration of the meanings, perceptions, and experiences of business operators directly related to the effectiveness and challenges of each system. The research was conducted over a one-month period in July 2025.

The data analysis technique used is comparative thematic analysis because it aims to examine in depth the differences and similarities between the implementation of manual and digital management information systems in the strategic planning process at the two coffee shops that are the objects of this study so that it is possible to compare how each system supports decision making, data management effectiveness , and their impact on strategic planning. This process is carried out through stages such as data transcription, open coding, theme grouping, and meaning extraction based on narrative interpretation.

The informants in this study were MSME entrepreneurs in Palu who were actively engaged in the culinary business, namely coffee shops. Informants were selected purposively, considering their involvement in the strategic planning process in each coffee shop, so that they could provide an in-depth description of the effectiveness and challenges of each system used.

## RESULTS

### The Importance of Implementing Management Information Systems in Supporting Strategic Planning in Coffee Shops

The implementation of a digital management information system at SuGi Coffee House has contributed significantly to the effectiveness and efficiency of strategic business planning. This system facilitates the recording of daily transactions, management of raw materials, and financial reporting in a more practical and structured manner. Digital applications such as GoBiz are considered very helpful because they are able to present data automatically, quickly, and with minimal input errors. The real-time information available enables business owners and managers to conduct regular and in-depth monitoring of daily operational conditions. As a result, the digital system is not only an administrative tool but also a solid foundation for formulating strategic business policies in a phased manner.

The availability of accurate and fast data from digital information systems has proven to strengthen performance evaluation and decision-making processes in the short to medium term. Although it does not yet fully cover the complexity of long-term strategy formulation, the information generated has been able to show trends in revenue, efficiency in the use of raw materials, and the effectiveness of the workforce. This makes it easier for management to identify aspects of the business that need to be improved, optimized, or enhanced. Additionally, historical data from digital systems can be used as a basis for decision-making in expansion planning, operational cost control, and adjustments to changes in consumer preferences. Strategic decisions made are thus more measurable and responsive to both internal and external business conditions.

However, the implementation of digital information systems also faces its own challenges, particularly in technical aspects such as system disruptions, application updates, or the need for regular maintenance. These obstacles can hinder operational smoothness, especially when recording processes must be switched back to manual methods. Despite this, the benefits offered far outweigh the limitations. Time efficiency, data accuracy, and easy access to information make this system a reliable tool in supporting better strategic policy direction. In the face of increasingly intense business competition, the ability to access information quickly and accurately has become a competitive advantage that supports the sustainability and growth of coffee shops like SuGi Coffee House.

### Implementation of a Manual Information Management System

The use of a manual management information system at Nerr Coffee shows that business data recording and management are still done conventionally through daily bookkeeping. Sales data is recorded daily and then accumulated at the end of the month to determine the overall business results. This system actually does not support strategic planning effectiveness, as the process is inefficient and tends to be time-consuming and resource-intensive. One indicator of this is decision-making that is based solely on simple reports from manual records, without any deeper data analysis.

The weaknesses of the manual system are also evident in the lack of consistent stock and accuracy in daily operational control. This system is unable to provide early warnings or *real-time* stock information, so materials are purchased based on urgent daily needs. Limited number of employees and operational capacity have prevented business owners from seeing the urgency of switching to a digital system. However, business owners acknowledge that digital systems can deliver more efficient results, but they have not been implemented due to financial constraints, past experiences, and the small scale of their businesses. Although manual systems are still considered sufficient for small businesses, they have many limitations in terms of strategic planning. Strategic decisions such as monthly revenue targets are determined solely by business owners without involving systematically processed data. Operational and financial decisions are made individually, without integrated information to support accuracy and business sustainability. This indicates that to compete and develop businesses in a more structured manner, the use of digital SIM will become an inevitable necessity in the future, even though it is currently considered non-urgent.

### Implementation of Digital Management Information System

The use of a digital management information system at SuGi Coffee House has had a positive impact, particularly in daily operational activities such as transaction recording, inventory management, and income and expenditure reporting. Digital applications like GoBiz are considered convenient for record-keeping because is practical and *user-friendly,* enabling financial reports to be generated automatically and quickly. Although it has not yet been fully utilized in long-term strategic business planning, this digital system has already proven helpful in daily to weekly evaluations as a basis for initial decision-making.

Digital systems also have several limitations, particularly related to technical issues such as application disruptions or *maintenance* processes that require manual recording activities to be repeated. This poses a particular challenge during busy operational periods. However, the benefits in terms of efficiency, data accuracy, and ease of access to information make digital systems a reliable tool for supporting business management. Additionally, data generated by digital systems are often used as a reference for making quick

decisions, although the formulation of major business strategies still requires additional analysis outside the application.

The use of digital systems offers significant speed, accuracy, and ease in managing business information. Digital systems allow business owners or managers to monitor business conditions in *real time* simply through an application on their devices. Thus, although not yet optimally utilized in large-scale strategic planning, digital systems have made a real contribution to improving the efficiency and effectiveness of business management processes at the coffee shop.

**Comparison of Manual and Digital Management Information Systems**

Table 1. Comparison of manual and digital MIS in the strategic planning process

| Aspect | Manual MIS | Digital MIS |
|---|---|---|
| Technology | Using physical or manual recording methods, such as paper or ledgers. | Utilizing computer-based hardware and software |
| Speed of information access | The data search process is slow because it is done manually. | Processes are faster because they are available in *real time* through an interconnected system ( ). |
| Data accuracy | Prone to human error, data duplication, and potential document loss. | High accuracy because data processing is automated and more precise. |
| Operational efficiency | Administrative processes are slow and lack clear standards. | Efficient because it supports accelerated work processes and decision making. |
| Support for strategy | Limited support due to information being difficult to access and not available in a timely manner. | Provides strong support by providing up-to-date information that supports adaptive planning. |

The fundamental difference between manual SIM and digital SIM in supporting the strategic planning process lies in their technological capabilities. Manual SIM, which still relies on physical media such as ledgers and paper forms, tends to cause delays in information processing and distribution. This hinders quick and adaptive decision-making processes. In contrast, digital SIM, which utilizes software and network systems, enables *real-time* data access, thereby providing more relevant and timely information to management in formulating organizational strategies.

In terms of data accuracy and operational efficiency, digital SIM offers more significant advantages. Manual systems are prone to recording errors, data duplication, and limitations in tracking historical information. This situation impacts the reliability of data as a basis for planning. Meanwhile, digital SIM integrates automated data processing with better quality control, enabling it to support process efficiency and enhance the accuracy of the information produced. As a result, businesses can minimize administrative costs and optimize their available resources.

In contributing to strategic planning, digital SIM has proven to be more adaptive and responsive. The availability of structured and analytical information enables management to conduct regular strategy evaluations and make adjustments based on external dynamics. This contrasts with manual SIM, which tends to be reactive and limited in providing a comprehensive overview of the organization's condition. As such, the transformation toward a digital information system has become an urgent necessity for businesses seeking to enhance their competitiveness through data-driven strategies.

**DISCUSSION**

The results of the study indicate that the implementation of a manual Management Information System (MIS) at Nerr Coffee, a coffee shop in , has serious limitations in supporting the strategic planning process. All transaction recording and operational management are still carried out conventionally through daily bookkeeping without the support of digital technology. Slow workflows and dependence on human resources make it difficult for business owners to obtain accurate and timely data to formulate relevant strategies. Strategic decisions are made without adequate analysis of historical data, making them intuitive and reactive to daily conditions rather than based on long-term trends. Even important activities such as inventory control are carried out spontaneously without data-driven planning, leading to the risk of shortages or excesses of raw materials. This situation highlights that while manual SIM systems may still function in small-scale operations, they face significant structural barriers that hinder the development of mature, well-planned, and sustainable business strategies.

The use of digital SIM cards at SuGi Coffee has shown more progressive results in business management, although it has not yet been optimally utilized in developing long-term strategies. The use of applications such as GoBiz has made it easier to record transactions, manage inventory, and generate financial reports automatically and in real time. This efficiency enables business owners to conduct regular evaluations and make quick decisions based on real-time data available at all times. Although still facing technical challenges such as system disruptions, digital SIM has generally helped businesses understand their business conditions more clearly and objectively. The digital data collected from daily activities has great potential to serve as a foundation for developing more precise long-term strategies. The results indicate that the transition to digital systems not only improves efficiency but also opens up significant opportunities for businesses to transform their thinking from an intuitive approach to a data-driven and future-oriented approach. The findings of this study are also consistent with the research by Jhonny & Hadiwinata (2024), which demonstrated that the implementation of *a Point of Sale-based* sales management information system at Konamu Coffee Shop improved efficiency, accuracy, and speed in transaction management, as well as provided *real-time* reports that support strategic business decision-making.

Digital management information systems (MIS) contribute more significantly to supporting strategic planning processes than manual MIS. The advantages of digital systems lie in their speed of data access, accuracy of information, and higher operational efficiency. This makes strategic decision-making more timely and based on valid data. Meanwhile, manual systems that still rely on conventional record-keeping have proven to slow down data collection and analysis processes, resulting in strategies that are less adaptive to the dynamic business environment.

Findings in the field indicate that business actors, particularly MSMEs, still face obstacles in terms of technology mastery, infrastructure limitations, and relatively high initial implementation costs. In addition, technical disruptions to digital systems can affect the smooth running of daily operations, especially when applications cannot be accessed optimally. Therefore, the effectiveness of digital SIMs is highly dependent on the internal readiness of business entities in terms of human resources, training, and commitment to the sustainable use of technology. Research by Yusuf et al. (2024) shows similar results, where the use of a Goods Management Information System at Kotalama Coffee Shop successfully increased efficiency by 82%, reduced recording errors, and facilitated data access and security, all of which support more structured and sustainable business planning and operations.

## CONCLUSION

The existence of a Management Information System (MIS) has proven to be very important in supporting effective strategic planning processes. Digital MIS allows business actors to access business data quickly, accurately, and in real time, which is the main foundation for making strategic decisions that are relevant to current market conditions. Without an integrated information system, the planning process becomes slow and less accurate, especially when important information must be collected manually. Therefore, the implementation of digital MIS not only improves operational efficiency but also strengthens a business's position in facing competition through sustainable data-driven planning.

Manual management information systems have proven to have significant limitations in supporting strategic planning. Recording processes that are entirely dependent on conventional methods cause delays in obtaining accurate and structured data. This has a direct impact on business management inefficiency, as important decisions are based solely on daily reports without in-depth analysis. Additionally, strategic decision-making remains individual and intuitive rather than data-driven, hindering the development of the business in a focused and sustainable manner.

Digital systems demonstrate superior performance in terms of speed, accuracy, and efficiency. With the support of digital applications, business owners can access sales, inventory, and business performance information in real time, which directly strengthens monitoring and evaluation processes. Although still facing technical challenges such as application disruptions, this system has proven to be more adaptive and capable of becoming a key tool in data-driven strategic decision-making. Therefore, the adoption of digital SIM is not merely an option but an urgent operational necessity for businesses aiming to compete effectively in the digital age.

## RECOMMENDATION

Based on the findings of this study, it is recommended that small businesses gradually begin to undertake digital transformation by strengthening their technological capacity and digital literacy in their business operations. This approach can start with the use of simple yet relevant digital applications to support financial record-keeping and inventory management. Local governments and SME support institutions are also encouraged to actively provide training and digital infrastructure support to ensure that strategic planning processes at the small business level can be carried out more efficiently, measurably, and competitively in the long term.

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