



## **Management information systems: Characteristics, applications, and future technological developments**

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**Abstract:** Management Information Systems (MIS) play a crucial role in information management and decision-making processes in an organization. This study aims to identify the main characteristics of MIS, factors that influence its implementation, and the benefits that organizations can obtain from using this system. The method used is a literature study with a descriptive-critical approach to analyze various academic references related to MIS. The results of the study indicate that MIS can improve operational effectiveness, accelerate access to information, and strengthen organizational competitiveness. However, in its implementation, there are various obstacles such as limited resources, resistance to change, and challenges in data security and integration. Along with the development of technologies such as artificial intelligence (AI), big data, and the Internet of Things (IoT), MIS in the future is predicted to become more complex but more optimal. Therefore, the right implementation strategy and active involvement of stakeholders are the main factors in the success of MIS implementation.

**Keywords:** Management Information Systems, Decision Making, Operational Efficiency, Technology, Implementation

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## **1. Introduction**

A system is a set of interconnected elements that facilitate the transfer of information, materials, or energy to achieve a goal. A collection of viewpoints, theories, expectations, and



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others. Management information systems (MIS) have an increasingly important function in the contemporary world, where organizations and institutions rely on data and technology to assist in efficient decision-making processes. SIM can be defined as a set of procedures, technologies, and resources that are used to collect, manage, examine, and fund data with the aim of improving the effectiveness and efficiency of organizational operations. Since the digital era began to develop, organizations are faced with a very complex buzz to manage information spread across various platform systems. Although the available data sets have increased without the integration of information systems, the optimal management of information cannot be changed. This SIM is designed to provide evidence-based and data-driven answers to a number of decisions, allowing organizations to detect trends evaluate returns and refine economic strategies as they go (Kopanaki & Stamoulis, 2025).

Management Information Systems (MIS) have proven to be a useful tool to support various aspects of an organization's operations. With the ability to collect, store, manage, and analyze data, it enables organizations to optimize their resources and speed up workflows. However, many organizations still fail to take full advantage of SIM. It is crucial to understand the basic concepts and features of a Management Information System, as well as how its implementation can improve organizational efficiency and performance. Some of the obstacles to implementing these systems include technical, financial, and lack of understanding of their benefits (Fitria et al., 2023). In an ongoing business environment, efficient data management will be converted into an important element to determine the well-being of the organization. SIM plays an important role in proportionally fast and precise access to data needed to restore management processes. With its ability to integrate various information sources, this system helps organizations optimize strategies and improve competitiveness (Daud et al., 2024). One of the main challenges in implementing SIM is defining implicit knowledge into explicit. This allows organizations to better record and share important information (Polanyi, 1966).

In addition, the rapid advancement of information technology is also driving digital transformation in various sectors, both public and private sectors. Organizations are required to be more adaptive in responding to changes, especially regarding the management of accurate and real-time information. Management Information System (MIS) not only serves as an administrative support tool, but also as a strategic foundation in planning, monitoring, and evaluating performance. Through an integrated system, organizations can reduce data redundancy, increase transparency, and strengthen coordination between work units. Therefore, the utilization of SIM is an important part of modern management reform that emphasizes efficiency, accountability, and continuous innovation.

The purpose of this article is to identify the role of information management systems (IMS) in supporting information management, point out the factors that influence their implementation, and explain the benefits that organizations can gain from implementing these systems. By further understanding the concept and characteristics of SIM, organizations can optimize the use of this system to strengthen competitiveness and operational termination in contemporary times.





## **2. Methods**

This research applies a qualitative methodology, which also uses literature studies, to analyze the characteristics and basic concepts of Management Information Systems and their role in improving organizational efficiency and effectiveness. The information used in this research was generated from several academic literatures, including books, scientific journals, and previous studies related to the subject. The data collection process was conducted by searching for relevant keywords in various academic databases. Subsequently, references were selected based on their level of relevance to the research focus. Once the data was collected, it was analyzed using a descriptive-critical approach. The purpose of this approach is to find patterns, trends, and challenges experienced in implementing information systems.

## **3. Results and Discussion**

### **3.1 Characteristics and Key Components of Management Information Systems**

Management information systems certainly have characteristics to demonstrate their role in assisting data management and organizational decision-making. SIM is structured, which means the system is designed in a systematic way so that the information produced can be used effectively. In addition, SIM is integrated, which allows various functions in the organization to be interconnected in a unified system (Bruch & Bellgran, 2013). The ability to manage and display data that is important for decision making is a key characteristic of Management Information Systems (MIS). social media has the ability to influence user behavior through easily accessible and reliable information. This idea is in line with the basic principle of SIM, which is that the information available in the system must be accurate, timely, and reliable to benefit users in various fields, such as business, health, and education (González-Serrano et al., 2024).

In addition, SIM is also flexible, which allows it to adjust to the changing needs of the organization and technological advancements. This ensures that the system remains relevant and can help with decision-making in a variety of changing situations. Today, some organizations use SIM to assist managers in decision-making. The SIM and its subsystems contribute to the decision-making process in various basic ways. In addition, a characteristic of SIM is that it features data processing efficiency, which allows the system to reduce redundancy and increase the speed of information access. As a result, managers can quickly obtain the required data and make decisions based on precise and actual data. Information on various histories is estimated and provided by SIM for internal and external operations. By providing uniform information in the right timeframe, the system helps the organization's planning, controlling, and operational processes. In addition to the technical aspects, SIM helps collaboration between departments in the organization and reduces errors caused by data mismatches.

One of the main functions or characteristics of a SIM is to ensure that there is a continuous flow of information to management. In addition, the management utilizes the data and information obtained from the SIM system to determine policies. With the development of digital technology, the role of SIM is becoming increasingly important. The integration of AI and





data analytics allows the system to present data and provide predictive insights that help organizations in strategic planning and innovation. A sophisticated SIM can include artificial intelligence components that improve decision-making by offering predictive analysis and automated insights. With all these characteristics, SIM becomes a key element in supporting operational efficiency, improving organizational competitiveness, and ensuring that decisions are based on appropriate and valid data (Asemi et al., 2011).

A Management Information System (MIS) is also made up of several key elements whose main function is to facilitate the organization's operational processes, such as system structure, data architecture, and integration between users and information technology. For multinational companies, a SIM has a core system, which is used by the entire organization, and local systems, which are designed to meet the unique requirements of a business or region. In addition, software and hardware are not the only important elements in management, SIM It also includes organizational elements such as stakeholder involvement, strategy implementation, and adaptation mechanisms to technological advances. Another key element is data and information synchronization, It is very important for an integrated information system to synchronize data and information. The structure of the core and local systems, the interaction of users with technology, and the degree of data synchronization of the organization are important components of the management information system. The effectiveness of SIM in assisting business processes and management decision-making is determined by the combination of these elements (Lehmann & Gallupe, 2005).

In addition, scalability and sustainability are also key components of information systems that are crucial to the performance of Management Information Systems (MIS). An integrated information system must be able to adapt to the changing needs of the company and its growth. In addition to ease of use, data security and regulatory compliance are important elements in the implementation of SIM. It states that in the absence of a robust security system, data theft, data leakage, and cyberattacks can threaten the stability of business operations. Therefore, companies must ensure that the SIM has reliable data security mechanisms, such as encryption, access authorization, and real-time security monitoring (Setyowati et al., 2021). One of the important advanced characteristics of MIS is the ability to integrate across systems and platforms. In practice, many organizations use various applications and operational systems for different functions, such as finance, human resources, and logistics. A good MIS must be able to integrate all data from these systems into one unified interface, so that management can access reports and analysis from various departments as a whole. This integration not only improves work efficiency, but also reduces data duplication and potential information inconsistencies between work units.

Another essential supporting component in MIS is clear system documentation and standard operating procedures (SOPs). Technical and procedural documentation serves as a guideline in the development, maintenance, and training of new users. The existence of SOPs also helps ensure that data is entered and processed in a consistent manner, which ultimately increases system reliability. Structured documentation and SOPs will speed up the onboarding process for





new employees and facilitate troubleshooting when technical problems occur in the system. An additional characteristic of MIS that is worth noting is the system's ability to produce strategic analytical reports. Not only presenting descriptive data, modern MIS is able to provide trend-based reports, comparisons, and even recommendations based on certain algorithms. This feature greatly assists management in making long-term decisions that are oriented towards achieving organizational goals. With this analytical reporting feature, MIS not only functions as a data management tool, but also as a strategic partner in planning and evaluating organizational performance (Anggraeni, 2016).

As technology develops and organizational needs become more complex, the characteristics of Management Information Systems (MIS) have also expanded. One of the advanced characteristics that is now important is the system's ability to process data in real time. With this feature, MIS can present the latest information to users without a significant time lag. This allows management to make decisions based on the latest conditions in the field, such as in inventory management, responding to customer requests, or monitoring operational activities directly. Another characteristic is the system interface that is designed to be increasingly user-friendly. Modern MIS focuses not only on technical sophistication, but also on ease of use by various levels of organizational users. Intuitive displays, clear navigation, and the use of visual elements such as graphs and interactive dashboards make information easier to understand and analyze by users, even those without a technology background.

MIS is also now required to have high mobility. With the support of cloud-based technology and mobile devices, users can access the system from various locations and times. This provides flexibility in working and allows for quick decision-making outside of working hours or when outside the office. This high accessibility is crucial, especially in organizations that have many work units or geographical locations that are spread out. Personalization capabilities are also part of the important characteristics of modern MIS. The system can be customized based on the needs and roles of each user. Thus, each individual or part of the organization will only receive information that is relevant to their tasks and responsibilities. This not only increases work efficiency, but also reduces the possibility of errors in decision-making due to inappropriate information (Hariyati et al., 2013).

### **3.2 Basic Concepts and Structure of Management Information Systems**

Management Information System (MIS) is a system that includes various components that interact with each other to collect, process, store, and distribute data to assist management and organizational decision making. The Leavitt Diamond approach defines an organization's information system as four main parts: technology, tasks, people, and organizational structure. The general model of an information system (IS) has key functions: information acquisition and dissemination, decision making, execution, and transformation. Each function is responsible for the collection, storage, operation and dissemination of knowledge and information. In addition, external factors can affect the system (Wu et al., 2022). For an information system to run







optimally, these four elements need to be continuous and support each other. In most cases, a driver's license consists of several basic models, such as:

1. Transaction Processing System (TPS): is a Transaction Management System responsible for recording daily transactions, such as order processing and payroll.
2. Management Information System (MIS): is a Management Information System that provides regular records and analysis to stop management operations.
3. Decision Support System (DSS): is a Decision Support System that supports decision making with quantitative models and analysis.
4. Executive Support System (ESS): is an Executive Support System that provides strategic management information to the top for its interest plan (Zemmouchi-Ghomari, 2022).

Management Information Systems (MIS) play an important role in supporting overall organizational performance. One of its main benefits is increasing operational efficiency and effectiveness. Through this system, data processing can be done faster, more accurately, and in real time. With the ability to store and manage data in one integrated system, organizations can minimize human error, reduce data duplication, and speed up administrative processes. This certainly has a positive impact on work productivity, because time previously wasted on collecting or searching for data can be diverted to more strategic activities. Another benefit of MIS is that it provides strong support for managerial functions such as planning, supervision, direction, and control. The information provided by MIS is comprehensive and timely, so it can be used by management in formulating strategies, making policies, or making quick and accurate decisions. With this system, managers can also monitor the performance of each work unit or individual directly and objectively, because the data used comes from the system, not from manual reports. This helps in increasing accountability and strengthening coordination between sections within the organization.

In addition, MIS also contributes to improving the quality of human resources and saving operational costs. In a work environment supported by a good information system, employees will be encouraged to work more systematically, regularly, and disciplined. A well-documented work process through the system also facilitates training, evaluation, and development of human resources. In terms of costs, MIS helps organizations save expenses by accelerating workflows, reducing the need for paper and physical storage, and reducing the risk of errors that can have a financial impact. Overall, optimal MIS implementation will have a significant impact on increasing the efficiency, effectiveness, and competitiveness of the organization in the long term. Not only in the business world, the benefits of Management Information Systems are also greatly felt in the government, education, and other public service sectors. For example, in the village government environment, MIS can help in managing population data, development planning, and transparent financial reporting. This system allows the village government to work more professionally, efficiently, and accountably. In the world of education, MIS supports the management of student data, curriculum, lesson schedules, and learning evaluations in a more





integrated manner. Thus, MIS not only plays a role in supporting managerial decisions, but also becomes a strategic tool to improve quality and data-based public services (Martini, 2022).

An information system is a system that filters information. Filtering can only be known if differences in the importance of the data do not exist. The goal is to reduce the amount of information available by only informing the actions taken (Moravec, 1965). Information systems in a business can change the way a business operates and allow managers to reduce uncertainty when making decisions. Data processed into relevant information will help them make more precise and effective decisions. In business information systems, various components, such as processes, software, manpower, hardware, and infrastructure, as well as certain standards and standards, work together to create, transform, store, manage, and disseminate useful information to design business strategies and create new products. Businesses and organizations depend on information systems to manage their activities, interact with customers, and manage supply chains with suppliers. They also use IT to compete in the marketplace (Mulaydinov, 2024).

### **3.3 Implementation of Management Information Systems in Organizations**

Information systems are certainly applied to various sectors of business, government, and education. In various fields, such as business, government, and education, management information systems (MIS) are very important. SIM helps businesses make decisions more easily, increase productivity, and become more competitive (Taxer et al., 1986). SIM capabilities enable companies to identify problems and capture market opportunities by providing access to information in a fast, timely, accurate, and comprehensive manner, which helps make faster and more accurate data-based decisions. In business, one of the most important prerequisites for the success of information systems is that information system planners know and understand business plans, priorities, and actual information needs.

Management information systems (MIS) are essential for improving organizational performance, especially in small and medium-sized businesses. According to (Kusa et al., 2024) Management information concentrates on the way information is collected, stored, distributed, and used in organizations. By implementing effective information systems, businesses can manage data in a more structured manner, which improves decision-making and operational efficiency. In addition, SIM enhances a company's competitiveness by providing relevant and timely management information about market dynamics. A good SIM implementation enables companies to adapt to changes in the business environment, improve coordination between departments, and optimize data-driven business strategies. Therefore, the implementation of an organization's Management Information System (MIS) largely depends on how well information management works, which helps companies work well and have a competitive advantage.

Effective use of SIM increases the company's competitiveness and Competitive position becomes better because information management improves the decision-making process and accelerates access to relevant information. shows that companies that have the ability to manage information are better prepared to face market challenges and change their business strategies. The implementation of IM in organizations depends on many things, such as management





involvement, the readiness of the technology infrastructure, and employee awareness about the utilization of information systems. Conversely, failures often occur due to poorly integrated systems, lack of user training, or resistance to change (Aydiner et al., 2019). The success of SIM implementation is not only related to the technology used, but also the organization's implementation strategy and human resource readiness. Companies that successfully implement SIM usually have a systematic approach to managing change and involve all stakeholders in the technology implementation process. However, there are still many unresolved issues, especially in interdepartmental coordination and data integration (Camargo et al., 2017).

In Government SIM is also applied to increase transparency, accelerate public services, and optimize resource management. With e-Government, the government can provide more effective public services. Meanwhile, in education, SIM helps academic management, school administration, and technology-based learning systems. By using SIM, educational institutions can be more efficient in managing academic, financial, and human resource data. Student Information Management System (SIMS) is one example of the application of information systems in educational institutions. SIMS collects and manages various data about students, faculty, and the institution as a whole, and is used to support the decision-making process (DMP). In addition, the integration and exchange of this information promotes innovation and learning within the organization, which benefits its performance (Gürkut et al., 2023). The successful implementation of information systems relies heavily on the organization's ability to collaborate and share information effectively. In organizations, well-integrated information systems allow different departments to work together, prevent data duplication, and improve operational efficiency. However, if there are no clear interoperability standards, information systems can cause problems in data exchange between work units, which in turn can hinder timely and accurate decision making (Liu et al., 2020).

One of the growing forms of SIM implementation is Green Information Systems (Green IS), which are information systems designed to help organizations achieve sustainability targets. A number of case studies show that successful implementation of Green IS can drive changes in organizational culture and strategy. By enabling bottom-up changes in corporate culture and strategy, Green IS can be a catalyst for transformation in organizations. The system enables information disclosure and democratization of will-related data, which improves people's understanding of the company. The implementation of Green IS in a bank in India is one of the prominent case studies. To improve energy efficiency and reduce the carbon footprint of its operations, the bank deployed green systems successfully. This was supported by system integration with core business processes and strong support from internal stakeholders. In addition, some organizations have implemented gamification elements in their Green IS to increase employee engagement. Organizations can encourage more sustainable behavior by adding features such as technology-based reward systems and motivational feedback. This method shows good results in increasing the rate of system adoption by employees in the workplace. There are several important factors that influence the success of SIM implementation, especially Green IS. Good integration with business processes, strong managerial support, and







effective employee engagement strategies are critical components to ensure these systems can best benefit the organization (Kirchner-Krath et al., 2024).

After understanding how MIS is applied in various sectors, it is important to dig deeper into its fundamental role in the overall structure and dynamics of the organization. Management Information Systems do not only act as technical tools, but also as strategic pillars that strengthen the operational, managerial, and long-term planning foundations of an organization. First, MIS acts as a liaison between organizational units. In organizations that have various divisions or departments, information fragmentation often occurs which can hinder smooth work. MIS allows for cross-departmental data integration so that relevant information can be accessed by those who need it in real-time. This not only speeds up coordination but also increases the accuracy of data used in decision making. In other words, MIS becomes a centralized information medium that supports synergy between work units. Second, MIS plays a role as a supporter of strategic planning and evaluation of organizational performance. By relying on historical data, trends, and predictive analytics provided by MIS, organizational leaders can formulate policies that are more responsive to market conditions or community needs. For example, in public sector organizations, MIS data can be used to monitor the effectiveness of work programs and assess the level of community satisfaction quantitatively. In this way, MIS strengthens the organization's capability in formulating data-based policy directions.

Third, the role of MIS is very important in increasing organizational accountability and transparency. This system allows for digital recording of all important organizational activities, both in terms of finance, human resources, and implementation of work programs. All data is recorded and can be tracked, thus facilitating internal and external audit processes. In the context of government, this is very relevant to prevent abuse of authority and increase public trust in government institutions. Furthermore, MIS also encourages innovation and adaptation to change. Amidst the rapid development of technology and changes in market or community preferences, organizations are required to adapt quickly. MIS allows the monitoring and evaluation process to be carried out continuously, so that organizations can immediately respond to these dynamics with service innovations or adjustments to work strategies. In this context, MIS functions as an organizational navigation tool to remain competitive and relevant. Finally, MIS plays a role in developing human resource (HR) capacity. With a digitalized system, employees can access information and training independently through an integrated system. This creates a knowledge-based working culture and supports continuous organizational learning. In addition, employee performance evaluations also become more objective and measurable, because they are based on data recorded in the system. Thus, MIS is not just an operational tool, but the heart of modern, intelligent, adaptive, and results-oriented organizational management (Ilham, 2022).

Management Information System (MIS) is an integrated system that combines information technology, human resources, and work procedures to manage information effectively to support decision making in an organization. In the context of a company, MIS plays an important role in various operational aspects. For example, in manufacturing companies, MIS is used to manage supply chains, schedule production, and monitor stock in real





time. Meanwhile, in service companies such as banking or insurance, MIS is used to record transactions, process claims, and support fast and accurate data-based customer service. The main role of MIS is to provide accurate, timely, and relevant information to support management functions. With MIS, management can monitor the organization's performance as a whole, identify problems quickly, and formulate data-based policies or strategies. MIS also helps improve operational efficiency by automating business processes, reducing human error, and accelerating the flow of information between departments.

In addition, MIS plays a role in creating transparency and accountability. Every process carried out in the system will be recorded digitally, making it easier to track, evaluate, and audit internally. This is very important in ensuring that the organization runs in accordance with applicable procedures and regulations. In the long term, MIS is able to encourage the creation of a more professional, performance-based, and measurable work culture. To implement MIS effectively, organizations need to go through several stages. First, a needs analysis is carried out to understand the type of information needed by each work unit. Second, the system design is adjusted to the organizational structure, business processes, and existing technology and human resource capacity. Third, training is provided to all system users so that they are able to operate and utilize MIS optimally. Furthermore, periodic evaluations also need to be carried out to assess the effectiveness of the system that has been implemented. If deficiencies or obstacles are found, adjustments need to be made both from a technical and managerial perspective. This is important so that MIS remains relevant to organizational developments and user needs.

However, it should be noted that the success of MIS implementation is not only determined by the sophistication of its technology, but also by the commitment of management and the readiness of all elements of the organization to adapt. Good governance, cross-department integration, and open communication are important factors in maintaining the sustainability of the system. With its strategic role, MIS is not just an administrative tool, but has become the main foundation in making decisions that are fast, accurate, and data-based. Proper implementation will lead the organization to higher operational efficiency, strong competitiveness, and the achievement of long-term goals sustainably (Intan Fahzilah & Muhammad Irwan Padli Nasution, 2024).

### **3.4 Future Challenges and Developments in Information Systems**

There is no doubt that management information systems (MIS) contribute significantly to decision-making and organizational efficiency. However, it is possible that their implementation and development may not always be successful. Therefore, it is important to understand the components that influence the successful implementation of MIS in an organizational environment. Factors that Create Obstacles in the Development of Management Information Systems. One of the main obstacles in the implementation of management information systems is:

1. Human factors, User ignorance of the system, lack of manager involvement, and lack of training can hinder system performance. lack of administrator participation in the design





and implementation process, Administrators and users who are not involved in the system architecture and also if Managers in the field of software and information technology have little understanding this becomes a management information system challenge.

2. Organizational factors, Organizations often face a number of structural problems that hinder the management information system (MIS) process, such as a lack of high-quality human resources and the absence of. In addition, another obstacle to effective system implementation is the lack of training for employees who handle MIS.
3. Natural Factors, In addition to internal factors, MIS development is also influenced by external factors, such as government regulations, technology policies, and market readiness.

In addition, other issues include mismatches between organizational and technological requirements, data security and privacy, and resistance to change, which make implementing new systems difficult (Hwang et al., 2018). Organizations can understand these issues as they make better plans to address SIM innovation challenges. Overcoming these problems requires a comprehensive approach to the implementation of management information systems. One method that can be applied is to include all stakeholders in the design and implementation of the system (Alawamleh et al., 2021). More and more changes in technology such as big data, and artificial intelligence (AI) are impacting the design and use of SIM. These advancements can improve system efficiency, but they also create new problems such as integration complexity and more complicated infrastructure. It is difficult for the information systems department to rely on the implementation and use of the system for higher work efficiency. However, if the system can provide significant advantages, technological innovation is considered a good thing. The future of SIM is likely to be characterized by higher automation, the use of more advanced analytics, and a greater focus on user experience (Jeyaraj, 2020).

Future information system development will center on digital transformation, the incorporation of artificial intelligence (AI) and big data management that seeks to improve the efficiency and transparency of public services (Yutanto et al., 2019). In the future, management information systems (MIS) may incorporate more gamification aspects to increase user participation, whether in the management of companies, public services or village administration. The implementation of gamification helps MIS development by increasing user participation, work efficiency, and data quality (Adhytia & Putra, 2023). Major transformations in Management Information Systems will take place in line with the rapid advancement of information technology, such as the Internet of Things (IoT), artificial intelligence (AI), and blockchain. These innovations not only improve efficiency and data security, but also support smarter and more connected processes in the Society 5.0 era. Smart strategies should be used to ensure optimal use of technology to improve people's quality of life and the effectiveness of information management in various sectors, addressing issues such as cyber information protection, data privacy, and social impact (Muttaqin et al., 2021). Companies that use a combination of technology and information systems grow faster, invest more, become more productive and profitable (Madonsela, 2020).





One of the most crucial tools for planning, designing, implementing, and maintaining high-performance information systems is the Management Information System (MIS) development model. In the midst of the rapid development of the digital era, this model continues to transform to adapt to technological advances, such as big data, artificial intelligence, and cloud computing. The emergence of new development models is a solution to meet the ever-changing needs of information systems. Therefore, current SIM development must be ready to face future challenges, including the principles of sustainability and adaptability to change. In the process of developing information systems, there are various models used by developers or system analysts. The guideline applied in system design is the system development model. Therefore, as a developer, system analyst, or programmer, it is very important to understand the methodology, approach, and device model or approach used in the development of information systems. One example is the conventional model using the SDLC (System Development Life Cycle) method, which is highly preferred and widely used by analysts and programmers (Wijoyo et al., 2023).

In the future, increasing operational efficiency will be aided by management information systems. Every business process can be automated faster and without errors. With real-time reports and easier data access, administrative tasks that used to take a long time can be completed in minutes. In addition, the decision-making process in an organization will become more precise. Smart information systems are able to provide quick and in-depth data analysis, allowing leaders to make decisions based on facts and concrete evidence rather than intuition. With the projection of market trends and analysis of consumer behavior, companies can formulate more optimal business strategies. In an increasingly connected work environment, coordination and collaboration between teams becomes smoother. Through cloud-based systems, employees from various locations can work together without being hindered by distance. An integrated digital platform supports real-time information exchange, improves efficiency, and accelerates workflow.

Data protection and privacy are key factors in future information management. In the future, technology will become more sophisticated. With the use of blockchain technology and advanced encryption systems, organizations can secure vital data from cyber threats and information leaks. A more reliable security system will increase customer and business partner trust, while maintaining the continuity of company operations. Future information systems will also increasingly focus on more intuitive interactions through augmented reality (AR) and virtual reality (VR) technologies. With AR and VR, users can interact with data visually, creating a more immersive and efficient work experience. In the business world, this technology will support more attractive data presentation, simulation-based training, and a more interactive customer experience (Kurniawan Ritonga & Firdaus, 2024).

#### **4. Conclusion**

Management Information System (MIS) is an important element in the sustainability and development of modern organizations. With the rapid advancement of information technology, the need for a system that is able to manage data and information effectively is becoming







increasingly urgent. MIS is present as a solution to overcome the complexity of data management and support fast, accurate, and data-based decision-making processes. This system is designed to collect, store, process, and distribute information to various parties in the organization, especially for management in carrying out planning, organizing, directing, and controlling functions.

In the context of an organization, the implementation of MIS has been proven to be able to increase operational efficiency and the effectiveness of communication between work units. Information presented in real time and relevantly allows leaders or management to respond to various changes in the internal and external environment more adaptively. MIS also supports integration between departments, so that work coordination becomes more synergistic and structured. In the digital era, MIS can even be integrated with other systems such as Enterprise Resource Planning (ERP), which is able to provide a comprehensive picture of the condition of the organization in one centralized platform. interests, both internal and external. In the long term, organizations that are able to utilize MIS optimally will have a competitive advantage in facing increasingly fierce competition.

The success of MIS implementation is highly dependent on management support, human resource readiness, and adequate technological infrastructure. Training and socialization to system users are also important aspects so that MIS can be operated and utilized optimally. Therefore, careful planning, good change management, and continuous evaluation are essential in every stage of MIS implementation in an organization. In the future, MIS is predicted to continue to develop along with technological advances such as artificial intelligence (AI), big data, and the Internet of Things (IoT). MIS of the future will not only be reactive but also proactive and predictive, helping organizations formulate strategies through deeper data analysis. With broader integration capabilities and cloud-based accessibility, MIS will be increasingly flexible, adaptive, and relevant in responding to new challenges in an increasingly complex and dynamic world of work.

## References

- [1] Adhytia, M., & Putra, W. (2023). *Trends and Applications of Gamification in E-Commerce: A Systematic Literature Review*. 9(1), 28–37.
- [2] Alawamleh, H. A., ALShibly, M. H. A. alkareem, Tommalieh, A. F. A., Al-Qaryouti, M. Q. H., & Ali, B. J. A. (2021). The Challenges, Barriers And Advantages Of Management Information System Development: Comprehensive Review. *Academy of Strategic Management Journal*, 20(5), 1–8.







- [3] Anggraeni, I. (2016). Pengaruh Karakteristik Sistem Informasi Manajemen dan SOP Terhadap Kinerja Manajerial (Studi Kasus Pada Citarum Sobat Bumi). *AKURAT /Jurnal Ilmiah Akuntansi*, 7(2), 1–19.
- [4] Asemi, A., Safari, A., & Asemi Zavareh, A. (2011). The Role of Management Information System (MIS) and Decision Support System (DSS) for Manager’s Decision Making Process. *International Journal of Business and Management*, 6(7), 164–173. <https://doi.org/10.5539/ijbm.v6n7p164>
- [5] Aydiner, A. S., Tatoglu, E., Bayraktar, E., & Zaim, S. (2019). Information system capabilities and firm performance : Opening the black box through decision-making performance and business-process. *International Journal of Information Management*, 47(December 2018), 168–182. <https://doi.org/10.1016/j.ijinfomgt.2018.12.015>
- [6] Bruch, J., & Bellgran, M. (2013). *Characteristics affecting management of design information in the production system design process*. 51(11), 3241–3251.
- [7] Camargo, P. De, José, C., & Jabbour, C. (2017). Information systems and sustainable supply chain management towards a more sustainable society : Where we are and where we are going. *International Journal of Information Management*, 37(4), 241–249. <https://doi.org/10.1016/j.ijinfomgt.2016.12.004>
- [8] Daud, A. A., Yasani, S. M., Bohar, A., Latif, R., & Abdul, H. (2024). *Critical Analysis of the Role of Management Information Systems in Optimizing Strategic Decision Making*. 2(02), 1024–1030.
- [9] Fitria, N., Wijayanti, I., Santoso, A. B., & Romadon, S. (2023). *The Role of Management Information Systems in Human Resource Competency Development*. 12, 1387–1396.
- [10] González-Serrano, M. H., Alonso-Dos-Santos, M., Crespo-Hervás, J., & Calabuig, F. (2024). Information management in social media to promote engagement and physical activity behavior. *International Journal of Information Management*, 78(April). <https://doi.org/10.1016/j.ijinfomgt.2024.102803>
- [11] Gürkut, C., Elçi, A., & Nat, M. (2023). An enriched decision-making satisfaction model for student information management systems. *International Journal of Information Management Data Insights*, 3(2), 100195. <https://doi.org/10.1016/j.ijime.2023.100195>





- [12] Hariyati, T., Sugiarsi, S., & Suswardany, D. L. (2013). Effect of Characteristics Information Managemen Hospitals on Perfomance Managerial in Ortopedic Hospital Prof. Dr. R. Soeharso Surakarta Year 2010. *Jurnal Manajemen Informasi Kesehatan Indonesia*, 1(1), 97–113. <https://doi.org/10.33560/v1i1.62>
- [13] Hwang, Y., Lin, H., & Shin, D. (2018). Knowledge system commitment and knowledge sharing intention : The role of personal information management motivation. *International Journal of Information Management*, 39(August 2017), 220–227. <https://doi.org/10.1016/j.ijinfomgt.2017.12.009>
- [14] Ilham, B. A. (2022). Sistem Informasi Manajemen (Sim) Sebagai Sarana Pencapaian E-Government. *Jurnal Stie Semarang*, 14(2), 184–195.
- [15] Intan Fahzirah, & Muhammad Irwan Padli Nasution. (2024). Penerapan Sistem Informasi Manajemen Untuk Meningkatkan Efisiensi Bisnis Di Perusahaan. *Jurnal Ilmiah Research and Development Student*, 2(1), 145–151. <https://doi.org/10.59024/jis.v2i1.577>
- [16] Jeyaraj, A. (2020). DeLone & McLean models of information system success: Critical meta-review and research directions. *International Journal of Information Management*, 54(April), 102139. <https://doi.org/10.1016/j.ijinfomgt.2020.102139>
- [17] Kirchner-Krath, J., Morschheuser, B., Sicevic, N., Xi, N., von Korflesch, H. F. O., & Hamari, J. (2024). Challenges in the adoption of sustainability information systems: A study on green IS in organizations. *International Journal of Information Management*, 77(December 2022), 102754. <https://doi.org/10.1016/j.ijinfomgt.2024.102754>
- [18] Kopanaki, E., & Stamoulis, D. S. (2025). ScienceDirect Designing an information system to support family policy making – the digital transformation of the policy making process. *Procedia Computer Science*, 256, 142–149. <https://doi.org/10.1016/j.procs.2025.02.106>
- [19] Kurniawan Ritonga, R., & Firdaus, R. (2024). the Importance of Management Information Systems in the Digital Era. *JICN: Jurnal Intelek Dan Cendikiawan Nusantara*, 1(3), 4353–4358.
- [20] Kusa, R., Suder, M., & Duda, J. (2024). Role of entrepreneurial orientation, information management, and knowledge management in improving firm performance. *International Journal of Information Management*, 78(April). <https://doi.org/10.1016/j.ijinfomgt.2024.102802>





- [21] Lehmann, H., & Gallupe, B. (2005). Information systems for multinational enterprises - Some factors at work in their design and implementation. *Journal of International Management*, 11(2 SPEC. ISS.), 163–186. <https://doi.org/10.1016/j.intman.2005.03.003>
- [22] Liu, L., Li, W., Aljohani, N. R., Lytras, M. D., Hassan, S., & Nawaz, R. (2020). A framework to evaluate the interoperability of information systems – Measuring the maturity of the business process alignment. *International Journal of Information Management*, 54(July 2019), 102153. <https://doi.org/10.1016/j.ijinfomgt.2020.102153>
- [23] Madonsela, N. S. (2020). Integration of the Management Information System for Competitive Integration of the Management Information System for Competitive Positioning. *Procedia Manufacturing*, 43, 375–382. <https://doi.org/10.1016/j.promfg.2020.02.176>
- [24] Martini, S. (2022). Konsep Dasar Sistem Informasi Manajemen. *Sistem Informasi Manajemen*, 17002089, 35.
- [25] Moravec, A. F. (1965). *Basic Concepts for Designing a Fundamental Information System*. 2(4).
- [26] Mulaydinov, F. M. (2024). Integrated Information Systems in Industrial Enterprises and Business Activities. *Kokand University Research Base*, 13(1), 33–44.
- [27] Muttaqin, A. R., Wibawa, A. P., & Nabila, K. (2021). Inovasi Digital untuk Masyarakat yang Lebih Cerdas 5 . 0 : Analisis Tren Teknologi Informasi dan Prospek Masa Depan. *Inovasi Teknik Dan Edukasi Teknologi*, 1(12), 880–886. <https://doi.org/10.17977/um068v1i122021p880-886>
- [28] Polanyi. (1966). *Polanyi\_Michael\_The\_Tacit\_Dimension.pdf*.
- [29] Setyowati, W., Widayanti, R., & Supriyanti, D. (2021). *Implementation Of E-Business Information System In Indonesia : Prospects And Challenges*. 1(2), 180–188.
- [30] Taxer, E. E., Road, A., Winchester, & Hampshire. (1986). *Developing Strategies for Management Information Systems*. 19(4). [https://doi.org/doi.org/10.1016/0024-6301\(86\)90267-0](https://doi.org/doi.org/10.1016/0024-6301(86)90267-0)





- [31] Wijoyo, A., Zalukhu, S., Tumanggor, J., Nurdin, M., & Ramanda, C. (2023). Tantangan Dan Peluang Dalam Mengelola Sistem Informasi Manajemen. *Bisnis Dan Pendidikan*, 1(2), 1–7.
- [32] Wu, C., Huang, S., & Yuan, Q. (2022). Seven important theories in information system empirical research: A systematic review and future directions. *Data and Information Management*, 6(1), 100006. <https://doi.org/10.1016/j.dim.2022.100006>
- [33] Yutanto, H., Ilham, R., Salma, K. R., & Effendi, Y. (2019). *Pengembangan Sistem Informasi Pada Local E-Governance Untuk Peningkatan Kinerja Pelayanan Warga*. 02, 220–227. <https://doi.org/10.21456/vol9iss2pp220-227>
- [34] Zemmouchi-Ghomari, L. (2022). Basic Concepts of Information Systems. *Contemporary Issues in Information Systems - A Global Perspective*, August. <https://doi.org/10.5772/intechopen.97644>

