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MANAGEMENT INFORMATION SYSTEMS: CHARACTERISTICS AND ROLE IN MODERN ORGANIZATIONAL TRANSFORMATION

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Abstrak: Sistem Informasi Manajemen (SIM) merupakan elemen krusial dalam mendukung transformasi organisasi modern di era digital. Artikel ini membahas karakteristik utama SIM yang terdiri dari manusia, data, perangkat keras, perangkat lunak, serta prosedur bisnis. Kelima elemen ini berinteraksi secara terintegrasi untuk mendukung efisiensi operasional dan pengambilan keputusan yang lebih efektif. Seiring berkembangnya teknologi seperti kecerdasan buatan (AI), big data, cloud computing, dan Internet of Things (IoT), SIM berevolusi menjadi sistem cerdas yang adaptif dan responsif terhadap dinamika pasar. Transformasi ini memungkinkan organisasi mengelola data secara real-time, mempercepat inovasi, dan meningkatkan daya saing. Namun, implementasi SIM tidak terlepas dari berbagai tantangan, seperti biaya investasi yang tinggi, resistensi perubahan dari karyawan, serta isu keamanan data yang kompleks. Oleh karena itu, dukungan organisasi melalui pengembangan keterampilan digital, penguatan infrastruktur teknologi, dan strategi manajemen perubahan menjadi kunci keberhasilan penerapan SIM. Melalui kajian pustaka yang komprehensif, artikel ini menegaskan bahwa SIM bukan hanya alat bantu operasional, melainkan juga pendorong utama dalam membangun organisasi yang lebih inovatif, adaptif, dan kompetitif.

Kata kunci: Sistem Informasi Manajemen, karakteristik, peranan, transformasi organisasi modern

Abstract: *Management Information Systems (MIS) are a crucial element in supporting the transformation of modern organizations in the digital era. This article discusses the main characteristics of MIS, which consist of people, data, hardware, software, and business procedures. These five elements work synergistically to enhance operational efficiency and facilitate informed decision-making. As technologies such as artificial intelligence (AI), big data, cloud computing, and the Internet of Things (IoT) develop, MIS has evolved into an intelligent system that is adaptive and responsive to market dynamics. This transformation allows organizations to manage data in real time, accelerate innovation, and increase competitiveness. However, the implementation of MIS is not free from various challenges, such as high investment costs, resistance to change from employees, and complex data security issues. Therefore, organizational support through the development of digital skills, strengthening technology infrastructure, and effective change management strategies is crucial to the success of MIS implementation. Through a comprehensive literature review, this article emphasizes that MIS is not only an operational tool but also a key driver in building a more innovative, adaptive, and competitive organization.*

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Keywords: *Management Information System, characteristics, roles, transformation of modern organizations.*

I. INTRODUCTION

A system is the result of thoughtful design, encompassing the organization of both logistical and physical elements. At its core, a system is made up of various components, including data, processes, policies, protocols, expertise, hardware, software, and responsibilities, all of which play a crucial role in defining an organization's capabilities. These components reflect both human and nonhuman aspects and can be either tangible or abstract. Together, they form a cohesive whole, where each part interacts with at least one other component, ultimately working towards a common goal. Furthermore, systems can contain distinct subsystems that facilitate a more focused set of interactions among their components, tailored for specific purposes. Additionally, systems may also be interconnected with other systems, enhancing their functionality and reach [1].

Management Information Systems (MIS) is a collection of processes that enable data to be processed, analyzed, and presented to become useful information for decision making in an organization. Management Information Systems (MIS) are a critical tool in the transformation of modern organizations, bridging business operations and computing to improve decision-making, efficiency, and planning strategy. As more organizations digitize their processes, MIS plays a vital role in converting raw data into practical insights, enabling leaders to make informed decisions [2].

The rapid advancement of technology has made MIS indispensable in addressing challenges such as data overload, inefficient manual processes, and the need for timely and accurate reporting. By automating routine tasks and providing predictive analytics, MIS empowers organizations to adapt to dynamic market conditions. For example, a Decision Support System (DSS) in MIS can play out hypothetical scenarios to impact strategic changes. Furthermore, MIS enhances risk management by identifying patterns in data that signal potential problems [3]. In addition, MIS enhances risk management by identifying patterns in data that signal potential problems [4].

Despite its many benefits, implementing MIS also comes with challenges such as aligning infrastructure with organizational needs, training employees to use the system effectively, and ensuring data security. These challenges highlight the need for research on how MIS can be optimized to support organizational transformation while overcoming barriers such as resource constraints and resistance to change. [5].

This article aims to examine the characteristics and role of MIS in modern organizational transformation. Through a comprehensive literature review, this study will discuss the basic concepts of MIS, the key components that support its effectiveness, and its impact on the decision-making process and overall organizational performance. In addition, this article will also highlight the challenges and opportunities that arise along with the development of MIS towards the era of Super Artificial Intelligence (Super AI). Thus, it is hoped that this article can provide a deeper understanding of the importance of MIS in supporting the effectiveness of organizational management in today's digital era.

II. METHODS AND MATERIALS

2.1 Methods

This study adopts a literature review method to systematically collect, analyze, and synthesize academic literature on Management Information Systems (MIS). The primary objective is to provide a comprehensive understanding of the characteristics, components, roles, and evolution of MIS in modern organizational transformation. The research begins with a literature search and collection, where relevant sources such as books, peer-reviewed journal articles, conference papers, and other credible publications are gathered from reputable databases like Scopus, IEEE Xplore, ACM Digital Library, and Google Scholar. Keywords such as "Management Information Systems," "organizational transformation," "decision-making," "artificial intelligence in MIS," and "MIS components" are used to refine the search process. Next, selection criteria are applied to ensure the relevance and quality of the literature. Only publications from the last 10 years are included to maintain up-to-date information. Articles focusing on MIS concepts, components, roles, challenges, and empirical or theoretical insights into its application in organizations are prioritized. To maintain academic rigor,

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at least 80% of the references consist of journal articles. The collected literature undergoes critical analysis to identify recurring themes, gaps in existing research, and emerging trends in MIS. Key areas such as MIS components (people, data, hardware, software, business procedures), their role in decision-making processes,

and challenges in implementation are categorized for deeper examination. Following this analysis, the findings are synthesized into a structured narrative that highlights the importance of MIS in enhancing organizational efficiency and competitiveness. This synthesis also explores how emerging technologies such as artificial intelligence (AI), Internet of Things (IoT), and big data influence the future development of MIS. Finally, validation is conducted by cross-checking findings across multiple sources to ensure reliability and alignment with established theories in the field of information systems. This systematic approach ensures that the study provides meaningful insights into the role of MIS in driving innovation and adaptability within organizations in the digital era.

2.2. Materials

The materials used in this study consist of:

2.2.1 Primary Sources: Peer-reviewed journal articles discussing the theoretical framework and practical applications of MIS.
Secondary Sources: Books and review articles providing foundational knowledge about MIS.

2.2.2 Data Analysis Tools: Software such as Mendeley or EndNote was used for managing references and ensuring proper citation formats.

2.2.3 Technological Frameworks: Studies on emerging technologies like AI, big data analytics, cloud computing, and IoT that influence the evolution of MIS.

2.3. Research Focus

The primary focus of this study is to:

2.3.1 Explore the fundamental components of MIS (people, data, hardware, software, business procedures).

2.3.2 Analyze how these components interact to support decision-making processes.

2.3.3 Examine the role of MIS in modern organizational transformation.

2.3.4 Identify challenges and opportunities associated with implementing advanced MIS technologies.

2.4. Research Limitations

This study is limited to secondary data sources and does not include empirical testing or case studies due to its nature as a literature review. However, it provides a robust theoretical foundation for future empirical research on MIS. By following these methods and utilizing these materials effectively, this study aims to contribute valuable insights into the role of Management Information Systems in driving innovation and adaptability within organizations in the digital era.

III. RESULTS AND ANALYSIS

3.1 Basic Concepts of Management Information Systems

A system can be defined as an entity characterized by a specific design. Generally, a system encompasses the organization of various elements, both logical and physical. Such systems comprise data, processes, policies, protocols, expertise, hardware, software, responsibilities, and other elements that collectively determine an organization's capabilities. Systems incorporate both human and nonhuman elements. The elements or sections of a specific system can be either physical or conceptual. These components together form an integrated "whole," wherein each element interacts with at least one other component within the system. Collectively, all elements within a system aim to achieve a common purpose. Furthermore, a system may encompass subsystems, which are distinct systems that comprise a series of smaller interactions among components, targeted toward a more narrowly defined objective. Additionally, systems may establish connections with other systems, enhancing their interactivity and functionality.[1].

An information system (IS) must include data, records, and processes that are collected to offer information for decision-making purposes. The various IS (especially computerized equivalents) used in each company facilitate the organization and the achievement of its goals. Such businesses strive to incorporate IS or technology for high optimization in institutional management processes [6]. According to Maeve Cumming, management information systems (MIS), Also known as information management systems, serve as essential tools in the realm of business, facilitating various processes, operations, intelligence gathering, and information technology functions. These systems play a critical role in the transfer and management of data, forming the

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foundation of the information management discipline, and are frequently regarded as the preliminary systems of the information age. Moreover, management information systems enable organizations

to efficiently create, collect, and utilize operational information, thereby providing them with a competitive edge in the marketplace. The difference between management information systems and corporate information management is that information management includes the management of information or IT departments, information systems, information flows, resources, and the management of personnel working in informatics [7]. Information Management Systems (IMS) are the main systems used in organizations to help manage information in organizations, store, process, and collect data [8].

Management Information Systems (MIS) have undergone major transformations since their emergence in the 1950s. Initially, MIS only functioned as a simple data processing tool, such as payroll and administrative document processing. However, from the 1970s to the 1990s, database and network technologies began to drive the development of MIS into more complex systems, supporting decision-making at various levels of management. Concepts such as Material Requirements Planning (MRP) and Decision Support Systems (DSS) also began to emerge. Entering the 1990s to 2010s, the internet and cloud computing transformed MIS into a global platform that supports e-commerce and social media, while integrating artificial intelligence to support group decisions and handle more unstructured tasks [9].

Currently, MIS is developing towards Smart Management Information Systems (SMIS), where the system can adapt in real-time, understand user needs in-depth, and facilitate collaborative decision-making based on big data, artificial intelligence (AI), and the Internet of Things (IoT). SMIS functions more than just a data processing tool; rather, it becomes an intelligent system that can learn, diagnose, and adapt to changes in the organizational environment [9].

In addition, the Super Artificial Intelligence (Super AI) transformation is also accelerating the evolution of MIS. Super AI enables systems to surpass human cognitive capabilities in data analysis, decision-making, and business process innovation. This development opens up great opportunities for organizational efficiency but also brings new challenges, such as ethical issues, data security, and workforce skills gaps that must be addressed through cross-disciplinary collaboration, including data science, software engineering, and business analytics [10]. In supporting the effectiveness of modern organizational management, MIS consists of several key components that interact with each other [11].

1. People (Human Resources)

   People are the core elements that run and utilize MIS. This includes managers, analysts, technicians, to end users who are responsible for entering data, managing systems, and using information in strategic decision-making. Skills and understanding of technology are determining factors in the effectiveness of MIS.

2. Data (Data Source)

   Data is the main raw material that is processed into valuable information. MIS manages various types of data, ranging from operational data and financial data to customer data that is collected, analyzed, and presented to support fact-based decision making. Accurate, real-time, and integrated data ensures that organizations are responsive to market changes.

3. Hardware (Hardware)

   Hardware provides the physical infrastructure that ensures smooth data processing. This includes computers, servers, networks, and other devices that support the speed and capacity of information processing. Without reliable hardware, MIS will lose its performance in supporting organizational activities.

4. Software (Software)

   Software functions to process raw data into ready-to-use information. This includes operating systems, data management applications (such as ERP and CRM), to special software according to organizational needs. User-friendly and compatible software will speed up business processes and increase productivity.

5. Business Procedures

   A procedure is a series of rules that ensure the system runs consistently and effectively. This procedure

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regulates how data is collected, processed, analyzed, and presented. With the right procedures, MIS not only produces accurate information but also supports operational efficiency and management control.

These five components are the key to creating an effective MIS. Each element must work in harmony so that the organization can utilize data quickly and accurately, supporting. Management information systems (MIS) also have several characteristics that can be summarized as follows [7]:

1. Support for Processes, Operations, Intelligence, and IT: MIS is used to support various aspects of a business, including operational processes, decision-making (intelligence), and information technology management.
2. Data and Information Management: MIS functions to manage information and move data, making it the core of the information management discipline.
3. Importance in the Information Age: MIS is often considered the first system to emerge in the information age, demonstrating its fundamental role in the evolution of technology and management.
4. Improved Corporate Performance: The use of MIS can improve corporate performance in a variety of ways, including operational efficiency and better decision-making.
5. Dependence on IT: Modern corporate business models rely heavily on the information technology (IT) management methods implemented, of which MIS is a key component.
6. Evolution of IT Functions: IT management has transformed from a business support function to a tool for improving efficiency, driving business innovation, and digital transformation.
7. Elements of Management Information: Management information consists of Tools (information system development), Processes (planning, innovation, HR management), and Information Flows (information flow management, risk assessment).
8. Information Flow Optimization: In the context of auditing, MIS helps optimize the flow of information at every stage of the financial statement audit, from planning to completion.
9. Improved Management Processes: The implementation of advanced information technology is key to the effectiveness of an entity. Effective management is impossible without managing its information activities and the entire information system of the company.
10. Impact of the Information Revolution: The rapid development and dissemination of new information affects politics, economics, management, finance, science, culture, and other areas of society.

Organizational support is considered a significant moderating variable in this study. This support relates to the steps that organizations can take to support the change process and offer facilities, training, and tools for digitalization. Organizational support is defined as investing in the digital environment, providing training programs, and fostering a positive mindset to embrace change and digital transformation. It plays an important role in positively moderating the relationship between digital readiness competence and system performance in the context of IMS. [12].

When properly defined and understood, Management Information Systems hold immense potential for businesses, industries, and governments. These systems can be vital for maintaining a competitive edge, as information is increasingly recognized as the fourth major resource. The evolving landscape of information technology presents two key challenges: acquiring the skills necessary to utilize these technologies effectively and identifying new ways to enhance management practices. Many students have already engaged in practical courses focused on computer usage and may expect introductory MIS classes to follow the same hands-on, computer-centric approach tailored to specific needs. However, the scope of this field extends beyond routine tasks; it encompasses a range of complex and intriguing problems that demand attention. Managers are tasked with not only addressing current challenges but also with discovering new opportunities to advance their organizations. [13].

Management Information Systems (MIS) are differentiated from general information systems as they serve to examine and evaluate alternative information systems implemented in an organization's operational processes. In the academic Management Information System, the term is generally used to refer to a group of information management methods related to Management Information Systems,

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decision support systems (DSS), the automation or support of human decision-making, executive information systems, and expert systems. Management information systems aim to address several issues that arise in business, such as services, product expenses, and business strategies. The complete system is utilized to examine other information systems in the execution of operational functions within the organization. Management information systems involve management because managers and other users need to have access to information and know how to use it. Management information can help them identify problems, solve problems, and monitor performance [14].

3.2 Role of Management Information System in Decision Making

The decision-making process can leverage both primary and supporting management information systems for various essential purposes. These systems are capable of extracting integrated data from extensive databases, providing valuable insights to support decision-makers. Organizations can utilize this information to optimize operations or identify new business opportunities to maximize profits. Overall, management information systems play a crucial role in facilitating and enhancing the decision-making process. First, the information needed by decision-makers is provided using the management information system. All managers access the computer using the system, which is a formal agreement by the executives. In other words, the management information system adjusts the solution to meet other areas, such as decision support systems and knowledge-based systems. Second, by using information with a continuous supply to managers, the management information system helps the company to identify and understand system problems and analyze the situation.

Management Information Systems (MIS) function as essential tools in daily business management by offering accurate solutions to business challenges, fostering efficient and effective coordination across different departments, and providing relevant data and documentation. These systems streamline operations by reducing time and labor requirements, enhancing both organizational and departmental processes, and replacing manual tasks with faster, computer-based solutions. As a result, MIS supports better control, organization, and planning within the company, highlighting its indispensable role in business operations. It directly influences how managers plan, make decisions, and organize their teams, particularly in key areas like production processes. Rhodes further emphasizes that MIS significantly enhances decision-making by providing managers with swift access to information. This may involve integrating with other systems to retrieve information on demand, employing decision support systems, employing data mining techniques, and cross-referencing external data. Additionally, these systems allow for a comparison between strategic objectives and practical decisions, helping managers evaluate whether their decisions align with the company's overall strategy. Rhodes concludes that MIS is crucial for ensuring access to reliable company data. However, he also notes that only a small number of organizations fully embrace this role and set an example for others within the industry [15].

3.3 Impact of Management Information System

A reliable management information system aids in overseeing finance, production, marketing, and personnel. The monitoring of operational objectives becomes straightforward. Managers receive updates regarding the status, accomplishments, and shortcomings in activities and goals. Managers are kept vigilant by offering specific information that reveals patterns in different areas of the business.

Management Information System has different influences on the organization, which pertain to the comprehension of the business itself. Management Information System utilizes data dictionaries, entities, and attributes, respectively, that are established for generating information within the organization. Given that all information systems employ dictionaries, there is a shared understanding of terms and terminology within the organization, which promotes clarity in communication and a common viewpoint of an event in the organization.

Management Information Systems require the organization of business operations to achieve an effective system design. This results in a sequence of interconnected functions that add complexity to the design process. However, the system enhances business administration by promoting discipline, ensuring that all members follow established procedures and systems. This approach reflects a high standard of professionalism in business operations. A well-designed system with a focus on the manager's impact on managerial efficiency. This system supports him in performing exercises such as experiments and modeling. With the use of computers, it becomes possible to apply tools and techniques that would be impractical or impossible to handle manually. Ready-made packages make this task simple. This system significantly improves decision-making capabilities. Since Management Information Systems work on systems such as transaction processing and databases, tedious administrative work is transferred to computerized systems, thereby relieving human minds for better work.

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This system was developed through 5 sequential stages [16]:

3.3.1 Quality Data Collection

Essential data produced during the manufacturing process in a modular factory is identified. Critical data is recorded at each stage of module production.

3.3.2 Quality Information Standardization

Different types of quality data are standardized through Integration Definition for Process Modeling (IDEF0) to enable seamless integration into a unified management system.

3.3.3 System Function Design

The direction of system design is determined based on the results of the previous two stages, and then the main functions of the system are defined in detail.

3.3.4 System Development

The quality information management system is built according to the function specifications that have been set in the previous stage.

3.3.5 System Verification

The reliability of the system is tested through two methods: Accredited laboratory testing and evaluation by modular construction experts.

3.4 Trends and Developments in Management Information Systems

Management Information Systems (MIS) have undergone a major transformation with the integration of advanced technologies. The following is an overview of the major trends and developments, supported by references from international journals.

3.4.1 Big Data and Business Intelligence

The development of Big Data has revolutionized Business Intelligence (BI) by enabling the analysis of large data sets to uncover patterns, trends, and insights. This integration supports more informed decision-making and better strategic planning. However, challenges such as data privacy, security, and the need for scalable infrastructure remain concerns. The convergence of Big Data with cloud computing provides a solution by providing flexible and efficient storage and processing capacity [17].

3.4.2 Cloud Computing

Cloud computing is now an essential element in MIS, offering scalable resources and services over the internet. This technology supports the storage and processing of large amounts of data, allowing organizations to manage data without having to invest heavily in physical infrastructure. Despite its many benefits, cloud computing also presents new challenges, especially related to security and privacy, which require a robust framework to minimize risks [18].

3.4.3 Artificial Intelligence (AI) and Machine Learning

Artificial Intelligence (AI) and Machine Learning (ML) have transformed the way MIS works by automating processes, improving data analysis, and enabling predictive analytics. These technologies support the development of intelligent systems that are able to learn from data, thereby improving decision-making and operational efficiency. The integration of AI and ML in BI also enables real-time data processing and the extraction of actionable insights, opening up new opportunities for business growth and innovation [19].

3.4.4 Internet of Things (IoT)

IoT denotes the collection of tangible devices that are linked to the internet and share data among themselves. In MIS, IoT devices generate large amounts of data that can be analyzed to optimize operations, improve customer experience, and drive innovation. The integration of IoT with big dataCloud computing enables real-time data processing, which contributes to business success across sectors.

3.4.5 Cybersecurity in MIS

As MIS becomes more dependent on interconnected technologies, cybersecurity becomes a major concern. Integration of Big Data analytics in cybersecurity helps detect anomalies, identify threats, and proactively implement preventive measures. However, the emergence of AI-based cyber threats also requires innovation and strengthening of security protocols to keep organizational assets protected [20].

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By understanding these trends and developments, organizations can maximize the potential of their Management Information Systems, improve efficiency, and better respond to market changes.

3.5 Importance of Management Information Systems in Modern Organizations

Much emphasis has been placed on the fact that management information systems (MIS) are invaluable to the effectiveness and success of contemporary organizations. Management information systems play a vital role as more and more organizations adopt various uses of technology in conducting operations, making critical decisions, and formulating strategies. This is one of the greatest strengths of MIS as it provides a major boost in decision-making. Thus, organizations can obtain relevant information on time, analyze results, and assess the efficiency of certain actions.

Management information systems (MIS) play a crucial role in improving the operational efficiency of organizations. By providing managers with relevant data, MIS supports better decision-making in line with company goals. It reduces the time and effort required to complete certain tasks, reduces manual work, and minimizes bureaucratic processes. As a result, productivity increases as employees can focus more on core tasks that add value to the business, driving organizational growth. In addition, MIS is effective in managing large volumes of data. The ability to collect, store, and distribute information quickly and accurately is essential in supporting interactions between departments and ensuring stakeholders have access to the information they need [21].

Furthermore, MIS supports strategic planning by helping organizations understand market needs and customer preferences, analyze competitors, and identify development opportunities that are in line with the company's long-term vision. In an ever-evolving business world, this capability is key to maintaining competitiveness. The implementation of MIS also leads to enhanced customer satisfaction. By comprehending customer requirements and inclinations, companies can enhance their offerings and services, thereby elevating customer experience and loyalty. Another advantage of MIS is that it supports risk management and compliance. This system helps organizations ensure regulatory compliance, manage legal and financial risks, and document processes effectively. In addition, MIS coordinates various business functions — such as finance, marketing, and operations to align with strategic goals, which has a positive impact on organizational performance and efficiency.

According to Garcia & Rodriguez (2017), in the fast-paced modern era, timely access to information is very important. MIS allows organizations to respond quickly to emerging challenges and opportunities, maintaining a competitive advantage. Overall, MIS is a vital solution for businesses in a competitive environment, enabling better decision-making, improved performance, and future development planning. As technology advances and business complexity continues to grow, the role of MIS is predicted to grow [21].

3.6 Challenges and Opportunities for MIS Transformation

Digital transformation has become a key pillar in managing modern business strategies, presenting various challenges and opportunities. The challenges faced include resistance to change from employees, technological uncertainty, information security, and the need for large investments. In addition, skills gaps and regulatory compliance are also obstacles in the transformation process. However, behind these challenges, there are great opportunities such as increased operational efficiency, better data access, faster innovation, more personalized customer interactions, and cost savings. Companies that are able to manage this transformation well, through effective communication, employee training, and adaptive strategies, will have a stronger competitive advantage and be able to survive in the midst of digital market dynamics [22].

Challenges and opportunities in Management Information Systems (MIS) are evolving along with technological advances and the needs of modern organizations. The main challenges involve substantial implementation costs, employee resistance to change, and the growing complexity of data security threats. In addition, the lack of a workforce with digital and data analysis skills is a barrier to the adoption of more sophisticated systems [23]. However, digital transformation also offers opportunities for increased operational efficiency, customer engagement, and market expansion. To capitalize on these opportunities, organizations are encouraged to strategically integrate their information systems, incorporating research-based management practices, knowledge management, and organizational learning to improve their competitive position [24].

IV. CONCLUSION

Management Information Systems (MIS) have evolved from mere data processing tools to intelligent

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systems that play a strategic role in the transformation of modern organizations. Through the integration of key components—people, data, hardware, software, and business procedures—MIS supports data-driven decision-making, accelerates innovation, and improves overall operational efficiency. This transformation is further strengthened by the emergence of cutting-edge technologies such as Artificial Intelligence (AI), Internet of Things (IoT), big data, and cloud computing that have led to the birth of Smart Management Information Systems (SMIS). These systems are not only responsive and adaptive to market dynamics, but are also able to understand user needs in real-time and support collaborative decision-making. However, the implementation of MIS faces various challenges, ranging from organizational resistance, limited digital skills, to the complexity of data security. Therefore, the success of MIS depends not only on technology but also on the readiness of the organization in building a digital culture, infrastructure investment, and effective change management strategies. This article emphasizes that MIS is not just a supporting system, but also the main foundation in building an innovative, competitive, and sustainable organization in the digital era. Moving forward, further research is needed to explore the integration of MIS with Super Artificial Intelligence, as well as how organizations can optimize the potential of MIS through a cross-disciplinary approach between technology, management, and human capital.

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