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The Role of Digital Transformation in Improving Organizational Efficiency and Performance

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Keywords
Digital transformation; organizational efficiency; organizational performance; information technology; digital innovation.

Abstract
Digital transformation has become a key strategy for organizations to enhance operational efficiency and maintain competitiveness amid rapid technological advancements. This study aims to analyze the role of digital transformation in improving operational efficiency and organizational performance. The research employed a literature review method with a descriptive qualitative approach through the examination and critical analysis of scientific publications discussing the implementation of digital transformation across various sectors. The results indicate that digital transformation significantly contributes to increasing productivity, accelerating business processes, reducing operational costs, improving service quality, and strengthening organizational competitiveness. The findings further reveal that the adoption of digital technologies, such as cloud computing, artificial intelligence, big data analytics, and business process automation, plays a crucial role in supporting operational efficiency and the continuous improvement of organizational performance. Therefore, digital transformation serves not only as a form of technology adoption but also as a strategic organizational approach capable of creating value, enhancing business process effectiveness, and establishing sustainable competitive advantages in the digital era.

INTRODUCTION

The rapid development of information and communication technology in the era of the Fourth Industrial Revolution (Industry 4.0) has encouraged organizations to implement comprehensive changes in their business activities (Vial, 2019; Kraus et al., 2021). Digital transformation is no longer viewed merely as a process of technology adoption (Chanias et al., 2019) but as a strategic transformation involving technology, business processes, human resources, and organizational culture to create added value (Verhoef et al., 2021; Warner & Wäger, 2019; Caputo et al., 2021; Gong & Ribiere, 2021). These changes have become essential for organizations to improve operational efficiency, strengthen competitiveness (Hanelt et al., 2021; Nadkarni & Prügl, 2021), and adapt to the dynamics of an increasingly complex and competitive business environment (Wessel et al., 2021).

According to Westerman, digital transformation refers to the use of digital technologies to significantly improve organizational performance and reach. Similarly, Schwab, through the concept of the Fourth Industrial Revolution, emphasized the importance of integrating digital, physical, and biological systems to achieve global efficiency and productivity. In this context, an organization's ability to provide comprehensive information becomes an important element in developing and implementing adaptive strategies in response to changes in the business environment (Wardhana, 2024). Therefore, digital transformation is not solely oriented toward

technology utilization but also toward strengthening organizational capabilities in managing information as a foundation for strategic decision-making.

In Indonesia, digital transformation has become one of the national strategic agendas implemented through various government policies aimed at accelerating digitalization in both public and private sectors. Organizations that fail to adapt to digital developments may lose competitiveness at national and global levels. Conversely, organizations that successfully implement digital transformation can respond more rapidly to changes in the business environment, increase operational flexibility, and maintain efficiency in their business processes (Rahayu et al., 2025). This condition demonstrates that digital transformation is a critical factor in supporting organizational sustainability in the digital economy era.

One of the key components supporting the success of digital transformation is the Management Information System (Sistem Informasi Manajemen [MIS]). A Management Information System is designed to collect, manage, process, and present information to support managerial functions, including planning, control, and decision-making. In the digital era, MIS serves as an information infrastructure that enables organizations to obtain information quickly, accurately, and strategically (Nadia & Irwan et al., 2024). In addition to integrating various data sources into a unified platform, the effectiveness of MIS implementation is also influenced by its alignment with organizational structure, work culture, and strategic objectives (Tjahjanto & Raditya, 2020).

Conceptually, digital transformation represents a fundamental change in how organizations create, deliver, and sustain value through the utilization of digital technologies. The implementation of digital transformation is supported by various technologies, including cloud computing, big data analytics, artificial intelligence (AI), the Internet of Things (IoT), and Robotic Process Automation (RPA). Bharadwaj argued that digital strategy should no longer be regarded merely as an information technology strategy but as a broader business strategy that utilizes digital resources to create competitive advantages. Therefore, digital technologies must be integrated into organizational strategies to generate innovation, improve business process effectiveness, and provide greater value to stakeholders (Aithal, 2023).

The implementation of digital transformation has a significant impact on organizational efficiency. Organizational efficiency reflects the ability to optimize resources in producing maximum output with minimal costs. Through the digitalization of business processes, organizations can automate operational activities, reduce manual errors, accelerate service delivery, and improve the quality of information used in decision-making. Relevant and accurate information enables leaders to establish priorities, respond quickly to changes, and maintain organizational competitiveness amid dynamic business environments (Khotimah & Fitri, 2025).

The novelty of this research lies in its comprehensive synthesis of existing literature to develop a multidimensional framework explaining the role of digital transformation in organizational efficiency and performance. Unlike previous studies that examined specific aspects of digital transformation separately, this research integrates findings related to business process automation, information system integration, operational cost reduction, decision-making improvement, and organizational competitiveness. This study provides additional insights by explicitly linking digital transformation dimensions with specific organizational outcomes and identifying mechanisms through which digital adoption contributes to

measurable performance improvements. Furthermore, this research focuses on the Indonesian context, providing relevant perspectives for organizations navigating the challenges and opportunities of the local digital ecosystem.

In addition to improving efficiency, digital transformation also contributes to enhanced organizational performance. Organizational performance is measured not only through financial indicators, such as profitability, but also through non-financial indicators, including productivity, innovation, customer satisfaction, and competitiveness. Kaplan and Norton, through the Balanced Scorecard framework, emphasized that organizational performance measurement should consider a balance between financial and non-financial perspectives to provide a comprehensive assessment of organizational success. Based on this perspective, digital transformation represents a strategic approach that not only enhances operational efficiency but also strengthens organizational performance sustainably through the optimization of digital technologies and management information systems.

METHOD

This study employed a qualitative approach using a literature review method (library research) to examine the role of digital transformation in improving operational efficiency and organizational performance. The research data were obtained from credible secondary sources, including national and international scientific journals, academic books, institutional reports, and government policy documents related to digital transformation, management information systems, organizational efficiency, and performance. The literature review method was selected to obtain a comprehensive understanding of relevant concepts, theories, and previous research findings as a basis for analyzing digital transformation phenomena.

The qualitative approach enabled an in-depth examination of various aspects related to digital transformation implementation, including perspectives and experiences discussed in previous studies involving managerial and operational contexts (Achjar et al., 2023). The collected data were analyzed using descriptive analysis techniques through the processes of identification, classification, interpretation, and synthesis of information from various literature sources to examine the relationship between digital transformation, operational efficiency, and organizational performance. The analysis results were systematically organized to provide a comprehensive understanding of the contribution of digital transformation to improving organizational effectiveness and competitiveness.

RESULTS AND DISCUSSION

The Role of Digital Transformation in Increasing Efficiency

1. Business Process Automation: The use of RPA reduces manual work and human error.
2. Information System Integration: ERP systems allow for real-time data integration between departments (Hendro et al., 2026).
3. Reduced Operational Costs: Cloud computing reduces IT infrastructure costs.
4. Increased Decision-Making Speed: Big data analytics helps management make data-driven decisions.
5. The Management Information System pyramid shows the differences in information needs at each level of management. The bottom of the pyramid contains operational data for daily routine activities. Mid-level management uses information to oversee and evaluate

processes. At the top of the pyramid, top management leverages strategic information to make long-term decisions.

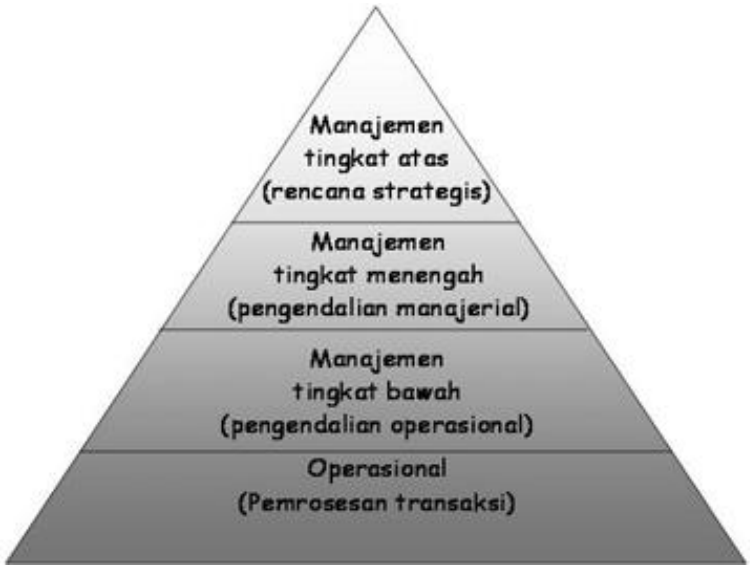

Figure 1. Management Information Systems Pyramid
Source: https://www.kibrispdr.org/detail-1/piramida-sistem-informasi-manajemen.html

A real example can be seen in global companies like Amazon that are optimizing supply chains through AI and big data analytics. Management Information Systems contribute to this through the processing of data from various activities as integrated information. This integration is the main foundation for management when responding to changes quickly and appropriately (Balisa et al., 2024).

The Role of Digital Transformation in Improving Organizational Performance

1. Increased Employee Productivity: Digital systems speed up workflows.
2. Improved Customer Satisfaction: Digital-based services increase responsiveness.
3. Business Model Innovation: Digital transformation has enabled the emergence of digital economy platforms such as Gojek and Tokopedia.
4. Competitive Advantage: Organizations are more adaptive to market changes.
5. , the active role of top management in providing support through aligned policies is indispensable. In this way, collaboration between organizational elements will ensure that the Management Information System really makes an optimal contribution to the effectiveness of the organization (Juraidin et al., 2020).
6. Organizational efficiency reflects the ability to optimize inputs into outputs to the maximum (Laudon & Laudon, 2020).

Digital Transformation Challenges

1. Resistance to change
2. Limited human resources
3. Cybersecurity risks
4. High initial investment
5. System success can be found from increasing efficiency, acceleration, and quality in decision-making through the integrated integration of operational and strategic aspects.

However, to achieve this, it requires a continuous commitment and readiness of all parts of the organization when facing challenges with a responsive approach (Miftahuddin, 2024).

6. Many Indonesian manufacturing companies still apply traditional working methods and have rigid hierarchical structures, which slow down the process of change. (Nufuz et al., 2025) highlights the importance of organizational culture in the success of digital transformation. If a company doesn't have a culture that supports innovation and change, even the best technology will be difficult to accept and integrate into day-to-day operations

Successful digital transformation requires visionary leadership, an innovative culture, and a clear strategy.

History and Development of Digital Transformation

1. The Digitalization Era (1980–2000): Focus on computerization and basic automation of business processes.
2. Internet and E-Business Era (2000–2010): The rise of e-commerce and digital platforms such as Alibaba.
3. The Industrial Era 4.0 (2010–Present)
   a. Integration of AI, IoT, and big data in an organization's systems as a whole.
   b. The concept of Industrial Revolution 4.0 was widely introduced in 2016 by the World Economic Forum.

CONCLUSION

Digital transformation plays a significant role in improving organizational efficiency and performance. The integration of digital technologies can optimize business processes, reduce operational costs, increase productivity, and strengthen competitiveness. However, the success of digital transformation depends on organizational readiness in terms of strategy, culture, and human resource capabilities. The effectiveness of Management Information System implementation is highly influenced by the alignment between technology, organizational policies, and internal cultural values, as well as the commitment to adapt to dynamic business environments to achieve sustainable competitiveness. This study suggests that organizations should develop a clear digital transformation roadmap, prioritize digital human resource development, and strengthen cybersecurity risk management to support successful and sustainable digital transformation initiatives.

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