

## HOSPITAL STRATEGIC MANAGEMENT INNOVATION IN THE ERA OF HEALTH DIGITALIZATION: A LITERATURE STUDY

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### Abstract

The development of digital technology has brought significant changes in the strategic management of hospitals, especially in efforts to improve the quality, efficiency and competitiveness of health services. This study aims to examine various strategic management innovations implemented by hospitals in Indonesia and globally in the era of health digitalization. This research was conducted using a systematic literature study method of 25 scientific articles published in the period 2022-2025. The results of the review show that the application of technologies such as Hospital Management Information System (SIMRS), digital marketing, telemedicine, and artificial intelligence has had a positive impact on operational effectiveness, data transparency, and patient experience. However, the digital transformation process is also faced with challenges such as limited infrastructure, resistance to change from human resources, and regulations that are not yet fully adaptive. Innovation-based management strategies, cross-sector collaboration, and strengthened governance are the keys to success in facing the dynamics of the digital era. This study recommends the importance of HR capacity building, digital infrastructure investment, and policy updates as strategic steps to support the sustainability of hospital management innovation in the future.

**Keywords:** Innovation, Strategic Management, Hospital, Health Digitalization

### Introduction

The digital shift has strategically changed the way hospitals are managed, especially with the use of technologies such as electronic health records (EHRs), telemedicine, and mobile health that increase operational efficiency and improve access to healthcare services (1). With this change, the system can move from a reactive approach to a proactive approach, utilizing real time data and artificial intelligence to support analytics-based decision making (2). In the wake of the COVID-19 pandemic, digitalization in Indonesia is on the rise, with increased use of data-driven systems and remote health services (3). However, the main obstacles to digital transformation are still data fragmentation, limited infrastructure, and laws that do not fully support sustainability (4). In addition, human resources are not ready to use new technologies and do not have access to digital tools. Many hospitals still face these problems (Kusmadeni dkk., 2024). Artificial intelligence and predictive systems have improved the early diagnosis and management efficiency of hospitals around the world, especially in countries with more advanced digital infrastructure (5). Therefore, utilizing technology in hospital strategic management must be accompanied by policies and organizational readiness to face the challenges of modern times (6).

Methods such as Hospital Management Information Systems (SIMRS) have been shown to improve operational efficiency and patient administration, but they still face infrastructure issues and a shortage of medical personnel training (7). The PDCA method, through continuous improvement cycles, has helped optimize team coordination and response to clinical needs (8), while Lean Management helps hospitals reduce waste and improve resource utilization (9). In terms of financing and service efficiency, the purchasing strategy in the JKN program helps improve service efficiency and data integration. However, there is still a need to resolve regulatory issues and uneven management of capitation funds (10). In addition, hospitals must have the ability to adapt to the VUCA era through the implementation of innovative, technology-based strategies that are responsive to the uncertainties and complexities that accompany health services (11). Ultimately, advances in hospital strategic management should not only focus on technology; it also needs to consider regulation, ethics, and sustainability of healthcare services. Collaboration with stakeholders and a continuous evaluation approach are essential to produce a more flexible and value-oriented health system (12).

## Method

This research adopts a systematic literature study method to analyze the development of hospital strategic management innovation in the context of healthcare digitalization. This approach was chosen for its ability to integrate findings from various secondary sources to produce a comprehensive synthesis that answers the research questions. The literature study was conducted by referring to 25 recent scientific publications (2022-2025) covering international journals, conference proceedings, and health institution reports, with a focus on digital transformation and hospital management strategies (13). Literature Search Strategy Databases used include Google Scholar, PubMed, Scopus, Science Direct, and Garuda Portal, with publication filters for 2022-2025. The search was conducted iteratively using Boolean operator (AND/OR) techniques to optimize coverage and relevance.

## Results

**Table 1 Literature Review**

Name, Year, Title	Results
Kuddi, Apriani, dkk. (2024). Innovation And Challenges In Hospital Strategic Management: A Literature Review.	<p>Innovation in hospital strategic management is essential to improve the quality and efficiency of health services amid the complex challenges of the modern era. The identified innovations include the implementation of health information technology, development of new organizational models, as well as improvement of performance evaluation systems. However, the implementation of these innovations faces significant challenges such as resistance to change, limited budgets, and difficulties integrating new technologies in existing systems.</p> <p>For innovations to be successfully implemented, hospitals need adaptive managerial systems, ongoing staff training, and assurance of financial sustainability. In addition, it is important for hospitals to develop effective marketing strategies, utilize digital technologies, and build collaboration among health institutions to improve efficiency and competitiveness.</p> <p>The study also emphasizes the need for regular evaluation and control of strategies to ensure the effectiveness of</p>

	<p>implementation and achievement of organizational goals. It is also emphasized that further research is still needed to explore practical solutions and adaptable strategies that can be applied in various hospital contexts (14)</p>
<p>Wulandari, Mayang, dkk. (2025). Implementation of Digital Transformation Strategy in Improving Service Quality in Hospitals: A Qualitative Study.</p>	<p>Digital transformation has proven to be an important key in improving the quality of service in hospitals in Indonesia. The application of digital technologies such as Artificial Intelligence (AI), Internet of Things (IoT), telemedicine, and digitization of medical records has had a positive impact in the form of increased operational efficiency, service accessibility, process speed, transparency, and patient satisfaction. Digital transformation also expands the reach of health services, especially for people in remote areas.</p> <p>However, the implementation of digital transformation in hospitals still faces a number of major challenges, including limited technological infrastructure, data security and patient privacy, low technological literacy among health workers, resistance to change, and uneven technology adoption in various regions of Indonesia.</p> <p>Integrated and sustainable digital transformation is expected to accelerate the achievement of Sustainable Development Goals (SDG) targets, especially SDG 3 (Good Health and Well-Being), and create a more effective, efficient and equitable health service system throughout Indonesian (15).</p>
<p>Melani, Sylvia, dkk. (2024). Strategic Management Of Hospitals In An Era Of External Change: Innovations, Challenges, And Opportunities.</p>	<p>Strategic management of hospitals is crucial amid dynamic external changes, such as global economic uncertainty, ASEAN market integration, and competition with foreign hospitals. Hospitals must be able to adapt strategies, innovate, and understand the external and internal factors that affect their operations. By conducting an in-depth SWOT analysis, hospitals can identify strengths, weaknesses, opportunities, and threats, so that the strategies taken are truly in line with the organization's vision and mission.</p> <p>The success of strategic management is highly dependent on proper planning, implementation, and control, as well as the involvement of all human resources in the hospital. Commitment to innovation and strategic leadership are key in improving competitiveness and operational performance. Thus, hospitals that are able to implement strategic management effectively will be better prepared to survive and thrive in an increasingly competitive global market (16).</p>
<p>Mutiarahati, Ni Luh Ayu Citra, dkk. (2022). Use of Digital Strategies in Hospital Healthcare.</p>	<p>The implementation of digital strategies in hospital healthcare has proven to have a very significant impact, especially in increasing patient engagement and trust through social media and various digital platforms. Digital marketing allows hospitals to attract new patients, expand business reach, strengthen patient loyalty and trust, and increase brand awareness. During the COVID-19 pandemic, digital strategies have become increasingly important as they facilitate more effective communication, service promotion and health education to the wider community.</p> <p>In order for the digital strategy to run optimally, hospitals need to determine clear marketing objectives, select appropriate digital channels, and conduct regular monitoring and evaluation. The success of digital marketing is also influenced by the readiness of human resources, good data integration, and protection of patient data security and</p>

	<p>privacy. With proper planning and implementation, digital strategy can be an innovative solution to improve the competitiveness and quality of hospital services in the era of digital transformation (17).</p>
<p>Az-Zahra, Syabina, dkk. (2025). The Effect Of Simrs Implementation On Improving Access And Quality Of Health Services In Hospitals: A Systematic Literature Review.</p>	<p>The implementation of the Hospital Management Information System (SIMRS) has been proven to have a positive impact on improving access and quality of health services in hospitals. SIMRS implementation accelerates administrative processes, facilitates patient data integration, and creates a more efficient referral system. In addition, medical data management becomes more accurate, the risk of administrative errors decreases, and patient satisfaction levels increase. Hospital operational efficiency is also achieved through accelerated document checking and reporting, which in turn supports better decision-making. However, SIMRS implementation still faces several major challenges, such as limited internet network infrastructure, lack of skilled IT personnel, and lack of system standardization in various hospitals. To optimize the benefits of SIMRS, strategies such as improving infrastructure, training health workers in digital literacy, and periodic evaluation of the system's effectiveness are needed. With effective management, SIMRS has the potential to become the main pillar of healthcare digitization, improving operational efficiency and quality of hospital services in a sustainable manner (18).</p>
<p>Carlof &amp; Dety Mulyanti. (2023). Technology Innovation in Health Management: Utilization of Electronic Health Information Systems in Hospitals.</p>	<p>The utilization of Electronic Health Information Systems, especially Hospital Management Information Systems (SIMRS) and Electronic Medical Records (RME), has a positive impact on improving the quality of health services in hospitals. The use of this system facilitates the registration process, accelerates access and processing of patient data, and minimizes data leakage. In addition, SIMRS also supports faster and more precise decision-making for hospital management, and improves operational efficiency through data integration and reduction of administrative errors. However, the implementation of SIMRS in hospitals still faces several obstacles, such as network instability, infrastructure limitations, and lack of training for health workers. Other challenges include initial resistance from some users and the need to simplify the system interface to make it easier to use. However, users' attitudes towards SIMRS tend to be positive after experiencing its benefits firsthand, and hospital management continues to evaluate and adjust to ensure the system can be optimally adopted across all work units. (19).</p>
<p>Purwadhi, dkk. (2024). Development of Marketing Strategies to Increase Hospital Competitiveness in the Digital Era.</p>	<p>An effective marketing strategy is essential to improve hospital competitiveness in the digital era. These strategies include building brand awareness through digital platforms such as informative websites, social media, as well as implementing SEO and digital advertising to reach potential patients. In addition, increasing engagement with patients through chatbots, live chat, online communities, and interactive content is considered capable of building strong relationships and patient loyalty. The utilization of digital technologies such as telemedicine, Hospital Information Systems (HIS), and mobile applications are also proven to</p>

	<p>improve efficiency, effectiveness, and ease of access to services for patients.</p> <p>The study also emphasized the importance of networking and collaborating with related parties, such as insurance companies, specialists, and other health institutions, to expand access and improve service quality. An effective referral system also helps hospitals gain new patients and maintain the loyalty of existing patients. The recommendation from this study is that hospitals need to establish an integrated digital marketing strategy, invest in digital technology, collaborate with various parties, and conduct regular evaluation and monitoring to remain relevant and competitive in an increasingly dynamic health industry (20).</p>
Fauzi, Muhamad Rizal, dkk. (2024). Challenges and Solutions for Health Administration in the Digital Age (Literature Review on Technology Implementation).	<p>The implementation of digital technology in health administration provides a great opportunity to improve the efficiency, effectiveness, and quality of health services. The use of digital systems such as electronic medical records (RME) and telemedicine can speed up administrative processes, facilitate access to patient data, and expand the reach of health services to remote areas. However, the application of these technologies also faces significant challenges, including limited digital infrastructure, lack of competence of health workers in the use of technology, and security and privacy risks of patient data.</p> <p>To overcome these challenges, proposed solutions include increased investment in technology infrastructure, training and development of digital competencies for health workers, and the implementation of stricter data security policies. In addition, collaboration between the government, healthcare institutions and the private sector is needed to create a solid and innovative digital ecosystem. With an integrated strategy and the right policy support, digital technology can be optimized to improve the effectiveness of health administration and the quality of service to the community in the digital era (21).</p>

## Discussion

In today's digital era, the use of information technology is essential to improve operational efficiency. However, not all hospitals have adequate technology infrastructure and this is one of the challenges in strategic management in the healthcare sector (22). Digital transformation refers to the process and strategy of using digital technology to rapidly change the way businesses operate and serve consumers. Digital transformation is indispensable in promoting medical care services to grow the business. Strategic thinking in this case means attracting new patients and offering quality healthcare services, thus ensuring their satisfaction and the likelihood of them recommending the healthcare facility further (23).

The implementation of digital transformation strategies in improving the quality of hospital services in Indonesia has become an increasingly relevant topic, especially in the context of technological developments and public needs for more efficient and accessible health services. The literature review shows various significant findings related to the benefits, strategies, and challenges in implementing digital transformation (15). In research (22) While the implementation of this strategy improves service quality, it faces significant challenges such as resistance to change, budget constraints, and difficulties integrating new technologies into existing systems.

Hospitals require change as a form of adaptation to environmental changes and demands for needs that change rapidly and dynamically, the use of information technology will increase operational efficiency and hospital resilience (24). In research Az-Zahra, Syabina, dkk. (2025) shows that the implementation of hospital management information systems has a positive impact and operational cost efficiency even though it takes time to implement a technology-based system.

Digital technology gives hospitals the ability to promote more effectively, provide relevant information, and interact real-time and personally with patients. This is not just about improving services, but also forming closer and more interactive relationships between healthcare providers and patients (25). In research Purwadhi, dkk. (2024) stated that the most effective marketing strategy is to use a platform or through social media, this is in line with the results of the study (25) which states Digital marketing provides a space for direct interaction between hospitals and patients, creating a personalized impression of service. This two-way communication allows patients to feel more engaged and valued, creating a more positive experience. Social media platforms such as Facebook, Twitter, and hospital websites are key vehicles in shaping patient perceptions of hospital credibility and professionalism.

Digital marketing is a marketing activity including branding that uses various media. For example, blogs, websites, e-mail, adwords, and various kinds of social media networks, in research (26) The application of digital marketing at RSIA Harapan Bunda Denpasar is still quite simple in this hospital using a marketing mix between Digital Marketing and Traditional Marketing. Traditional Marketing here is that RSIA Harapan Bunda conducts social services to the community, another thing that is done by RSIA Harapan Bunda is to collaborate with Private Practice Midwives which can later help increase patient visits. The results of this literature study show that the implementation of digital strategies in various hospitals is significant even though it has various challenges, but the implementation of this technology-based strategic management has a positive impact and efficiency in spending operational costs in hospitals.

## **Conclusion**

The process of digitalization has become a crucial element in the development of hospital strategic management today, especially after the COVID-19 pandemic that accelerated the implementation of health technology in Indonesia. Various innovations, such as the Hospital Management Information System (SIMRS), electronic medical records (RME), telemedicine, and artificial intelligence (AI), contribute to improving operational efficiency, service quality, and faster and wider service accessibility. The success in implementing these technologies shows that digitalization has significant potential in supporting the overall performance of hospitals.

However, digital transformation also faces various challenges both in terms of structural and technical aspects. Obstacles such as unevenly developed infrastructure, low digital literacy, and unoptimized regulations are still the main obstacles. To overcome these problems, hospitals need to implement more flexible strategies by strengthening governance, conducting training for human resources, and conducting continuous system evaluation. Methods such as Lean Management, PDCA, and digital marketing have proven effective in improving efficiency and competitiveness. In the context of the uncertain VUCA era, combining technological innovation with ethical and sustainability principles is essential to building a robust and responsive health system.

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