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PRIORITY DIRECTIONS FOR DEVELOPING INTEGRATION WITH THE HEALTHCARE 5.0 CONCEPT IN THE DIGITAL ECONOMY

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Abstract

This thesis examines the priority directions for integrating the Healthcare 5.0 concept into healthcare systems in the digital and green economy. It shows how artificial intelligence, big data analytics, the Internet of Medical Things, 6G, blockchain and remote medical services raise both the quality of care and the economic efficiency of medical institutions. Five priority directions are systematized, a conceptual integration model is proposed, and practical recommendations for implementation are formulated.

Keywords: Healthcare 5.0, Industry 5.0, digital economy, green economy, artificial intelligence, big data, Internet of Medical Things (IoMT), telemedicine, blockchain, personalized medicine, economic efficiency.

Introduction

The development of the digital economy has brought significant changes to many sectors worldwide, and medicine is no exception. With its rapidly changing nature, the digital economy creates both new opportunities and new challenges for the healthcare system. In a number of developed countries, digital medicine and digital healthcare are no longer a prospect for the future but a requirement of today.



Integrating the Healthcare 5.0 concept in the context of the digital and green economy means creating a human-centered, sustainable and environmentally clean medical ecosystem. Healthcare 5.0 combines the most advanced digital technologies of industry, such as artificial intelligence (AI), 6G and the Internet of Things (IoT), with green technologies that save resources and reduce the environmental burden [1]. Based on the principles of Industry 5.0, the concept gives priority not only to AI, Big Data and IoT, but also to harmonious collaboration between people (doctors and patients) and technology [2].

The purpose of this thesis is to analyze the importance of the priority directions for developing integration with the Healthcare 5.0 concept in the digital economy, and to examine how the use of artificial intelligence, big data analytics and remote medical services in healthcare systems affects economic efficiency.

Main Part

Today, the priority directions for developing integration with the Healthcare 5.0 concept ensure not only the provision of high-quality services to patients but also an increase in the economic efficiency of healthcare systems. Artificial intelligence, big data analytics and blockchain technologies make it possible to organize management in the medical sector in an efficient and optimized way: their effective application optimizes the operations of medical institutions, improves the quality of services and reduces costs. At the same time, digitalizing the healthcare system is not simply a matter of converting paper documents into electronic form. It means providing patients with fast, high-quality services, storing medical data securely and increasing the efficiency of doctors' work [1].

The basic digital infrastructure on which Healthcare 5.0 integration is built includes the following elements [3]:

• electronic medical records;

• online queuing and appointment systems;
• electronic exchange of laboratory results;
• a unified database of medical data;
• reliable statistical data for analysis and management.

On this foundation, integration with the Healthcare 5.0 concept transforms the medical sector into a human-centered, technologically highly integrated and economically efficient system. The conceptual logic of this transformation is shown in Figure 1: digital and green technologies, combined with collaboration between doctors, patients and intelligent systems, are channelled through five priority directions toward three groups of outcomes — quality of care, economic efficiency and sustainability.

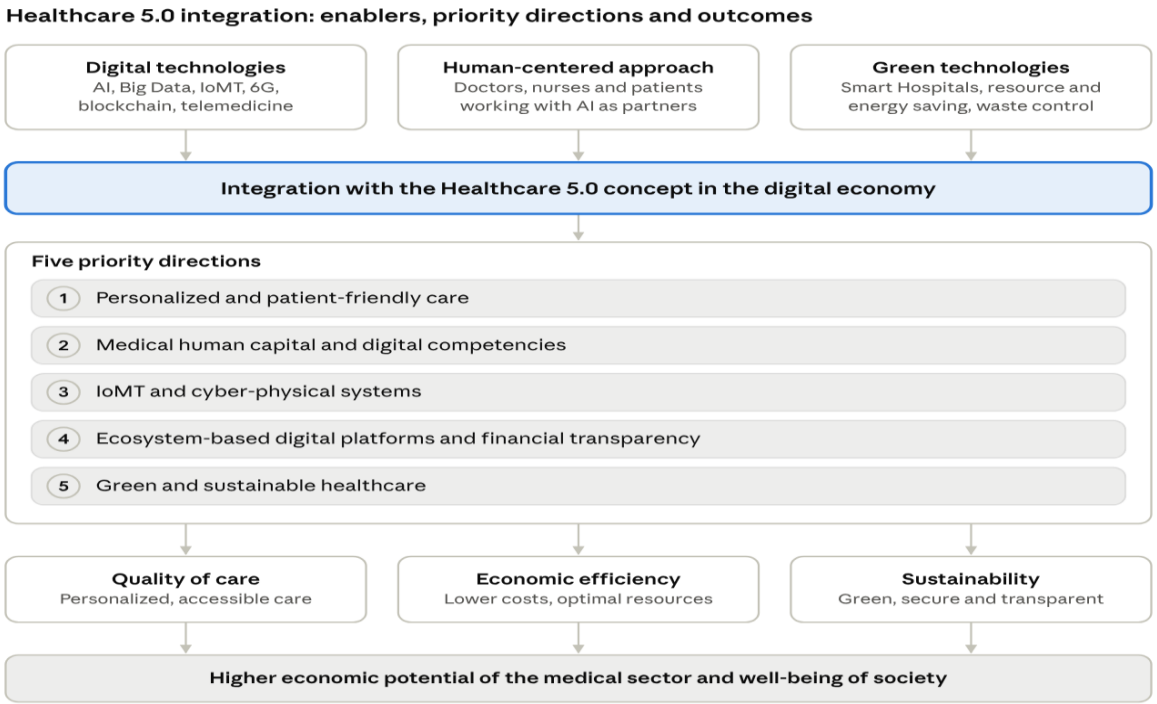


Figure 1 · conceptual model of Healthcare 5.0 integration



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Figure 1. Conceptual model of integration with the Healthcare 5.0 concept in the digital economy (developed by the author)

The main priority directions for developing this integration are as follows.

1. Personalized and patient-friendly care (Value-Based & Personalized Healthcare). Predictive medicine uses Big Data and AI to analyze a patient's genetic data, lifestyle and medical history in order to organize disease prevention on an individual basis. This supports the transition to the "Health Preservation" model: a shift from an economy of treatment to a model focused on disease prevention and digital monitoring of a healthy lifestyle.

2. Developing medical human capital and digital competencies. Continuous modular education replaces outdated methods of training medical personnel with continuous professional development that covers digital skills: working with AI tools, robotic surgical assistants and telemedicine. Cognitive collaboration means training doctors to work with AI systems not as competitors but as cooperative partners that improve diagnostic accuracy. Nursing staff, whose role in managing service delivery in medical institutions is steadily growing, form an equally important part of this human capital [4].

3. Integration of the IoMT (Internet of Medical Things) and cyber-physical systems. Wearables such as smartwatches, biosensors and implants make it possible to monitor a patient's condition remotely in real time (24/7) and to send an automatic alert to the hospital in emergencies [2]. Telemedicine 5.0 adds real-time multidisciplinary consultations with specialists anywhere in the world through remote diagnostics and digital holograms.

4. Ecosystem-based digital platforms and financial transparency. A unified national medical data platform integrates the patient's electronic health record (EHR) openly and securely, on a blockchain basis, for all public and private

hospitals, pharmacies and insurance companies. Digital insurance and financing allow the guaranteed volume of medical services to be funded directly through automated systems, with cost accounting fully digitalized.

5. Green and Sustainable Healthcare. Environmental resource management covers smart management of energy and resources in hospitals (Smart Hospitals) and digital control over the disposal of medical waste. Economic efficiency is achieved by optimizing logistics and the pharmaceutical supply chain with AI, which reduces unnecessary costs and allocates resources properly to the regions in need.

Table 1 systematizes these directions together with their enabling technologies and expected effects.

Table 1. Priority directions for developing integration with the Healthcare 5.0 concept

No.	Priority direction	Key instruments	Enabling technologies	Expected effect
1	Personalized and patient-friendly care	Predictive medicine; "Health Preservation" model	Big Data, AI, genetic data analytics	Individual prevention; lower treatment costs
2	Medical human capital and digital competencies	Continuous modular education; cognitive collaboration	AI tools, robotic surgical assistants, telemedicine	Higher diagnostic accuracy; digitally skilled staff
3	IoMT and cyber-physical systems	24/7 remote monitoring; Telemedicine 5.0	Wearables, biosensors, implants, 6G, digital holograms	Rapid emergency response; access to specialists worldwide
4	Ecosystem-based platforms and financial transparency	Unified national medical data platform; digital insurance and financing	EHR, blockchain, automated payment systems	Secure data exchange; transparent use of funds
5	Green and sustainable healthcare	Smart Hospitals; digital control of medical waste; AI-optimized supply chain	IoT sensors, AI-based logistics	Energy and resource savings; targeted regional allocation

Source: compiled by the author based on [1–4].

International experience confirms the practical value of these directions. In Germany, Sweden and Japan, the use of AI in the healthcare system and fast, effective care through remote medical services are widespread, while Singapore has improved the quality of medical services and reduced costs by introducing big data analytics. These cases demonstrate effective ways of modernizing management in the medical sector [4].

Integration with Healthcare 5.0 is essential for increasing the economic potential of the healthcare system: it allows the resources of medical institutions to be allocated optimally, creates efficient management processes and makes maximum use of available opportunities [3]. Digital platforms, for example, establish communication with patients and offer them personalized treatment plans, which makes services more effective for patients and the system as a whole more economical. AI and big data analytics simplify diagnosis and treatment: AI supports the early detection of oncological diseases and treatment prognoses, while large medical databases help create individual treatment plans, identify the regions with the greatest needs and optimize services overall.

Digital diagnostic and treatment systems, remote medical consultations, robotization and AI-based software significantly improve the patient service system. They also facilitate data analysis and enable management decisions to be made quickly and effectively. As a result, medical institutions reduce their costs while improving the quality of their services, and management systems are renewed in every field of medicine.

Ensuring the security and confidentiality of medical data is of great importance in this process. Medical data are highly sensitive, and the need to protect them grows with every connected device [2]. Blockchain technologies help create secure systems for transmitting and storing medical data, while modern encryption is needed to keep data secure during transmission [1].

Digital medical platforms make it possible to build large databases on patient treatment and health monitoring, and the data collected help institutions optimize their activities. Electronic health records store and analyze all patient-related information in one place, where medical staff can easily use it. The management of the medical system therefore becomes much more efficient, which in turn increases its economic potential.

Finally, integration increases the financial efficiency of medical institutions. Innovative technologies are needed to manage financial resources effectively, reduce costs and increase revenues. Digital systems can set and optimize the prices of medical services automatically, and new methods of financial resource management help institutions control costs, keep them at the required level and improve the quality of services. Such innovative management mechanisms raise the economic potential of the medical sector and ensure its sustainable development [3].

Conclusion and Recommendations

The study shows that integration with the Healthcare 5.0 concept plays a major role in increasing the economic potential of the medical sector in the digital economy. It turns healthcare into a human-centered, technologically integrated and economically efficient system in which AI, big data, IoMT, 6G and blockchain work in harmony with doctors, patients and green technologies. This integration will continue to develop: the further growth of the digital economy and the effective application of new technologies will allow management in the medical sector to be optimized even further. Its effect extends beyond medicine, since a more efficient healthcare system, optimal use of resources and better services contribute to economic growth and the overall well-being of society.

Based on the analysis, the following recommendations are proposed:

1. Create a unified national medical data platform on a blockchain basis that links the EHRs of public and private hospitals, pharmacies and insurance companies, supported by common standards for data exchange and encryption.
2. Introduce continuous modular education for doctors and nurses covering AI tools, robotic surgical assistants and telemedicine, and build cognitive collaboration between medical staff and AI into clinical practice.
3. Expand IoMT-based 24/7 remote monitoring and Telemedicine 5.0 services, giving priority to patients with chronic diseases and to remote regions.
4. Move to digital insurance and financing of the guaranteed volume of medical services, with automated pricing and fully digital cost accounting.
5. Adopt Smart Hospital and green healthcare standards: energy and resource management, digital control of medical waste disposal and AI-optimized pharmaceutical logistics.

References

1. Younesi A., Oustad E., Ansari M., Fahringer T., Buyya R. HealthCare 5.0: An industry 5.0 perspective for next-generation medical systems with synergistic integration of IoT, AI, and 6G // Internet of Things. – 2026. – Vol. 35. – Article 101815. – DOI: 10.1016/j.iot.2025.101815.
2. Mbunge E., Muchemwa B., Jiyane S., Batani J. Sensors and healthcare 5.0: transformative shift in virtual care through emerging digital health technologies // Global Health Journal. – 2021. – Vol. 5, No. 4. – P. 169–177. – DOI: 10.1016/j.glohj.2021.11.008.
3. Ibraimov Q. Innovative management mechanism for increasing economic potential in the medical sector in the digital economy // Central Asian Journal of Academic Research. – 2025. – Vol. 3, No. 4. – P. 49–52. – DOI: 10.5281/zenodo.15321613 (in Uzbek).

4. Parpiyeva M.M. The role of nurses in managing service delivery in medical institutions in the economy // International scientific journal "Interpretation and Researches". – ISSN 2181-4181. – 2026. – Vol. 1, Issue 8(80). – P. 220–231 (in Uzbek).