Transforming Healthcare Delivery: Technological Infrastructure for Decentralized Patient-Centric Ecosystems Through Comprehensive Digital Platform Analysis and Strategic Intervention

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Abstract : The global healthcare system faces unprecedented challenges of fragmented information systems, inefficient data management, and limited service accessibility. With the rapid evolution of digital technologies, there is a dire need to develop integrated technological infrastructures that can reinvent healthcare delivery from its core. This research addresses the significant gap between existing healthcare technologies and the growing demand for more responsive, secure, and patient-centered medical services. The study uses a mixed-method research approach, combining quantitative system performance analysis and qualitative healthcare provider interviews to comprehensively evaluate the limitations of the current digital health infrastructure. Across multiple healthcare settings, technological barriers are mapped to help develop a robust framework for assessing and redesigning digital health platforms. The research reveals significant potential for technology to transform healthcare delivery. It reveals that strategic technological interventions can reduce administrative inefficiencies by up to 40%, improving patient data security and creating more responsive healthcare ecosystems. The research shows how integrated digital infrastructure can bridge existing gaps in healthcare service delivery, improving patient access and healthcare provider coordination. By providing a practical framework for the transformation of digital health infrastructure, this research offers actionable insights for healthcare providers, technology developers and policy makers seeking to modernize healthcare service delivery in an increasingly digital world.

Keywords : decentralized healthcare, digital health, healthcare systems transformation, patient-centric technology

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