

Chapter 12

Maturity of Healthcare IS/IT Systems

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ABSTRACT

The use of information systems and technology (IS/IT) in healthcare has been recognized as crucial for improving the efficiency, cost-effectiveness, quality, and safety of medical care delivery. IS/IT has the potential to enhance individual health outcomes and provider performance by delivering better quality care, achieving cost savings, and increasing patient involvement in their own health. Two major drivers have spurred IS/IT investments in healthcare: the rapidly increasing burden of chronic diseases, with costs growing significantly, and the recognition of the need for substantial improvements in the quality and safety of healthcare delivery. Maturity models (MM) are based on the premise that people, organizations, functional areas, and processes evolve through a development process, progressing towards a more advanced state of maturity by passing through distinct levels. The application of MM in healthcare offers significant opportunities to enhance information and knowledge management. This paper summarizes some of the recent developments in this area.

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INTRODUCTION

In the digital era, citizens expect modern public services to adhere to several key principles, including the use of a single-entry point for related services, one-time data or document submission, transparency in processes, effective use of public data, and strong data security protection (Pamungkas et al., 2019). The development of electronic healthcare services poses challenges related to the effective collaboration of systems and stakeholders within a highly regulated environment (Kouroubali et al., 2019). In nearly every industry, organizations invest significantly in Information Systems (IS) and Information Technology (IT) with the expectation of achieving substantial benefits post-implementation (Gomes & Romão, 2015). However, despite these considerable investments, the anticipated benefits often remain ambiguous or contradictory (Ward & Daniels, 2012). The linkage between IS/IT investments and enhancements in organizational performance has been extensively debated (Melville et al., 2004). While numerous studies affirm the operational and strategic significance of IS/IT (Aral et al., 2006); Han, Chang, & Hahn, 2011; Ramirez, Melville, & Lawler, 2010), the precise causal relationship between IS/IT investments and tangible business value is still not fully clarified. Strategic management is becoming increasingly important for sustainable management in healthcare (Huebner & Flessa, 2022). Hospitals around the world are implementing ambitious digital transformation programs as part of broader initiatives to build digitally advanced healthcare systems. However, there is still no consensus on the best approach to define and evaluate digital excellence in hospitals (Krasuska et al., 2020).

In the healthcare sector, the potential of IS/IT to transform methods and processes is significant, offering improvements in patient care, operational performance, cost efficiency, and patient engagement (Buntin et al., 2011; Cleven et al., 2016).

The World Health Organization defines social determinants of health as the conditions in which people are born, grow, work, live, and age, as well as the broader forces and systems shaping these conditions. These determinants encompass factors such as socioeconomic status, education, the neighbourhood and physical environment, employment, social support networks, and access to healthcare. The influence of the social environment and structural barriers to accessing care and supportive resources has shifted attention towards community-level effects, with information gathered from various spatial data products. These factors are sometimes referred to as social and environmental determinants of health to highlight the critical role of the environment [10]. In the healthcare sector, maturity models help address the complexities and extensive needs of healthcare systems (Chong et al., 2020; Liu et al., 2021). The public health system faces significant challenges due to rising costs, constrained budgets, and insufficient workforce distribution (Mishra & Sharma, 2022) to enhance process efficiency and demonstrate the quality of care (Neumann

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