Chapter 5
Digital Transformation Leadership for Smart Healthcare Organizations: House of Success Model

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ABSTRACT

The digital transformation has revolutionized the contexts of healthcare organizations in all aspects, and those hospitals that tend to create a smart digital environment are require to perceive vital factors of digital transformation. The author has created a framework called "House of Success" Model to elaborate on the significant organizational factors contributing to developing a smart healthcare organization in the digital era. This model consists of digital transformation, as the foundation of the house; quadruple aims, as the roof of the house and the ultimate goal of the transformation; and leadership and management, as the pillars of the house. Moreover, the house of success model has four rooms including change management and change leadership, people leadership, digital technology leadership, and the global partnership that resulted in building up a prosperous digital transformation outlook toward sustainable effectiveness development.

INTRODUCTION

The digital era generated by cutting-edge technologies and manifested in Artificial Intelligence (AI), Big Data, IoT, Cloud Computing, robotics, wearables, mobile computing, and virtual reality. The internet revolution has opened new doors for networking, decision making, human-human communication, and human-machine interaction that result in fundamental changes in many aspects such as lifestyle, businesses, trading, and healthcare. All industries, as well as the healthcare industry, have experienced new challenges and opportunities to adopt digital services and adapt to fast pacing changes.

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In healthcare, digital technologies have changed the approaches of healthcare services, healthcare deliveries, disease management, and population health. The statistical reports have revealed that the digital market is dramatically increasing in the medical field. Dow Jones Institutional News (2016) reported that 77% of executive leaders put digital transformation in the top of their organizations priorities; they have broken down the budget to invest in Big Data and analytical technologies (58%), mobile and digital computing (36%), and SAAS (Software As A Service) (29%). Moreover, Faddis (2018) stated that the Internet of Things would exceed $136 billion in the medical field, and spending in digital transformation will reach $2.1 trillion by 2021. The global digital transformation valued $150.50 billion in 2015, and it will reach approximately $431.71 billion by 2021, and also, the hospital Artificial Intelligence market was evaluated at around $19 billion in 2016, and it is expected to reach $50.23 billion worldwide by 2023 (NewsRx, 2019b; Newswire, 2016).

Expectingly, digital technologies create productivity and dynamic in operation and process of healthcare, including quality improvement, accessibility, and cost-effectiveness as well as medical error reduction, performance improvement, and decision support development (Bowersox, Closs, & Drayer, 2005; Kane, 2015; Schwarzmüller, Brosi, Duman, & Welpe, 2018). The University College London Hospital (2019a) reports that utilizing the artificial intelligence and computer aid diagnosis systems in colonoscopy have reduced the variation in performance and improve decision supports services to detect polyps. Massachusetts General Hospital (2019b) defined AI applications as a potential solution in surgical practice and medical complex problems. Moreover, Royal Adelaide Hospital (2019) states, "The neural network was trained on images of 900 skulls virtually reconstructed from hospital CT scans. When tested on previously unseen images of skulls, the artificial neural network showed 95% accuracy at sex determination" [para1].

Despite all advancements, healthcare organizations are still in the primary stage of transforming into full smart healthcare. In the transformation journey, many hospitals have challenges to maximize the use of digital services due to the high cost of technologies, employees' resistance to change, regulations, complex processes, lack of leadership support, and disparities in healthcare deliveries (Agarwal, DesRoches, & Jha, 2010; Buvat et al., 2018; Faddis, 2018). Therefore, the transition from the traditional model of hospitals to modern medical centers is a sophisticated journey that must be structured in a conceptual model. This transition recalls a beautiful metaphor of caterpillar's journey toward turning into a beautiful butterfly shown in Figure 1 that takes time and many efforts to obtain successful outcomes. For elaborating significant parts of healthcare transformation, the author has structured a model called "*House of Success*."

BACKGROUND

Digital transformation phenomena in healthcare have created favorable and unfavorable consequences for healthcare organizations. Many hospitals are endeavoring to establish digital health technologies to stay competitive in the digital arena. However, there is a lack of a guide that enlightens the road map of hospitals toward uncovering the essential organizational factors in establishing smart healthcare. This research is attempting to elaborate on the significant factors contributing to digital transformation, including people, change, technology, leadership, and partnership to achieve Quadruple Aims of healthcare. This research is an in-depth literature review, monitoring the medical centers' approaches in embracing the digital changes, exploration of healthcare strategies in establishing digital health, and