Digital Transformation Strategies for Healthcare Providers: Perspectives from Senior Leadership

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Kaushik Ghosh
Lamar University
kghosh@lamar.edu

Michael Dohan
Lakehead University
msdohan@lakeheadu.ca

Hareesh Veldandi
AES Group
veldandi@gmail.com

Abstract

Healthcare costs in the US and Canada are rising at an alarming rate. Digital transformation, defined as digitally enabled strategic undertaking is crucial to healthcare organizations to improve patient outcomes and reduce costs. There is lack of understanding in prior research on the key enablers of digital transformation of healthcare providers. This project attempts to fill this gap. The study intends to analyze data from interviews of senior leaders from various healthcare providers based in the US and Canada to exemplify the drivers of digital transformation.

Keywords

Digital Transformation, Strategy, Healthcare, Technology

Introduction

Organizations across the world are facing difficult challenges in the new digital age to remain competitive (Hess et al. 2016). With customer expectations changing, companies need to re-invent their business model to remain relevant and sustain growth. Otherwise, they could become defunct – for example, Blockbuster continued to conduct business the ‘old’ way, and the demands of digital era caught up with it with the arrival of Netflix.

Most scholars (for example. Kane et al. 2015; Hanelt et al. 2015) believe that sustained competitive advantage can only occur with innovation and strategic change enabled by digital technology. Digital technologies are influencing every walk of peoples’ lives - the way we live, communicate and interact with each other, utilize services and products, and work (Hanelt et al. 2015). Digital transformation is defined as the modifications “…digital technologies can bring about in a company’s business model, which result in changed products or organizational structures or in the automation of processes” (Hess et al 2016, p.124). It is fundamentally “…not about technology but about strategy…” (Kane et al. 2015, p. 82). Although it may require upgrading the information technology infrastructure, more important advancements are needed in strategic thinking.

Digital transformation is a top strategic priority for most businesses today (Sebastian et al. 2017). The primary focus of digital transformation is how digital technologies can drive strategic contributions to business performance, rather than simply be “aligned but essentially subordinate” (Bharadwaj et al., 2013, p.472) to business strategy. The key question business leaders need to respond to is - how to incorporate digital transformation and use it as a means for competitive advantage (Hess et al. 2016). Although theory on the topic is developing and therefore conflicting at times, a few important points currently arise from the literature (Morakanyane et al. 2017). First, in order to capture the fact that firms
and technology both evolve with time, they propose that digital transformation should be an “evolutionary process” that brings about a “radical change” to organizations. Second, digital transformation is driven by a digital organizational culture as well as a digital technology infrastructure that creates opportunities for transformation. Third, the value created by digital transformation could be tangible benefits such as operational/cost efficiency and improved customer experience, as well the intangible benefits to business models, strategic plans, and competitiveness. Finally, the areas, which experience the key impacts of digital transformation, focus on the business model, customer experience and operational processes.

Industry leaders are using analytics, mobility, social media and smart embedded devices to improve customer relationships, increase operational efficiency, and change internal processes. However, most organizations have ways to go to achieve successful digital transformation (Hanelt et al. 2015). The key to digital transformation is to create a vision to drive change to generate a new business model. This will lead to improved performance and create value for customers. The argument is that digital transformation is mainly a ‘management and people’ challenge rather than a technology one.

**Motivation**

In 2015, approximately $3.2 trillion was spent on healthcare in the United States alone, and by 2020, it is estimated that healthcare expenditures will further increase (Emanuel 2016). Healthcare lags behind other industries (such as retail, banking, automotive) in the way it delivers service to its customers (patients); in the present day, patients seek more ‘power and control’ – for example, they prefer a wider choice of provider(s) and line of treatment (Gupta 2016). However, the longstanding healthcare delivery business model does not offer such options (Ghosh et al. 2014). According to some (for example, Emanuel 2016), strategic changes enabled by digital technology can allow healthcare organizations to re-shape their business models and improve the patient experience. As such, digital transformation in healthcare emphasizes strategic endeavors enabled by emerging digital technologies to improve increased access to patient care and enhance patient outcomes (Gupta 2016).

Although case studies and surveys have been undertaken to identify the key enablers of digital transformation in industries such as retail and banking, there is limited research on understanding the key strategic drivers of digital transformation for entities in the healthcare value chain, such as healthcare providers, payers, and pharmacies. This may be partly due to the limited collaboration between scholars and practitioners. Academics focus on developing theoretical models of the new digital era. Whereas, healthcare managers seem to be chiefly concerned with obtaining practical solutions to real business problems.

The focus of this study is to understand the strategic drivers that propel digital transformation in healthcare provider settings to improve patient (customer) experience and outcomes. The choice of the healthcare provider is obvious; these are entities that interact with patients, and are at the forefront of healthcare delivery to improve patient access, engagement, and experience.

**Theoretical Development for Digital Transformation in Healthcare**

This research will present and develop a model that conceptualizes digital transformation in healthcare, and this is the only known study with this purpose. This framework will adapt from the Digital Transformation Framework as prescribed in Hess et al. (2016). This preliminary model was originally based on analysis of digital transformation in German media companies, yet our research seeks to adapt it for the healthcare industry. Our proposed framework is comprised of four interrelated dimensions: use of technologies; changes in value creation; structural changes; and financial aspects.

**Use of Technologies**

The use of technologies dimension concerns the attitudes towards adopting technologies and the ability to exploit these technologies to reach their strategic goals (Hess et al., 2016; Matt et al., 2015). This dimension should capture the degree to which a firm considers technology as either an enabler or supporter of strategic goals. Firms that consider technology as an enabler would look for new opportunities in their current technology. Whereas others may see technology as something that will support previously defined business objectives. This dimension also encapsulates the degree to which
firms prefer to adopt established versus newer technologies, or perhaps they are innovators in the technologies that they develop themselves and bring to market.

**Changes in Value Creation**

The use of technology should entail change in the way value is created by the firm, related to the expanded capabilities of products or services already provided by the firm (Hess et al., 2016; Matt et al., 2015). This value can be thought of as the diversification that the firm undergoes beyond their “analog” offerings. In a business environment, this may translate to the business scope of the firm, expansion into other markets, or addressing a new customer need. In healthcare, this may transform into the development of new service delivery models (for example, Bigham et al., 2013), new technologies to interface with the patient (for example, Wilson, 2008), or measures taken to reduce waste and costs (for example, Berwick et al., 2012).

**Structural Changes**

Structural changes may be required to the firm to allow for new value-creating activities that are enabled by the new technologies (Hess et al., 2016; Matt et al., 2015). These changes may take the form of augmenting or developing new organizational hierarchies, business processes, and acquiring new skills or competencies. This dimension also concerns the degree to which digital transformation is integrated within functions in the existing organizational structure, or if it is kept separate from the core business. Different configurations of the above are appropriate for differing organizations, and there is not one ideal form.

**Financial Attributes**

Financial aspects drive all three other dimensions. This captures the urgency to induce digital transformation within the firm (Hess et al., 2016; Matt et al., 2015). We also acknowledge that, in healthcare, there may be more than just financial pressures to apply technology, including desire to increase patient safety (for example, Kaushal et al., 2001), satisfaction (for example, Or & Karsh, 2009), or other healthcare-related pressures. As well, this dimension captures the ability to finance the change (Hess et al., 2016; Matt et al., 2015).

**Proposed Research Methodology**

Digital transformation starts at the top of an organization’s hierarchy and pervades through it—the senior leadership’s support and encouragement is essential to propel the initiative to achieve desired outcomes. Depending on an organizations circumstances (its core business model, location it operates, type of customers, type of products and/or service offerings), ideally a combination of C-level executives could ‘spearhead’ the transformation (Kane et al. 2015).

According to Gill et al. (2008), there is a variety of methods of data collection in qualitative research, including observations, textual or visual analysis and interviews. The most common methods used, particularly in healthcare qualitative research, are interviews and focus groups. Following the norms outlined in prior studies relevant to qualitative research, this study will include in-depth semi-structured interviews with senior leaders to develop the key strategic drivers of digital transformation phenomenon in healthcare provider organizations (for example, hospitals, clinics, home health agencies).

Following the guidelines outlined in extant research (for example, Miles and Huberman, 1984), the list of preliminary interview questions was adopted from Hess et al. 2016. Next, pre-interviews with a focus group were conducted to obtain feedback on how to modify these questions and contextualize them to healthcare settings. The focus group consisted of healthcare executives from healthcare organizations in United States and Canada. Following the pre-interviews, the research team evaluated the feedback from the focus group and after concurrence, reformed the questions. Some questions were also added to the existing set, based on the inputs from the focus group. The final questionnaire was hence developed.
Future Research Directions

Efforts are currently underway to contact of 25 to 30 individuals that serve leadership roles in various healthcare organizations, including hospitals and large doctor networks to conduct in-person interviews. To offer balanced perspectives, some interviewees targeted will be leaders such as CEOs, line-of-business managers, or Chief Operating Officers, while some will be technology leaders (such as Chief Information Officers, Chief Digital Officers, Senior IT Directors), or a suitable designate. These leaders will be based in the US in different locations including (but not limited to), Dallas, Houston, Denver, Washington DC, and a few cities in Canada. Interviewing individuals from two different healthcare systems (US and Canada) will provide a diverse perspective. Ethics has been obtained from both Canadian and American institutions.

After the interviews are completed, the data will be transcribed. Qualitative analysis of the transcribed data will be performed using conventional content analysis techniques prescribed in prior research (Fereday & Muir-Cochrane, 2006; Staggers et al. 2009). A coding scheme (code book) will be generated after review of extant literature relevant to strategic transformation and digital innovation. The code book generated will provide the guidelines to extract common sub-themes and themes related to factors that enable digital transformation in healthcare provider settings. Demographic variables including State/Province, Country, Type of Organization, Private/Public, For-Profit/Non-Profit, Teaching Hospitals versus Non-Teaching, will be collected, and subsequently used to compare differences between these subgroups in the resultant themes. nVivo version 11 (a very widely used content analysis tool) will be used to conduct the analysis of the transcribed interview data.

A subsequent (to the one described in this proposal) research project will be undertaken to develop a survey instrument based on the themes (that described the strategies for digital transformation in provider settings) which emerged from the analysis of the interview data. The survey instrument will provide a tool to researchers (and practitioners) to quantify the role of various strategic drivers of successful digital transformation in the healthcare context.

REFERENCES


