Chapter 19
An Empirical Study of Patient Willingness to Use Self-Service Technologies in the Healthcare Context

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ABSTRACT
Self-Service Technologies (SSTs) enable consumers to produce services independent of direct employee involvement. The successful introduction of SSTs into healthcare and the realisation of their benefits will however lie in their acceptance by patients. This chapter outlines the advantages and disadvantages of one type of SST, namely self-service hospital kiosks, and presents results of an empirical study carried out on the willingness of patients to use them. Data was collected from 192 patients attending two private healthcare clinics in Johannesburg, South Africa. Results show that patients are most willing to use kiosk technologies for administrative rather than diagnostic or treatment-related services. Moreover, the authors find that technology anxiety, self-efficacy beliefs, trust, and need for interaction are important antecedents to the formulation of performance and effort expectancies and the willingness of patients to use kiosk technology. Results have implications for healthcare providers looking to improve the success of their SST applications.

INTRODUCTION
Information technologies are recognized as an essential component of health system reform and are increasingly being embedded into strategies for a sustainable, accessible, and high quality health system (Tsiknakis & Kouroubali, 2009). While a good deal of effort has been focused on understanding the adoption and impacts of clinician-oriented IT applications (e.g. Kaplan, 2001; Kaushal, Shojania & Bates, 2003; Poissant, Pereira, Tamblyn & Kawasumi, 2005; Prgomet, Georgiou & Westbrook, 2009) and the reaction of
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healthcare workers to IT inducted change (Ayatollahi, Bath & Goodcare, 2009; Timmons, 2003), patient readiness for an increasingly IT-enabled healthcare system has received less attention.

Yet, technology can enable patients to independently produce healthcare services and these may hold much promise. Self-Service Technologies (SSTs) have permeated numerous sectors of the economy. They are now common place in the banking, retail, hotel and airline industries and are enabling consumers to produce services independent of direct employee involvement.

Hoping to capture the benefits experienced in those other sectors, both public and private healthcare facilities are increasingly adding these technologies to their IT portfolios. Among these is the self-service hospital kiosk. These technologies hold much promise for improving hospital efficiency and service delivery and for improving patient outcomes. However, their successful introduction into healthcare and the realisation of their benefits will lie in their acceptance and use by patients.

If health consumers begin to engage with these technologies in a meaningful way, they have the potential to transform the healthcare experience (Warren et al., 2010). Yet, if patients are unable or unwilling to use these innovations they will fail to bring much needed improvements to health service delivery. We see this as a research problem in need of investigation.

The purpose of this chapter therefore is to understand patient readiness and willingness to use self-service kiosks within the healthcare process. The chapter first outlines the functionality of self-service kiosks in healthcare, and their advantages and disadvantages are discussed. Next, we present the empirical research study that we undertook to improve our understanding of patients’ willingness to use these technologies. The chapter concludes with recommendations for healthcare and technology providers along with directions for future research.

BACKGROUND

Healthcare providers are beginning to respond to consumer expectations for engaging with them through technology (Eysenbach, 2000). Much work is underway to enable consumers to make use of technologies to inter-alia schedule appointments, request prescription renewals, conduct electronic consultations and access their medical records (e.g. to review medical history, lab results, and treatment outcomes). Increasingly these self-service applications run on mobile devices and smart-phones facilitating anywhere-anytime access to health information (e.g. Oregon Health & Science University’s MyChart iPhone application1). In addition to the above, the implementation of self-service kiosks is gaining momentum. They are typically implemented on touch screen panels or in monitor-keyboard combinations within free-standing or housed units. They have been positioned in areas such as emergency rooms, outpatient clinics and numerous specialist facilities such as cancer treatment centres. Once integrated with other backend hospital and patient database systems, these kiosks from vendors such as NCR allow patients to maintain their personal information and medical insurance details, self-register and check-in for prearranged appointments, review appointment details, complete pre-assessment questionnaires, confirm future appointments, review physician order details, check out, and capture their patient reported outcome measures. Some solutions aim to assist more directly in self-diagnosis or in the patient triage and assessment process by allowing patients to provide details of symptoms, taking patient vital sign information or carrying out vision screening. Kiosks may even help in self-care and in the treatment process by prompting patients with questions such as whether they have had a flu shot or even dispensing prescribed medications via online connections to pharmacists. Another important kiosk function is the provision of maps or virtual tours of a healthcare centre to enable