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Building a Critical Mass of Users for Digital Healthcare Promotion Programs: A Teaching Case

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ABSTRACT

Despite recent technological advancements, the slow adoption pattern of digital healthcare promotion programs continues to be a major problem plaguing many healthcare organizations today. The historical teaching case study is indispensable in improving our understanding of the complex and multifaceted nature of contemporary digital healthcare promotion programs. This historical teaching case presents information about e-health, the e-commerce unit of a large multinational healthcare insurance company. The teaching case shows how despite e-health's ability to persuade a large registered base of users to trial its healthcare promotion programs, over 90% of these registrants discontinued use after a short trial period of using the technology. This historical teaching case focuses on the social challenges involved in persuading users to adopt and continue using e-health's major healthcare promotion innovation: an online nutrition center. Despite extensive promotions and the use of incentives, less than 10% of the user base adopted and continued to use this healthcare promotion innovation. The case reports on the discontinuance among digital healthcare promotion users despite the intensive efforts to retain them. Students and practitioners will gain insight into the key social challenges involved in achieving a critical mass of users for digital healthcare promotion innovations. The teaching case requires important decisions to be made by students and practitioners about present digital healthcare promotion programs by drawing on inferences from past digital healthcare promotion programs. Finally, this historical teaching case study makes a convincing case for the value of historical insights in informing present day challenges facing contemporary digital healthcare promotion programs.

KEYWORDS

Adoption, Electronic Health, Healthcare Informatics, Healthcare Promotion, Preventative Healthcare

INTRODUCTION TO DIGITAL HEALTHCARE PROMOTION PROGRAMS

As the global population rises and life expectancy rates around the world continue to increase due to advances in science and technology and improvements to socio-environmental conditions, healthcare budgets are facing enormous pressure. On the 21st of November 1986, the Ottawa Charter initiated the advocacy of health promotion to improve healthcare globally (WHO, 1986). Health promotion is

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based on the premise that healthcare cannot be the sole responsibility of the health sector and therefore seeks to provide patients with better control over their health through information, health education, and life enhancing skills (Eriksson & Lindström, 2008). The benefit of empowering patients is not limited to the cost reduction of healthcare, but is also a risk mitigation factor for disease as well as a health-enhancing strategy.

Over the years, ICT began to be integrated into health systems and services worldwide. During the 1990s, e-commerce emerged and enabled new ways to conduct transactions via the Internet. eHealth was also enabled by the Internet. The term eHealth refers to the use of information and communication technologies to improve health and the health care system (Oh, Rizo, Enkin & Jadad, 2005). The Internet refers to the globally connected network of computers. Although the term Internet is used interchangeably with World Wide Web or 'the Web', the World Wide Web refers to multimedia-based documents that can be accessed online, over the Internet (Lupton, 2014). This became known as the Web 1.0 era or the so-called brochure web era. The Web 1.0 era began rapidly in 1990s because of the availability of browsers with user-friendly graphical interfaces. The World Wide Web had become a valuable channel for accessing and seeking health information. Rapid improvement in communication, hardware and software technologies also led to new and better health service offerings via the Internet. By the early 2000s, there was a noticeable shift in the use of the web and the development of web-based applications. This was termed Web 2.0 and involves users creating, organizing, sharing, critiquing and updating content. Web 2.0 connects people and content in unique ways. Web 2.0 facilitates an 'architecture of participation' – a design that encourages user interaction, empowerment and community contributions. Popular Web 2.0 applications include Flickr, Wikipedia, Facebook, MySpace, Twitter and YouTube. By the mid-2000s, Healthcare 2.0 emerged to take advantage of the network of Web 2.0 applications and services delivered through the Web platform. Health 2.0 uses social networking sites, blogs, email list services, online communities, podcasts, search, tagging, videos, and wikis to personalize health care and to collaborate and promote health education (Lupton, 2014).

Recent advances in processor, memory, and disk storage capacity have made digital devices relatively inexpensive and access to online platforms have become more ubiquitous. Consequently, increasingly smaller digital devices from the personal computer to the tablet to smartphones to wearable computers are being been used in healthcare (Lupton, 2015). m-Health or mobile health is defined as the use of mobile devices, such as mobile phones, patient monitoring devices, personal digital assistants (PDAs), and other wireless devices to support health practices (Bert, Giacometti, Gualano & Siliquini, 2014). For example, tracking devices can be used to monitor a patient's calorie consumption, exercise and metabolic rate. These devices are being integrated with social media to provide support and motivation. Experts predict that the Web will evolve into Web 3.0 or the 'SemanticWeb' (Giustini, 2007). The Semantic Web aims to improve upon the meaningfulness of information on the Web thereby improving cooperation between digital devices, healthcare practitioners and patients.

Apart from the creation of digital content by healthcare users when they upload information to the Internet, sensors embedded in healthcare digital devices and physical healthcare environments are also generating massive data sets (Neves Stachyra, Rodrigues 2008; Panesar, 2019). These massive data sets are referred to as 'big data'. Cloud computing technologies are being used to facilitate the production, storage and sharing of these big data sets to provide digital healthcare solutions (Darwish, Hassanien, Elhoseny, Sangaiah & Muhammad, 2019). Artificial intelligence and machine learning are being used to uncover hidden connections and patterns in these massive data sets to provide evidence-based digital healthcare solutions (Panesar, 2019). Today's healthcare ICT ecosystem is much more complex and involves network providers, network operators, digital device suppliers, platform, content and applications providers, healthcare companies, health agencies, governments and patients (Fransman, 2007). The term 'digital' is now being employed to describe paper-based elements that have been transformed into digital formats, and the devices, communication networks and software applications that use these formats.