Toward a Better Understanding of the Assimilation of Telehealth Systems

JoachimJean-Jules, Université de Sherbrooke, Canada
Alain O. Villeneuve, Université de Sherbrooke, Canada

ABSTRACT

A number of healthcare authorities are considering bringing telehealth systems out of experimental settings into mainstream clinical care. As most literature on telehealth systems to date has focused on their adoption and their evaluation, more work is warranted to understand how telehealth systems can be assimilated and to identify factors that may facilitate or impinge onto this assimilation. Borrowing from institutional, structuration and organizational learning theories, we propose a conceptual model of the determinants relevant for the assimilation of telehealth systems in healthcare organizations. The result is summarized in eight conjectures and a conceptual model. This work not only goes beyond the common methods of analyzing and discussing telehealth systems with user acceptance models, but it also draws a strong link between the assimilation of technological innovations and their institutional context. We hope it will contribute to guide research and managerial actions directed toward integrating telehealth systems in the workplace. [Article copies are available for purchase from InfoSci-on-Demand.com]

Keywords: Assimilation; Information Technology Adoption; Social Cognition; Technology Appropriation; Telehealth; Web-Enabled Healthcare

INTRODUCTION

Many western countries have undertaken telehealth projects for providing healthcare services to underserved populations living in remote regions and low-cost specialty services to areas where full-time staffing is uneconomical.
The term telehealth is presently used to describe all possible variations of healthcare services using information and communications technology (ICT) such as tele-education, teleconsultation, and teletraining, among others.

Given the centrality of information technology in telehealth, many studies in information systems (IS) research have been devoted to telehealth systems. A close examination of these studies revealed three salient streams, namely 1) user acceptance/adoptions of telehealth systems (Mitchell, Mitchell and Disney, 1996; Hu and Chau, 1999; Cohn and Goodenough, 2002), 2) the characteristics of these systems (McKee et al., 1996), and 3) the effectiveness of telehealth systems compared to conventional face-to-face delivery in different medical specialties (Picolo et al., 2000; Nordal et al., 2001; Bishop et al., 2002). Although our knowledge has been enriched by such diversity, we need to go a step forward in order to consider the organizational assimilation of telehealth systems. The following reasons justify such an endeavor.

First, since telehealth programs have demonstrated clinical value and technical feasibility (Shore, Brooks and al., 2007; Duplantie, Gagnon and al., 2007; Putnam, 2007), they must move from experimental settings to the real world calling for adjustments to healthcare organization’s administrative and clinical routines (Saga and Zmud, 1994; Zucker, 1977) as well as into its work systems and technological configuration to account for its assimilation as a technological innovation (Kwon, 1987; Cooper and Zmud, 1990; Chatterjee and Segars, 2001; Keen and McDonald, 2000).

Second, innovation adoption is not always accompanied by widespread deployment (Fichman and Kemerer, 1999). For instance, Eveland and Tornatzky (1990) and Cooper and Zmud (1990) reported that new technology enjoying widespread adoption may fail to be widely deployed.

To be truly valuable, a technological innovation must be routinized and infused in the adopting organization’s operational or managerial work systems (Zmud and Apple, 1992). Consequently, to materialize the benefits of telehealth systems, we need to better understand the mechanisms through which their assimilation into administrative and clinical practices occurs. Little is known, however, about the process of telehealth systems assimilation and about assimilation enabling and impeding factors since most studies to date have focused on user acceptance and adoption little being said on what happens after the initial adoption decision has been taken.

This article attempts to add to our knowledge of assimilation of large-scale IS by developing a mixed determinants model of telehealth systems and is structured as follows. First, we explain the nature of telehealth systems, the concerns raised by their deployment and elicit on this basis the underlying mechanisms of their assimilation. Next, we develop the conceptual model by in-