Chapter 8.1
Toward a Better Understanding of the Assimilation of Telehealth Systems

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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.

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/ adoption 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 integrating insights from three influential theories: the sociocognitive theory of organizational learning, the institutional theory and the structuration theory. Then, we proceed with our contributions to both theory and practice. Finally, we conclude by indicating the future steps of this research.

THEORETICAL BACKGROUND

We first propose a conceptualization of telehealth system to identify its characteristics. We then cover the role and nature of the technological artifact and their articulation with the social and institutional contexts in which the systems and the adopting organization are embedded (Orlikowski and Iacono, 2001). Such a theorizing strategy ensures that the technological artifact is at the core of the model.

Understanding Telehealth Systems

Information technology systems for telehealth projects are large-scale systems linking two or more organizations and many categories of actors. Considerations about social context are essential to insure the success of systems deployment. An understanding of social relations, work structures, cultural factors and the organization's experience with IT are additional imperatives. Given the scope of telehealth information systems, decisions are far too numerous and technology is too diffuse and complex to be grasped by a single person's cognitive ability. Moreover, acquisition and deployment decisions of such systems are not generally situated within the discretionary power of a single member of the organization (Eveland and Tornatzky, 1990 p.

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