Chapter 5.29
Social Context for Mobile Computing Device Adoption and Diffusion:
A Proposed Research Model and Key Research Issues

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ABSTRACT

The purpose of this chapter is to explore and suggest how perceptions of the social context of an organization moderate the usage of an innovative technology. We propose a research model that is strongly grounded in theory and offer a number of associated propositions that can be used to investigate adoption and diffusion of mobile computing devices for business-to-business (B2B) interactions (including transactions and other informational exchanges). Mobile computing devices for B2B are treated as a technological innovation. An extension of existing adoption and diffusion models by considering the social contextual factors is necessary and appropriate in light of the fact that various aspects of the social context have been generally cited to be important in the introduction of new technologies. In particular, a micro-level analysis of this phenomenon for the introduction of new technologies is not common. Since the technological innovation that is considered here is very much in its nascent stages there may not as yet be a large body of users in a B2B context. Therefore, this provides a rich opportunity to conduct academic research. We expect this chapter to sow the seeds for extensive empirical research in the future.

INTRODUCTION

What causes individuals to adopt new information technologies (ITs)? How much influence do the perceptions of the social context of an organization have on the acceptance of new ITs? These questions are significant because systems that are not utilized will not result in expected efficiency and effectiveness gains (Agarwal & Prasad, 1999), and will end up as unproductive use of organizational resources. Academic research consequently has focused on the determinants of computer technology acceptance and utilization among users. Some of this research comes from the literature on adoption and diffusion of innovations (DOI), where an individual's perceptions about an innovation's attributes (e.g., compatibility, complexity, relative advantage, trialability, visibility) are posited to influence adoption behavior (Moore & Benbasat, 1991; Rogers, 2003). Another stream of research stems from the technology acceptance model (TAM), which has become widely accepted among IS researchers because of its parsimony and empirical support (Agarwal & Prasad, 1999; Davis, 1989; Davis, Bagozzi, & Warshaw, 1989; Hu, Chau, Sheng, & Tam, 1999; Jackson, Chow, & Leitch, 1997; Mathieson, 1991; Taylor & Todd, 1995; Venkatesh, 1999, 2000; Venkatesh & Davis, 1996, 2000; Venkatesh & Morris, 2000).

Individual differences indeed are believed to be very relevant to information system (IS) success (Zmud, 1979). Nelson (1990) also acknowledged the importance of individual differences in affecting the acceptance of new technologies. A variety of research has investigated differences in the perceptions of individuals when using TAM (Harrison & Rainer, 1992; Jackson et al., 1997; Venkatesh, 1999, 2000; Venkatesh & Morris, 2000); however, the perceptions and influences of the social context of an organization have not been widely examined in the literature. Hartwick and Barki (1994) suggest that it is imperative to examine the acceptance of new technologies with different user populations in different organizational contexts.

Although mobile computing devices have existed for several years, strategic applications of this technology are still in their infancy. Mobile computing devices (in the context of business-to-business—B2B) is treated as a technology innovation in this chapter due to their newness and short history. An investigation into the usage of mobile computing devices within a B2B context, which we define as two or more entities engaged within a business relationship, is of value because of its increasing popularity (March, Hevner, & Ram, 2000). As an emergent phenomenon, relatively modest academic literature has examined the nature of adoption and use of this technology. Mobile computing devices, which have been described as both ubiquitous (March et al., 2000) and nomadic (Lyytinen & Yoo, 2002a, 2002b), offer a stark difference from traditional, static computing environments. A good characterization of these differences is provided in Satyanarayanan (1996). New technology innovations typically require changes in users' existing operating procedures, knowledge bases, or organizational relationships (Van de Ven, 1986). Such innovations may even require users to develop new ways of classifying, examining, and understanding problems. The domain of mobile computing devices has the potential to become the dominant paradigm for future computing applications (March et al., 2000), and topics of such contemporary interest are recommended to be pursued in IS research (Benbasat & Zmud, 1999; Lyytinen, 1999).

The primary objective of this chapter is to examine whether and how perceptions of the social context of an organization moderate the adoption, use, and infusion[1] of mobile computing devices for B2B transactions. We extend TAM to include individuals' perceptions of the social context of their organization, which incorporates aspects of both culture and climate research as recommended in the literature (Denison, 1996; Moran & Volkwein, 1992). Aspects of the social context of an organization are suggested as having a significant role in the introduction of new

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