The Role of Appraisal in Adapting to Information Systems

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ABSTRACT

The benefits of new organizational information systems (IS) depend on the degree that users of the technology adapt by proactively changing themselves, their work routines, and even the technology itself in order to leverage its strategic capabilities. Scholars have recently proposed the Coping Model of User Adaptation (CMUA) as a useful theoretical lens for understanding individual adaptive responses to an IS; however, this nascent model has not yet received extensive empirical validation. Using survey data from a campus health center at a large public university, this study empirically examines and extends CMUA by exploring the relationship between IS appraisal and adaptive behaviors. Results show that user adaptation to IS depends on how it is appraised by users, with appraisal of the IS as a challenge being the strongest predictor of both problem-focused and emotion-focused adaptation. Implications for research and practice are discussed.

Keywords: Adaptation, Appraisal, Coping, Information Systems (IS), Post-Adoptive Behavior; Technology Acceptance, Use

INTRODUCTION

Organizations adopt information systems (IS) to improve efficiency, reduce errors, and enhance productivity. However, experience has shown that such benefits materialize only to the degree that users of the technology adapt by proactively changing themselves, their work routines, and even the technology itself in order to leverage its strategic capabilities. The importance of user adaptation to IS and its impact on IS success outcomes has been documented by several studies (e.g., Leonard-Barton, 1988; Majchrzak, Rice, Malhotra, King, & Ba, 2000; Tyre & Orlikowski, 1994); nevertheless, many aspects surrounding how and why adaptation unfolds at the individual level remain unclear. Because user adaptation is crucial to IS success, explaining how adaptation processes occur constitutes an important practical and theoretical challenge.

Scholars have recently proposed the Coping Model of User Adaptation (CMUA) as a useful theoretical lens for understanding individual adaptive responses to an IS (Beaudry & Pinsonneault, 2005b). Building on coping theory (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986; Lazarus & Folkman, 1984), CMUA describes the adaptive process in terms of coping stages, including appraisal of the IS and consequent adaptive behaviors undertaken in response to it. Because coping theory provides an established theoretical foun-
dation for understanding many types of individual responses to potentially stressful events, CMUA is a promising framework for studying and explaining users’ adaptive responses to new (and often stressful) workplace IS. However, CMUA has not yet undergone extensive empirical validation. Although Beaudry and Pinsonneault (2005b) illustrate the tenets of the model using qualitative case evidence from two IS implementations, they note the need for further testing in various IS contexts (p. 519).

The purpose of the current study is to examine the relationship between IS appraisal and adaptive behaviors as posited by CMUA. In doing so, we make two primary contributions. First, we empirically test a core component of CMUA, a necessary step toward establishing its utility for understanding user adaptation to IS. Though recent studies (e.g., Fadel & Brown, 2010) have utilized CMUA to examine antecedents of IS appraisal, the relationship between appraisal and adaptation has not been empirically explored. Second, we expand theoretically on CMUA by incorporating an additional type of appraisal, challenge appraisal that is rooted in coping theory but not explicitly included in CMUA. We believe that this more nuanced view of user adaptation will not only help managers better anticipate adaptive responses to IS, but will also help to foster adaptive responses that are most likely to produce desired IS outcomes.

THEORETICAL BACKGROUND

IS Implementation and User Adaptation

Research has shown that the most successful IS implementations are those in which the users of the technology adapt in order to take full advantage of its features (Chin & Marcolin, 2001; Jasperson, Carter, & Zmud, 2005; Leonard-Barton, 1988; Orlikowski, 1996; Tyre & Orlikowski, 1994, 1996). Researchers have studied temporal patterns of adaptation (e.g., Tyre & Orlikowski, 1994), adaptation behaviors (e.g., Beaudry & Pinsonneault, 2005b), and structural and performance impacts of adaptation (e.g., Desanctis & Poole, 1994; Majchrzak et al., 2000) using theories such as punctuated-equilibrium (Lassila & Brancheau, 1999; Orlikowski, 1996), adaptive structuration (DeSanctis & Poole, 1994; Korpelainen, Vartiainen, & Kira, 2010), and situated change (Orlikowski, 1996). Some of this work has investigated the degree to which a technology is changed during its adoption and implementation (Clark, 1987; Ives & Olson, 1984; Leonard-Barton, 1988; Rice & Rogers, 1980). Other studies have focused on how users’ perceptions and attitudes (e.g., Majchrzak et al., 2000), and the work system and organizational structure (e.g., Sokol, 1994; Tyre & Orlikowski, 1996) are adapted by the IS implementation.

In the late 1980s, Leonard-Barton (1988) observed that, up to that time, most studies of adaptation had focused exclusively on either how the technology could be adjusted to its environment or how the environment is shaped by the technology, prompting her to combine the two perspectives and propose a process of “mutual adaptation” (p. 253). Later studies have advanced the common theme that the adaptation process occurs as a process of reciprocal adjustment among three components: the user, the technology, and the work task (Beaudry & Pinsonneault, 2005b; Orlikowski, 1996). When a new IS is introduced, users may engage in adaptation behaviors targeted at each of these dimensions. For example, users may adapt the work task by modifying work routines and procedures. The IS may also be adapted to better fit the needs of users in particular situations. Finally, users may engage in behaviors directed at adapting themselves, such as attending training sessions or seeking additional knowledge through support documentation (Spitler, 2005).

While it is clear that users may engage a variety of adaptation behaviors, the literature has lacked a theoretical framework for understanding how and why adaptation behaviors occur. As Leonard-Barton (1988) points out, “adaptation does not necessarily occur in equal proportions to both technology and organization” (p. 253). In some cases, users may tend toward changing the technology to fit their current work tasks, while
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