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Technology Adaptation:
Capturing the Appropriation Dynamics of Web-Based Collaboration Support in a Project Team

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ABSTRACT

This research applies contributions from the social sciences to examine how organizations adapt information systems in a project team setting. Its main concern is to study the set of events and actions implicated in the institutionalization of an information system. The motivation for this research has been to address the following questions: why are well designed information systems so often not successfully adapted or used by organizations? How does the adaptation process affect and how is it affected by work context characteristics? In our research we are focusing on analyzing the adaptation process of a collaborative platform in a project team, in the context of the construction industry by applying adaptive structuration theory.

Keywords: adaptive structuration theory; collaborative technologies; project teams; technology adoption

INTRODUCTION

The adoption of information systems (IS) has been a pervasive topic in IS research (Lin et al., 2005). Core frameworks that explore the topic as an innovation adoption or innovation diffusion phenomenon, featured in the literature are: the Diffusion of Innovations (Rogers, 1983), the Theory of Reasoned Action (Ajzen & Fishbein, 1975) and the Theory of Planned Behavior (Ajzen, 1985; Taylor & Todd, 1995) which provide the theoretical basis for the Technology Acceptance Model

(Davis, Bagozzi & Warshaw, 1989). However, increasing evidence suggests that these "rational" frameworks neglect the realities of implementing technology innovations within organizations, especially when adoption decisions are made at the organizational, division, or workgroup levels (Wynekoop, 1992; Orlikowski, 1993; Fichman & Kemerer, 1997). Thus rather than fitting the conditions under which traditional models of innovation diffusion (Rogers, 1983) or technology acceptance (Davis et al., 1989) were created, the reality of IT innovation adoption and implementation within organizational settings may require alternative views to examine how people adapt advanced information technologies in the context of their work place (Orlikowski, 2000).

This study is concerned with a particular type of IS innovation, namely the adoption of collaborative technologies in project teams. Feldman and March (1981) note that technology plays a distinctive and interpersonal role in organizations. Susman et al. (2003) contend that the introduction of collaborative technology in the work place does not necessarily enhance intensive collaboration among project participants. In this line of reasoning, it is important to investigate the changes that the introduction of collaborative technologies brings to the work place and how these technologies are actually used by people. We adopt structurational theoretical concepts in order to reveal the technology-organization relationship and to better understand how the social structures embedded within the collaboration technology affect and are getting affected by work context characteristics. Several authors note that teamwork cannot be understood apart from the organizational context in which it is embedded (Ancona 1990; Mohran et al., 1995). For this purpose, we need to understand how humans act, view, reflect, accept or neglect the entrance of a new technology in the social context of their work place.

By adopting a structuration approach it is assumed that the adoption and use of a novel technology are not deterministic; technologies are structured by users in their context of use (Contractor & Eisenberg, 1990; Orlikowski, 1992; DeSanctis & Poole, 1994). In our research, the context of use is distributed project teams which are defined as groups of people who interact through independent tasks guided by a common purpose, and who collaborate across space, time and organizational boundaries primarily through electronic means (Maznevski & Chudoba, 2000). In line with other authors (Clark et al., 1997; Ekstedt et al., 1999) we define project teams as structures of independently managed individuals, often geographically distributed, that possess complementary capabilities and who cooperate temporarily to meet predefined objectives within predetermined deadlines through a non-repetitious string of complex activities.

Specifically, we aim to investigate how the social dimensions of the collaborative context of a project team

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