Chapter VIII

Innovation Diffusion and E-Collaboration: The Effects of Social Proximity on Social Information Processing

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Abstract

Organizational arrangements such as telework are often believed to disrupt workers’ social networks. This raises a concern regarding teleworkers’ abilities to adjust to technological changes in organizations. Based on innovation diffusion theory, this chapter considers telework and interdependence as parallel dimensions of social proximity that may be expected to affect the diffusion of innovation in terms of users’ social information processing (i.e., their technology beliefs, communication channels, and information sources). This proposition is investigated in a field-study conducted during the migration of a business unit to a new communications system. Technology users at the business unit were surveyed three times over a 12-week period—right before the conversion to the new system and at two six-week intervals following the
conversion. These surveys assessed the impact of telework on respondents’ beliefs toward the communication technology. Findings partially supported our hypotheses regarding the negative effect of remoteness on beliefs about technology. Users were then surveyed to investigate the media and sources they utilized to stay informed about the new technology. As anticipated, telework was related to an increased use of electronic media and of individual and authority information sources. Contrary to our expectations, though, results indicated a positive effect of telework on the use of collective sources and face-to-face media. Therefore, we conclude that teleworkers make a special effort to preserve their social networks.

Introduction

The effects of social proximity have been of concern to researchers and practitioners in regard to evolving organizational practices such as virtual teams and telework. Such practices have been found to impede collaboration, to compromise workers’ identification with their organization, to engender feelings of isolation, and to constrict employees’ long-term career potential (Baker & Aldrich, 1996; Cooper & Kurland, 2002; Frank & Lowe, 2003; Gerber, 1995; Kugelmass, 1996; Maznevski & Chudoba, 2000; Nilles, 1994). If such organizational practices that reduce social proximity in the workforce thus disrupt workers’ social systems, how will they affect the diffusion of new technologies? This is the question addressed by this chapter.

Social systems have been viewed as critical to innovation diffusion. Individuals process information about innovations within the context of these social systems (Rogers, 1983). Information flows through social systems, facilitating learning and assimilation of the innovation and influencing individuals’ beliefs about the innovation. Rogers reports on eight independent studies, all supporting the proposition that the interconnectedness within a social system has a positive impact on the diffusion of an innovation. He further proposes that relative advantage, an innovation characteristic, is “often the content of the network messages about an innovation” (Rogers, 1983). The number of linkages in a social network is believed to determine the extent of innovation diffusion (Abrahamson & Rosenkopf, 1997). Speaking more directly to diffusion of computer technology, Burkhardt (1994) found that a lack of direct contact with other users hurt users’ perceptions of their self-efficacy with a new computer system, and self-efficacy has been shown to be an important predictor of technology diffusion (Compeau et al., 1999).

In a field study, we therefore explore this issue of social proximity and social information processing in a company undergoing a transition to a new communication system. Specifically, we studied the effects of telework and users’ beliefs about a technological innovation at three time periods: prior to the changeover from the