



Chapter 1

Extending Collaboration Support Systems: Making Sense in Remote Innovation

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This chapter first examines the role of collaboration and collective learning in regional and industry-wide innovation and how remote innovation—that is, innovation organized through electronic collaboration—could be enhanced by comprehensive computer support tools that include sensemaking aids. We look at the importance of sensemaking in collaborations and report on a study in which we analyzed sensemaking processes among students collaborating remotely. We describe a web-based computer system called *LiveNet*, that incorporates sensemaking aids to facilitate remote innovation. It brings together members within one workspace, provides them with the ability to locate needed information quickly, and supports this process with an agent-based structure that can assist members to achieve their goals. In addition, *LiveNet* supports the development of a common language and facilitates knowledge sharing, processes deemed important in the innovation and collective learning literatures. In the final section, we describe how this system can be used in remote innovation.

INTRODUCTION

Collaboration is recognized as an important organizational practice by many academics (Gray, 1989; Huxham, 1996; Pasquero, 1991; Roberts & Bradley, 1991; Wood & Gray, 1991). In particular, inter-organizational collaboration is becoming an increasingly common business practice as organizations focus on their

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core competencies and outsource peripheral activities in their attempts to innovate, develop emerging markets, respond to global competition or implement new technologies. Accordingly, a wide variety of new organizational forms such as networks, strategic alliances, cooperatives and joint ventures have emerged, that allow different organizations to work together (Palmer & Dunford, 1997).

The innovation literature often refers to collaboration as an important factor for enhancing innovativeness in organizations as well as in industries. For instance, Dougherty and Hardy (1996, p. 1122) suggested that mature organizations that want to develop a capacity for sustained innovation must “provide collaborative structures and processes to solve problems creatively and connect innovations with existing businesses.” Similarly, Smith, Ahmed and Takanashi (1999) reported that open collaboration between different organizations represents a main driver for technological innovation in the late 20th century, while Wycoff and Snead (1999, p. 55) claimed that innovation itself was “a collaborative skill that involves actively scouting the future, generating new ideas, choosing the best ones, rapidly and effectively implementing them, and then learning the lessons from successes and failures to begin again.”

As far as regional or industry-wide innovation is concerned, researchers also increasingly point to the importance of collaboration and networks. For example, Keeble, Lawson, Moore and Wilkinson (1999) as well as Asheim (1996) developed the concept of collective learning to refer to the development of the capacity of a regional innovative milieu amongst member firms. Successful collective learning is characterized by establishing a common language and by sharing technological or engineering knowledge as well as organizational knowledge across organizational boundaries (Lorenz, 1996). Establishing a common language helps to build trust between collaborating partners. Because of unanticipated events and uncertainties that often arise after formal contracts have been arranged, trust helps the partners move forward. Sharing technological or engineering knowledge often involves the detailed product design, testing and production of the innovation. Organizational knowledge may include the division of responsibilities or the choice of procedures to ensure consistent, collective decision making. In addition to these three elements, Camagni (1991) and others (e.g., Simmie, 1997) have pointed to the importance of common culture, as well as psychological and social background as facilitators of collective learning. In an empirical study of the biotechnology industry, Powell, Koput and Smith-Doerr (1996) found that collaboration within networks was an important mechanism to gain access to knowledge that was widely distributed and not necessarily produced within the boundaries of any one member of the network. Thus, there is ample evidence suggesting that collaborating with other organizations can enhance innovation. Most of this

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