Chapter 5
Wiki Technology and Emergency Response: An Action Research Study

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ABSTRACT
This paper is about the design and implementation of a wiki-based knowledge management system for improving emergency response. Most organizations face difficult challenges in managing knowledge for emergency response, but it is crucial for response effectiveness that such challenges be overcome. Organizational members must share the knowledge needed to plan for emergencies. They also must be able during an emergency to access relevant plans and communicate about their responses to it. This study, which employed action research methods, suggests that wiki technology can be used to manage knowledge for emergency response. It also suggests that effective use of a knowledge management system for emergency response requires thorough training, a knowledge-sharing culture, and a good fit between emergency-response tasks and system capabilities.

1. INTRODUCTION
Knowledge management is about making knowledge available to those who need it. Knowledge management systems help organizations make good use of what they know, connecting knowledge sources and knowledge users. Emergency response involves making plans and preparations before an emergency, as well taking action during it and analyzing what happened afterwards. It might seem natural for knowledge management systems to be used to support emergency
response, but a review of the relevant research literature shows that most studies to date have been focused more generally on how knowledge management systems affect organizational performance and competitiveness (Von Krogh, 1998; Hackbart, 1998; Davenport & Prusak, 1998; Alavi & Leidner, 2001; Jennex & Olfman, 2005, 2006). Yet, recent emergencies (such as the 9/11 terrorist attacks, subsequent anthrax events, the Slammer worm attack on the Internet, the London subway bombings, the 2004 tsunami, and Hurricane Katrina) have spurred interest in research about how to support emergency response in broader terms. A small, but growing, body of research has focused on understanding how knowledge management systems can support emergency response.

How relevant are knowledge management systems to emergency response? Can knowledge management systems be designed specifically to support emergency response in an organizational context? What should a knowledge management system for emergency response include? What do emerging social software technologies, such as wikis, have to offer in the design of knowledge management systems for emergency response?

These questions motivated the study reported here: to create a knowledge management system to support emergency response, specifically the planning and preparation that must occur before an emergency occurs. The study involved using a wiki to develop a knowledge management system for emergency-response activities of the Claremont University Consortium. The Consortium (CUC) is located in Southern California and comprises seven colleges. It exists to help its members, seven co-located private colleges, with common needs, including campus safety, facilities management, library, payroll, textbooks, and emergency response.

The objectives of this research were to understand: (1) what attributes a knowledge management system for emergency response should have; (2) whether a wiki can be used to develop such a knowledge management system; and (3) if such a system is an effective way to support knowledge management for emergency response.

The paper proceeds as follows. Section 2 provides an overview of knowledge management. Section 3 provides an overview of emergency-response systems. Section 4 briefly examines the relationship between emergency response and knowledge management. Section 5 provides an overview of wikis and their role in supporting knowledge management in organizations. Sections 6 through 9 provide the details of our case study. Sections 10 through 12 present implications for theory and practice, as well as conclusions.

2. KNOWLEDGE MANAGEMENT

Davenport and Prusak (1998) define knowledge as an evolving mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. Knowledge often becomes embedded in documents or repositories, as well as in organizational routines, processes, practices, and norms. Knowledge is also about meaning, in the sense that it is context-specific (Huber, Davenport, & King 1998). Jennex (2006) extends the concepts of context to also include associated culture that provides frameworks for understanding and using knowledge. A simpler definition of knowledge is that it is the how and why of something. Gaining knowledge is gaining insight into how and why things happen. To be useful, this knowledge must be framed in context and culture, providing the information and data needed to explain how the knowledge was generated, what it means, and how it should be used.

Jennex (2005b) defines knowledge management as “the practice of selectively applying knowledge from previous experiences of decision-making to current and future decision-making activities with the express purpose of
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