Chapter 4.50
Knowledge Management and Hurricane Katrina Response

Tim Murphy
Autonomechs, LLC, USA

Murray E. Jennex
San Diego State University, USA

ABSTRACT

This article explores the use of knowledge management with emergency information systems. Two knowledge management systems that were utilized during the Hurricane Katrina response are described and analyzed. The systems specified were developed by federal agencies as well as grass root efforts without the support or mandate of government programs. These programs, although developed independently, were able to share data and interact in life-saving capacities, transcending traditional geopolitical boundaries. We conclude that emergency information systems are enhanced by incorporating knowledge management tools and concepts.

INTRODUCTION

Emergency response in the United States of America (US) is evolving from something that was handled locally to something that is standardized under federal control. The US implemented the National Incident Management System (NIMS) in 2004 to accomplish this. NIMS established standardized incident management protocols and procedures that all responders are to use to conduct and coordinate response actions (Townsend, 2006).

It was expected that on August 27, 2005, when President George W. Bush declared a state of emergency for three coastal states days before the August 29, 2005, landfall of Hurricane Katrina,

this approach would be sufficient to handle necessary emergency response. However, Mississippi, Alabama, and Louisiana would be the site of the worst natural disaster in US history, stretching government resources far beyond their abilities to respond to the instantaneous and growing number of casualties. Running out of shelter and supplies for the growing number of victims, the government became logistically overwhelmed and underequipped. Private citizens and companies (all nongovernment offices) responded immediately. Multiple independent yet collaborative-by-design knowledge management systems (KMS) were developed and implemented for immediate use to help victims find housing and medical supplies and to post requests for immediate evacuation as well as help to find those separated in the storm. Via the Internet, people as far north as Michigan were able to help find housing in the state of Washington for people in southern New Orleans. This article proceeds to describe how theses systems were developed, implemented, and used. We will describe the situation that led to the need for these systems, how these systems were created, the resources required for each, within which category of knowledge management system each falls, the use of the systems by the end users, and finally the end result of these systems.

This article discusses two of these systems developed to respond to Hurricane Katrina. The purpose of this discussion is to illustrate the use of knowledge management (KM) and KMS in emergency response. The article will discuss how KM was implemented and how effective the resulting systems were.

BACKGROUND

Before discussing these systems, it is important that we establish what we mean by KM and KMS as well as provide a framework for how KM fits into disaster and/or emergency response.

Knowledge

Davenport and Prusak (1998) define knowledge as an evolving mix of framed experiences, values, contextual information, and expert insight, which provides a framework for evaluating and incorporating new experiences and information. Knowledge often becomes embedded in documents or repositories and 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. It is the insight into why something happens that creates knowledge. To be useful, though, this knowledge needs to be framed in context and culture, the information and data that explain how the knowledge was generated, what it means, and how it should be used.

Knowledge Management

Jennex (2005) defines KM 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 improving the organization's effectiveness. KM is an action discipline; knowledge needs to be used and applied in order for KM to have an impact. Inherent in KM is communication between knowledge creators and/or possessors and knowledge users. A KMS is the system developed to aid knowledge users in identifying, sharing, retrieving, and using knowledge that they need. The following section further defines a KMS.

Knowledge Management Systems

Alavi and Leidner (2001) defined a KMS as "IT (Information Technology)-based systems devel-

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