

**Turning to Digital Government in a Crisis:
Coordinating Government, Business & Nonprofit Services in Response to the World Trade Center
Attacks of September 11, 2001**

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Many of the critical challenges faced by government and the community in responding to the World Trade Center attack involved the use of information and technology linked to related professional and organizational relationships. Multiple crises and ongoing recovery demands spawned public-private and intergovernmental teams, some of which had never worked together before, to address interdependent environmental, public safety, health, infrastructure and other needs. Effective use of a variety of information and communication technologies (ICTs) helped government agencies to better visualize, coordinate, deploy, and monitor these activities. At the same time, the severity of the crisis was exacerbated by damage to critical communications and computing infrastructure as well as the absence, loss, outdated nature, or inaccessibility of needed information resources. Government decision makers were faced with unprecedented problems, and responded with creative, often unorthodox, solutions.

The objective of this pilot study was to examine the long-term lessons of the 9/11 response for government and community ability to use information and technology in order to improve crisis response and to benefit overall government and community functioning in normal times. The study was conducted through a multi-disciplinary academic-nonprofit partnership between the Center for Technology in Government (CTG) at the University at Albany, State University of New York, and Urban Logic, Inc., a New York City nonprofit organization closely involved in the response. By studying the response using both social and technical perspectives, we sought to answer two main questions: What were the critically important roles of information and technology in the response to the events of 9/11? And what can we learn to better prepare us for an uncertain future?

Two data collection methods were used. Background and substantiating information came from the documentary record: news accounts, formal reports, testimony before governmental bodies, conference presentations, taped and television documentaries, and other similar material. Our more direct data collection method was semi-structured interviews with key participants. In-person and telephone interviews were conducted with 29 participants, including seven New York City officials, five New York State officials, five federal government officials, five representatives of nonprofit organizations, and seven private sector executives. Interview questions covered a wide range of issues: operational communication, command and control, threat assessment, public information, service restoration, information management and analysis, organizational and professional relationships, and innovation. We asked participants to tell us about the events immediately following the crisis and also to reflect on the longer term impact of the crisis and response.

Our research design included several unusual elements: the investigators' professional networks and past collaboration successes with practitioners provided access to interviewees; this first large-scale academic collaboration for CTG yielded multidisciplinary results and insights; and the findings are available in both practitioner and academic formats. Two of the challenges we faced in the doing this research were obtaining interviews with government officials who were facing new security requirements and developing collaborative ways to work as a multidisciplinary team. Our research collaboration involved overcoming the complications of physically sharing data across networks and developing common vocabulary to share insights and ideas.

Our findings offer important lessons for public officials, civic-minded individuals, leaders of organizations, and a wide variety of researchers. Throughout the WTC response and recovery, surprising problems and little known capabilities combined to present organizations with both unfamiliar challenges and opportunities for ingenious solutions. The main lessons which emerged pertain to the ways in which information needs, resources, technology, and policies interacted with planning, preparedness, coordination, and collaboration among the involved organizations. These lessons apply not only to emergency planning and management agencies. They also suggest ways to achieve better performing governments and stronger communities in normal times. Drawing on the interviews and the public record, our practitioner-focused report addresses six topics:

- Information needs associated with the event and the response and recovery efforts
- The availability, quality, use, and management of information resources
- The nature, strengths, and weaknesses of information technology
- The role and effectiveness of existing plans, programs, and relationships
- Information policy issues
- Methods and effectiveness of communications with the public
- Recommendations and prospects for long-term improvements in government and community capacity

Some of the many lessons from this study include:

- Technology: The Internet worked when other networks massively failed; GIS emerged as the most versatile IT tool; mobil and wireless technologies played important specialized roles
- Data: Data issues (quality, access, use, sharing, security) far outweighed technology problems and remain harder to solve.
- Preparedness: Preparation for Y2K was invaluable for both government and business, but business continuity planning remains inadequate in most organizations.
- Leadership Policy makers need a much more sophisticated understanding of IT capabilities and limitations, especially in terms of interorganizational and intergovernmental action.
- Relationships: Public-private-nonprofit cooperation was unprecedented; crucial activities rested on long-standing professional networks and years of trust building among key individuals.

This study is not yet complete. In addition to the publications and presentations listed below, a research symposium will be held in June 2004 to bring together researchers and practitioners to learn about the findings of the study and to discuss their application. Further, researchers are currently working on two additional papers using data from the study: one on the impact and development of geographic information technologies and one on the impact of social networks on the response.

Publications and Presentations:

- Dawes, S.S., Birkland, T., Tayi, G., & Schneider, C. (2004). *Information, Technology, and Coordination: Lessons from the World Trade Center Response*. Albany, NY: Center for Technology in Government
- Dawes, S.S., Cresswell, A. M., & Cahan, B.B. (2004). Learning from Crisis: Lessons in Human and Information Infrastructure from the World Trade Center Response. *Social Science Computer Review*, 22, 1, 52-66
- Dawes, S.S., Cahan, B.B., & Cresswell, A. M. (May, 2003) Turning to Digital Government in a Crisis. Paper presented at the dg.o2003 Research Conference, Boston
- Dawes, S.S. (August, 2003). Digital Government and Crisis: Lessons from the World Trade Center Attack. Paper presented at the American Political Science Association Conference, Philadelphia