

Knowledge Networking in the Public Sector

KDI and Digital Government 2000-2003, NSF grant # SES-9979839

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This three-year longitudinal study examined the formation and operation of knowledge sharing relationships in public sector information technology innovations. The research sought to identify the dimensions and dynamics of interorganizational networks as the frameworks of knowledge exchange in IT development and implementation. The study employed a multi-disciplinary framework to conduct comparative examinations of seven empirical cases that involved groups of agencies in New York State (NYS) that were engaged in programmatic or administrative innovations. All of these innovations depended on the sharing of knowledge in order to create information systems that span organization boundaries.

In each case, the groups of agencies involved were collaborating with the Center for Technology in Government (CTG) in the planning and implementation of their IT projects. CTG combined action research and survey methods to study each case in depth. The case examination varied in time frame, from a five-plus year time span for the longest, to approximately three years for the shortest. For six of the seven cases the action research was based on deep engagement with these agencies in the planning and development of their projects. The seventh case was retrospective, based on interviews and document analysis reaching back five years prior to the funded research period. The study used qualitative field observations, interviews, survey research, document analysis and simulation modeling to collect and analyze the data.

The seven cases represent an array of critically important innovations in public services and public management. Their successes were largely dependent on interorganizational knowledge sharing. In each case, public agencies designed and instituted major changes in the philosophy and operation of key service and administrative programs. Each initiative involved multiple governments and organizations and was led by the agency listed below.

Evaluating Services for Homeless People (NYS Office of Temporary and Disability Assistance, Bureau of Housing Services). Development of a jointly designed system for government program managers and nonprofit service providers to assess the effectiveness of programs delivered to more than 30,000 homeless New Yorkers.

Accessing Childhood Statistical Information – (NYS Council on Children and Families). Creation of a public, Web-based repository of statistical indicators about the health and well-being of the state's children. The repository was designed to improve the accessibility and timeliness of information that government agencies and nonprofit organizations use to design, implement, and evaluate programs and policies that serve children.

Streamlining Municipal Technical Assistance (NYS Office of the State Comptroller, Division of Municipal Affairs). Development of an information system to track the thousands of documents and customer contacts generated by this Division's regional offices that oversee and provide financial management assistance to more than 10,000 local government entities.

Improving the Central Accounting System (NYS Office of the State Comptroller). Stakeholder analysis to inform the redesign of the 17-year-old state central accounting system, which is the backbone of government financial and budgetary operations in New York. This project involved cooperation among scores of state and local agencies to reflect their needs, technical capabilities, local conditions, and existing systems.

Supporting the Knowledge Needs of IT Professionals (New York City Department of Information Technology and Telecommunications). Development of a comprehensive process to manage information

about the city's technology systems and support information technology investment decisions. The new model includes information about best practices, current systems, and new information technology and management investments made in every city agency.

Designing a New Property Assessment System (NYS Office of Real Property Services). Creating a new process for town and county assessors to annually supplement real property assessments with statistical adjustments based on a market analysis system for sharing up-to-date valuation and sales data across jurisdictions.

Creating a Geographic Information System (GIS) Repository (NYS Office for Technology and NYS Library). Creating a Web-based clearinghouse of geographic information that promotes the sharing of spatial data sets statewide. The resulting NYS GIS Clearinghouse was the first successful attempt to create a state-wide information resource available to public and private sector contributors and users.

The results of this research represent contributions to both the scientific understanding of information technology development and to the direct improvement of government operations. The interventions in the six nascent cases, supported in part by this research project, produced three prototype information systems, one of which has already moved into full production status and been expanded beyond its original scope. The other three projects resulted in enhanced analysis and strategic planning for major state government IT investments. The research work also produced several practitioner publications and a website devoted to supporting better information use in government (www.ctg.albany.edu/projects/uig). A comprehensive guide for managers, *The Insider's Guide to Using Information in Government*, is available on the CTG Web site at www.ctg.albany.edu/static/usinginfo/index.htm.

The research publications and reports stemming from this project span the wide range of disciplines employed. To date the project has resulted in 27 refereed articles, conference papers, and book chapters either accepted or in review. These range across a number of disciplines related to the core research questions, including political science, information science, system dynamics, public administration, anthropology, organizational science, and communication. Three doctoral dissertations and one masters thesis have been completed based on this research, with an additional dissertation in process. The papers and presentations developed under the project have presented empirical and theoretical contributions related to leadership, trust, IT innovation success, interorganizational relations and communication processes, and action research methods.

Papers have been accepted for publication in *Communications of the AIS* (Cresswell, 2001), *Government Information Quarterly* (Cresswell et al., 2001a), and a book on *Digital Government* (Zhang, Cresswell, & Thompson, forthcoming), and submitted for review for forthcoming publications (Pardo, Cresswell, Zhang, & Thompson, submitted; Zhang & Dawes, submitted). Papers reporting project findings were presented at Academy of Management meetings (Cresswell, Pardo, Dawes, & Kelly, 2000; Cresswell, Pardo, Thompson, & Zhang, 2002b; Pardo et al., 2001), including a "best paper" in 2001. Papers were also presented at the American Political Science Association (Eglene, Dawes, & Schneider, 2003), and conferences on Information Systems (Zhang, Cresswell, & Thompson, 2002), Communication (LaVigne, 2003), Sociology (Le, Thompson, Cresswell, & Dawes, 2001a; Le, Thompson, Cresswell, & Dawes, 2001b), Anthropology (Thompson, Connelly, & Cresswell, 2000b), and Non-governmental and Voluntary Associations (Miller & Thompson, 2000). In addition, invited papers were presented at international conferences in Belgium (Thompson et al., 2000a), the Korean Association for Public Administration International Forum (Cresswell & Zhang, 2000), a workshop on Knowledge Management in the Enterprise at the European Commission, Brussels (Dawes, 2000), and the Conference on Digital Government, Mexico City (Cresswell, Pardo, & Dawes, 2001). Papers on the dynamic modelling work have been given at the System Dynamics Society meetings (Cresswell et al., 2001) and the Hawaii International Conference on System Sciences (Black et al., 2003; Cresswell et al., 2002a).