

Summary

Social, organizational, political, and economic influences shape the creation, use, ownership, and governance of knowledge networks. These influences have a combined, interactive effect on the information and knowledge sharing processes in government (and other organizations as well). Rapid evolution of network telecommunication technologies and growing pressures to share information and work in collaborative ways have led to great interest in the successful development of knowledge networks.

This three-year research project, supported by the National Science Foundation, investigates seven initiatives led by New York State and local agencies. These initiatives depend on sharing knowledge and information across multiple organizations.

This study examines the formation and operation of knowledge networks in the public sector, exploring the dimensions of success and how organizational, technological, and political factors influence outcomes. The study has developed an enhanced model of knowledge network formation and operation in the public sector. In addition, this research has resulted in recommendations to practitioners about planning and implementing knowledge networks.

Publications & Results

Journal Articles and Conference Papers (1)

Authority and Leadership Patterns in Public Sector Knowledge Networks

Thu, 01 Mar 2007

Knowledge and information-sharing networks are emerging in an increasing number of government programs and policy arenas. This article reports the results of an exploratory investigation into ways in which leadership and formal authority shaped the course of four knowledge network initiatives. The study treats authority as both formal and perceived. Leadership is assessed in terms of style, focus, and communication strategies. Analysis of the various authority and leadership patterns found in the case studies generated a set of hypotheses with regard to their influence on success of knowledge networks. Findings reveal that formal authority, perceived authority, and a variety of leadership behaviors appear to have important influence on the development and performance of public sector knowledge networks. These factors affect the ability of such networks to achieve their substantive goals and the degree to which these efforts provide satisfying and useful networking relationships among the participants.

Knowledge and information-sharing networks are emerging in an increasing number of government programs and policy arenas. This article reports the results of an exploratory investigation into ways in which leadership and formal authority shaped the course of four knowledge network initiatives. The study treats authority as both formal and perceived. Leadership is assessed in terms of style, focus, and communication strategies. Analysis of the various authority and leadership patterns found in the case studies generated a set of hypotheses with regard to their influence on success of knowledge networks. Findings reveal that formal authority, perceived authority, and a variety of leadership behaviors appear to have important influence on the development and performance of public sector knowledge networks. These factors affect the ability of such networks to achieve their substantive goals and the degree to which these efforts provide satisfying and useful networking relationships among the participants.

Conference Papers and Presentations (13)

Black, L., Cresswell, A.M., Pardo, T.A., Thompson, F., Canestraro, D.S., Cook, M., Luna, L.F., Martinez, I.J., Andersen, D. & Richardson, G. (January, 2003). **A dynamic theory of collaboration: A structural approach to facilitating intergovernmental use of information technology.** Paper presented at the 36th Hawaiian International Conference on System Sciences.

Cresswell, A. M., & Zhang, J. (November, 2000). **Effectiveness of knowledge sharing in public sector interorganizational networks.** Paper presented at the Korean Association of Public Administration International Forum on Strategy Development for Knowledge-Empowered Government, Chosun University, Kwangju.

Cresswell, A.M., Canestraro, D., Cook, M., Pardo, T.A., Thompson, F., Black, L., Luna, L.F., Martinez, I.J., Andersen, D. & Richardson, G. (June, 2001). **A preliminary system dynamics model of intergovernmental collaboration.** Poster presented at the annual System Dynamics Research Conference, Atlanta.

Cresswell, A.M., Pardo, T.A., Thompson, F., & Zhang, J. (August, 2002). **Trust and networking: Knowledge sharing in the public sector.** Paper presented at the annual Academy of Management conference, Denver.

Cresswell, A.M., Pardo, T.A., Thompson, F., Canestraro, D.S., Cook, M., Black, L., Luna, L.F., Martinez, I.J., Andersen, D. & Richardson, G. (January, 2002). **Modeling intergovernmental collaboration: A system dynamics approach.** Paper presented at the annual Hawaiian International Conference on System Sciences.

Eglene, O., Dawes, S.S., & Schneider, C. (August, 2003). **Authority and leadership patterns in interorganizational knowledge networks.** Paper proposed for the annual American Political Science Association meeting, Philadelphia.

Le, C. N., Thompson, F., Cresswell, A. M., & Dawes, S. (August, 2001). **Carpooling on the superhighway: Information technology and interorganizational knowledge-sharing networks in the public sector.** Roundtable presentation at the annual American Sociological Association meeting, Anaheim.

Le, C. N., Thompson, F., Cresswell, A. M., & Dawes, S. (March, 2001). **Walking the walk: The effectiveness of knowledge sharing in public sector organizational networks.** Paper presented at the annual Eastern Sociological Society meeting, Philadelphia.

Miller, J., & Thompson, F. (November, 2000). **Developing collaboration between nonprofits and government: A case study of knowledge sharing to improve services for the homeless.** Paper presented at the annual Association for Research on Nonprofit Organizations and Voluntary Action conference, New Orleans.

Pardo, T. A., Cresswell, A. M., Zhang, J., & Thompson, F. (August, 2001). **Interorganizational knowledge sharing in public sector innovations.** Paper presented at the annual Academy of Management conference, Washington DC, and published in the **Best Paper Proceedings.**

Thompson, F., Connelly, D. R., & Cresswell, A. M. (November, 2000). **Structuring the story to restructure work and interorganizational relations in the public sector.** Paper presented at the annual American Anthropology Association meeting, San Francisco.

Thompson, F., Cresswell, A. M., & Connelly, D. R. (August, 2000). **Getting the story right: Talk and text in the restructuring of public sector interorganizational relations.** Paper presented at the conference on Text and Talk at Work: Discourse Practices in, around and about the Workplace, University of Ghent, Belgium.

Zhang, J., Cresswell, A.M., & Thompson, F. (August, 2002). **Participants' expectations and the success of knowledge networking in the public sector.** Paper presented at the annual Americas Conference on Information Systems, Dallas.

Press Releases & News Stories

Press Releases

Center for Technology in Government Receives \$1 Million Grant from NSF: Largest Grant in Center History To Focus on Knowledge Networks
Tue, 28 Sep 1999

News Stories

Prototypes

Of the seven cases in this research, two involved the development of prototypes.

- The New York State Homeless Information Management System

- Kids Well-being Indicators Clearinghouse

Partners

Government Partners

- New York State Council on Children and Families
- New York State Office of Real Property Services
- New York State Office of the State Comptroller, Central Accounting System,
- New York State Office of the Comptroller, Division of Municipal Affairs,
- New York State Office for Technology, NYS GIS Clearinghouse,
- New York State Office of Temporary and Disability Assistance, Bureau of Housing Services
- New York City Department of Information Technology and Telecommunications

Center for Technology in Government

- Peter Bloniarz, Co-Principal Investigator
- Donna Canestraro, Project Support Manager
- David Connelly, Graduate Assistant
- Meghan Cook, Project Associate
- Anthony Cresswell, Co-Principal Investigator
- Sharon Dawes, Principal Investigator
- Ophelia Eglene, Graduate Assistant
- Theresa Pardo, Co-Principal Investigator
- Fiona Thompson, Co-Principal Investigator
- Mark LaVigne, Project Associate
- C.N. Le, Research Associate
- Judy Miller, Graduate Assistant
- Carrie Schneider, Graduate Assistant
- Jochen Scholl, Project Support Manager
- Yi-jung Wu, Graduate Assistant
- Jing Zhang, Graduate Assistant

Funding Sources

This material is based upon work supported in part by the National Science Foundation under Grant No. SES-9979839. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not reflect the views of the National Science Foundation.

Original Scope of Work

This study examines the formation and operation of knowledge networks in the public sector. The research is based on seven empirical cases involving groups of agencies in New York State. In each case, agencies are engaged in programmatic or administrative innovations that depend on the sharing of knowledge and information across multiple organizations. We identify the dimensions of success and their relationship to how organizational, technological, and political factors influence results. The study has developed an enhanced model of knowledge network formation and operation in the public sector. In addition, this research has resulted in recommendations to practitioners about planning and implementing knowledge networks.

This three-year study has addressed the following research questions:

- What are the defining characteristics of successful knowledge networks in the public sector?
- What activities comprise the processes of planning and implementing these networks? How does the order or combination of activities affect results?
- What organizational, technological, and political factors influence public sector knowledge networks and how

can they be measured? What is their relative importance at each stage of the planning and implementation process? How sensitive are they to different environmental conditions?

Existing research on these questions has applied a number of disciplinary lenses and identified an abundance of characteristics, activities, factors, and conditions as relevant to effective knowledge networks. The complexity of the environment in which knowledge networks develop is mirrored in the complexity of the research insights, yielding an understanding of this phenomenon that is both confusing and incomplete. This complexity is especially unsatisfying for practitioners, who have little guidance from the research literature that would help them maximize their chances for developing successful knowledge networks. This work develops a more coherent model of the way these networks function.

This study employs action research methods with actual public sector initiatives as they were being developed, together with a study of one successful benchmark initiative. Each of the seven initiatives has been studied as a distinct case, using a comparative case study design. Because of CTG's unique project-based collaboration with New York State government agencies, the researchers in this study have exceptional access to these organizations, their staff, their partners, and their customers. The findings from these case studies help clarify the factors that lead to successful knowledge networks, as well as leading to results that can be immediately applied in government operations.

The knowledge networks examined in this research are treated as a combination of interorganizational relationships, policies, information content, work processes, and technology tools and architectures brought together to achieve collectively defined purposes. The conceptual framework identifies the main types of influences, processes, and outcomes to be examined and posits ways in which they interact to influence the success. This framework has guided the data collection and analysis. The results of the analysis have led us to revise and expand the framework to better reflect the results. The revised framework, and the resulting propositions about influences on knowledge and information sharing, will form the basis for further research and serve as guidance for building and operating future knowledge networks in the public sector.

The Seven Initiatives Led by State and Local Agencies

The seven projects represent an array of critically important innovations in public services and public management. Their success relies in large measure on the understanding, creation, and implementation of knowledge networks. In each case, public agencies are designing and instituting major changes in the philosophy and operation of key service and administrative programs. They are moving away from centralized, command and control management models toward collaborative and distributed ways of working. Each initiative involves multiple governments and organizations and is led by the agency listed below.

- **Evaluating Services for Homeless People** NYS Office of Temporary and Disability Assistance, Bureau of Housing Services This project involved development of a Web-based system to compile information allowing government program managers and nonprofit service providers to assess the effectiveness of the housing, health, education, and training programs delivered to the more than 30,000 New Yorkers who are homeless at any one time.
- **Accessing Childhood Statistical Information** NYS Council on Children and Families This initiative involved the creation of a publicly available Web-based repository of statistical indicator data about the health and well-being of the state's children. The clearinghouse is designed to vastly 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** Office of the NYS Comptroller, Division of Municipal Affairs This project involved creating an internal information system to keep track of the thousands of documents and customer contacts generated by this regionally-based division that oversees and provides technical financial management assistance to more than 10,000 local government entities.
- **Improving the Central Accounting System** Office of the NYS Comptroller The goal of this project was to redesign the 17-year-old central accounting system, which is the backbone of financial and budgetary operations in New York. While the earlier stand alone system was created mainly with the Comptroller's Office in mind, the new system was designed in cooperation with its users in state and local agencies to reflect their needs, technical capabilities, local conditions, and existing systems.
- **Planning Strategic IT Investments** *New York City Department of Information Technology and Telecommunications* This project involved developing a comprehensive process to manage information about the city's technology systems and enable strategic 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 This initiative involved creating a new process to allow town and county assessors to supplement physical property assessments with an annual statistical adjustment based on a market analysis system that relies on the sharing of up-to-date valuation and sales data across jurisdictions.
- **Creating a Geographic Information System (GIS) Repository** NYS Office for Technology and NYS Library This project, which serves as a practical standard for a successful knowledge network, involved creating a Web-based clearinghouse of geographic information that promotes the sharing of spatial data sets statewide. The resulting NYS GIS Clearinghouse represents the state's first successful attempt to create a jurisdiction-wide information resource available to both public and private sector contributors and users.

Related Web Sites

The Intergovernmental Solutions Program

<http://www.albany.edu/igsp/>

A partnership between the University at Albany's Rockefeller College of Public Affairs & Policy and New York State to develop a professional learning community focused on intergovernmental effectiveness. Program goals are to capture and share knowledge about how successful intergovernmental work occurs.

National Science Foundation

<http://www.nsf.gov>

Contact Information

Center for Technology in Government
University at Albany, SUNY
187 Wolf Road, Suite 301
Albany, NY 12205
(518) 442-3892 (phone)
(518) 442-3886 (fax)

Fiona Thompson

Project Manager

(518) 442-3892