

Leveraging Networks: A Guide for Public Managers Working across Organizations



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IBM Endowment for
**The Business
of Government**

NEW WAYS TO MANAGE SERIES

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March 2003

T A B L E O F C O N T E N T S

Foreword	5
Executive Summary	6
Networks and Network Management	7
Scope of the Study	7
About Networks	7
Study Focus	8
Importance of Networks	8
The Public Agency and the Network	9
Network Prospects	10
Types of Networks.....	10
Management Differences.....	11
Decision Making.....	12
Planning	12
Implementation.....	13
Staffing	13
Organizing	13
A Guide to Network Participation and Operation	18
Promoting Networks	18
Broad Participation	19
Communication	19
Agency Head Role	19
Brokering Decisions and Results	21
Decision Process.....	21
Network Power	22
Negotiated Support	22
Developing Trust	22
Action Builds Trust	23
Problematic Trust.....	24
Enlisting Technical Expertise	25
Finding Expertise.....	25
Informal Expertise Development	25
Ten Lessons on How to Manage in Networks	28
Appendix: Research Method	32
Endnotes	34
About the Author	35
Key Contact Information	36

F O R E W O R D

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On behalf of the IBM Endowment for The Business of Government, we are pleased to present this report, "Leveraging Networks: A Guide for Public Managers Working across Organizations," by Robert Agranoff.

This report comes at an opportune time. Increasingly, effective government means collaborating with others in order to achieve a common purpose. In its January 2003 report to Congress on the major management challenges facing the federal government, the General Accounting Office wrote, "Promoting effective partnerships with third parties in the formulation and design of complex national initiatives will prove increasingly vital to achieving key outcomes..."

The number of networks sprouting up across the nation is growing. This report describes 12 such networks, all located in the Midwest. They range from nonprofits to intergovernmental entities to government organizations. Going a step further, the report presents the critical elements of success for managers to deliver results in a collaborative environment. Most public executives today have been trained to deliver results via the traditional hierarchy. And they got to where they are by performing well within their own organizations. But to be successful tomorrow, government executives must increasingly be able to deliver through networks, partnerships, and the use of collaboration. Already, one of the core qualifications for acceptance into the federal government's Senior Executive Service is the ability to "create coalitions." In this report, Professor Agranoff provides a road map to help today's and tomorrow's leaders understand where this new road leads—and how to get there.

We trust that his report will be both informative and helpful to all government executives faced with the challenging task of working across organizations. There is much to learn about the power of leveraging networks.

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EXECUTIVE SUMMARY

Do public managers operate differently in inter-organizational networks than they do in the organizations where they do most of their work? This basic question is asked from the perspective of state and federal government officials as they work with other agencies to access information, exchange resources, and solve vexing problems that occur at the boundaries of their agencies.

Based on an examination of 12 networks based in Midwest states, network processes are examined, relating to how managing networks are different, how networks are promoted, how trust replaces hierarchical authority, how decisions are brokered, and how technology is accessed. Network management is considered to be a different type of non-hierarchical management, where information and expertise is substituted for authority structure, through a self-organizing process, held together by mutual obligation that develops over time, by reaching consensus-based decisions, and by blending knowledge bases from different organizational arenas into innovative technologies that can become the “DNA” of networks. The managers interviewed for this report supported these general observations and offered numerous useful suggestions for other managers who work in networks.

Public managers’ searches for knowledge-based solutions are increasingly outside of their organizations. As a result, managers will spend more and more of their time in knowledge management working across organizations. There is, therefore, a growing need to enhance the knowledge base in network management through observation and study.

Networks and Network Management

Scope of the Study

Do public managers operate differently in inter-organizational networks than they do in their home organizations? Is management in networks different from that of hierarchical organizations? Some may answer no, because both entail a type of boundary spanning and “dealing with people” that is common to traditional management functions. Others respond definitely yes, because of the absence of all the trappings of standard management—for example, hierarchy, authority, and direction. One state official said, “We manage by consensus in the Partnership for Rural Nebraska,” one of the networks studied in this report. “In my department I supervise and direct, based on the legal authority vested in my position ... in the network I am an equal partner.”

The study investigates public managers as they participate in collaborative undertakings with other governments and the nongovernmental sector. These experiential lessons about “network management” are derived from the responses of managers in federal government, state government, local government, and universities, as well as nongovernmental organization (NGO) officials, as they work together to approach issues that cross the boundaries of their organizations. The 12 focal networks studied operate in Midwest states. “Networks Studied,” at the end of this section provides a thumbnail sketch of each one.

How to manage in a network is an important 21st-century issue because of networks’ prevalence in the managerial enterprise. No single agency or organiza-

tion at any level of government or the private sector has a monopoly on the mandate, resources, or information to deal with the most vexing of public problems. Moreover, a century of knowledge building in management—public and private—has focused on hierarchy and its derivatives, for example, POSDCORB (Planning, Organizing, Staffing, Directing, COordinating, Reporting, and Budgeting). Such targeted focus on running the single organization was appropriate during a time when the concept of management—as a guidance function—within organizations was developed. The importance of organization management is likely to continue. But research also demonstrates a parallel importance of managers working across organizational boundaries. One study of collaborative management in economic development found that about 20 percent of public managers’ time is spent in collaborative activity outside of the home government organization.¹ In a number of public policy arenas—for example, environmental protection—an increasing portion of this time is spent in formal networks.² As a result, both a knowledge base³ and a practical literature⁴ in network management are beginning to emerge.

About Networks

The study focuses on networks of public organizations, involving formal and informal structures, composed of representatives from governmental and nongovernmental agencies working interdependently to exchange information and/or jointly formulate and implement policies and programs that are usually designed for action through their respective organizations. However, not all networks are alike. Some come together primarily to provide

information and some do more by also mutually developing capabilities, whereas others additionally provide new programming opportunities for their component organizations, and still others make joint decisions and take action.

Networks bring the nonprofit and for-profit sectors together with government in a number of policy arenas, including economic development, health care, criminal justice, human services, information systems, rural development, environmental protection, biotechnology, transportation, and education. Their activities are purposeful efforts to access knowledge and technology and to guide, steer, control, or manage. And the public and private actors involved do not act separately but in conjunction, operating as a network. Since the networks under study involve government, interest is in patterns that emerge from the governing activities of the actors, for example, codiscovery, coregulation, costeering, coproduction, cooperative management, and public-private partnerships.

Study Focus

In this report, we do not analyze the structure and operation of the Midwest networks but try to answer important generic managerial questions that emanate from their experiences. As a result, the report does not go beyond a categorization-by-decision structure. The report emphasizes general management processes. In particular, managers were asked how various tasks and roles in the promotion and operation of these networks are different from their other public role, that of working within bureaucratic organizations (see “Appendix: Research Method”). Among the many issues discussed, the following questions guide this report:

1. How do public managers promote networks? That is, are there important organizing, convening, and operational issues that are essential for maintenance of these bodies?
2. What processes of management are different and tend to replace traditional approaches when working in networks?
3. How do managers working together across organizational lines replace authority with mutual understanding or trust levels so that they can work together and respect one another?

4. How do network managers broker decisions and results? In other words, what processes do they engage in to reach agreement and ultimately decisions?
5. Since information exchange is a key element of networking, how are technical information, knowledge, and expertise mobilized?
6. What operational information and advice can the network managers studied offer other public managers about the techniques and approaches they have experienced?

Answers to these questions will not only help other public managers as they operate in networks, but add to the network management knowledge base.

Importance of Networks

Why do public managers find themselves working in networks today? One force is the changing nature of work from labor-based production and services to the integration of knowledge-based symbolic-analytic work, which places greater value on human capital. Knowledge is specialized and must be integrated collaboratively to solve many problems, a core issue in change management. As a result, government agencies, once thought to be the monopolistic holders of key information and expertise relating to public issues, now possess only part of the information needed to solve problems.

A second force is the changing nature of government. The 20th century was a time of growth of welfare states and, consequently, government agencies and programs at national and state levels. The government took on more and more problems and created many new policy areas. As public efforts grew, however, it became apparent that the government could not garner the resources, investments, expertise, or commitments needed to solve all public problems. New structures involving several organizations became one of a number of collaborative efforts to try to approach some of society’s “wicked problems” or challenges that could not be handled by dividing them into simple pieces, in isolation from one another.⁵

A related factor is the idea that government should not only operate programs but also should take on more of a developmental or steering role, promoting, regulating, and encouraging various types of non-

governmental activity and operations. This engagement philosophy has, in many fields, unfolded in the 1980s and 1990s, and it has led to greater variety in government-nongovernment organizational interaction.

A number of research streams have also confirmed the prominence of networks. The urban-politics work of Clarence Stone on regime theory is seminal. In his study of urban power, he concludes that in a fragmented world where power, resources, knowledge, and the other means to solve problems reside with so many individuals and organizations, “the issue is how to bring about enough cooperation among disparate community elements to get things done—and to do so in the absence of an overarching command structure or a unifying system of thought.” He labeled this process as “governance,” which is the ability to combine the necessary elements toward a result, that is, the capacity to assemble and use needed resources for a policy initiative.⁶

Intergovernmental researchers have also recognized the importance of networks, often operating in complex and overlapping fashions⁷ and, in many ways, changing the traditional role of governments and their links with nongovernmental organizations and with the various tools and strategies that lead to different public-private configurations.⁸ A study by Radin and associates reveals how federal-state-private councils in rural development have led to many program changes and demonstration approaches.⁹ In the same vein, economic development research at the state and local levels has demonstrated how networked officials enhance their economies by stimulating private sector action, engaging in partnerships with such organizations as chambers of commerce and industry groups, and jointly formulating developmental policies in human resource development, technology advancement, and global marketing.¹⁰ Finally, research in environmental policy also demonstrates that emergent solutions to such problems as nonpoint source pollution (for example, agricultural chemicals) and watershed and forest management can be approached by formally and informally convening government agencies, conservation advocacy groups, industry representatives, land developers, and the scientific community into joint bodies.¹¹

The Public Agency and the Network

Operating in networks is changing the nature of government organizations, at least with regard to shared policies and programs. Of primary importance is that representatives of public agencies become partners with other organization representatives in examining problems, establishing strategies, and formulating policy responses. The public organization actor often serves as a convener, but once the process begins those persons are among the many participants.

Second, the public agency representative does not have nearly the monopoly or the corner on technical expertise that previous public administrators possessed. Many stakeholders—such as scientists, organizational researchers, interest groups, and advocacy groups—bring needed knowledge and information to the table.

Third, resources are more dispersed. In the past, a government agency possessed the major allocation or appropriation needed to launch a program, and money (and indirectly control) was dispensed through a chain of agencies, public and non-public. Resources are now more dispersed throughout the network, as government increasingly tries to use its role in governance to leverage investments and broker program actions through other government agencies and a host of nongovernmental organizations.

Fourth, program implementation occurs through many of the same organizations that were involved in pooling knowledge and technologies, enhancing capacities, or in formulating strategies and policies. As government has taken on more of a guidance role, and has encouraged nongovernmental investments, the carrying out function is no longer exclusively through the familiar intergovernmental chain of public organizations or by contract or mutual agreement. The process involves a variety of grantees, contractees, and, most important, collaborating partners.

Some analysts have concluded that this renders the government agency unimportant and a bystander to a series of private actions. Networks do change the role of government in democratic systems. Government agencies are not, however, marginal players in the multiple organization process. They

remain core actors, because they continue to possess a legitimacy to approach public problems and policy solutions, retain important legal authority to set rules and norms, contribute financial resources to programs, and retain some of the information and scientific knowledge needed to approach problems. This research reveals that government agencies are almost always among the key partners in networks.

Network Prospects

The future holds even greater promise for these collaborative structures, and, therefore, a body of knowledge about how to manage them is important for public management. The demand for knowledge will increase as an important resource, as will the demand for new capital that resides in human resources or knowledge workers. Knowledge capital will continue to need some form of collective that will bring it together. Knowledge is nonhierarchical in that it is required for a situation where professional performance needs to be applied, regardless of organizational position, social status, or possession of wealth. As a result, portable knowledge application plus rapid access to information can and has led to the disintegration of large-scale organizations into more flexible structures, such as the networks studied here. In the future, several different types of organizations are expected to interlock along these lines. These trends will also accelerate the need for greater study of the new forms of organizing and operating. As Peter Drucker concludes, "Despite all the present talk of 'knowledge management,' no one yet really knows how to do it."¹² Finally, these structures will increasingly be used to deal with social problems. David Korten concludes that knowledge and reformation have provided powerful new collective intelligence that can be used to master social and institutional discovery and innovation through problem solving.¹³ A portion of this body of knowledge entails a newer form of management knowledge that can be applied in both public and private institutions.

Types of Networks

Not all networks are alike, as other researchers have also discovered.¹⁴ Of the networks examined for this study (see "Types of Networks Studied"), three limit their interorganizational actions to

exchange of information. The Darby Partnership (Darby), the Lower Platte River Corridor Alliance (LPRCA), both environmental or natural resource networks, and the Indiana Economic Development Council (IEDC) are included in this category. *Informational networks* tend to involve large numbers of stakeholders, many of whom have quite opposite views, who come together to exchange information, examine the depths of a given problem, and explore "possible actions" that stakeholders might take. Such actions are not mandated but are almost always voluntary and exclusively taken within the partner agencies. As such, informational networks tend to be broad convening bodies or "sounding boards," but never decision bodies. In many ways they are like councils of organizations that most volunteers are familiar with, such as a health and welfare council. Nevertheless, with

Types of Networks Studied

1. *Informational Networks*: Partners come together exclusively to exchange agency policies and programs, technologies and potential solutions. Any actions that might be taken are entirely up to the agencies on a voluntary basis.

Darby, LPRCA, IEDC

2. *Developmental Networks*: Partner information and technical exchange are combined with education and member service that increases member capacity to implement solutions within home agencies or organizations.

PRN, IRDC, IGIC, IEN

3. *Outreach Networks*: Partners come together to exchange information and technologies, sequence programming, exchange resource opportunities, pool client contacts, and enhance access opportunities that lead to new programming avenues. Implementation of designed programs is within an array of public and private agencies themselves.

SCEIG, USD/RD

4. *Action Networks*: Partners come together to make interagency adjustments, formally adopt collaborative courses of action, and/or deliver services along with exchanges of information and technologies.

EDARC, DMMPO, ICN

the exception of not deciding, they experience the exchange and information/knowledge management patterns as other networks.

Three of the networks studied, in stark contrast, take the kind of joint action that is commonly associated with a number of other collaborative organizations, for example, partnerships and joint ventures. The Indiana Electronic Data Access Review Committee (EDARC), the Des Moines Metropolitan Planning Organization (DMMPO), and the Iowa Communications Network (ICN) all have developed interactive working procedures to collectively adopt programs and to implement them through component organizations. To be sure, these *action networks* also are heavily engaged in information exchange, capacity development, and discovering new programming opportunities, but they are distinguished by their ability to engage in collective action. In many ways their decision component makes them the most different and means that they have the most difficulty achieving aims, because they make collective win/lose decisions among governments and organizations, and they share implementation with their partner organizations.

Standing between these two types of networks are two others, one that exchanges information and increases partner capabilities to take own-source actions, and one that not only increases capacity but develops new program venues that are implemented through partner agencies. The former category, *developmental networks*, includes the Partnership for Rural Nebraska (PRN), the Indiana Rural Development Council (IRDC), the Iowa Geographic Information Council (IGIC), and the Iowa Enterprise Network (IEN). Each relies heavily on partners implementing those strategies and capabilities developed within the network itself, and as such, the network goes beyond the mere exchange of information.

The latter category, *outreach networks*, includes the Ohio Small Communities Environmental Infrastructure Group (SCEIG) and the Nebraska U.S. Department of Agriculture Rural Development (USDA/RD) program. These networks not only exchange information, technologies, and opportunities, but they carve out programming strategies for clients (for example, funding packages, usable technologies) that are carried out elsewhere, usually by the part-

ner organizations. In other words, potential action frameworks for clients are developed, but action is not formally adopted by the network, it is merely suggested. Managerially, both of these types of networks are like consortia or confederations where information and potential action is collectively arrived at but not taken by the bodies themselves. In terms of operational decisions, both of these types experience most of the managerial challenges of all types of networks, except that they stop short of those binding decisions that imply joint action.

Management Differences

When administrators from different agencies come together to solve problems or to inform one another, most operate differently than in their home agencies. One informational network leader said, "Inside, I manage a program, and I have a line role. When in a partnership I dispense and exchange information." Another said, "I am a typical 'fed,' with administrative structure, rules, programs ... whereas in this [network] group the activity is exchange, equal input." Another state official stated, "At the network there are no bosses, many players." A federal official stated, "We do loans, fund and operate programs within the agency. At the network we build capacity." Another state official said, "We do programs and contracts here. In the network I am not the answer." All of these responses suggest that another type of management is going on in these networks.

What kind of management is it? First and foremost, agency representatives come to the table as delegates from their agency and form a "pooled" authority system that is based more on expertise than on position. In most of the networks studied, despite differential informal authority, official authority is more or less one delegate, one *opportunity* to influence the recommended/agreed course of action. One federal official said, "I am the orchestra leader in [agency], in the Council I am a partner." Authority generally flows in the following manner. Agency designation to the network usually brings a measure of delegated authority, that is, ability to speak on behalf of and to commit agency resources. That seat at the table offers the venue to offer home agency information and technical expertise to the joint experience. Potential resources—funding opportunities, access to programs, new technologies,

educational opportunities—are entered into the transactional mix. These inputs are thrust into the discussions, which are joint learning experiences based on exchange. Then, if the network takes a form of action—for example, outreach and decision networks—the accommodations are made. In this sense, authority is based on expertise and the ability to reach agreement as a collective. These agreements carry more “moral” weight because they have the backing of many experts and managers even though traditional program authority normally remains in the participating organizations. One state official concluded that “while [the network] provides the input, and we work as a team, and try to reach agreement, ... this agency is the final decision maker.”

Decision Making

Decision making is different in networks, where reaching ultimate overall agreement based on joint learning from many organizational representatives is paramount. In the networks where actual joint decisions are made, discussion, discovery, adjustment, and consensus are clearly the rule. When authority is delegated and divided and based on expertise,

there are few alternatives. Because most network participants usually come together with some shared beliefs, this is easier than it would appear on the surface. Where strident differences are present—for example, between landowners and environmentalists in natural resource networks—the process does not work as well. The transportation network resorts to voting whereas natural resource networks like the Lower Platte River Corridor Alliance (see “Lower Platte River Corridor Alliance: An Informational Network”) have no choice but to remain informational. In general, networks do decide on programs of mutual benefit or of technical and informational value, and some make policy recommendations. These decisions are mostly ones that all can agree upon. One network leader said, “Our decisions come naturally as a product of our discussions and interventions. We only vote once a year when we adopt our work plan.”

Planning

Planning in all of the different types of networks is vision and problem driven. “The work plan is a catalyst for what we do.” The partners come together and articulate what they want to work on,

The Lower Platte River Corridor Alliance (LPRCA): An Informational Network

The Lower Platte River Corridor Alliance is a consortium of three natural resource districts and seven state agencies in Nebraska, joined together in an effort to address natural resource management issues in the Lower Platte River Corridor area. With the passage of an interlocal agreement, the Lower Platte River Corridor Alliance was established in 1996. Members contribute to an administrative fund totaling \$65,000 annually to support a coordinator’s position for the Alliance, and agree to provide technical and other assistance within their authority to the coordinator. Quarterly meetings are convened to share progress reports on programs and projects of all involved.

The Alliance seeks to assist counties and communities spanning 100 river miles to become fully informed about the natural-resources impact of their decisions, and to promote consistent decision making across jurisdictions so as to promote natural-resources conservation in the river corridor area. The Alliance pro-

vides a forum for concerned, interested citizens and local elected officials to bring their different perspectives to the table and seek common solutions. The goals of the alliance are: to foster increased understanding of the Platte River’s resources; to support local efforts to achieve comprehensive and coordinated land use to protect the long-term vitality of the river; and to promote cooperation among local, state, and federal organizations, private and public, to meet the needs of the many and varied interests in the river corridor. The Alliance furnishes easy access to relevant information on key issues and proposed projects, opportunities for dialogue and discussion for individuals wishing to influence the decision-making process, and a forum for consensus. Community participation is an integral part of this process. Opportunities for public involvement include river tours, a water quality golf tournament, stakeholder summit meetings, and regional planning workshops and charettes.

Source: www.lowerplatte.org

and the collective body by agreement or a token vote adopts it. For example, one of the rural development networks, PRN, has a steering committee of second-level executives and an education committee composed of program specialists. The former group agrees on the networks' work program whereas the latter plans an annual Rural Institute. The executive committee composed of the ratifiers of the overall agreement approves the programming decisions made by program and second-level staff. In each process it is a matter of finding and tapping available expertise and delegated authority. Planning then becomes organizing what the network has decided to do. One network coordinator related, "In my other work, in this organization, we administrators lay out what we need to do to make programs work. In the [network] a committee plans everything."

Implementation

Programming, or what might be called network implementation, follows planning, and in all types of networks it is normally through participating agencies. Most of the networks studied have either a minuscule staff presence, usually one coordinator, or program support comes out of the home agency of whoever is chair or president. Meeting arrangements, the listserv, and a website are the norm for this activity. The real programs that flow from the decisions of a network, which need to be carried out, happen back in the agencies themselves. For example, both the rural development and natural resource networks, which are not decision makers, rely on substate, state, and federal agencies to do the actual remediation or development work needed to deal with their challenges and agreed courses of action. In the same fashion, the Iowa Communications Network, an action network, is the data transmission and narrowcast agency for dozens of federal, state, and local government agencies that are responsible for their own programming. With this type of programming, one state official reported, "I have less control over what is done by the members because they are agencies and I can't tell them what to do."

Staffing

Staffing follows programming. With the exception of the action networks, where there is a larger staff

presence, once what to do is decided, one must go back to the table and see who is willing to take on the various tasks beyond core maintenance activities. "We rely on each partner to identify and offer expertise." In a network with pooled resources and expertise, this is not merely a matter of asking for "volunteers." Indeed, the process rarely works that way. More often in the course of the discussion of an issue, participating agencies make the group aware of staff within their organization who might contribute time and/or expertise. Several of the networks rely on the federal-state Extension Service located at land grant universities in this way, whereas others point out the expertise of planners, engineers, information specialists, finance experts, and many others. Then it is a question of "convincing the person to contribute some of their [agency] time or resources to the overall cause."

Organizing

Finally, organizing flows from all the other management activities. In a network, the form of organization more closely resembles a voluntary organization than a bureaucracy. Officers are "elected" on a rotating basis. Normally, that means tapping one who has been immediately active and has the technical and political respect of the other network activists. Often it is someone who can also command one's agency or university resources. Other officers may or may not be utilized, and their presence is more or less a formality beyond forming an executive committee to decide between meetings.

The real organization within most networks is through its voluntary committees, where the basic and detailed work gets done. For example, the Iowa Geographic Information Council operates with the following committees: Executive, Remote Sensing, Newsletter, Conference, Strategic Planning, and Clearinghouse. The MPO transportation network organizes with two committees: Policy and Technical. The Indiana Rural Development Council organizes with these committees: Executive, Community Visitation, Housing, Environmental Infrastructure, Leadership Development, and Agricultural Development. The particular structure for each network is a product of a self-organizing process where partners bring issues to the table and the group decides to focus on specific issues. Then specialization and expertise is pooled into committees.

It is an incremental process. Initially, discussants report that the process resembles “herding cats.” One state official asserted that eventually “our activities fall into categories, more or less, and we agree to a structure of some kind, at some time, about when we decide on our work plan.”

Working in a network is thus quite different for most managers, who are normally more heavily engaged in their own structures and operations. The only exception to this would be a notable number of agency “boundary spanners,” or staff who represent their department/agency nearly full time as a

liaison person to other organizations and who are network participants. Their inside and outside work is in many ways similar as they reach across and represent their program as full-time partner or network participant. Only about 10 percent of the informants fell into this category. But even the boundary spanner who does different work is within a hierarchy with standard management processes as he/she communicates with the home organization. In the network, all managers face a nonhierarchical self-organizing situation where “jointly agreed focus and purpose prevails.”

Networks Studied

Name of Network	Description and Purpose	Type	Enabling Authority	Primary Agencies
1. <i>accessIndiana</i> Enhanced Data Access Review Committee (EDARC)	Portal to Indiana State government information; EDARC regulates <i>accessIndiana</i> , (www.state.in.us) supported by a contractor for web development; sets policies for <i>accessIndiana</i> , reviews, modifies, and approves audit agency agreements; encourages public and private use; and establishes fees for enhanced access to public records.	Action	State Government	Indiana State Library; Indiana Departments of Administration, Bureau of Motor Vehicles, Secretary of State, Indiana Commission on Public Records, Indiana Commission for Higher Education; Chair, Indiana Intelnet Commission; Division of Information Technology; Office of Attorney General; State Budget Agency; and six citizen/NGO/media representatives
2. Des Moines Area Metropolitan Planning Organization (DMMPO)	Responsible for transportation planning for metropolitan area under §450 of Title 23 of U.S. Code (TEA-21) through its Transportation Policy and Technical Committees.	Action	Intergovernmental Agreement	Thirteen cities, three county government members, and two associate cities. Advisory participants include Iowa Department of Transportation, U.S. Federal Highway Administration, U.S. Federal Transit Authority, Des Moines Metropolitan Transportation Authority, and Des Moines International Airport.

Networks Studied (continued)

Name of Network	Description and Purpose	Type	Enabling Authority	Primary Agencies
3. Indiana Economic Development Council (IEDC)	Created by the Indiana General Assembly to serve as a research and ideas consultant for statewide public-private economic development strategic planning.	Informational	Not-for-profit 501c(3)	Seventy-two-member board of directors from state government, universities, private sector, business and labor interest groups, and NGOs. Chaired by the governor. Lt. Governor is chief executive officer of the Council (Note: in Indiana the Lt. Governor is head of the Department of Commerce and is Commissioner of Agriculture).
4. Indiana Rural Development Council (IRDC)	Provides a forum to address rural issues, seeks community input to identify problems, establishes partnerships to find solutions, enables partners to take action, and educates the public on rural issues.	Developmental	Intergovernmental Agreement/Not-for-profit 501c(3)	U.S. Department of Housing and Urban Development, U.S. Small Business Administration, U.S. Department of Agriculture/Rural Development Service, Indiana Commissioner of Agriculture, Indiana Department of Health/Rural Health, Indiana Department of Commerce, four local government elected officials, eight state legislative and U.S. Congress staff appointees, and four for-profit appointees.
5. Iowa Communications Network (ICN)	A statewide, state-administered, fiber-optics network that enables authorized users such as hospitals, state and federal government, public defense armories, libraries, schools, and higher education to communicate via high-quality, full-motion video; data; high-speed Internet communications; and telephones.	Action	State Government	Iowa Telecommunications and Technology Commission, Iowa Public Television, Iowa National Guard, Iowa Department of Corrections, Iowa universities and colleges, Iowa Department of Transportation, U.S. Veterans Administration, U.S. Social Security Administration, public schools, public libraries, and others.
6. Iowa Enterprise Network (IEN)	Supports home-based and micro enterprises; provides mutual assistance and information through conferences, workshops, and web links.	Developmental	Not-for-profit 501c(3)	U.S. Small Business Administration, Iowa Department of Economic Development, Iowa Rural Development Council, Iowa Area Development Group, Small Business Development Center-Des Moines, U.S. Department of Agriculture/Rural Development, Iowa Department of Cultural Affairs, and micro business owners.

Networks Studied (continued)

Name of Network	Description and Purpose	Type	Enabling Authority	Primary Agencies
7. Iowa Geographic Information Council (IGIC)	Clearinghouse for coordinated geographic information systems (GIS), data sharing, exploring standards, and facilitating cooperation among Iowans who use GIS.	Developmental	State Government	Representatives on 25-member board include university/private colleges, state government, planning organizations, county governments, local governments, federal government, private businesses, and community colleges.
8. Lower Platte River Corridor Alliance (LPRCA)	Fosters the development and implementation of locally drawn strategies, actions, and practices to protect and restore the river's sources; fosters increased understanding of the river's resources; supports local efforts to achieve comprehensive and coordinated land use; promotes cooperation among local, state, and federal organizations, private and public, to meet the needs of the many and varied interests of the corridor.	Informational	Intergovernmental Agreement	Lower Platte South, Lower Platte North, and Papio-Missouri Natural Resources Districts; Nebraska Departments of: Natural Resources, Health and Human Services, Environmental Quality; Nebraska State Military Department; and University of Nebraska Conservation and Survey Division. Ex-officio links with U.S. Environmental Protection Agency, U.S. Geological Survey, U.S. Army Corps of Engineers, and U.S. National Park Service.
9. Partnership for Rural Nebraska (PRN)	Cooperative commitment to address rural opportunities and challenges identified by rural Nebraskans; to work together to meet those challenges and provide resources and expertise to enhance development opportunities.	Developmental	Intergovernmental Agreement	State of Nebraska—Departments of Agriculture, Economic Development, Environmental Quality, Health and Human Services Systems, and the Rural Development Commission; federal government—USDA/RD and Natural Resources Conservation Services; the University of Nebraska; Nebraska Development Network.

Networks Studied (continued)

Name of Network	Description and Purpose	Type	Enabling Authority	Primary Agencies
10. Small Communities Environmental Infrastructure Group (SCEIG)	Coordinated efforts to assist small governments in Ohio in their development, improvement, and maintenance of their water and wastewater systems.	Outreach	Non-formal group	State of Ohio Water Development Authority, Ohio Environmental Protection Agency, Ohio Department of Natural Resources, U.S. federal-state Extension Service/Ohio State University, U.S. Department of Agriculture/Rural Development, U.S. Department of Commerce, Economic Development Administration, private lending representatives, university rural centers, nongovernmental organizations, and regional development districts.
11. The Darby Partnership (Darby)	Facilitated by the Nature Conservancy of Ohio, this partnership of federal, state, and local agencies, environmental groups, and watershed citizens share information and resources to address stresses to the streams and serve as a “think tank” for conservation efforts in the watershed.	Informational	Non-formal group	U.S. Department of Agriculture, Natural Resources Conservation Service, Ohio Department of Natural Resources, Ohio Environmental Protection Agency, U.S. Geological Survey, six county Soil and Water Conservation Districts, City of Columbus, Columbus and Franklin County Metro Parks, Mid-Ohio Regional Planning Commission, The Nature Conservancy, The Darby Creek Association, and several NGOs.
12. United States Department of Agriculture/Rural Development Nebraska Outreach Programs (USDA/RD)	Uses outreach to leverage funds of other programs to augment its funding as well as assisting rural cooperatives, value-adding businesses, small municipal water systems, public facilities, and housing for small communities.	Outreach	Federal Government	USDA/RD, Partnership for Rural Nebraska, Nebraska Department of Economic Development, Nebraska Rural Development Commission, Nebraska Development Network, University of Nebraska–Extension, Development Districts, Nebraska colleges, and county and city governments.

A Guide to Network Participation and Operation

Promoting Networks

Networks do not just happen, but many other experiences suggest that they must be developed. Those composed of public managers will need to be advanced by some of the managers. This is because few networks have a pre-existing mandate to operate. With the exception of the Des Moines Area Metropolitan Planning Organization (MPO) and the Iowa Communications Network, the other networks are based on voluntary action, a nonprofit charter, or voluntary intergovernmental agreements. Their operation and continuation therefore depends on self-generated actions. They have to be “held together.” This requires a heavy dose of developmental activity on the part of some partners who are champions and promoters as well as partners.

All networks depend on one or a small number of champions. A state program head of a federal agency in one of the rural development networks stated that every network must “have a catalytic leader who has a passion for it.” Another state official said, “We need an overall champion, and each subcommittee project needs a mini champion!” Even though authority is more equal in networks, and is based primarily on expertise, someone needs to come forward and help orchestrate a vision, follow through on the work plan, contact key partners, orchestrate meetings, and so on. Ordinarily this is someone who holds an administrative position in one key agency, can command modest professional staff resources if needed, has control over potential donated in-house clerical and communication resources, and has the technical or professional respect of the other members. A network champion can be but is not always the

convener or chairperson. Often it is the director of one of the participating agencies who, through staff time, holds the modest network records, operates the listserv, and maintains the website. In other cases it is a “volunteer” who has the capacity to do the work within the organization, for example, a federal or state agency/program or unit of a college or university. In a few cases, the role of champion has rotated with the chair, who is expected to be temporary champion. The risk is that “with an inactive chair we go a year or so with very little activity.” As in the case of voluntary organization committee work, behind most long-term networks lies the energy work of a network champion.

Networks need promoters around their champions. One network promoter referred to himself and others like him as “vision keepers.” “These are the people at the middle or working level of federal and state agencies where the links up and down have to be made.” As persons who work with programs on a daily basis, they have the technical knowledge to share with others. They do more than be present and present. They provide a technical and organizing energy that champions need to keep the process going. They become involved in developing joint information events and activities, and engage extensively in information sharing, are at meetings to access information and emerging technologies, and communicate the networks’ concerns with their home agencies. In this sense these vision keepers promote the information and access to expertise/information within their agencies and help carry the work of the network. Each network needs a reasonable number (three to six) of these persons representing a range of different agencies,

who in a collaborative are as essential as the champion. Indeed, it would be very hard to be a successful champion, or even think of a viable network, without the complementary work of the vision keepers.

Broad Participation

The vision keepers must work with the champion to broaden participation. In nonprofit-organization parlance, this means identify the stakeholders and bring them in. Networks, too, must find those organizational representatives who have the needed resources—information, expertise, authority, money—to advance the overall cause. One network champion said, “We try to mobilize all the people in a similar capacity: funders, regulators, educators, and technology experts.” Many networks have categories of council or board members to signify broad involvement: federal government, state government, local government, nonprofit, for-profit, and university/college. This type of activity involves reaching out and inviting new resource persons to an “ever-widening circle.” Once people come to the table, it is important to see that everyone’s issues are put on the table. It keeps and holds partners, meeting after meeting, year after year.

Communication

The network is also promoted by a steady flow of communication. Electronic communication—e-mail, websites, and, to a lesser extent, video conferencing—constitute the channels of non-face-to-face communication. Meeting notices, announcements of relevant events and programs, and newly available technologies are all transmitted this way. “They save a lot of telephone tag, and contact with one can be contact with all.” All the networks have websites, which provide an instant introduction and a contact point for potential participants. Before the availability of the World Wide Web, it could take weeks to find out about and contact someone in a network. E-mails link individuals so that the work of the network can be transmitted, and, between meetings, e-mail is the transmission belt of technological and/or program information.

Electronic means, however, are not substitutes for face-to-face communication, particularly at network meetings. Here the network business and

one-to-one interagency business is transmitted, once again avoiding “telephone tag.” Most meetings observed informally “convened” 10 or 15 minutes before the formal meeting and “continued” for up to 45 minutes after the meeting. At the annual Rural Institute of one developmental network that the author attended, The Partnership for Rural Nebraska (PRN), hundreds of informal contacts were made over the two and a half days (see “Partnership for Rural Nebraska: A Developmental Network”). These contacts are important since PRN does not take direct action beyond its capacity-building activities. Communication promotes networks by offering participants vital information, new capabilities and opportunities, and contact venues. They are central to conducting transorganizational affairs in all types of networks.

Agency Head Role

Network promotion, as other research has revealed, also relies on the tacit support of most partners’ agency head. It proves to be hard for anyone in the hierarchy to devote scarce agency resources—time, personnel, information—if the person at the top has not bought into the idea of agency presence in a network. “Our council is struggling right now because it was the idea of a Republican governor two governors ago. The previous and current Democrats see less of a need for such a body.” As a result, appointed department heads in this situation were reported as offering only token support. On the other hand, another network coordinator stated, “The only way we have survived political resistance from local people is that the state and [special] district chief executive officers are steadfast in their support of this joint undertaking.” In this case the executives are not directly involved, but they have committed dollars to support a coordinator and have made their staff available to become involved in network activity. Top-level support is essential promotional activity.

In effect, network promotion beyond a modest amount of publicity through electronic venues and an occasional brochure and newsletter is primarily operational activity. Acts or deeds in development and maintenance amount to the major elements of promotion. A sort of natural contacting of like-minded agency managers, specialists, and knowledge holders over commonly held aims or interests moves champions and vision keepers to engage in

The Partnership for Rural Nebraska (PRN): A Developmental Network

What Is the Partnership for Rural Nebraska?

The PRN is really a name applied to a vision:

- A vision of local, state, and federal groups working together to stretch resources, thereby benefiting more Nebraskans: The whole of the PRN is greater than the sum of its parts.
- A vision of educating each other on available resource and rural development needs, using educational opportunities such as the annual Rural Institute, agency orientations, and seminars: PRN organizations learn from each other.
- A vision of communicating to Nebraskans and others regarding rural development activities, opportunities, and challenges through the newsletter, *Rural News Bits*. The PRN shares a common voice.
- A vision that is admired outside Nebraska. The PRN is seen as a model for the rest of the country.

As a Result of the Partnership, We Have:

The Nebraska Rural Institute. Held every year in September, the Rural Institute has become the preeminent conference of its kind in Nebraska. Focused entirely on rural development issues, the Institute brings together providers, practitioners, researchers, and community activists to network, share, discuss, and learn about rural issues, opportunities, challenges, and solutions. Over 750 people have participated in the Institute since 1998, including people from South Africa and Australia.

The PRN Education Committee. The Education Committee is the education arm of the PRN. The Education Committee is responsible for the planning and implementation of the Nebraska Rural Institute, cross-training the staff of PRN organizations on each organization's programs, and conducting one- and two-day seminars on topics of interest to rural development practitioners.

Rural News Bits. Over 6,000 persons working on rural development in Nebraska receive this monthly newsletter. Contributing organizations share ideas, educational and financial opportunities, announcements, and general news. In a survey conducted last year, 76 percent of the survey respondents indicated they used the information from *Rural News Bits* to assist their community, business, or self. Only 15 per-

cent of the respondents indicated that they receive the same type of information that is available in *Rural News Bits* from other sources.

Nebraska Rural Poll. The annual Rural Poll, conducted through the University of Nebraska–Lincoln's Center for Applied Rural Innovation, is the most extensive, comprehensive research of its kind anywhere in the world. Real information on the trends happening in rural Nebraska and the attitudes of the people who live there is gathered and analyzed, providing an invaluable snapshot of rural Nebraska that can be considered and used in policy development. Rural Poll results have been cited in the *Wall Street Journal*, *New York Times*, and *USA Today*.

Nebraska Cooperative Development Center. This is a network of people with access to local state and national resources, dedicated to keeping people in rural areas by helping them work together to increase their income, and dedicated to helping in the creation of agricultural opportunities by working cooperatively. The NCDC is staffed and funded by three of the PRN agencies.

Shared Staff. Because of the improved communications and recognition of common needs, some of the partner agencies have been able to share staff. While one agency may not have been able to afford a new staff person to meet a pressing need, by working cooperatively with another PRN agency, they are able to fund a position that meets the demands of two or more organizations. Shared staff includes two staff positions with the Cooperative Development Center and two shared positions with the Education Committee and *Rural News Bits*. In addition, agency staff works together on a variety of projects that aren't jointly funded. This extends and expands capability without stressing limited resources.

Communication. Perhaps most important of all is the heightened level of communication and its value to the partner organizations. The enhanced communication and the relationships that have been built allow the partner organizations to eliminate "turf" issues, collaborate to provide the needed service to rural Nebraska, and focus on the final result: that of providing the highest level of assistance to the greatest number of projects and communities, and stretching tax dollars to the maximum.

Source: <http://cari.unl.edu/prn1>

an inclusive involvement that brings in others, and those who benefit personally/professionally/organizationally will participate, and sometimes become potential vision keepers. Media advertisements, news releases, newspaper and magazine articles, and other aspects of mass publicity can create some visibility but are rare forms for network building. Networks' real promotion is by organizing and operating.

Brokering Decisions and Results

One clear factor about networks is that because they are self-organizing and nonhierarchical, they approach their form of decision process carefully, whether it be to adopt an agenda or to take some form of action. Why the trepidation over decisions? Several reasons are apparent. First, these bodies are rarely program bodies, but they exist to *exchange* information and become aware of potential adjustments that the network actors can make in their own organizations.¹⁵ Second, most members come to the table on a *voluntary* basis (a few report they were assigned network duty), and the nature of their participation suggests some form of shared participation in decisions. Third, network actors come together from very *different organizational cultures*, and the risk of clashing styles is great if not managed. Fourth, in most networks, decision comes as a result of *shared learning* experiences in which the product is the creative solution that emanates from the discussion.¹⁶ Fifth, decisions that create winners and losers, most zero-sum situations, discourage involvement and *contribution*. These concerns make clear why so few of the networks make many hard and fast core policy/program decisions. It is also clear that consensus is the mode of agreement. It almost always prevails over parliamentary voting.

It is important to understand that many networks are not the joint decision bodies they are assumed to be. In all but the action networks, the process of decision is limited to such organizing issues as adopting the annual work plan, approving the agenda for the annual meeting or program for the conference, forming workgroups or committees, reviewing the website, or electing officers. With the exception of Des Moines MPO, where plans and funding priorities are adopted, and ICN and EDARC of *accessIndiana*, where agency use rates

are approved and communications operations are regulated, the networks operate without the kind of formal work schedules or major project designs that single organizations are familiar with. Often studies are conducted, as with the two natural resource networks, after which the partners "hear the results," ask questions, and then are free to bring the studies back to their agencies for implementation. Also, with the exception of the transportation and natural resource networks, little that is on the table is really controversial. Decisions are not core issues for most networks.

Decision Process

How are decisions that are made brokered in most of the networks? Clearly by achieving consensus through joint exploration and discussion until agreement is at hand. Then another issue is brought to the table. A state official described the process this way: "Proposals are made by participating agencies; the staff there researches the proposal and does a market feasibility study; the report is distributed electronically before the meeting; at the meeting, discussion is held and questions are asked; if there are too many questions we table the issue until more research can be undertaken; in between, meetings, phone calls, and one-to-one discussions ensue; the issue is brought back to the table; and if there are a lot of head nods in the yes direction, we consider it to be approved." A process like this, with lots of brokering, is followed in most of the networks, although normally "staff" research tends to be the partners themselves who go back to their own programs and work with their agency colleagues, later bringing the agency-derived results to the network.

One partner described the network decision process as similar to "a rural community meeting." "You get the people out, connect them, let them identify the issues, and let them come up with a solution over time." Another said that beyond setting priorities on work, and staff doing some studies, "we let consensus rise to the top." Another said, "We have Robert's Rules in our by-laws, but only use them after we have reached agreement." Another network chair said that "parliamentary procedure rules won't work—as a last resort when we are near consensus we may resort to informal Robert's Rules to move things along."

Therefore, agreement must be brokered in some way. The prevailing mode is to use the discussion to identify the barriers posed by the people at the table and, if possible, acknowledge them by making accommodations. As mentioned, most of the administrators at the table have the delegated authority to make such adjustments. In other cases an ominous silence by a key partner may signal disagreement but unwillingness to hold up the emerging consensus. Voiced disagreement, on the other hand, often leads to tabling and protracted discussions and e-mails among administrators between network meetings.

In some information networks, consensus is often hard to reach. The parties—for example, land-owners and environmentalists—may simply agree that they disagree. Action is individual. The Des Moines MPO must by law make two types of decisions that are virtually impossible to reach by consensus, project funding priorities and the metropolitan transportation plan. For the former, they have adopted elaborate decision rules that all have bought into by prior agreement, deflecting major conflict over choosing projects, whereas with regard to the plan, a weighted (by population) voting scheme has been employed, but these devices have not always built consensus.

Network Power

The decision-brokering role also operates within the context of network power. Beyond the façade of consensus and collaborative management, stronger partners may be able to take advantage of weaker partners. In each of the networks studied, some organization representatives sit in positions where their knowledge, financial resources, organization position, or legal authority accrues power within the collective.¹⁷ While such power can be used to impede consensus, it is more often used to forge general agreements. For example, in the rural development networks—both outreach and developmental—the USDA/RD, university Extension, and state economic development departments tend to be powerful and committed actors. Their partner members do a great deal of the persuasion and, ultimately, adjustment work required to foster the common mission by getting others to make the adjustments needed for essential consensus. On the other hand, the absence of the support of any of the “big three” can slow progress in these networks.¹⁸

Negotiated Support

Brokering within networks is, as one partner suggested, “very much like project management within our agency, where you try to make adjustments to build agreement to move forward.” Working together and discussing reasonable accommodations and proposals needs to carry the support of a wide range of organizations. Like project management, it is a negotiated support.

Developing Trust

It is clear that networks are held together by purpose and social capital, plus mutual respect or trust. Generally held beliefs in the purpose—geographic information system (GIS), rural development, micro and home-based business, economic development—of the network contribute to attracting and holding people in the collective.¹⁹ Social capital, or the built-up reservoir of good will that flows from different organizations working together for mutual productive gain, no doubt is the “glue” that holds people together or the “motivator” that moves the process along.²⁰ But in terms of what helps to steer networks, it is clearly trust, the obligation to be concerned with others’ interests, that allows for the network to do its work, select its leaders, keep its members, and, most important, to broker those decisions it must make.

To some degree, many network partners bring pre-existing trust-based relationships with them into the network. “Some of us have been working together for up to 30 years,” said one natural resource administrator. The author was repeatedly reminded that many of the state and federal officials work with one another in multiple settings: interagency funding awards committees, task forces, councils, and consortia. In this way, familiarity breeds subsequent understanding through prior or other ongoing work.

The process of mutual learning through exploration leads to additional trust. “As we educate one another we take advantage of diverse backgrounds.” When participants hear technical presentations by colleagues, or hear about others’ programs, they develop more than a passing level of understanding about them. One learns not only about the other agency and its programs, but is able to make deeper judgments regarding the competence of the agency,

along with that agency's potential contribution to the network's mission. As participation in the network increases over time, individuals demonstrate key technical and managerial abilities, which in turn build the collective confidence of the group. Indeed, the more knowledge that is extended, the greater the opportunity to build trust in others' abilities.

Discussants in virtually all networks agreed that procedurally the consensus-building process builds trust. "We give up some autonomy for a new paradigm shift, collaboration. This leads to mutual understanding and a passion about partnering." As deliberations ensue, the details and positions are put on the table, and adjustments are made, people feel more comfortable about one another. One federal official stated that a great group dynamic means, "Don't let your power get in the way." Each instance of consensus cements this obligation-based trust.

Another operating rule in most networks is that trust is maintained by non-encroachment on any participating agency's domain. One state official put it bluntly, "Let each agency put their details and concerns on the table; respect each agency's needs and interests. They come first!" Most network actors will tell you it is better to keep agency agendas from being hidden, but when agendas do come forward, it may be impossible to force an agency to change. Mild persuasion and minor adjustment may follow, but intransigence on the part of an agency, particularly a powerful one, usually means that a network must pull away from a controversial issue.

Action Builds Trust

The individual information-sharing dimension of network activity cements relationships in a very subtle way. In the Ohio Small Communities Environmental Infrastructure Group, a key portion of every meeting is the time allotted for agencies to share their own outreach experiences and agendas. This unfolds *before* they tackle joint outreach activities (see "Small Communities Environmental Infrastructure Group: An Outreach Network"). This way partners know what the others are undertaking; agendas get put on the table. In most of the networks, meeting time is usually devoted to an

around-the-table report on the issues of relevance in each agency or program. These "show-and-tell" sessions are important for all members to fulfill their liaison role for their organizations, whether they are official boundary spanners or not. In the process of opening up one's agency to others, the kind of trust that emanates from openness is advanced.

The sense of trust can also be built through progressive accomplishment. "Start with something small and build from there" was a sentiment echoed by a number of discussants. Another suggested that starting with low-risk efforts helps. As each network carves out the possible, achievement produces "results" and proves to the group that they can work together. Committee work is critical here. When small groups of networkers work together at a smaller table on focused projects, it leads to a higher level of intimacy, and if all goes well and the work gets done, it breeds deeper understanding. Failure to do committee work, or failure to deliver a promised information component, a data set, or some other work necessary for network operation, contributes to loss of trust. Since networks rely on the "volunteer contribution" of mostly full-time administrators, each is expected to do his/her share and come forth with any commitments made to the group.

Extended timeframe conferences or meetings are important social platforms upon which trust is extended. The Iowa GIS network has a biannual conference at a university where prepared papers and panel presentations are offered. The Iowa Enterprise Network holds periodic conferences where self-help projects are demonstrated, along with useful presentations on maintaining small businesses. The Partnership for Rural Nebraska's annual community economic development Rural Institute is planned by its component partners; it provides substantive panel presentations and mobile workshops. The Indiana Rural Development Council holds a one-day annual conference, and in 2002 hosted the two-day National Rural Development Council Partnership workshops. These meetings bring the key actors together in planning the sessions, and the sessions, formally and informally, provide the type of social and intellectual bonding that reinforces pre-existing trust.

Small Communities Environmental Infrastructure Group: An Outreach Network

What is SCEIG?

The Small Communities Environment Infrastructure Group is an association of federal and state agencies, local governments and groups, service organizations, and educational institutions designed to help small communities in meeting their environmental infrastructure needs.

The SCEIG was formed in 1990, by state, federal, local, educational, and service agencies that provide regulatory, technical, financial, and educational assistance for environmental infrastructure projects. These agencies saw a need to coordinate efforts to assist small governments with the difficult task of developing, improving, and maintaining their water and wastewater systems. This group of experts has quarterly meetings to discuss the needs of small communities and what responses or remedies are appropriate and feasible.

The goal of the group is to assist small communities in identifying the most appropriate resources to help the communities resolve problems associated with environmental infrastructure. To this end, the group has established three committees to address the most pressing needs of small communities: Finance Committee, Curriculum Committee, and Technology Committee.

A committee on financing was formed to coordinate the financial resources administered by state and federal agencies to address environmental infrastructure needs of small communities. The Finance Committee meets bimonthly to address the needs of specific communities if a member agency feels that a project cannot be funded without a coordinated effort.

The Curriculum Committee offers workshops in what local officials need to know about water and wastewater systems; the training session includes: review of system alternatives, visits to nearby facilities, understanding management requirements, analysis of community needs, and resources available to assist in designing, funding, and operating water supply systems and wastewater treatment facilities.

The committee for technology transfer works together to identify and develop new or under-utilized technologies to meet the specific needs of small communities. The Technology Committee prepares manuals, offers workshops, and has developed a resource library to help engineering consultants and regulators find the right systems for small communities.

In addition, the SCEIG has published various documents and compiled a list of Internet resources for the use of small communities in considering the installation, repair, or expansion of environmental infrastructure.

Source: <http://www.cpmra.muohio.edu/sceig/sceig.htm>

Many network participants thus build on the relationship-based trust from numerous prior contacts. The act of working in the network as a team on a “common cause” as information bearers for their agencies usually leads to greater mutual respect. In the outreach and action networks, there is the opportunity to build trust by “delivering” on implementation.

Problematic Trust

Trust is not guaranteed. The transportation Des Moines MPO has some difficulty getting representatives to think metropolitan rather than for their own jurisdiction’s interests. Their policy body, composed of elected officials and local managers, finds this particularly difficult. They also suffer from

turnover of local elected official members. The organization’s technical committee finds this to be less of a problem, as it is composed of appointed administrators who have worked together over time. The informational natural resource networks—Lower Platte and Darby—also find developing mutual respect among conflicting interests difficult. In these cases, trust is harder to develop, though there appears to exist among administrators, and with the others, a level of working familiarity, if not trust. In these cases, where the conflict potential is greater, the issues addressed mean that it is more difficult to develop trust. The other networks, however, rely heavily on their interactive processes to orchestrate mutual obligation.

Enlisting Technical Expertise

Information is at the heart of network operations. Since only a small number take direct mutual action, there would not be much left to do without a solid information base. Both program and technical information, from different organizations running in the opposite directions of agency autonomy and integrative solution, take the form of a double helix, which constitutes the “transactional DNA” of these interorganizational exchange relationships. Most of the network management practices already identified—such as roundtable information sharing, annual/biannual conferences, agency presentations at full network and committee meetings, web postings, and e-mail transmissions—compose the set of ordinary vehicles of finding and transmitting information. This constant flow of expertise is a part of the ongoing operations of networks. As one non-profit administrator related, “A lot of expertise resides in the people who are in the network.”

Dedicated expertise vehicles also play a prominent role in many of the networks studied. The Des Moines MPO has a technical advisory committee that both looks at feasibility of contemplated projects and finds and brings state-of-the-art planning and transportation technology to the MPO. The committee’s technical conclusions and advice prove to be essential for making the kind of joint-action decisions the MPO is required to make (see “Des Moines Area Metropolitan Planning Organization: An Action Network”).

The Small Cities Environmental Infrastructure Group in Ohio has a Technology Transfer Committee, composed mostly of consulting engineers, who bring advice and information to small cities as an alternative technical source to paid consultants. The committee maintains a technology library, and also serves to educate the other group members. The Iowa GIS group (IGIC) has several technical committees, for example, the Global Positioning Committee. Network actors sometimes call on network staff or agency staff to provide expertise. IGIC has a state GIS coordinator who works for Iowa State Extension, spending part of his time in GIS training and development at the county government level. *accessIndiana’s* EDARC relies almost completely on contract-based technical and marketing staff. The Indiana Economic Development Council, a strategic planning group composed of

high-level public and private sector executives and elected officials, relies almost completely on project staff, or the staff of the Indiana Department of Commerce, to conduct its research and provide needed information.

Finally, many of the networks dedicate up to half of their meetings to technical presentations. These presentations are reported to be invaluable in keeping and holding partner members, who become more comfortable if they attend a two- to four-hour meeting in which more than housekeeping business items are discussed. These presentations are made by network participant experts, university researchers and professors, or external vendors.

Finding Expertise

Internal and external expertise is a mainstream source of technical knowledge. Most participants will ask staff scientists or specialists, along with university-based researchers, to share their technology knowledge with the body. For example, in the environmental and natural resource networks, engineering knowledge that deals with flooding and floodplain concerns, water supply, water quality, agricultural use, and recreation and wildlife management are all at the forefront of participating agency needs. Researchers and vendors have knowledge that may not be within the network. A good example of external knowledge in environmental management would be in various facets of precision agriculture. As a result, external experts are called in, usually with some “coaching.” As one federal official observed, “The university research people usually need to be reminded that the audience is most interested in the practical applications, and how feasible and cost-effective it is. The vendors need to be reminded that they are not here to sell us a product, but to make us aware of a technology so we can explain it to the communities we work with.” Individual agency partners then can access these external presenters if they choose to do so.

Informal Expertise Development

The Iowa Communication Network accesses information differently through its informal networking processes. It is a different kind of action network, its physical network being the nearly 4,000 miles of fiber-optic cable that has been laid, and it is a

Des Moines Area Metropolitan Planning Organization (MPO): An Action Network

The Des Moines Area MPO is responsible for transportation planning within a geographic area called the Planning Area. The MPO approved the Planning Area on May 21, 1992. It is nearly double the area that was used for previous transportation plans in the Des Moines area. It is the same area used to develop the MPO's *HY 2020 Transportation Development Report*, published and adopted by the MPO in October 1994. It is the same area used to develop this plan, *The Horizon Year 2025 Long-Range Transportation Plan* (Plan). The Planning Area includes portions of Dallas, Madison, Polk, and Warren Counties. The Planning Area is intended to include the area that is expected to be developed or urbanized by the year 2025.

MPO membership is open to any county or city government located in the Planning Area having at least 2,400 population and that adopts the MPO's 28E Agreement (agreement entered into under Chapter 28E, Code of Iowa, establishing the MPO and its responsibilities). Currently, MPO membership includes the following cities and counties: Altoona, Ankeny, Carlisle, Clive, Dallas County, Des Moines, Grimes, Johnston, Norwalk, Pleasant Hill, Polk County, Urbandale, Warren County, Waukee, West Des Moines, and Windsor Heights. The city of Polk City is an associate MPO member. Associate membership allows a nonvoting representative to actively participate in the transportation planning process. Associate membership is available to governments within the MPO that do not meet the population threshold for full membership.

Representation on the MPO (the Transportation Policy Committee) is based on population, with each member government given at least one vote. The MPO gives additional representatives to larger member governments based on reaching determined population thresholds. The Iowa Department of Transportation (DOT), the Des Moines Metropolitan Transit Authority (MTA), the Des Moines International Airport (Airport), the Federal Highway Administration (FHWA), and the Federal Transit Administration (FTA) serve as non-voting, advisory representatives to the MPO.

The MPO receives technical guidance and recommendations from the MPO's Transportation Technical Committee (Tech Committee). The Tech Committee representation differs from the MPO in that the MTA and Airport are voting members of this committee. The MPO Tech Committee's representatives, primarily senior staff from the MPO's member governments and agencies, are appointed by their respective councils or boards.

Additionally, the MPO has established and supports other committees on various transportation-related issues relevant to the MPO's responsibilities. The MPO also requests citizens to serve on these committees, as appropriate. As part of an adopted public participation process, the MPO strongly encourages input by and communication from citizens.

Source: Des Moines Area Metropolitan Planning Organization, Horizon Year 2025: Long-Range Transportation Plan (Urbandale, IA: DMMPO, 1999).

statutory agency governed by a state commission. At the first level, expertise is exchanged through a set of advisory committees and councils: Education, Regional Telecommunications, Telemedicine (also statutory), Administrative Telecommunications, Telecommunications, Telejustice, and Library Network. At another level there are the interactions of the policy and operational people, such as the director of education for Iowa Public Television, the Iowa Department of Public Health chief information officer, the Iowa Department of Transportation information officer, the operations director for the Public Safety Department, the associate dean/

telecommunications director of the University of Iowa School of Medicine/Hospitals, and ICN management staff and division heads. Technical expertise, however, is transmitted informally as ICN operating staff (some of whom are contract employees) interact with the information executives previously mentioned and their immediate staff. As needs are exchanged and programs adjusted, valuable telecom expertise is accessed and exchanged. Technical knowledge is enhanced by transactional contacts between service provider and client through this informal networking.

The other networks come together formally to access expertise and to share information. Holding many partners in the fold in most networks requires that technical knowledge be transmitted; they will not attend repeatedly unless there is something to gain beyond the usual collaboration slogans of who is doing what and can we work together. As one federal official related, "We try to find out who is riding the appropriate technology horse and get it out in a viable form."

Ten Lessons on How to Manage in Networks

The network managers were asked, at the end of each discussion, for observations and suggestions to other public managers about how to manage in networks as opposed to managing within single administrative organizations. It provided them an opportunity to reflect on the network experience in a broad way and, most important, to contrast the two types of management, in hierarchies versus networks. Very few managers were reluctant to speak, reflect, and provide advice.

1. Be a representative of your agency and the network.

To be an effective network participant, one must balance the dualism of agency and collective concerns. As a formal or informal boundary spanner, one must first of all know your own agency, its programs, administrators, technologies, funding bases, regulations, and so on. "Others in the network will turn to you with questions and expect answers." This requires a constant flow of communication within the home agency. In this sense the boundary spanning activity extends to intraorganizational as well as interorganizational domains. "Do the lateral networking within your agency," said one state liaison officer. If expertise is called for that you cannot supply, bring the right person from the organization to the meeting. "It is your responsibility (as agency representative) to see that the right need for technical information from your agency is satisfied."

"Continuous involvement, no matter what the trade-offs might be, is also essential." "Always be there! No one will protect your interests but you."

Several persons relayed that they don't want to miss the information that is exchanged around the table. One federal manager concluded that network involvement is a necessary evil. "It takes great time commitments, I would call it 'drudge' work; you have to make yourself network when there is so much on your desk, and go to night meetings; it is hard to keep the momentum going, so we all have to do our part."

At the same time, one must be concerned for the overall mission or purpose of the network. "We're not here just for departmental 'show-and-tell,' but to investigate and solve problems that touch all of us." Those at the table are, as mentioned, expected to contribute information or expertise or resources. And when the problem being faced is nettlesome, solutions require that most all administrators help focus on the issue at hand and contribute. That is a major reason why the network is demanding of managers' time. One must think in terms of the whole enterprise as well as represent one's agency.

2. Take a share of the administrative burden.

Most of the active and long-standing networks either have a small coordinating staff, or the maintenance work is conducted by a staff person as a small part of his or her regular duties. Only half of the agencies have any kind of full-time staff. The other half relies on a small portion of one person's duties, which were devoted to network maintenance/continuity. As a result, many individuals in the network may have to take on all or some of the neces-

sary support chores. The point is to “have someone to do the staff work.”

A great deal of the administrative load is carried by old-fashioned volunteering or stepping up. This is usually the case with regard to committee or task-force chairpersons. When a network member agrees to become a chair there is a tacit understanding that this person will arrange meetings, keep records of proceedings, oversee necessary investigations, contact outside experts, and report at network plenary meetings. The network itself also makes designations of persons responsible for gathering information or making contacts. This designee is expected to absorb any necessary research assistance and e-mail or clerical resources within the home agency, and to personally perform the leadership aspects. The task leadership function is not expected to be delegated to an assistant or deputy, unless that person is or is about to become a working member of the network. In a network, many managers are expected to become workers in terms of critical committee or assignment work.

An active president/chair or coordinator is also essential. “Our good years have been those with a committed, active chairperson; the bad years when [the network] was low on the chair’s agenda, or something came along to overwhelm or distract him.” An active chair plus a champion is a real administrative advantage, as the champion can fill in the gaps with a less active chair and urge active chairs to greater heights.

3. Operate by agenda orchestration.

Networks that just let the discussion roll and hope for the best do not do as well as those who “manage the interaction time.” The advice of the discussants, in their words, goes something like this: “Learn the players,” “get people to work across their silos,” “keep the formal and the informal going,” “don’t step on agency toes,” “keep politics out of the core issue,” and “always steer toward the vision.”

This is why the work plan and a focused agenda are important in virtually all of the networks. An annual work plan focuses on mission-driven goals that can be accomplished within a timeframe. The plan is not only a statement of the quality and the

The Ten Lessons

1. Be a representative of your agency and the network.
2. Take a share of the administrative burden.
3. Operate by agenda orchestration.
4. Recognize shared expertise-based authority.
5. Stay within the decision bounds of your network.
6. Accommodate and adjust while maintaining purpose.
7. Be as creative as possible.
8. Be patient and use interpersonal skills.
9. Recruit constantly.
10. Emphasize incentives.

quantity of the work, but an important message that the network is not a social gathering of like-minded managers, but a serious collaborative body that has concrete reasons for existence and can accomplish tangible results. The agenda is a signal to partner managers that meetings are devoted to objectives for which their participation is required. One network champion flatly asserted, “Without a work plan and real issues on the agenda, we would slowly lose program directors, or they would begin to send staff members, and then expendable employees. Then it [the network] is over!”

In other words, the interaction must not only be led but oriented to purpose, guided to some tangible level of accomplishment, while respecting partner interests and positions. In networks, one would call this the essential part of the guidance function.

4. Recognize shared expertise-based authority.

One discussant reminds herself “that every time I enter the world of the network I change hats from *the boss* to *one member*.” Another state agency head concluded that every clergyperson—rabbi, minister, priest—could learn from his network experience. “They should all be required to not be

the person in charge for at least a year before they take the pulpit. They would learn to work with people at different levels, formally and informally. This means that as one works through the network, different aspirations, goals, and missions must come together." Another administrator said, "You can't operate in this collective if you think you have all the answers. We come together to find answers. That makes us more equal. We all have expertise in different ways." Another administrator concluded, "It is not a matter of no one being in charge, but that everyone is in charge ... and that is how you have to operate." One middle manager related how important implicit authority among his peers in the network is, particularly in subcommittees: "We just do without our agency head's support. At the top level they have to be protective of their turf. It is easier for us to take certain actions." Finally, one full-time network coordinator underscored not only the presence of collective authority, but the low authority profile that networks often have to take in this regard: "We are most useful when no one is scared of us."

5. Stay within the decision bounds of your network.

If your network is designed to inform others or to build capacity so individual agencies can make better decisions, don't tread on agency decision prerogatives, or you will not be a network for long. The three information networks studied report they are constantly watched so that they do not cross that line to decision/action/implementation. Several discussants in one of these networks observed that the network was particularly threatened in 1999 when one of its core partners unilaterally came out in support of a national wildlife refuge proposal for the watershed. "The wildlife refuge issue almost blew us apart. People thought [the network] was in favor of it, and we lost a lot of public and agency support. Some people dropped out for two years and, now that the issue is dead, they are just coming back."

Developmental networks can decide on programs that help partner agencies, but they must stop short of deciding on courses of action that their agencies might take. "We demonstrate lots of different business development strategies and hope the conference participant will go home and use them!"

Outreach networks stop short of hard decisions, but provide opportunities to access agency programs and no more. "We can't do programming as a network. Only the programs themselves are authorized by law to provide funding or some type of services!" On the other hand, action networks must fulfill their charge by delivering services, funding programs, making legal plans, and so on. It is thus important to know that all types of networks decide on work plans, agendas, officers, committees, and information programs, but not all make the kind of operational decisions that are familiar to agencies and organizations.

6. Accommodate and adjust while maintaining purpose.

The earlier discussion of the brokering role suggests the importance of moving beyond the recognition of individual concerns toward new ideas and forms of collaborative agreement. This requires recognition of the "long lead time that is needed for adjustment and reaching consensus." This comes, according to a state department head, "after an open and frank discussion on the big issues." "This means to be ready for give-and-take while reminding all of our vision," said another manager. Another program manager echoed this sentiment, "Talk it out, back off a bit from the agenda to get agreement, but stay within your bounds. Remember what you are there for." The individual member of the network is there to use agency knowledge/expertise/resources to help explore problems and develop creative solutions while being concerned for the interests of the home agency. This is not an easy undertaking. One substate official suggested that "informed discussion helps, but there is still a lot of work to get everybody on board." Many informants described the process as, in effect, protracted.

7. Be as creative as possible.

Because networks rely so heavily on shared information, a lot gets put on the table. Then the participants must go further and turn the pooled information into a new, group-based direction that is based in joint-learning experiences. One state program head reminded other managers to "think outside the box, because the whole must be something different than the sum of its parts." Another federal government state program director said that

as a group, network actors must “get outside of their normal comfort zone.” One thing that helps this process along is to focus on who ultimately is being served and what results will help them. “We try to focus on clients,” said one state administrator. Another state official said, “If we forget about why we are here and who we are serving, we will slide into the same ruts. If we keep our focus on the purpose, we can extend our ability to experiment and utilize innovative technology.” Finally, a former Extension worker concluded that the network he was involved in almost died because it “failed to take into account how all of the interests, all of the ideas, and all of the institutions could lead to solutions that all persons with a stake could live with.”

8. Be patient and use interpersonal skills.

A university professor who was present at the founding of two networks said that he learned to “be incredibly patient; if you push you lose. You must adopt the style of ‘wait for the teachable moment.’” Others similarly referred to the “long learning curve” required, as well as the strategy of “slow introduction, and wait for support later,” as well as the need for “good listening skills because everybody’s view is valued to some extent.” Many discussants suggested that the same type of team-building skills that are necessary within agencies are valued, except that there is an extra burden on getting every person’s involvement and agreement. It is a slower team process, because there is no ultimate authority, and the team management process evolves at the same time the content does. Finally, the ability to communicate openly is identified as an essential skill: “You have to talk it through and see that someone is responsible for institutional memory.” In a sense, managers appear to bring similar skill sets to networks as they do for single organizations. In the absence of legal authority, however, they are applied with greater degrees of difficulty.

9. Recruit constantly.

As the scope of knowledge increases, and problems become more complex and interactive, the quest for information broadens. For networks this means a continuing effort at expanding the involvement base. “Touch as many bases as you can, get

as many sectors as are important involved, and welcome them,” said one federal administrator. Another state official said, “Get the top decision makers, the managers who do the work, and the technical people involved ... but don’t let the ‘techies’ get control.” If there are key stakeholders who are potential opponents or impediments to solutions, “engage them early ... don’t wait for them to attack you from outside the tent.” Involving some opponents means meeting them on their ground, as the natural resource network managers concluded. “We started having evening meetings in the communities, and new positions and opposition came out in numbers. Now we know how hard it is going to be, and how hard it is to keep them participating.” In these situations, networks have no choice if they wish to inform and educate. Networks are inclusive. Exclusivity or limited involvement leads to information and support gaps, as well as lost potential in interagency adjustment as well as potential resources.

10. Emphasize incentives.

Most informants agreed that the two greatest incentives to participate are the opportunity to work toward solutions that are important to them and their agencies, and the possibilities of information/knowledge expansion. Thus “keeping the information flowing,” said one state program head, is “what I expect to give and to get.” Another said, “The rewards are intrinsic but great. I learn how to keep rural Nebraska communities, and I help communities by my involvement.” Another federal rural development administrator said, “Outreach is part of our agency’s mission. All of our different rural bodies help us do this. The same people who are at the meetings are the ones we contact in the field. The meetings help keep the process going.” It is also important to let people in the broad program arena that a network operates in know about your existence. “Let people know who you are.” At some point awareness may lead to critical participation. Information or the potential to receive it, plus shared purpose, can at some point be the incentive that brings in other agencies or organizations to the network.

Appendix:

Research Method

Finding networks that can become objects of study is not as easy as looking at a government organization directory and choosing agencies whose missions equal one's scope of a study. Locating them involves following leads from federal, state, and local government managers, and listening carefully when networks are mentioned in the course of other research, or remembering those that surfaced during the hunt for "real life" teaching examples. The initial search for this project led to about three dozen possibilities. Their website home pages were visited to see if they really qualify as networks. That reduced the number to around 20. E-mail contacts were made with a potential principal contact and an abstract of the study included. That was followed by phone calls to answer questions and to request permission to enter into the "space" of the network, and to seek assistance for names of potential informants. If the answer was in the affirmative and if the body was a true network, documentation from the network's website and through mailings was gathered. After the initial document examination, the networks to be studied were selected.

The study itself encompasses a grounded theory/field study that includes observation and limited participation, guided discussions with principal network actors, and document analysis. The latter included extensive review of each network's annual reports, strategic plans, action plans, major studies, legislation and executive orders, meeting minutes, conference programs, and other published sources. For each network the discussions were conducted on-site in Ohio, Indiana, Iowa, and

Nebraska. Site visits were scheduled in several cases to coincide with observation at regular network meetings and, in two cases, attendance at an annual conference. Rather than interviews, guided discussions were employed, where discussants were asked to respond to a standardized set of questions, but in a conversational form. All discussants received an e-mail copy of the study abstract in advance.

One hundred discussions were held with network staff coordinators and/or chairpersons/presidents, along with federal and state agency managers and program heads, and in most cases network activists from substate and local governments, nongovernmental organizations and university researchers and program specialists. Because the study focuses on management issues, priority was placed on public managers, particularly those who work both in large bureaucratic organizations and in networks. A mixture of agency heads or state directors, program managers, program specialists, and agency liaison persons or "boundary spanners" was included. This inevitably led to a weighted or purposive sample that included larger numbers of federal and state officials who were managers, along with network chairs and coordinators. The topic under study seemed to justify this approach, because the focus is not on the structure and operations of the networks themselves, but on how managers from agencies might manage differently in networks. As a result, some very important network contributors no doubt were missed. Their slighting was totally a function of topic.

The use of mixed methods allowed for a richer and deeper understanding of a murky arena, part of that 20 percent of public managers' time that is spent crossing organizational lines to do their jobs. Discussants had a chance to reflect on the presubmitted study abstract and to answer in their own words. Face-to-face allowed the researcher to read more stimuli, i.e., nonverbal expressions, and to get instant clarification of any point made. Also, additional but valuable information not on the discussion guide was usually added, including political and administrative tactics that would never be offered in a questionnaire response. Often the information was sufficiently sensitive to "drop the pen." The discussions were also the time to find out who really "carried" the network by their knowledge and efforts, and if unequal power is a relevant factor within the network, it was likely to come out during some discussions.

Meanwhile, the scientific documentation and information produced by the networks allowed for a clearer understanding about how research and technology are interlinked with interagency possibilities and, ultimately, action. Indeed, it allowed for an understanding of how information is as essential as interaction. Finally, the observation opportunities, while uneven, helped not only to understand relationships between the formal and informal, but also to see how networkers both give and receive valuable information and knowledge. It also provided a level of personal contact with many actors beyond the scheduled discussion in a considerably more informal and personal way. Together, the three types of data gathering allow for a more holistic picture of these semi-amorphous networks.

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