

# Managing Networks Effectively

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## Abstract

The federal government's policy of devolution has meant that many services that were formerly internal are now provided by non-governmental organizations. Thus, state and local governments have had to shift from managing hierarchies to managing multi-organizational networks. Our paper discusses what publicly funded networks are, their different forms, and then provides guidelines for effectively managing and structuring such networks.

“...(W)hen the density of networked transactions across traditional firm boundaries increases through outsourcing and alliancing, at what point will our current concepts of organization as a network device for coordinating production get decoupled from our prevailing concepts of the firm as a structure of claims on the distribution of outputs? In short, how should we conceptualize a situation in which productive organizations reach beyond the boundaries of the firms originally designed to contain them” (Boisot, 2002:198)?

## Introduction

The devolution of responsibility for federal government domestic programs to the states has been a policy followed by Presidents Reagan, Bush, Clinton, and George W. Bush. During this period, the federal government has given the states progressively more latitude in how they may arrange major domestic programs, especially in health and human services. This freedom to organize programs as states see fit, leads many observers of federal and state government reform to conclude, as did Elaine Kamarck (2002), that years of decentralization, devolution, and outsourcing have led to a world of “networked government.” Instead of organizing, providing, and managing services on its own, state government has increasingly turned to contracting out these services, mostly to nonprofit but also to for-profit organizations. This increased contracting out of services has meant that government entities, especially at the state level, have had to coordinate and oversee the activities of the many organizations it funds to ensure the smooth provision of multiple services to clients. Thus, government must not only manage its own internal operations, but it must also arrange and manage multi-organization networks. At the local level, increased contracting out has meant that coordination of services has largely been left to the service providers themselves, presenting a critical managerial problem. While there have been studies of how clients fare under these arrangements, and studies of how formally constructed networks of partner organizations might best be

managed (Agranoff, 2003), there is little work on how loosely organized service provider networks can be structured and managed effectively. This is a critical issue since so many publicly funded services are provided in this manner, including community policing, health and human services to the elderly, the mentally ill, and other vulnerable populations.

While there may be benefits to contracting out, the costs can be substantial if the network is not managed effectively (Smith and Lipsky, 1993). Under traditional bureaucratic control, government can monitor and coordinate its own services through its hiring practices and by imposing rules and procedures – controlling its inputs rather than outputs. When services are contracted out, however, management, coordination, and monitoring become significantly more difficult, especially when multiple, sometimes overlapping services are contracted out to multiple service providers. Since the inputs third parties use to produce these services are difficult to observe, issues of performance and accountability are critical.

Despite the increase in networked government, most of what we know about management is derived from studies of how to manage individual organizations. However, the emerging literature on networks, including our own work, suggests that networks are quite different from organizational hierarchies. In particular, networks are collaborative, not bureaucratic structures, involving autonomous organizations that are often responsive to a broad range of non-governmental stakeholders, while also working in interdependent ways with both government and other network providers. Thus, effective network management requires skills and development of coordinating structures that are not the same as those that might be effective for managing individual organizations.

In addition, there is a vertical and a horizontal dimension to network management. The vertical dimension of network management consists of trying to manage a complex set of principal-agent relationships between governments, as funders, and the local organizations that contract for provision of the actual services. Because government typically funds and/or regulates the contracted agencies, managing these vertical relationships often becomes a question of providing proper incentives and sanctions (Milward and Provan, 2003). In contrast, the horizontal dimension revolves around attempts to coordinate a set of organizations involved in the delivery of services to individuals. The central task of horizontal network management is to solve what economists would call a joint production problem. In the case of publicly funded mental health care, for example, this problem consists of a mental health authority trying to get a community mental health center, a day treatment facility, group homes, a case management agency, a vocational rehabilitation agency, and various local government agencies to work together to coordinate care for a common population of clients. In prior work we have referred to this as a “service implementation network.” Because there is no hierarchical relationship among these agencies and because there may be few economic incentives and sanctions that can be applied, horizontal network management is often far more complex, subtle, and poorly understood than either the vertical dimension of network management or internal organizational management.

For the past 12 years, we have conducted studies of network effectiveness in health and human services. We developed the concept of service implementation networks (Provan and Milward, 1991) and were among the first to measure network effectiveness (Provan and Milward 1995). We are now conducting research on effective network management in what we call the “hollow state,” based on government

contracting (Milward and Provan, 2000). While the characteristics of networks have been well researched, there have been very few studies of network management, and these have typically focused on formally constructed networks and partnerships involving organizations that have agreed to work together (c.f. Agranoff, 2003 and Weiner and Alexander, 1998). There is an assumption that network management is somehow different, but this rests largely on assertions. In our work on networks, we have met a number of managers who seemed to understand how to develop trust and incentives to facilitate working together across organizational boundaries. At the same time, each of these managers also runs an organization. Thus there are two dimensions of network management – managing networks and managing an agency in a network. This paper will focus on the former and we will explore the latter in subsequent work. In this paper we hope to provide an understanding of how networks can be managed effectively, usually through some supra organization which we have called a “network administrative organization (Provan and Milward, 1995). We hope to provide an understanding of how networks can be managed effectively and how this differs from or builds on effective organizational management.

The primary focus in this paper will be on the horizontal dimension of network management, however a secondary aim will be to address how horizontal network management might affect or be affected by the vertical dimension which is characterized by contracting and collaboration between state actors and third parties (Milward and Provan, 2003). The metaphor that best captures the influence of the vertical dimension on the horizontal is managing “networks in the shadow of hierarchy” (Fritz Scharpf, unknown citation). This captures the multiple and sometimes conflicting set of laws, regulations, grants, and contracts that surrounds the programs that are implemented

through service implementation networks as well as formal and informal attempts to monitor, oversee, and influence the behavior of third parties who act in the name of the state under some type of grant or contract.

### Effective Network Management

The literature of public management is littered with admonitions. The recent reinventing government movement admonished public managers to be risk takers (Gore, 1993) The problem with the admonishment strain in the public management literature is that the research supporting it ranges from nonexistent to inconclusive (Bozeman, 2003: 117). There is a small but growing literature on how to manage effectively in network settings. The best derive from both observation of various cases of particular networks (Agranoff, 2003: 28-31) and large scale studies of executive management in a particular network setting (Meier and O'Toole, 2002; Meier and O'Toole, 2001). Many others are fanciful yet interesting and, reasoning by analogy, apply lessons from arenas like the theatre to the practice of network collaboration (Bryant, 2003).

There are many different kinds of networks. There are “epistemic communities” of individuals linked through similar training, career promotion, and shared world view like the “neoconservative policy network” (Agranoff, 2003). There are networks of scientists linked through a common interest in scientific problems like the theoretical physicists of the “Copenhagen School” like Nels Bor and Werner Heisenberg in the 1920's working on atomic physics (Crane, 1972). There are “policy communities” linked through interest in a common problem like child abuse (Nelson, 1984).

Networks are often viewed as emergent phenomenon that occur when organizations or individuals begin to embrace collaborative processes, engage in joint decision-making and begin to act as a coherent entity. When this occurs, a network has

emerged. These new interorganizational forms are referred to as partnerships, coalitions, alliances, strategic alliances, consortiums, and networks.

As stated earlier, this paper will focus on service implementation networks (SIN's) which have the following characteristics:

1. Provision of service is external to the government that funds it.
2. Services are jointly produced by two or more organizations.
3. Task is horizontal management of service provision, not vertical governance.
4. Funds flow to organizations to pay for contracted services.
5. Cooperation, contracting, planning, and rationing are the primary tasks.
6. Power is shared but not equal.
7. A mixture of organizational forms – public, private, nonprofit, and hybrid
8. Programmatic rather than organizational focus.

This last point needs further explanation. “The idea of a service-implementation network is closely tied to the work of Hjern and Porter (1981: 216). They introduced the notion of “implementation structure,” which they view as “a cluster of parts of public and private organizations [in which] subsets of members within organizations ...view a program as their primary, or an instrumentally important, interest.” (Provan and Milward, 1991: 394). Since every organization receiving external funds for service provision has a programmatic element within it, there will be tension between managing the organization and managing the program that is contained in a network of organizations. Network administrative organizations (NAOs) struggle to manage a service implementation network that consists of pieces of many different organizations. Heads of these organizations struggle to manage their organizations that may contain a number of different programmatic elements within their boundaries. This tension between program

and organization is a source of management problems, like mission drift or goal deflection that affect both SINS and the organizations that house them. This is why it is important to carefully distinguish between managing a network (the programmatic focus) versus managing an organization in a network (the organizational focus).

### The Evidence for External Provision

While there is a growing debate about how pervasive external service provision is versus direct government provision of services (Light, 2003), whatever the proportions, it is astonishing that there is so little evidence that externalizing production is any more efficient or effective than direct government provision (Hodge, 2000). In a huge meta-analysis of all of the quantitative privatization studies, over a twenty year period, where relationships could be sufficiently specified and with statistics that could be analyzed, Hodge (2000) found that there was very little evidence that privatization saved any money outside of garbage collection and contracting out cleaning services. There was only one privatization study that dealt with the joint production of services by a network and that was inconclusive. The most difficult part of trying to determine how to manage networks effectively is the fact that there is so little evidence of how one might do this. “There is very little evidence that we know much how to manage decentralized programs at the community level. There is very little empirical evidence that integrating human services, community policing, urban enterprise zones, public-private partnerships, or community coalitions to build social capital have a consistently positive effect on community-level outcomes (Milward and Provan, 2000b).”

### Network Effectiveness

One of the major anomalies of research on network effectiveness is that **stability (defined as noninterference by structural superiors) has been found to be central to**

**network performance** (Provan and Milward, 1995; Provan, Milward and Isett, 2002, and Nathens, Jurkovich, Maier, Grossman, MacKenzie, Moore, and Rivara, 2001). This finding stands in contrast to one of the central arguments for using networks rather than hierarchies – that networks, as opposed to hierarchies, are flexible and adaptable. While three studies doesn't prove the point, the ball is clearly in the court of those who wish to argue that flexibility and adaptability enhance network performance. This finding is consistent with the classic implementation study by Pressman and Wildavsky (1973: 107) that worked through the mathematics of the “complexity of joint action.” Our tentative recommendation for managing networks effectively is that they need time to develop and if you must change them, do so incrementally. Our argument is that networks are inherently unstable organizational forms. Command and control do not exist and managing across organizational boundaries isn't easy. Network managers must continuously deal with problems requiring negotiating, coordinating, monitoring, holding third parties accountable, and writing and enforcing contracts, all in an interorganizational domain where information asymmetries and moral hazard abound and production functions are unclear. For network managers, the problem is one of good news and bad news. The good news is you are managing a program with thousands of employees. The bad news is that none of them think they work for you (Handy, 1994: 34).

**Network legitimacy** is related to network stability. “While political principals can transfer power to their agents, within the limits set by law, they cannot transfer legitimacy in the same way (Majone, 1997: 13). If structural superiors make only incremental changes in the governance of the network and refrain from tinkering with the relationships in a network, this is likely to enhance the network manager's authority as time will tend to give the relationships the patina of legitimacy. Likewise, if the network

manager treats relationships as lasting rather than contingent, the manager's writ is likely to go farther based on lengthening the shadow of the future.

**Emergent networks** are endowed with all manner of positive accolades from researchers (Jones, Hesterly, and Borgatti, 1997). Much of the network literature assumes that the benefits of cooperation result from the emergent character of networks that allow a set of reasonably autonomous actors to jointly decide how to best shape their pattern of interaction. The literature on social capital explains that it is out of emergent patterns of interaction at the local level that social capital is created. It is asserted that high levels of social capital are related to a community's capacity to solve social problems (Putnam, 2000; Wuthnow, 1998). This research notwithstanding, governments and foundations, while extolling the virtues of local problem solving and the social capital this interaction creates, frequently force local service implementation networks to adopt a particular form of network, if they want external funding. Certain network forms are determined to be "best practices" or are based on one "success story." Alexander (1995) provides compelling evidence of how networks are governed "in the shadow of hierarchy." "The social services agencies participating in the coordinating committee are doing so because they need each other's referrals for clients, and their cases require the other programs' complementary services. They could ignore this at their own risk, because their interdependence has been asserted by the federal agency that is their common source of funds" (Alexander, 1995:68). There is simply no evidence that any "best practice"

or favored institutional form has had any positive effect on any network outcome. In fact the logic of the network advantage would lead one to exactly the opposite conclusion. Top down solutions either force service implementation networks to not fit their form to the nature of the problem they are combating (i.e. eschew contingency) or lie

about what they are up to. We found that the two least politically correct mental health networks performed better than the two based on models favored and endorsed by the National Institute of Mental Health's Community Support Program (Provan and Milward, 1995).

While the limited research results argue for favoring emergent network forms rather than imposing network templates on service implementation networks, the issue of network mechanism is an important research issue and far from resolved. On one side of the debate are those who argue that **human agency** drives the institutional form networks take. The exchange attributes of network members leads to the emergence of a social structure that allows for the efficient governance of the network to emerge (Williamson, 1975, 1985 and Granovetter 1985). This mechanism has been described as the **agency push** thesis of efficient network formation. "To enhance cooperation on shared tasks, the network form of governance relies more heavily on social coordination and control, such as occupational socialization, collective sanctions, and reputations than on authority or legal recourse" (Jones, Hesterley and Borgatti, 1997: 916).

A second mechanism has been described as **institutional pull**. Here the argument is that emergent networks are often dysfunctional and well thought out and field-tested network structures should be imposed on a set of network actors to save them from themselves. A central funding source, through its control over valued resources, simply says that funding will flow if the service implementation network arrays itself in a particular way. A less direct form of this approach would be to allow the actors to come together and create a strategic plan for how the service implementation network will respond to the needs of the central funding source. While the agency push/institutional

pull debate is far from settled (and we think research favors the former), central funding sources are more likely to opt for the latter.

Perhaps the key to unlocking this dilemma lies in “networks in the shadow of hierarchy.” There is an old adage that says, “nothing so concentrates the mind as the thought of being shot in the morning.” Perhaps the threat of action by structural superiors spurs network actors to develop a network form that is both efficient for them and acceptable to their superiors? In this way, threatened action by structural superiors creates institutional incentives for cooperation among network actors to get their act together or else. An example of exactly this phenomenon can be found in the case of the Derivatives Policy Group, which developed the governing structure for buying and selling financial derivatives which were largely unregulated at the time. It was the threat of Congress stepping in to legislate that brought the members of the group to agreement on the kind of regulation their industry needed (Faerman, McCaffrey, and Van Slyke, 1999). The study clearly shows how governance emerges from the interaction of individuals representing different organizations as they face a set of incentives.

#### Advice for Effective Network Management

Much of the prior discussion of managing networks effectively has been discussed amid the larger theoretical discussion of the nature of network interaction. Here we seek a narrower goal. From a number of studies (including our own) a number of factors emerge that are important for effective network management.

**Network Leadership** - In a number of studies, network leadership variously defined as serving as “an honest broker” (Faerman, McCaffrey, and Van Slyke, 1999), being an indispensable central node (Hull and Hjern, 1987) or simply providing leadership

stability (Provan and Milward, 1995) has proved important for effective network management.

**Limited Network Size** – As one contemplates the “complexity of joint action” it seems reasonable to conclude that as network size increases, it becomes much more difficult to organize effectively. While it is a case study, this was one of Faerman, McCaffrey and Van Slyke’s (1999) findings. In our work on mental health networks (Provan and Milward, 1995; Provan, Milward, and Isett, 2002) we have found that network size does not vary a great deal. Most of the mental health networks in our various studies have no more than forty members jointly providing services. While size of communities vary a good bit, the size of the networks are virtually identical. In the case of a much larger city where we are currently collecting data, there is roughly the same number of agencies providing services as in the smaller cities we have studied. While size and effectiveness needs much further investigation, the logic of complexity argues that smaller rather than larger networks should be easier to manage effectively simply because of lower transaction costs.

**Limited Network Variety** – One of the strongest findings in the network literature is that network interaction can be predicted based on similar characteristics of the actors (Watts, 2003). This is the homophily argument which states that it is far easier to create an effective network if the actors share certain characteristics in common like age, race, ethnicity, gender or a variety of common bonding experiences like specialized training or military service. We live in a society where diversity is extolled and exclusivity excoriated but when you look at how people act as opposed to how they say they should act, it is clear that “birds of a feather, flock together.” Faerman, McCaffrey and Van Slyke’s (1999) finding supports this and they assert that homogeneity of network

members facilitated agreement. On the other hand, reaching agreement among a group of likeminded individuals representing only some organizations in the derivatives industry made it necessary to convince those not at the table to not oppose the proposed regulation. In a world where many claim and are granted standing, it is fair to ask if the limited network variety finding isn't an example of a principle that is efficient but not effective?

**Multiplicity of Linkages** – Networks didn't all start today. Time is a very important variable in network studies. As networks age and grow, one frequently finds an overlay of ties based on both cooperation and contracting. Contracted ties based on the funding of a service implementation network can and do coexist with historical patterns of collaboration and personal relationships based on trust and reciprocity (Milward and Provan, 2000b). In our studies, multiplex relationships are stronger than relationships based only one tie (Provan and Milward, 1991, 1995). The management argument would be that the more ties of various ties that you have among the organizations in a network, the more integrated the network will be and more capable effective action. Multiplicity is a range variable, like stability. At some point a network can become so connected that a disturbance in any part will ripple through the network leading to disturbance and turmoil (Simon, 1962).

**Make as Well as Buy** - An organization that contracts out too much “runs the risk of becoming a ‘hollow’ corporation, a firm without a clearly defined essential contribution to make to its product or service value chain. Firms need to occupy a wide enough segment of the value chain to be able to test and protect the value of their contribution” (Miles and Snow, 1992: 67). A network administrative organization that manages a service implementation network may find it very valuable to make some of the

services it contracts from others. In areas of health and human services where production functions are unclear and information asymmetries between buyer and seller are large, making at least some of the services you buy is an important management tool to help organizations determine whether they are getting fair value for the services they buy. In our four city comparison of the performance of mental health networks, the network administrative organization that produced the most services ran the most effective service implementation network (Provan and Milward, 1995). There are two strategies that need to be considered. First, an NAO can make some critical or expensive services to ensure that they know what it costs to provide them. In this way, it lowers the information asymmetries between the buyer and the seller when it contracts with other service providers. Second, an NAO can occupy a critical place in the service value chain (Miles and Snow, 1992). A community mental health authority may choose to provide case management rather than contract it out so that it continuously knows what is happening to costs and well as to clients.

**Centralized Integration Through an NAO** - Earlier we argued that it was important for network structure to emerge rather than be imposed from above. With that caveat in mind, we have found (Provan and Milward, 1995) that centralized integration of a service implementation network through a network administrative organization is more effective than other forms of integration. This type of integration conforms to principal agent theory that argues that direct relationships between the principal and the agent are essential for efficient outcomes (Miller, 1992). The network that was most effective in our study had persisted for twenty five years and the centralized nature of the network was emergent rather than imposed from above. It grew out of the power differentials between network members rather than being imposed from above by the state. The NAO

had even negotiated with the state for the right of veto power over any contracts with other providers they didn't approve of (Provan and Milward, 1995). Summarizing our argument, we believe that powerful NAO's that are centrally integrated, facilitate effective network performance.

**Caveats** - All of our recommendations are in a sense contingent. They rely on very few network studies in a limited number of policy areas and in some cases we reason from analogy. In addition, all of our recommendations are time dependent. They apply during certain periods of a network's development. For example, stability is a range variable and after a certain amount of time stability may turn into rigidity. Limited network variety may take a turn toward the dark side of network performance with the network being run in the interests of a small clique of likeminded actors. In addition, all networks have a limited carrying capacity. A network that has the resource base to be effective for one thousand clients may become ineffective with two thousand. Lastly, effectiveness as we have noted (Provan and Milward, 2001) is subject to various interpretations. One of the interesting aspects of public and nonprofit networks is that various stakeholders hold them responsible for multiple and conflicting bottom lines – efficiency, effectiveness, accountability, responsiveness and equity. A network may very well do quite well on some of these measures only to be judged as failing on others. We have argued that network managers need to take all of these bottom lines into account and at least minimally succeed if they are to survive. Effective networks are those that determine which of these measures are most important for their most valued stakeholders and try to achieve a higher tradeoff on that measure than on the others.

### Conclusion

This paper has tried to look carefully at the evidence on or effective network management and distill from it a set of contingent principles that network managers may find useful in managerial practice. No doubt this list will be altered and extended as empirical research on network performance, now in its infancy, continues. We believe that if public management is to grow as a field, developing a body of knowledge about network management is one thing that will serve to justify a separate focus on public management.

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