Core Concepts and Key Ideas for Understanding Public Sector Organizational Networks: Using Research to Inform Scholarship and Practice

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This article provides an overview of the key research findings and core concepts on the topic of organizational networks. The primary focus is on goal-directed “whole” service delivery networks, which are prevalent in the public and nonprofit sectors. The findings and ideas presented are especially salient for helping public managers build, maintain, operate, and govern multi-organizational networks in ways that will enhance their effectiveness. Because research and theory on networks extend well beyond the boundaries of public management and administration, the authors draw on thinking from a number of fields, providing a broad understanding of public networks and network functioning. The article is intended to provide usable information on networks for both practitioners and students, as well as to suggest directions for future research for the many public management scholars who now study organizational networks.

Over the past two decades, increasing attention has been paid to both the study and the practice of collaborative arrangements between and among organizations. This focus has occurred in the public, nonprofit, and private for-profit sectors, leading some to claim that we have become a network society (Castells 2000), or even a society of networks (Raab and Kenis 2009). There is considerable truth to these claims. Especially in the public and nonprofit sectors, otherwise independent entities have come together, often working across sectors, to address issues, solve problems, and provide services that are too complex, costly, and/or seemingly intractable for any one organization to handle on its own (O’Toole 1997).

Although the field of network studies is still relatively new, there has been an impressive amount of description, research, and theorizing about organizational networks in both public and private sector contexts (see reviews by Borgatti and Foster 2003; Brass et al. 2004; Isett et al. 2011; Provan, Fish, and Sydow 2007). While definitive conclusions on many aspects of networks have yet to be reached, there is still considerable research-based evidence on some key network topics that is important for understanding how networks operate and why they may or may not be effective. Unfortunately, too often public managers are asked to create, build, manage, and maintain service delivery networks with little knowledge or understanding of the research that has been conducted on the topic. Furthermore, public management scholars, even those who study networks, have often neglected a consideration of the research on networks in other fields, especially business management and sociology. This article is an attempt to draw broadly on network research to build a deeper understanding of public sector organizational networks, which, it is hoped, will prove valuable to scholars, network managers, and policy makers.

It is critical for public managers to understand as much as possible about what researchers have learned about how networks are effectively structured, governed, and managed.

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as possible about what researchers have learned about how networks are effectively structured, governed, and managed.

This article is not a literature review on the topic of public networks, as such work has already been conducted and published. Instead, we provide a basic understanding of organizational service delivery networks (rather than policy networks), including what they are, how they differ from more traditional organizational forms, and why the network form might be appropriate. Then, we discuss several key factors that have been shown to contribute to network effectiveness. Discussion is based primarily on the research conducted on networks over the past two decades, including our own, combined with our observations and insights. Rather than focusing solely on the public management literature, we draw as well on core ideas from the social and business network literatures.

Networks: What Are They?
Research on organizational networks draws directly from research and theory on social networks, which focuses on relationships between individuals. A fundamental concept underlying this work is what is known as social capital (Coleman 1988). Unlike economic capital (based on resources) or human capital (based on knowledge and training), which are attributes of the actor/individual, social capital is based on attributes of the relationship between individuals (see Adler and Kwon 2002 for a review). A person who has high social capital is someone who has a rich set of social connections that provide access to information, resources, support, and so on.

When organizations form network ties, they, too, benefit from the advantages of social capital. This is especially important when examining organizational networks from an egocentric perspective. Egocentric network analysis focuses on the individual actor (a person or an organization) in an attempt to demonstrate why this actor has developed dyadic network ties with others and what the benefits or other (possibly negative) outcomes might be. The egocentric dyadic approach is by far the dominant perspective in the organization theory and strategy literatures on network relations, which is not surprising, as this research has focused mainly on private, for-profit organizations. Such organizations typically make relationship decisions based on self-interest, which makes the egocentric approach highly appropriate.

While public sector (and nonprofit) organizations are certainly not immune to self-interest, collective action is an important consideration. As a result, most of the research on and discussion of networks by public management scholars (but certainly not all, as evidenced by research by Meier, O’Toole, and colleagues; cf. Meier and O’Toole 2001) has focused instead on “whole” goal-directed networks. Whole network research shifts the focus from the ties that an actor has (an egocentric micro approach) and focuses instead on all of the ties among a set of actors, which is a macro approach (see figure 1). Rather than examining only the egocentric ties of individual organizations, the whole network approach examines where ties are both present and absent among a defined set of organizations, indicating the extent to which the organizations are working with one another to achieve a common goal.

As defined by Provan, Fish, and Sydow in their review of the topic, whole networks refer to “a group of three or more organizations connected in ways that facilitate achievement of a common goal” (2007, 482). They go on to point out that whole networks “are often formally established and governed, and goal-directed, rather than occurring serendipitously” and that “relationships among network members are primarily non-hierarchical and participants often have substantial operating autonomy.” Though the whole network analysis approach can be and is used outside the realm of public management (see, e.g., Powell et al. 2005), most public management research focuses on networks that conform to the definition given by Provan, Fish, and Sydow (2007). This means examining not only bilateral dyadic ties, but also the multilateral relations that define a whole network and that are essential for achieving a collective outcome. Such networks are critical for resolving many of the problems and issues that public managers must confront. These include addressing the health and social needs of children and of people with serious mental illnesses (Provan and Milward 1995), unemployment and workforce development (Herranz 2008), community and regional economic development (Teisman and Klijn 2002), and disaster preparedness and emergency response (Capucu and Van Wart 2006; Moynihan 2009). These are the sorts of “wicked problems” that O’Toole (1997) referred to when he argued that public scholars and managers need to be “taking networks seriously.”

The need for collective action has, in fact, been taken seriously by public and nonprofit organizations. However, determining the extent of attention given to the topic is difficult because of the multitude of terms employed. For instance, rather than talking about networks, many refer to “collaboration” or “collaborative arrangements.” Wood and Gray defined collaboration as occurring “when a group of autonomous stakeholders of a problem domain engage in an interactive process, using shared rules, norms, and structures, to act or decide on issues related to that domain” (1991, 146). Since then, the concept has been defined and used in many different ways, leading to a recent call for a better conceptualization and definition (Bingham, O’Leary, and Carlson 2008).

Collaborative governance is another related concept. One recent and rather narrow definition of collaborative governance that is frequently cited is that of Ansell and Gash: “a governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets” (2008, 544). Thus, collaborative governance goes beyond mere collaboration by including government actors as a key component,
especially as the means for achieving direction, control, and coordination of collective action between government agencies and nonpublic groups and organizations (Lynn, Heinrich, and Hill 2000). Research on public contracting is closely tied to collaborative governance as state agencies develop funding ties to a network of nonprofit and for-profit organizations to deliver public programs (cf. Brown, Potoski, and Van Slyke 2006; Milward and Provan 2000).

Though network theory and analysis may be applied, and possibly with great benefit, to the study of collaboration, contracting, and collaborative governance, the term “network,” especially when referring to whole networks, is not synonymous with these other concepts. Networks focus on the multiple relationships existing or not existing among multiple individuals or, in this case, organizations. Collaboration, contracting, and governance can all be elements of networks, but the occurrence of any one of these concepts alone or even in combination does not necessarily make a network. While collaboration is critical to network success, collaboration between two organizations is a dyadic interorganizational relationship, not a network. This is the case even when multiple dyadic relationships exist, as when a state agency contracts with multiple nonprofits. In addition, in a network, all organizational participants need not collaborate with each other, and in fact, such widespread collaboration actually may be detrimental to overall network effectiveness (see later discussion). Finally, while collaborative governance often occurs through networks, networks may or may not involve cross-sector collaboration, and they may not even involve the public sector at all.

In this article, because of their importance to public sector scholarship and practice, we focus heavily on goal-directed whole networks, which may be formally established and/or mandated through a top-down process, an emergent or bottom-up process, or have characteristics of both. We use the term “whole” goal-directed network to refer to those organizations, regardless of sector, that are engaged in multilateral interorganizational relationships around a common, universally recognized goal, although commitment to that goal may vary considerably among participants. For our discussion, the common goal would typically be addressing, mainly through provision of services, some major public problem or task. The network may be organized or initiated by government, but the task is largely publicly funded, even though participants may be from any sector. In addition, while membership in or affiliation with a network is often formalized, making clear who is “in” and who is “out,” this is not always the case, sometimes creating fuzzy boundaries.

Finally, while the analytical and methodological distinctions between egocentric dyadic network ties and multilateral whole network ties are clear, from a practical perspective, understanding how whole networks operate requires consideration of the dyadic ties maintained by individual actors. Thus, despite our “whole network” perspective, we consider core concepts and ideas from research and thinking on egocentric dyadic ties as a way of explaining how public networks operate. Whole networks are composed of many overlapping sets of dyadic relationships that collectively make up the full network, making it essential to consider both micro and more macro aspects of public networks.

Why and When to Use Networks

The most fundamental strategy decision that must be made by public policy officials, government managers, and potential network members is under what circumstances a network form is appropriate at all, as opposed to more traditional forms. There has been a considerable amount of theorizing about different forms of organizing, especially which of three basic forms should be used for performing a task: market, hierarchy, or network. While we do not have the space here to elaborate on and compare these forms in any detail, a brief overview may provide some guidance as to when each form might be appropriate.

Transaction cost economics offers what is undoubtedly the most extensive theoretical treatment of when to use the market and when to use a hierarchy, which is the classic “make or buy” decision (Williamson 1981). In the public sector, the decision between market and hierarchy is the decision about whether to contract out for a service or provide the service directly. Thus, it is fitting that a great deal of the contracting literature relies on transaction cost economics and is concerned with finding the conditions that lead to better contracting decisions and more efficient contracts.

Whether services should be contracted out by a public agency or provided directly is not the only consideration for public managers. The other option is to use a network, which may involve a mix of contractual and more informal, trust-based ties and in which a public agency may or may not play a lead role in the flow of resources and information among network participants. Many of the conditions under which network relations might be a favorable option, as opposed to a hierarchy, a market, or traditional contracting, were discussed in the late 1980s and 1990s (cf. Powell 1990). These include the need for flexibility, enhanced learning, improved knowledge flow, and greater sensitivity to the needs of clients. Although much of the research on networks since then has focused on dyadic relationships between for-profit firms (mostly buyer-seller relationships and strategic alliances), there is also an emergent literature in the public context examining when to use a network. Though early work proposed that networks would play a primary role in governance (Goldsmith and Eggers 2004), a greater recognition of the shortcomings and challenges of networks has led to a more nuanced view. For instance, Kettl (2009) described the next government of the United States not as networked government, but as two interconnected systems: one in which hierarchies are used to manage routine problems and another in which networks manage nonroutine problems.

Scholars have long understood that a bureaucracy, the classic hierarchy form, is appropriate for stable and routine tasks, but not for handling most nonroutine tasks (Burns and Stalker 1961). Even for nonroutine tasks, however, it is not clear when a network should be used and when a bureaucracy or alternative form of hierarchy would be best. Because of the costs of working in and through a network (see discussion later), using the network form for all tasks is likely to
be both highly inefficient and ineffective. Thus, the decision to use a network in the first place is critical.

Despite more than 20 years of network research, only some general guidelines exist for when to use a network versus a more traditional hierarchical form. It is not necessarily the complexity of the problem being addressed, but rather how routine and predictable the problem is and whether the problem can be addressed sufficiently by a single organization (Kettl 2009). The reason “wicked” problems typically warrant a network response is the need to be highly adaptive (because the problem and/or solution is either unknown, inconsistent, or frequently changing) and because the resources, knowledge, and solutions are spread across many different entities, necessitating a coordinated response from a multitude of organizations in order to adequately serve client needs. When these conditions exist, networks are generally more effective than either a market or a hierarchy.

While networks are not always an appropriate form, research and theorizing about networks has demonstrated considerable advantages over the use of more traditional forms for addressing certain types of problems and in certain settings. These include the capacity of organizations to stretch and leverage limited resources, enhanced learning, which leads to greater innovation and better service quality; the provision of an enhanced range of services to clients, who are no longer limited to dealing separately with many different providers; the ability to achieve economies of scale in areas such as purchasing or greater competitiveness in grant applications; the ability to exert more pressure on politicians and funders because of greater political clout and community “reach”; the capacity to be far more flexible than a traditional bureaucracy; and enhanced capacity and responsiveness to deal with unforeseen problems, such as disasters. For these and other reasons, networks of organizations have been widely discussed and implemented over the past 20 years and more, and they can and have had a significant positive impact on how public problems are addressed.

Despite these advantages, the use of networks to address public needs is not without its problems and challenges, some quite serious (McGuire and Agranoff 2011). Thus, as emphasized by Huxham and Vangen (2005), collaborative forms should not be entered into or constructed unless more traditional forms have not been effective or without a clear understanding of the cost–benefit trade-off. In effect, this means that prior to network involvement or formation, a strategy decision must be made regarding whether developing and implementing a network to address a problem is appropriate. This is a decision that is sometimes, if not often, given short shrift by public officials who may be overly eager to embrace network solutions to problems, even imposing requirements on organizations to form collaborative arrangements for receipt of funding.

**How Strong a Role for Government?**

The push for greater collaboration among organizations by government leads to the question of whether networks should be mandated or emergent. This is an important question for the study and practice of public networks, in which government agencies often play a much more significant role in initiating the formation of networks (and sometimes sustaining them) than is typically the case in the private sector. Although very little research has been conducted on this issue, especially research that actually compares mandated versus emergent networks, both costs and benefits are likely to be associated with each approach. While a top-down mandate to form and/or be involved in a network, typically through control of funding, can provide a powerful incentive for organizations to attempt to work together, this approach may be best suited to situations in which coordinated effort is essential and such effort might only evolve slowly, if at all, without efforts of a key government agency or funder. Examples might include networks addressing a major public health issue or a disaster response. At some point, however, if the network is to be truly effective, as envisioned by those government funders, regulators, or policy officials who mandated the network in the first place, it must be able to operate through the cooperative and collaborative efforts of the organizations that make up the network, allowing time for trust and commitment to be built (Moynihan 2009).

At the opposite extreme, networks that are purely emergent, or bottom up, are likely to suffer from “liabilities of newness,” especially regarding legitimizing the network to new and potential members (Human and Provan 2000). In addition, emergent networks often take a great deal of time to initiate and develop to the point that they are sustainable, or they may suffer from “overprocessing,” which can lead to collaborative inertia (McGuire and Agranoff 2011). Network governance issues also frequently arise, especially because emergent networks are likely to adopt a participatory governance form (Provan and Kenis 2008), which places a significant time and effort burden on each network member to coordinate network activities.

While there has been little research directly comparing mandated and emergent networks, there has been considerable exploration of the antecedents of network formation in emergent network relationships. This research has focused primarily on the dyad/egocentric level, rather than the whole network level, but because ties between individual organizations are the building blocks of whole networks, the findings are instructive as to why and when networks might form. Much of the research on the topic has been reviewed elsewhere (cf. Brass et al. 2004; Cropper et al. 2008; Kilduff and Tsai 2003; Oliver 1990). However, some of the main factors that have been found to explain the emergence of network ties between individual organizations when they are not mandated include homophily (i.e., similarity based on size, reputation, service orientation, etc.), proximity, heterophily (dissimilarity in ways that the organizations might benefit from working together), the need to reduce dependence on others, prior relationship experience, and the need to gain both legitimacy and access to key information and/or resources.

It is not our intent to discuss the research underlying these factors or exactly how each might affect the operation and performance of public networks. Nonetheless, from a practice perspective, it is important to recognize that network relationships are likely to be based only in part on instrumental factors related to overall task performance. Thus, although rarely studied empirically in the public network literature, a major reason why multiorganizational whole networks may not operate as intended, especially those formed through mandate, may be a lack of consideration of how emergent
relationships typically form, are strengthened, and ultimately are sustained. Such factors as homophily, friendship, trust, or the need to acquire legitimacy or power are the basis of successful relationships and cannot simply be discounted by network planners.

Whether the network is emergent, mandated, or mixed, in addition to the potential advantages of the network form, there are some significant challenges to working in a whole network context in which multiple organizations are attempting to work collectively toward a common goal. Some of the most important challenges identified by network scholars in a number of different contexts (cf. Agranoff and McGuire 2001; Huxham and Vangen 2005; Weiner and Alexander 1998) include the following:

- Varied commitment to network goals: Networks often consist of many organizational members, some of which may have a considerable stake in network outcomes, while others may be only peripherally involved because of limited overlap between network and organizational goals.
- Culture clash: Although a real strength of networks is the bringing together of organizations that perform different activities to achieve a common goal, this diversity can also make meaningful collaboration difficult. Culture can differ in many ways, including approach to decision making, methods of treatment or provision of service, type of training, and level of professionalism.
- Loss of autonomy: When organizations act independently, they may resist coordinated decision making, especially when network decisions are not seen as reflecting the interests of their own organization.
- Coordination fatigue and costs: Coordination of decisions and activities can take up a considerable amount of time and effort. It is simply easier and more efficient to make decisions within rather than across organizations. This is a problem that can be eased through the adoption of an appropriate form of network governance.
- Reduced accountability: Despite the common tendency for managers to take credit for their own success and to blame others when things go wrong, when organizations act on their own in addressing problems, their managers are generally held responsible for the outcomes of their actions. In networks, however, successes and failures are difficult to pin on any one organization; thus, accountability is diffused. This can enable the possibility of “free riders,” where organizations participate minimally, assuming that others will pick up the slack.
- Management complexity: Network managers must straddle two worlds—the internal world of their employing organization and the external world of the network in which their organization is embedded (Agranoff 2007). Even when focusing only on network-level issues, tensions can be significant, leading to conflict among network members. As a result, both managing in a network context and managing the network as a whole means confronting and addressing several fundamental tensions, which are typically difficult to resolve (cf. Provan and Kenis 2008; Saz-Carranza and Osipina 2011). Dealing with such issues as culture clashes, turf/power problems, and the loss of autonomy also significantly increases complexity by making conflict resolution among network participants a key concern for network management (O’Leary and Bingham 2007).

Network Effectiveness

If a network approach is judged to be the best strategy given the demands of the task, success is still far from assured. Building an effective network depends on many factors, all of which must be considered in the design and implementation of a network. Thus, it is important to understand what the research has demonstrated regarding how a network might be constructed and maintained to be effective and hence minimize the likelihood that the challenges mentioned here might lead to the failure of the network.

In any discussion of network effectiveness, two basic roles of public managers must be considered: as manager of a network and as manager in a network (Milward and Provan 2006). This important distinction is often overlooked. Most of our discussion of network effectiveness here will focus on management and governance of a network. However, managing an organization that operates within a network context is a critical issue confronting public managers, especially because individual organizations are often involved in multiple networks. Adopting an egocentric view, managing in a network is paramount because the main aim is to manage an organization’s network ties in order to maximize organization-level benefits. Moving beyond pure self-interest, the fundamental management problem is balancing the needs and demands of the organization with those of the broader network. By acquiring knowledge about how networks operate and where their organization fits into the broader network in which they are participating, public managers can more clearly recognize how to address possible tensions between organizational and network demands, thereby enhancing their own organization’s benefits while limiting the costs of involvement.

A key point to recognize, however, is that managers, especially in public and nonprofit settings, either are or should be committed to the success of the network as a whole. Their particular organization stands to benefit most (often through its clients’ outcomes) when the network is effective. This is especially true when client and other stakeholder outcomes can only be achieved through collective action, which is, of course, the primary rationale for network formation. Thus, being a good “network citizen” may also have local benefits, but only if the benefits of collective action are recognized and taken seriously by participants.
the organization and the network) must be conveyed in a meaning-
ful way to others working within the organization, many of whom
may not be heavily involved in the network, and thus they may not
be aware of potential network benefits and may be less receptive to
network demands and constraints on organizational action.

Once the basic strategy decision has been made to form a network, management of the network becomes important. The fundamental
questions for management of a network shift to issues of design and
governance. Basically, public managers and policy officials need
to know how the network can be set up and run to be effective at
accomplishing network-level goals, while minimizing the emergence
of the problems discussed earlier. Unfortunately, but perhaps not
surprisingly, the empirical research on whole network effectiveness
is limited. Some previous publications have addressed this short-
coming while attempting to shed light on how network effective-
ness might best be addressed (cf. Agranoff 2007, chap. 8; Kenis
and Provan 2010; Provan and Milward 2001). Rather than simply
reiterate what these and other discussions of network effectiveness
have said, consistent with the aims of this article, we focus instead
on some key conclusions that can be drawn from research on both
whole and ego-centric networks. These conclusions are not defini-
tive, but rather are suggestive of the factors that have generally been
shown to be associated with a more effective, versus a less effective,
network.

In addition, despite some limited empirical research on network
outcomes (see discussion by Turri et al. 2010), such work has been
scarce and problematic. This is attributable primarily to the diffi-
culty of determining which goals are relevant, accurately measuring
public and nonprofit sector outcomes, and the absence of a control
group, which limits what can be said about the relative contribu-
tion of network (versus organizational or individual) activity and struc-
tures for attaining these outcomes. For this reason, our discussion
will focus primarily on process indicators of network effectiveness,
such as enhanced information processing capability, sustainability,
and the capacity of a network to address the needs of both organi-
zational members and other key stakeholders. In this regard, we
identify five broad characteristics of effective networks:

- Involvement at multiple levels
- Network design
- Appropriate governance
- Building and maintaining legitimacy
- Stability

**Involvement at Multiple Levels**

Despite the name, *organizational* networks are built around the
connections and relationships established and maintained by
individuals. When these ties are built around a single representative
in an organization, they may be tenuous. In addition, when only a
single person is that organization’s network representative, the likeli-
hood is high that others in the organization will not be committed
to network-level goals and thus may resist active participation.

While there has been little direct research on this idea, it is closely
related to the concept of multiplexity. Multiplexity refers to the
diversity of the relationships among partners, usually based on the
number of different types of ties maintained (Beckman, Haunschild,
and Phillips 2004; Ibarra 1995). Multiplex ties are stronger and
more intensive than single ties because they represent multiple
interests. Building on this idea, overall network effectiveness can
be significantly enhanced when network goals and interests are
understood and accepted through meaningful involvement by mul-
tiple members of organizations in the network, especially for those
organizations that are critical to overall network success. Ideally,
network involvement would occur at several hierarchical levels in
the organization, thereby gaining the participation, commitment,
and engagement not only of top administrators who have decision
authority, but also of the key service and staff professionals who
have the necessary operational and programmatic knowledge and
who are likely to be most heavily involved in the implementation of
network initiatives. When these organizational representatives con-
nect to others in different ways, the potential range of information
exchanged is significantly enhanced.

An empirical example of the value of involvement by multiple
individuals at multiple levels and through diverse ties is the recent
work by Safford (2009) examining the configuration of social capital
in communities and the ability of those communities to address
and eventually overcome an economic crisis. Safford proposed
the importance of “multiplex independence,” which refers to the
intersection of different types of ties. In the two goal-directed com-
munity networks that he studied, Safford found that a key factor
in explaining the economic success of one community (but not
the other) was that multiple individuals were involved in develop-
ing and maintaining network connections and that these relation-
ships often did not overlap. Network effectiveness also depended
on having particular organizations in the network that could bring
together and unify the intersecting networks when needed, which
gets at issues of network design and governance, discussed later.

**Network Design**

While there has been considerable discussion and research on
network structure over the past several decades, most research has
examined the structure of dyadic or triadic relations (cf. Gulati and
Gargiulo 1999) and not the whole networks that are so prevalent in
the public domain. Additionally, the vast majority of network lit-
trature in public management journals addresses issues of structure
only broadly and qualitatively, generally ignoring the rich empirical
literature on network structure in other fields.

Drawing on this more extensive structural literature and extend-
ing it to the design of more effective public networks, we can draw
several conclusions. The first is what we call selective integration.
There is no research available to inform practice about the “right”
amount of integration in a network. What can be said is that for
those tasks that are well suited to network solutions, such as the
“wicked problems” discussed earlier, integration across and among
network members is critical. Too little coordination and collabora-
tion by organizations and the network ceases to operate in a mean-
meaningful way as a network. At the same time, however, a high level
of integration among organizations in a network is not necessarily
beneficial. As noted earlier, a challenge to network success is time
and coordination costs. If all organizations in a network are interact-
ing frequently and intensively with all or most others, especially
when a network is large, the network will not be effective because of
overembeddedness (Uzzi 1997). Little work may get done, and
commitment to network goals may drop quickly because of the high demands on participants and resources. Even if network goals are being accomplished, it may not be done very efficiently, which is a concern because most network activity is performed in addition to individual organizational demands. Selective integration means that network links must be targeted and appropriate, so that those organizations that need to work closely together do so, while others do not.

A major contribution in this regard was made by sociologist Ronald Burt in his book *Brokerage and Closure: An Introduction to Social Capital* (2005). Burt argued that there are distinct advantages to maintaining network closure, where people are connected to each other, and brokerage, where individuals bridge what he calls “structural holes.” Structural holes are gaps in connectedness in a network and may include clusters of strongly connected individuals who are not otherwise (or only weakly) connected to other clusters. Both can be advantageous, but for different reasons. Consistent with prior research on closure by Coleman (1988), Burt acknowledged that closure has distinct advantages for building and maintaining trust and for sharing information that is already reasonably well known. In the public sector, closure has been found to have a positive impact on organizational performance through membership in cohesive subnetworks (Schalk, Torenvlied, and Allen 2007). In contrast, structural holes can be important in a network for generating new ideas and approaches. The individuals (or organizations) that are able to bridge, or broker, the gap between structural holes can convey new ideas and approaches to others in the network, thereby enhancing overall network performance. These network brokers are themselves quite influential, precisely because they are the key connectors in a network, which is the focus of Burt’s research. In a goal-directed whole network, key connectors are likely to be even more important in order to prevent the degeneration of the whole network into separate clusters created by closure (Gulati, Sytch, and Tatarynowicz 2012).

Burt’s idea of structural holes is closely related to an earlier concept, the so-called strength of weak ties. This idea originally was developed by Mark Granovetter (1973), who argued that weak ties, to people you may not know well, can be extremely valuable in transferring information that is not available to you or to your close circle of friends. Rather than only talking to your friends and close relatives to get a new job, for instance, you talk to those who are connected to other circles of friends who will have different information, thus increasing the likelihood of getting a new job. More recently, weak ties have been found to be especially useful for the exchange of complex knowledge leading to innovation (Hansen 1999; Reagans and McEvily 2003) and for knowledge exploration through networks rather than exploitation (Lechner, Frankenberger, and Floyd 2010). People also can readily maintain many weak ties, but only a relatively small number of strong ties. The benefits of maintaining a mix of both strong and weak ties are the same for organizational networks as well.

Although strong, intensive ties may be needed for some network relationships, weaker ties based on low to moderate levels of interaction are likely to be quite appropriate for most relationships.

**Appropriate Governance**

An important issue for network effectiveness, and one that is closely related to overall network design, is governance. While the managers of organizations in a network play a key role in ensuring that the network in which they participate functions smoothly and achieves its objectives, the main issue regarding management of a network is governance. Depending on the form of governance adopted, these two roles may overlap. In the business network literature, governance has been addressed extensively, but almost exclusively in the context of a dyadic alliance (cf. Zaheer and Harris 2006 for a review). A key issue here is the role of trust, especially whether formal governance mechanisms serve as a substitute, complement, or alternative to interorganizational trust. Moynihan (2009) argued that in public networks, trust is necessary even for centralized governance forms. In the business alliance literature, trust has often been considered to be an alternative to the need for a formal contract (Gulati and Nickerson 2008), although some research has supported Moynihan’s position that the two governance mechanisms may complement each other (Zaheer and Harris 2006).

Systematic research on governance of broader multiorganizational networks is very new, although a number of scholars both inside and outside public management have specifically addressed the role of a network facilitator, intermediary, hub firm, or “weaver” (cf. Bryson, Crosby, and Stone 2006; Dhanaraj and Parkhe 2006; Ingram and Torfason 2010; Koza and Lewin 1999). In addition, O’Mahoney and Ferraro (2007) examined informal governance in an online open-source network. Despite this work, in-depth discussion and recognition of the various forms of network governance and their impact on overall network effectiveness have taken place almost exclusively in public management. In particular, Provan and Kenis (2008) introduced three basic modes of network governance; shared/participative, lead organization, and network administrative organization. When network governance is shared, the network members themselves are actively involved in governance responsibilities for the network. Network representatives interact frequently to ensure that coordination and collaboration occurs, that conflict is minimized, and that participants stay focused on network-level goals. Engaging in these activities is critical to network effectiveness, and, consistent with the business network literature on alliance governance, trust among participants is essential.

Especially as a network becomes larger (i.e., includes more organizations) and more complex, however, shared governance becomes less
viable and overall network effectiveness more problematic. While it is difficult to jointly govern a network of five or six organizations, when the number increases to 20, 30, or more, the task becomes nearly impossible, especially as trust among all participants is not likely to be particularly strong. Thus, network governance typically will shift to one of two alternative forms: either a lead organization or a network administrative organization. Both are brokered forms, enabling a network to be governed effectively despite a large number of organizations and a reduced level of active involvement regarding management of the network by most participants. Hybrid forms are also possible, with the three forms discussed by Provan and Kenis (2008) being pure or “ideal” types.

It is beyond the scope of this article to go into a full discussion of the three forms of governance and the conditions under which each is likely to be most effective. However, just as the shared/participative form can be effective for some networks, each of the two brokered forms can be effective under certain specific conditions. Although empirical research on network governance has only recently begun, research suggests support for the effectiveness of certain forms over others under various conditions (cf. Saz-Carranza and Ospina 2011).

Legitimacy
Legitimacy, often thought of as credibility to others or externally conferred status, is a concept that has been discussed frequently in the literature on organizations (see Suchman 1995 for a review). It has also been discussed within a network context, but mainly as an advantage that accrues to network participants as a result of being connected to others with high status or reputation (Podolny and Page 1998). But the limited research on whole multiorganizational networks has demonstrated that legitimacy can be critical for network success. Specifically, in work by Human and Provan (2000) comparing the evolution of two business networks, both internal and external legitimacy were found to be essential for determining the success of one network and the failure of another.

Building the internal legitimacy of the network consisted of such actions as demonstrating the value of network participation to network members, developing trust-based ties between members, satisfactorily resolving conflicts, and building sustainable network governance and communication mechanisms. These are similar to many of the management activities discussed in the public network literature, such as facilitating (Kickert, Klijn, and Koppenjan 1997), framing and synthesizing (Agranoff and McGuire 2001), and bridging (Saz-Carranza and Ospina 2011). Building external legitimacy consisted of seeking new members, promoting the network and its activities to outsiders, and providing outside resources to meet network (and organizational) goals. In the public network literature, these are similar to the management activities of activating and mobilizing (Agranoff and McGuire 2001) or capacitating (Saz-Carranza and Ospina 2011). The research findings from Human and Provan’s (2000) study indicated that while both aspects of legitimacy building were needed for network success, internal legitimacy was more important early in the network’s development as a way of sustaining the network through times of crisis. The network that failed focused heavily on external legitimacy building, thereby largely ignoring the internal needs of network members until it was too late. In both cases, and for both forms of legitimacy, the role of network governance was critical.

There are important implications of this research for a broader consideration of legitimacy for public network effectiveness. As mentioned earlier, public networks may be either mandated or emergent, and they often display characteristics of both. When mandated, or at least when formed by and through a government agency charged with building, funding, overseeing, and maintaining a network, the risk is that legitimacy for the network will be externally established, but that internal legitimacy will be ignored or undervalued. Thus, network participants will be weakly committed to working closely with others in the network and may only do so because of external pressure and/or financial incentives. This is not to say that such networks cannot be effective. However, it requires the building of trust-based relationships, as would typically occur in an emergent network, especially if the network is to be sustained once government involvement and funding ends. Thus, the internal legitimacy needs of network participants must be addressed instead of simply assuming that it will happen on its own. This is an important consideration for choice of governance form and for the leadership of a network.

Stability
Networks are typically seen as flexible forms of organization that are “light on their feet” (Powell 1990). Despite this basic network characteristic, there has been little research on network evolution, in large part because of the difficulties of data collection and analysis. Recently, however, there has been considerable interest in the topic in the business network literature (cf. Koka, Madhavan, and Prescott 2006; Zaheer and Soda 2009), although this work has mostly focused on the stability or change over time of dyadic relationships. For whole, goal-directed networks, the flexibility of relationships can be highly advantageous in performing tasks, such as emergency response (Kapucu and Van Wart 2006; Moynihan 2009), to which traditional bureaucratic forms are not well suited. Paradoxically, however, networks that are highly flexible are also unstable, which can lead to ineffectiveness. In part, the issue depends on the task being performed, with some network tasks requiring significantly more stability than others. Emergency response may be at the high-flexibility end of the task continuum, but even for this task, stability is required regarding such factors as which organizations are part of the network at which stages of the crisis, how the network is governed and led, how resources will be distributed, and so on. For other tasks, such as dealing with “vulnerable” clients, including emergency and disaster recovery efforts, stability is an important factor for network success. This conclusion was demonstrated in a comparative study by Provan and Milward (1995) on community-based networks serving adults with serious mental illnesses.

Based on the limited research that has been conducted on whole network stability, the conclusion that we can draw about the stability–flexibility paradox is that networks need to be relatively stable at their core, while maintaining flexibility, especially at the periphery...
The network core would typically consist of organizations that are most central in their level of involvement and most critical to the overall mission of the network. Significant disruptions in the pattern of relationships among the core organizations are especially difficult to overcome. Flexibility could be advantageous, however, on the network periphery, which refers to those organizations that are less well connected and whose involvement might be less critical. New organizations can enter and less involved organizations can leave, thus bringing new ideas and contributions to core members.

One example of the value of core stability in an evolving network is the case of the Southern Alberta Child and Youth Health Network (SACYHN; see Lemaire 2012). In SACYHN, the core consisted mostly of health organizations, as they initiated the network and provided most of its financial support. This core group was highly stable, while on the periphery, the membership and involvement of organizations from other sectors varied over the eight-year life of the network. While SACYHN was highly effective for most of this period, what led to its demise was a restructuring of the health system that collapsed seven core member organizations into a single agency. With the uncertainty created by this restructuring, coupled with the withdrawal of support by the main health agency, SACYHN was no longer able to operate as a formal network. Overall, as network needs change based on shifting clients, changes in funding, or movement to a different task stage, some organizations at the periphery may drop out, while others move to the core, eventually supplanting the role of some older core organizations. This type of change does not disrupt overall network stability, while a stable core can actually support the flexibility typically associated with networks and still maintain the network's mission.

Conclusion

This article has attempted to provide public management scholars, students, and practitioners with an overview of current thinking on organizational networks. We have focused in particular on whole, goal-directed service delivery networks, which are so important to and prevalent in the public and nonprofit sectors. Our discussion has drawn not only on the considerable research and theorizing on public and publicly funded networks, but also on some of the core concepts and findings from network scholarship in other disciplines. Adding our own thinking, we have offered insights into why a network might be appropriately selected over more traditional, hierarchical forms of organizing and, once selected, how networks might function more effectively. While public management scholars and practitioners can certainly learn a great deal from work that has been done on private sector networks, public network researchers have examined some issues that are significantly understudied in a private sector context. Most notably, and as pointed out on several occasions here, public network scholars have contributed in important ways to an understanding of goal-directed whole networks, including their management and governance, while private sector scholars have mostly focused on dyadic relationships and egocentric network ties. As business firms turn increasingly toward network forms to accomplish work, especially complex tasks that are best suited to multiorganizational and collaborative solutions involving multiple sectors, those who study the phenomenon would be well served to draw on the contributions of public network scholars.

Because the literature on organizational networks and network relations is by now so large, a thorough consideration of all that has been done to date is an impossible task, at least within the confines of a journal article. Our intent here has been to provide a brief overview of what we believe are the key findings and ideas that have emerged in the study of networks over the past two decades that are particularly relevant to public management network scholars and practitioners concerned with or working in service delivery networks. Too often, scholarly research either does not reach practitioners in a way that is usable, or the knowledge transferred is extremely narrow, depriving practitioners of an understanding of the bigger picture. This article has been attempted to convey public network research knowledge that is both nontechnical and broad enough to address a range of important questions and issues. Those involved in network practice will, of course, still need to adopt the general conclusions that we have made here to their own specific network settings.

References


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