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Sharon L. Caudle
Texas A&M University

From "Need to Know" to "Need to Share": Tangled Problems, Information Boundaries, and the Building of Public Sector Knowledge Networks

Sharon Dawes, Tony Cresswell, and Theresa Pardo

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Sharon Caudle is a graduate faculty member of the Bush School of Government and Public Service, Texas A&M University, Master of Public Service and Administration Program and the Homeland Security Certificate Program. Before joining the Bush School, she was with the U.S. Government Accountability Office, working in a variety of policy and management areas. Dr. Caudle also has extensive government headquarters and field experience with the U.S. Office of Management and Budget, Department of Agriculture, and the State of Nevada. She has authored numerous articles and book chapters on topics ranging from public performance management to homeland security issues. She earned her master's and doctorate in public administration from George Washington University in Washington, DC, and a master's in homeland security and homeland defense from the Center for Homeland Security and Defense, School of International Studies, Naval Postgraduate School, in Monterey, CA.

E-Mail: scaudle@bushschool.tamu.edu

Dawes, Cresswell, and Pardo present "public sector knowledge networks" (PSKNs) as one, if not the primary, solution to the sharing of information and knowledge across traditional organizational

boundaries for those problems that are not quite routine and wicked. They contend that if there were PSKNs, there would no longer be information hoarding or "need to know" restrictions to obstruct the action needed to solve or at least lessen most problems in organizational life. Instead, in their view, PSKNs would create and nurture that long sought "need to share" network culture. The authors suggest that if others learned the many "lessons" from their extensive field work, the development and implementation of PSKNs would occur in that fertile ground between routine and wicked problems. The authors have presented these "lessons" before, most notably in Zhang and Dawes' 2006 article in *Public Performance & Management Review*.

I do not have major disagreements with what is presented, but a richer presentation of the "lessons" with the reflections and findings of others would be useful. I also recommend that identifying discrete success

factors unique to PSKNs in contrast to generic management efforts would have been welcome, as well as identification of critical success factors over the phases of life of a PSKN. I also present another path for arrangements to share information and knowledge—that of considering totally separate types of networks to embrace communities of practice and direct product and service delivery.

Consistency with Past Findings

The authors' latest work is consistent with that presented in the Zhang and Dawes' 2006 article. A major deviation would have been surprising given the thoughtful research design and analysis reflected in that work. The 2006 research drew on the results of studying seven government knowledge-networking projects in New York State that, from the descriptions, seem to replicate the six networks addressed in the current article, at least in the development, implementation, and sustainability of a PSKN. However, I cannot state that definitively because the extended article was not made available for review; my comments are restricted to the article published in *PAR*.

In the current article, Dawes, Cresswell, and Pardo describe PSKNs as "socio-technical systems in which human, organizational, and institutional considerations exist in a mutually influential relationship with processes, practices, software, and other technologies." Quite a sophisticated description! One wishes the authors had resurfaced the more useful and understandable definition found in Zhang and Dawes that described PSKNs as a "combination of inter-organizational relations, policies, structured information, professional knowledge, work processes, and technologies brought together to achieve a collective public purpose" (2006, 434). That definition offered a much more useful verbal picture of a PSKN while

reminding the reader of the expected outcome—achieving a collective public purpose. This is key. In the current article, the authors describe PSKNs as much different from other networks in that they view the sharing of information and knowledge across organizational boundaries as a primary tool to addressing public needs. This also is consistent with the O'Leary, Gerard, and Bingham definition of collaborative public management as the "process of facilitating and operating in multi-organizational arrangements to solve problems that cannot be solved or easily solved by single organizations" (2006, 7).

Both articles describe the same benefits of and barriers to knowledge sharing and present essentially the same research findings. For example, the 2006 article includes expected benefits of facilitating the delivery of integrated services and enhancing relationships among participating organizations. In the same vein, the current article argues that PSKNs provide benefits both for the organizations involved in the networks and those they serve. For the organizations, the PSKN's communication channels offer participants timely, shared access to better quality and more complete information and knowledge. They help innovation and organizational learning, including reacting to uncertainty and complexity and in connecting others' knowledge and experience. They facilitate problem-solving, coordination, technological improvements, and better access for citizens.

Barriers remain the same. The 2006 barriers included the technological (compatible infrastructures, consistent data definitions and standards, technological change); the organizational (structural conflicts, power dynamics, managerial practices, evaluation and incentive systems); the individual (relationships); the financial (financial constraints);

and the legal and policy (stability and accountability, uncertainty). In the current article, the PSKN barriers (now called challenges) similarly result from the nature of knowledge and the boundaries it must cross. The authors claim that it is just these challenges that explain why structured information technology systems are often ineffective in the exchange of knowledge and information across organizational boundaries. The current article's barriers/challenges remain very much the same, including those involving the content of the information or knowledge (shared understanding of meanings, the context of the material, and their quality); the presence of boundary barriers (legal and jurisdictional authority, recognized roles and functions, different missions and agendas, varying capacity and supporting resources such as technology, different processes and business practices, insufficient expertise to extract and easily use the information or knowledge, and physical distance); and the understanding and perception of tangible or intangible risks in sharing information and knowledge.

For practitioners and academicians alike, the findings of the authors' research remain the bottom line and, again, are consistent. For example, the 2006 article identifies "lessons" that include the following: prior expectations about both benefits and barriers are tempered by experience; networking success can be achieved without project success; policy and legal barriers appear to present the greatest obstacles to substantive success of knowledge-networking projects; and technology is necessary to the creation of knowledge networks but appears to have limited influence on success. The current research findings, somewhat expanded, are consistent with the 2006 research. To illustrate, the current findings include: the necessity for acquiring legal authority for a PSKN, but the structure of that formal au-

thority can vary; while policy barriers are the greatest obstacles to success in building PSKNs, they can be surmounted by early intervention, focused action, and consistent attention; learning and adaptation are essential to PSKN development and survival; and technology is necessary but not sufficient for success.

Analytical Support

Thus, the current presentation is consistent with the authors' past research on the New York projects and sets forth findings on information and knowledge sharing that are well known and applicable to many other public management efforts. For example, the authors state that it is misguided to conceive of information-intensive public management problems as mainly information-technology (IT) issues, and thus it is useless to focus on IT in search of a silver bullet. They also say political leaders and public managers must invest in fundamental management skills that engage in sharing knowledge and information in networks. They list previously well-articulated benefits such as solving joint problems, coordination, and improvements in information and IT infrastructure. They note that boundaries typically occur in complex combinations such as policy and legal constraints, cost and authority considerations, and issues about participation and decision-making. Making an obvious point, they write that mobilizing political support really helps.

The authors appear to have missed an opportunity to weave in the findings of others that have a direct bearing on the authors' PSKN observations. There is, of course, substantial literature on communities of practice and partner delivery networks that the authors could have relied on or referenced further. For example, they might have drawn on the extensive work in *PAR's* 2006 special issue on collaborative management.

To illustrate, that issue contained articles on managing boundaries (Kettl), managing collaborative processes (McGuire), designing and implementing cross-sector collaborations (Bryson, Crosby, and Stone), and learning from collaborative networks (Agranoff). Agranoff (2005) also observes that engaging other partners and leveraging joint resources require sophisticated management skills, including leverage and engagement and collaborative information strategies. He presents eight central collaborative support functions such as executive leadership, promoting the network to encourage information creation and flow, brokering opportunities and investments, and collaborative capacity development.

These articles and other materials provide depth on collaborative and networking environments, including overt and subtle nuances from relationships to costs and benefits to legitimacy. For example, Weber and Khademian (2008, 334)—the apparent launching point for the authors' article—say networks are defined by enduring relations established between organizations, individuals, and groups in exchanging information. They note that networks have desirable characteristics for accomplishing complex tasks, for they are considered flexible, efficient, and innovative in enabling collective accomplishments. They can coordinate and safeguard exchanges among firms in market settings. Discussing knowledge and knowledge transfer, Weber and Khademian write that the capacity to integrate disparate knowledge requires an understanding of knowledge as practice and an exploration of how collaborative capacity builders approach collaborative problem-solving so that the integration of existing knowledge and the creation of new knowledge can occur. Network knowledge must be turned into practical, useful information. The mechanism to do that is through a collaborative capacity

builder. Goldsmith and Eggers (2004) describe in considerable detail the ins and outs of networks in government, including their benefits, management skill sets, and implementation challenges.

The assessment of PSKNs also might have benefited from the literature on assessment. For example, Klitgaard and Treverton's (2003) work (part of the IBM Center for the Business of Government publications on collaboration and networks) provides considerable guidance on how to evaluate partnerships, including a checklist to assess the costs and benefits of partnerships. Perspectives on evaluation can include, for example, each partner's interests and the broader effects on society over partnerships and over time. Klitgaard and Treverton also discuss partnership costs such as the transaction costs of interacting, coordinating, and partnering (e.g., sharing data, designing and implementing joint incentive and evaluation systems, and organizational conflict over time). Provan and Milward (2001) discuss many issues for evaluating network effectiveness, and Milward and Provan (2006) describe management of accountability, legitimacy, conflict, design, and commitment as leading to effective network management.

The authors also might have looked at literature on coordination in different environments that could support or conflict with their research findings. For example, Kettl (2003) and Kamarck (2002) discuss homeland security coordination and governance relevant to PSKNs. Kettl (2003) describes coordination problems, such as building a reliable learning system to learn from mistakes and the need to do new and old missions well. Kamarck (2002), writing about government's emerging implementation strategies in the 21st century, concludes that networked government as a new form of government is more flexible and innovative.

However, Kamarck notes that many government managers find themselves managing networks when their experience, training, and expectations have been to manage traditional bureaucracies. In a similar view, Kettl (2006) notes that the new challenges of 21st century life—from terrorism to pandemics and international trade to climate change—create complex service systems. With programs increasingly interrelated, defining any organization's mission becomes harder because programs must connect seamlessly with closely related programs. With networks sharing service delivery and accountability, it is difficult to determine how individual roles contribute to a program's success. New skill sets, Kettl contends, are needed to cope with capacity demands and the complexity of creating a seamless service system.

Other sources such as Kelman (2007), Sanderson, Gordon, and Ben-Ari (2008), and the Government Accountability Office (GAO; 2001, 2003) are particularly on point. Kelman discusses trends in interorganizational collaboration across government agencies and between government organizations and private ones. Sanderson, Gordon, and Ben-Ari write that international collaborative online networks mostly fail, not because of poor technology or lack of funding but because of the inability to engage individuals successfully in a collaborative effort. They identify specific challenges such as building and maintaining trust among members, crafting incentives strong enough to attract and sustain members, and finding the right partner(s). They also describe mechanisms to address these challenges. For example, building trust in these networks might include enabling a two-way exchange of information and being transparent about how information ultimately will be used. Moderating the network can include encouraging

different perspectives and creating conditions conducive to open dialogue.

The GAO (2001, 2003) work on information-sharing practices also might have been useful to enhance the authors' points and to test the validity and comprehensiveness of their findings. In its 2001 report, the GAO studied the practices of organizations that successfully shared sensitive or time-critical information across organizational boundaries. The challenges were consistent with what the authors found in New York pertaining to agreements on the use and protection of shared information and obtaining adequate funding. Factors found by GAO to be critical to successful information-sharing relationships included: (1) building trust as the essential underlying element to successful relationships, normally over time with personal relationships; (2) establishing effective and appropriately secure communication mechanisms such as regular meetings and secure websites; (3) obtaining the support of senior managers at member organizations regarding the sharing of potentially sensitive member information and the commitment of resources; (4) ensuring organization leadership continuity; and (5) providing identifiable membership benefits through information sharing such as current information, lessons learned, and free advice. The 2003 work provided additional guidance, including data integration and interoperability technologies and the assessment of information security risks and controls.

Advancing PSKN Knowledge

Beyond the analytical support just discussed, the authors could have advanced PSKN knowledge in at least three ways. These include more discrete critical success factors or practices, exploring differences in their types of PSKNs, and considering if another viable categorization might include direct

client delivery networks and community of practice networks.

First, the authors might have separated out those critical factors or practices important to developing, implementing, and sustaining any new cross-organizational relationship from those specific to a successful PSKN. For example, virtually any successful boundary-spanning relationship calls for strong leadership and management practices, competencies, and cultural acceptance of collaborating and integrating efforts with others. These certainly are not new challenges and/or lessons for those involved in public management and public/private partnerships; indeed, they pertain to any situation involving collaboration and integration. The most important factors for PSKNs may center on the information and knowledge quality flow such as the timeliness and quality of the data, infrastructure to handle the flow to the right actors practically, policy and legal requirements regarding information sharing and intellectual property, and the actual personal relationships across PSKN participants.

In addition, the authors might have considered more discretely identifying the critical success factors for the different phases of the life of a PSKN, from deciding to form a PSKN to sustaining effective sharing and collaboration. For example, in a work I did on regional partnerships (Caudle 2006), I described initiation factors such as evaluating in what environment the partnership must perform, what should be the right mix of capable partners, who are potential partners, and what value each partner brings. Once a partnership becomes operational, then partner contributions and renegotiation of the partnership compact occurs. Partners can become rivals in securing funding, have changed missions, or have major changes in the mix of products and services. Partners

can be terminated if there no longer is synergy for added value, whether due to one partner's lack of contribution or other partners deciding they are strong enough to jettison a partner. Snyder and de Souza Briggs (2003) describe the evolution of communities of practice and the different activities, methods, and tensions that occur in each stage of evolution. The evolutionary stages start with identifying what strategic issues a community of practice might address. They continue to the final stage of determining the legacy of the community. The latter includes organizational institutionalization, dissolution of the community totally, or fragmentation into sub-issues. At each stage there will be key management tasks.

Second, the authors might have been more explicit in analyzing the differences between types of PSKNs. The one apparent new element in this article compared to the 2006 one is the authors' assertion that there are substantially different PSKNs in terms of "focus" and "extensiveness." The description of the two dimensions is difficult to follow, but the long and short of the description appears to be that "focus" means that network use can either be narrow for single decisions and action or broad for a "domain of action" left undefined.

The authors could have considered fashioning their analysis of "focus" and "extensiveness" into more explicit "bad" or "good" findings to help guide those creating and implementing a PSKN. What costs would outweigh the benefits for each type? Should each PSKN type be approached differently in terms of strategies, policies, and practices? Are there different barrier issues or factors? Overall, the authors claim that costs and risks increase but that benefits and overall public value are greater as one moves to information and knowledge sharing that crosses organizational boundaries external to

an organization and are always available to the participants beyond a specific need or problem.

As I mentioned earlier, literature on assessment might have been useful. The reader yearns for a more robust discussion of PSKN outcomes and measures, no matter where it falls in terms of "focus" and "extensiveness." Agranoff (2008) and Chen (2008) discuss network process and collaboration outcomes that might be considered across the focus and extensiveness categories. To illustrate, they mention aspects such as partner knowledge, resource exchange, goal achievement, and power relationships.

Finally, the authors might have explored whether the difference between PSKNs in terms of "focus" and "extensiveness" was the most appropriate categorization tool. Another possibility would be to consider at least two possible communities serviced by a PSKN and with different purposes, both mentioned by the authors as a PSKN. One would be a direct, formal client delivery network designed to provide better services and products to clients, requiring sharing sensitive client information across organizational boundaries and facilitating the effective integration of products and services for each client. A second would be an informal community of practice network intended to enhance informal community professions and practices through sharing information and knowledge.

These are substantively different networks with different purposes, targets, and perspectives than the authors' "focus" and "extensiveness" analysis. Direct service delivery networks are those designed to determine client needs, the availability of services and products, the crafting of those services and products to meet client needs, and then a delivery and accountability me-

chanism. Communities of practice are quite different, defined by Snyder and de Souza Briggs (2003, 7) as informal social learning systems where practitioners voluntarily participate and connect in problem-solving—sharing ideas, setting standards, building tools, and developing relationships with peers and other stakeholders. Kerno (2008) points out that learning for a community of practice relies on a high interactive process across those who are new to a community of practice (amateurs) and those who are experienced (masters). A community of practice's main value is the synergistic creation and dissemination of knowledge, whereas direct service delivery is more grounded in consistent information flow and integration for a client's benefit.

Analysis of such a separation could lead to questioning of the authors' conclusion that there is no real difference other than "focus" or "extensiveness" in categorizing PSKNs. The barriers, challenges, and lessons should be somewhat different if community of practice and direct client service delivery are the units of analysis. For example, the authors say that the risk-averse culture of government runs counter to the ability of organizations to share information about clients and services and knowledge about their professions and practices. Actually, there are good reasons to protect information about clients and services in partnerships servicing the same clients. Standardized approaches to classifying shared data and access are a necessity, and formality carries forward in terms of authority, policy directives, data standards, restrictions on information access, and the like.

Unlike a normally informal community of practice, a client service delivery PSKN requires considerable structure, skills, resources, management attention, and accountability. Depending on the central product or

service that must be delivered, one organization with "more skin in the game"—and thus accountability for good resource stewardship—may have more authority and control than other organizations participating in the PSKN. A community of practice requires, of course, some of these same elements but is much more contingent on those participating in the community, and control may be very fluid. Other differences also may be critical. For example, Kerno (2008) and Probst and Borzillo (2008) discuss "lessons" for an effective community of practice involving elements such as a flatter, horizontally linked organizational structure; commitment of a core group to engagement in the community, importing external expertise into the community, and differences in the societal context in which the community is situated.

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