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Communities of Practice: A New Tool for Government Managers

William M. Snyder
Managing Director
Social Capital Group

Xavier de Souza Briggs
Associate Professor of Public Policy
Harvard University

Collaboration Series

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FOREWORD

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On behalf of the IBM Center for The Business of Government, we are pleased to present this report, "Communities of Practice: A New Tool for Government Managers," by William M. Snyder and Xavier de Souza Briggs.

"Communities of practice" provide government leaders with a new tool for managing in a fast-paced, fluid environment where they need to reach beyond traditional organizational boundaries to solve problems, share ideas, and develop peer and stakeholder relationships. This approach has been successfully used in the private sector over the past decade and is now being applied in the public sector.

Snyder and Briggs present four case examples of the federal government's experience with "communities of practice": Boost4Kids, SafeCities, 21st Century Skills, and the Federal Highway Administration's Rumble Strips Initiative. This report is a practical "how to" guide for public managers desiring to develop communities of practice to solve problems beyond their span of responsibility. Along with the four case studies, the report offers lessons learned from each. The authors conclude that that there are many opportunities in the federal government for managers to use this approach as a tool for building communities of practitioners who are dedicated to solving challenges and spreading successful practices that go beyond traditional organizational solutions.

We trust that this report will challenge federal executives to think differently about how to leverage new ways of doing business to bring together networks of partners to jointly learn about and act on the big challenges now facing government at all levels.

Paul Lawrence
Partner-in-Charge, IBM Center for
The Business of Government
paul.lawrence@us.ibm.com

John M. Kamensky
Senior Fellow, IBM Center for
The Business of Government
john.kamensky@us.ibm.com

Introduction

"Here the focus is on grassroots innovation efforts where innovating community groups have the opportunity to come together and share how they have solved problems…. It's like a virtual center of excellence, where all the partners are experts."

"This approach helps build buy-in from people who will implement the approaches, versus saying, 'Oh here comes another dictate from Washington.' These are our own problems and we should design our own solutions."

Transformative changes in the world—driven by globalization and a sweeping knowledge revolution—are creating challenges too complex for traditional structures and management methods to address. This is clear in the private sector but may be even more important in the realm of public problem solving, where government, nonprofits, and businesses increasingly work together. The complexity of today's challenges and associated performance expectations requires a commensurate capacity for learning, innovation, and collaboration across diverse constituencies. But *action learning*—the kind that leads to real impact on important public problems—calls for organizational arrangements that we are only beginning to envision and create. Existing models of teamwork and collaboration, while useful, are hard-pressed to overcome persistent barriers: bureaucratic inertia, fear of change, and turf-minded managers, among others. And many change efforts are much too dependent on charismatic champions whose exits spell the demise of promising innovation.

Conventional government bureaucracies—designed to solve stable problems for established constituencies through centrally managed programs and policies—are hampered by important limitations in this environment. While scale and functional specialization still offer important benefits, and while centralized coordination and enforcement of standards also have a role to play, the old structures are not enough. Many of our most urgent social problems—in education, community safety, the environment, job creation, affordable housing, healthcare, and more—call for flexible arrangements, constant adaptation, and the savvy blending of expertise and credibility that requires crossing the boundaries of organizations and sectors.

Private-sector firms—both multinationals and start-ups—are embracing network-based forms of organizing to build new capabilities, accelerate innovation, and increase agility (Nohria and Eccles, 1992; Dyer and Nobeoka, 2000). Nonprofits, too, are organizing more frequently as cross-sector networks of organizations that partner together to address complex civic issues (Keyes et al., 1996). Governments must also learn to leverage the power of networks, both internally (across agencies and sub-units) and externally (across levels of government, across sectors, and across important constituencies). But doing this work presents important challenges that outrun much of the private sector's experience. What's more, many of the most important players display "collaboration fatigue." Process alone, and the promise of better governance, is not enough to win their commitment.

Let us go back to first principles. The most important business of government is governance. In democratic societies, particularly where civic engagement is desperately needed, effective models of governance must be able to *meaningfully* engage organized public interest groups, private-sector parties, and citizens at large to tackle matters of civic concern (Barber, 1985; Putnam, 1993; Fung and Wright, 2003).

Unfortunately, while scholars and other opinion leaders have made a compelling case for more engagement and more structure, the effort to develop, document, and test new structures and new norms is still in its infancy. Furthermore, it is particularly unclear, in an era defining "civic" all too often as "local," what role, if any, the federal government should play.

That is, the crucial challenges ahead are less about the "whether" of broader engagement than about the when and how. This report describes how collaborative action-learning networks—here called "communities of practice"—can combine disciplines, interests, and capabilities across boundaries to take on national priorities. Though much of the action is local, the federal government plays a lead role in sponsoring and structuring the work. The report mines rich case studies that show the model in action and offer specific examples of breakthroughs and pitfalls.

This report addresses three key questions:

- What are communities of practice, and how should we distinguish them from transaction- or advocacy-oriented networks and traditional organizational structures?
- When and where should federal government managers develop communities of practice to address strategic priorities, particularly those that cross boundaries within and across agencies?
- How can you create and manage these informal, action-learning structures? How do you get them launched, support their growth, and help them achieve desired results?

We illustrate these points in the context of a core set of four federal case studies (with occasional references to others). These cases illustrate how federal agencies can cultivate these structures and bring them to scale to address national priorities.

Our findings and recommendations are drawn from an in-depth analysis of a "revelatory" (Yin, 1989) set of cases. These include a federal initiative, sponsored by senior staff in Vice President Gore's National Partnership for Reinventing Government, which began in 1998, that launched three communities of practice. These communities focused on three urgent national issues: children's health and school readiness; public safety; and workforce development. They were called Boost4Kids, SafeCities, and 21st Century Skills, respectively. Each network consisted of 10 or more local, multi-stakeholder groups from cities across the nation. In addition, we report on a fourth case, a community of practice sponsored by the Federal Highway Administration (FHWA), which focuses on reducing highway fatalities. The FHWA case is based primarily within one agency, as opposed to the other three cases, which featured intensive cross-agency collaboration. In all four cases, linkages between players across sectors and levels of government were crucial.

Cultivating high-performing communities of practice—as opposed to mere "interest roundtables" or affinity groups—presents a formidable management challenge to the federal government and other stakeholders such as businesses, foundations, universities, local and state governments, and nonprofits. The good news is there are working examples of such networks today—in all sectors, at all levels—including successful ones in which the federal government has played an instrumental role.

A "community of practice" is a particular type of network that features peer-to-peer collaborative activities to build member skills as well as organizational and societal capabilities. Education and public safety communities of practice generally involve organizations from the private and nonprofit sectors, even when they are primarily sponsored by public agencies. Organizations and researchers use a variety of terms to describe similar phenomena, such as "learning networks," "knowledge communities," "competency networks," "thematic groups," and others (Wenger, McDermott, and Snyder, 2002, pp. 239-240).

The analysis of these cases suggests three recommendations for what the federal government can do to spur improvements at the local level on a national scale.

1. *Sponsor and support communities of practice to achieve national outcomes that require ongoing innovation and action-learning.* There is now no other entity as well placed as the federal government to provide such sponsorship and support. Key roles and structures required to help communities of practice succeed include agency sponsors to provide strategic focus, seed funding, and institutional legitimacy; community coordinators to develop a learning agenda, build the community, and lead outcome-oriented initiatives; and agency champions and support staff to bridge formal-unit barriers, coach community initiatives, and liaise with sponsors and stakeholders.

2. *Align community goals with the agency strategic imperatives and policy mandates.* Many communities of practice are simply loose networks of professionals who have no aspiration to influence policy or build new organizational capabilities beyond individual professional development. But the cases described here show that well-supported communities of practice can be powerful engines for achieving strategic goals. Alignment actions include linking the community's learning agenda with agency objectives; leveraging community capability outcomes by consistently implementing them in formal service-delivery units; and partnering with communities of practice to accelerate the dissemination of good ideas and enhance policy development.

3. *Leverage the unique position of the federal government to broaden the scope and scale of pilot initiatives.* Wherever there are urgent socioeconomic imperatives that require building and sharing new capabilities, there are opportunities to leverage communities of practice to achieve results faster. National priorities such as homeland security and school improvement are important, high-profile areas to consider—and so are specific strategic objectives for every federal agency, whether in the Army to promote professional development for newly minted company commanders, the Federal Highway Administration to reduce traffic crashes, or a multi-agency initiative to establish and implement federal e-government standards and methodologies. The same goes for scale: If 10 cities find a way to connect faith leaders and police departments—and reduce gun violence and urban conflict in the process—why not provide an infrastructure that over time helps 1,000 cities nationwide do the same thing? The opportunity here is to leverage a relatively small investment in infrastructure and senior executive attention to catalyze peer-to-peer learning networks on a national scale and thereby achieve results not otherwise possible.

Understanding Communities of Practice

What Is a "Community of Practice"?

Communities of practice steward the knowledge assets of organizations and society. They operate as "social learning systems" where practitioners connect to solve problems, share ideas, set standards, build tools, and develop relationships with peers and stakeholders. These structures are considered informal because they cannot be mandated from the outside. An essential dimension of a community of practice is voluntary participation, because without this a member is less likely to seek or share knowledge; build trust and reciprocity with others; or apply the community's knowledge in practice. Members' willingness to learn and relate together is what drives value in communities. This is not to say external sponsors and stakeholders cannot guide or influence a community—in fact, they have important roles to play. But the nature of the sponsor relationship is qualitatively different from a traditional reporting relationship. It is more like a strategic alliance, in this case with an informal, knowledge-based structure.

As knowledge structures, communities of practice complement the function of formal units, such as departments or cross-functional teams, whose primary purpose is to deliver a product or service and to assume accountability for quality, cost, and customer satisfaction. A salient benefit of communities, in fact, is to bridge formal organizational boundaries in order to increase the collective knowledge, skills, and professional trust and reciprocity of practitioners who serve in these organizations (Wenger, et al., 2002). Communities of practice are a particularly appropriate structural model for cross-agency and cross-sector collaborations because they are inherently boundary-crossing entities. A community's effectiveness depends on strength in all three of its core structural dimensions: its domain, community, and practice. (See Figure 1 on page 8.) The "domain" refers to its focus and identity, the "community" to its member relationships and interactions, and the "practice" to its methods and learning initiatives.

Domain

The domain of a community of practice includes the key issues or problems that practitioners wrestle with or consider essential to what they do. Airline pilots discuss advances in flight technologies and ways to adjust to new security requirements; petro-geologists talk about rock formations and where to find oil reserves; and teachers share their thoughts and experiences about lessons plans and ways to adapt them for different students. In all these cases, the issues are ones that elicit members' passion for their work. A professional's vocation is not an abstract, disinterested experience. A community's domain is often a deep part of members' personal identity and a means of talking about what their life's work is about. As a member of one community enthused: "[We can] get to a point … where we change the psychology and thinking and culture of the country about what we can do for kids and families." Community leaders perform a stewardship function for stakeholders, as well as members, by ensuring the profession's integrity, standards, and efficacy. Of course, members of communities of practice may focus exclusively on their own selfish, internally focused interests, even when these contradict or violate the needs and interests of stakeholders and society. Such narcissism ultimately hurts members themselves—as was true for members of many traditional guilds in the late 19th century, whose insulation from changes surrounding them accelerated their demise. Communities, like any group or organization, require effective leadership and inquiry-oriented, engaged relationships with stakeholders to assure an integrity and capacity for growth that serves both members and society.

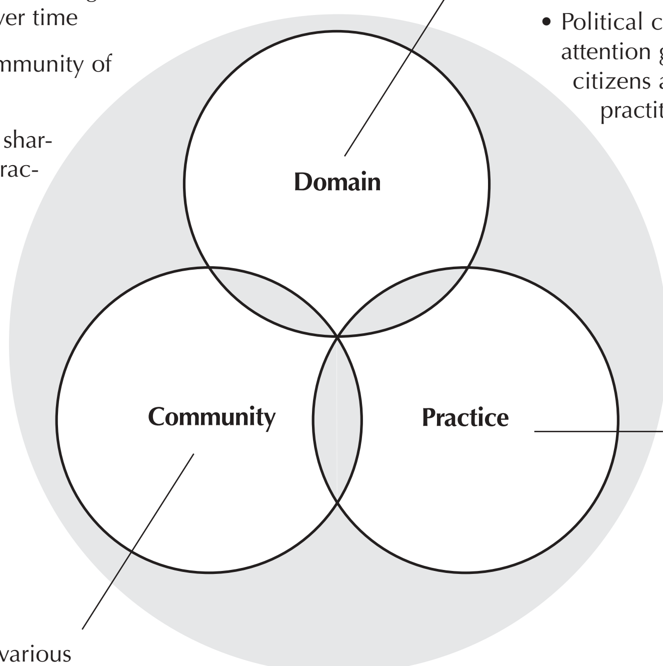
In some cases, it is particularly challenging to set the boundaries for a domain. Some domains—the field of psycho-neuro-immunology is a readily apparent example—include a varied mix of disciplines to match an emerging cluster of problems. Communities must carefully gauge what is the requisite variety of perspectives needed to address messy problems. In one community we studied, practitioners were divided on the question of whether it made sense to combine a focus on distance learning with more specific issues related to workforce development. In another community, members asserted that a variety of perspectives was essential to the community's effectiveness—even as they sought support from agency sponsors who wanted to narrow the focus. As one member argued: "It is the right thing to keep everything in the mix—

Figure 1: Structural Elements of a Community of Practice

- Three basic dimensions define a community of practice: domain, community, and practice
- Its purpose is to cross organizational, sector, and geographic boundaries to foster learning and innovation in specific topic areas
- Its effectiveness depends on strength in all three dimensions, and this evolves over time
- Key characteristics of community of practice are:
  - a focus on building and sharing knowledge among practitioners vs. delivering a product or service to customers
  - a reliance on informal phenomena such as passion, relationships, and shared experience, as opposed to dependence on formal rules and job descriptions

Domain

- Focus on a specific area of related civic issues, such as strategies for reducing gun violence
- Passion for topic and understanding of how it can contribute to society
- Political context: Legitimacy and attention given to this domain, to the citizens affected by it, and to the practitioners who care about it.



Practice

- Techniques, methods, stories, tools, and professional attitudes
- Learning activities engaged to build, share, and apply the practice

Community

- Community members at various levels: conveners, core group, active, and peripheral
- Feelings of trust, openness, belonging, and commitment to others in network

Sponsorship and support

- Sponsorship: Federal government or agency mandate; involvement of cross-sector sponsors at local, state, and national levels; funding for staff and travel
- Professional and logistical support: coaching community leaders, acting as liaison with sponsors, providing communications infrastructure, logistics for meetings, etc.

including issues about health, education, safety, nutrition, and transportation—because they are so interrelated when it comes to helping kids."

Community

In the context of the federal government, communities of practice require collaborative relationships among federal officials from various agencies, and from a diverse array of stakeholders and partners—including state and local agencies, business, universities and schools, hospitals, foundations, citizen coalitions, and nonprofits. Optimally, the membership mirrors the diversity of perspectives and approaches relevant to leading-edge innovation in the field and reflects the varied professional interests and demographic characteristics of practitioners. In thriving communities, members appreciate the range of contributions their peers can make: "I feel I'm in the company of other dedicated professionals. The energy level, trust, and creativity are higher because you know others are at high levels of capability. That's been extremely valuable to me."

Community members participate at various levels of involvement—including community leaders, active participants, and peripheral members who only participate occasionally. Leadership by an effective community coordinator and core group is essential.

Members' mutual feelings of trust, openness, belonging, shared commitment, and common values provide the foundation for mutual learning among diverse members. As one member said: "It is important to meet each other and build relationships and talk to each other and learn from each other. If we were just voices on the phone, we would not be so comfortable with each other." This sense of community is at the heart of communities' success. The reason successful communities of practice do not mandate participation is because building collective trust, reciprocity, and shared values is not something that you can require from the outside, any more than you can force someone to feel passionate about something they simply do not enjoy.

Practice

Practice is used to denote both methodologies and skills. It includes both codifiable "best practices" that can be documented, as well as the tacit skills of an expert—a heart surgeon, for example, or a good plumber. Practice also connotes the implicit notion that true expertise involves continuous learning, as expressed in the phrase "practicing the piano." Hence, elements of a practice include its repertoire—tools, methods, and stories—as well as learning and innovation activities. The elements of SafeCities' "practice," for example, included methods for using Geographic Information System (GIS) mapping techniques to determine high-crime areas that need more attention.

In addition to the GIS mapping example, the elements of the practice repertoires of the communities described here included methods for building local coalitions, running after-school programs, linking education to job training, tracing illegal guns, and using "rumble strips" to reduce highway fatalities. Each of the networks coordinated a varied mix of learning and innovation activities to build, share, and apply knowledge related to their shared practice. These activities differed along several dimensions—face-to-face and virtual; formal and informal; public and private. Further, activities were orchestrated to take place at various rhythms—listserv announcements came weekly, teleconferences were semi-monthly or monthly, visits occurred occasionally throughout the year, e-mails and phone calls were ongoing, and the whole group gathered about once a year. This ecology of activities—which served various functions and occurred at different rhythms—provided value on multiple levels. Moreover, it increased the communities' "presence" in members' lives and reinforced the sense of belonging and identity that were the foundation for knowledge-sharing and collaboration activities. One member reinforced the importance of a mix of activities: "We should combine these various elements of cutting-edge ideas, research evidence, and best practice, along with the local context about how to implement best practices in real cases."

The dimensions of domain, community, and practice are, of course, highly interrelated. For many "emergent" communities, the domain has not been well defined, and therefore the professional repertoire is spotty or uneven. Moreover, if the domain is not compelling, it is less likely to attract motivated and talented members, or ones who want to learn and work together. Conversely, even if members are talented and enjoy working together, if they cannot define a compelling learning agenda to address and do not have case problems to work on or tools they want to build together, then the community is unlikely to get traction.

When, Where, and Why Do You Create Them?

Agencies and government managers are becoming increasingly conscious that the challenge of keeping up with strategic challenges is mostly about building, sharing, and applying capabilities—at organizational, group, and individual levels. (The plethora of business books published since 1990 on learning and knowledge is just one indicator of the recognition of knowledge, learning, and innovation as the drivers of strategic performance today.) Effectively managing the production and delivery of high-quality products and services is, of course, necessary; but it isn't nearly sufficient in today's management environment (Kotter, 1996). Organization leaders must do "adaptive" work, not only "technical" work, to keep up in a turbulent environment where new technologies are changing how work gets done, demographic shifts are roiling talent pools, and market demands are increasingly dynamic (Heifetz, 1994). The challenges that are most likely to require an adaptive approach are those that are unfamiliar, complex, and require a combination of disciplines to address. Often, an organization's most important strategic challenges fit these criteria. This is why it is important for federal managers to manage two types of complementary structures serving distinct purposes: *formal units*—teams, projects, and business units—that support product and service delivery; and *informal structures*—communities of practice—that steward learning and innovation activities to build professional skills and organizational capabilities.

Adapting to new strategic realities requires learning and innovation, and that is why an increasing number of agencies are sponsoring communities of practice (Wenger and Snyder, 2003). Communities of practice complement traditional structures by stewarding both codifiable tools and frameworks (contained in documents and other media that you can store in a website) as well as the "non-codifiable" dimension that includes professional skills and complex organizational capabilities for which standard policies and procedures cannot substitute (Snyder, 1996, pp. 30-34).

Federal managers should consider community-based initiatives in situations such as the following:

- *Building and disseminating a new capability*—such as homeland security.
- *Increasing current capability levels*—for example, improving school system performance so "no child is left behind."
- *Integrating a new dimension to current capabilities*—such as e-government applications to government purchasing and citizen-service processes.
- *Attracting, retaining, and developing talent*—including professionals in various disciplines and levels of expertise—and particularly as the government, like organizations in every sector, faces massive losses of baby-boomer staff (in many agencies, 40 percent of employees will be eligible to retire in 2005).

Building New Capabilities

The mission to ensure homeland security, for example, presents an enormous capability-building challenge for 11,000 cities and 3,000 counties nationwide. Local cities and counties must now establish the capacity to prepare, prevent, and respond to unfamiliar threats of unprecedented danger—bio-terrorism, dirty bombs, suicide attacks, and other potential dangers. How can we build local security capabilities all across the country quickly and effectively? How can we combine and coordinate the multitude of disciplines and organizations—such as businesses, agencies, schools, universities, hospitals, fire and police—and connect across local, state, and federal levels where needed? How can we build a sufficient practice repertoire that must include new databases, protocols, technologies, simulations, standards, case studies, and research?

The homeland security problem is much like the gun-violence problem faced by SafeCities, only with increased complexity and uncertainty. But from a knowledge perspective, the challenge is the same: building local capability quickly; leveraging the best capabilities available at various levels of government; and creating mechanisms for innovation, knowledge-sharing, and collaboration among groups within and across cities.

Traditional mechanisms will get us part of the way there. Mandates, policies, and standard procedures should be defined and implemented—but, as usual, the catch is executing plans and intentions at the local level in order to achieve desired outcomes. Every town has its own idiosyncrasies and limitations that may or may not align with the best-laid plans; any complex capability requires adaptation to implement at the local level—not to mention the right motivation, skills, and resourcefulness to make it work.

Communities of practice are effective mechanisms for building and disseminating capabilities because they address the “local” (or “situated”) (Lave and Wenger, 1991) nature of knowledge—as well as issues related to skill and will. When you are engaged with peers struggling with the same issues as you face, and when you can put a human face on agency bureaucrats and experts who participate in your community, it becomes less daunting to take on a challenge you have never faced before.

Communities of practice also provide a living repository for ideas, information, best practices, directories of experts and resources, and the rest of the requisite repertoire that civic leaders will need. The amount of information to absorb just to keep up with an established professional discipline can be overwhelming (Davenport and Beck, 2001). Member relationships provide a network for finding out quickly which information is most important to pay attention to and where to get the knowledge you need “on demand,” instead of piling it up on your desk or storing it in an obscure folder somewhere in your computer’s hard drive “just in case.”

Increasing Current Capability Levels

In many cases, the problem is not to build a new capability, but rather to raise up an established capability to a new level, or even simply maintain it. The new emphasis on improving schools’ ability to enable all children to succeed—that is, children of every socioeconomic status, ethnic background, and special need—has raised the national standard for public schools and illustrates a case where the challenge is to raise a current capability to a new level.

The federal government could convene and cultivate a community of stakeholders at the national level. Such a group could provide cross-sectoral stewardship for the array of initiatives and policy mandates being applied to increase school performance levels. This group might consider how communities of practice could be used within and across districts to promote innovation and peer-to-peer knowledge sharing. For example, it could sponsor a pilot initiative to spur student success by promoting the professional development of school leaders and classroom teachers.

Consider briefly how such a group might frame the school leadership crisis we face today. School leaders, particularly principals, are now widely seen as perhaps the most critical lever for school improvement (because they have much influence on teacher effectiveness, which in turn drives student success). There are 90,000 principals in the nation, and approximately 40,000 will be eligible to retire in 2005. Moreover, the schools most in need of effective principals, urban schools in poor districts, are the ones that suffer most from high levels of turnover and underdeveloped leaders. Schools of education generally do not prepare graduates sufficiently for the distinctive challenges of leading urban schools. While formal education and training is essential, the most reliable methods for developing effective urban principals—as is true for any professional—are informal learning activities that occur during internships and on the job. These include coaching and counseling by mentors and co-consulting, visits, and mutual encouragement among peers and colleagues (Fink and Resnick, 2001).

The Department of Education, in collaboration with cross-sector partners at various levels—including foundations, corporations, and nonprofits focused on this work—could lead a collaborative initiative in this area. Such a group could sponsor pilots that demonstrate how school districts can cultivate and leverage local peer-to-peer learning networks that accelerate the development of effective school principals. The approach could also be used to help superintendents learn together about leading transformative change initiatives in districts that need to radically improve performance with scarce resources and restrictive union contracts. Finally, the approach applies just as well to teachers learning to organize a curriculum and manage a classroom.

Integrating New Capability Dimensions

Communities of practice are also effective for integrating new dimensions into established capabilities. For example, many agencies have been mandated to incorporate a variety of e-government capabilities to reduce operational costs and to increase citizen access and convenience. (President Clinton issued a Presidential Memorandum in 1999 to this effect.)

The Office of the Secretary of Defense, the Defense Acquisition University, and the United States Navy, for example, launched a community of acquisition program managers (called PMCoP for "Program Management Communities of Practice") to provide online access to performance-support materials that help accelerate the production of high-quality weapon systems—an area with tremendous potential for savings. The community includes over 3,000 government and defense-contractor procurement acquisition professionals who serve in all three military services. They present new practices (such as "evolutionary acquisition" and "performance-based contracting" and "reverse auctions"), share ideas, and ask and answer questions via face-to-face meetings, video conferences, listserv discussions, and an online repository. These activities help members build and share vetted tools, methods, lessons learned, and application examples. Community participation enables acquisition professionals to solve problems faster and supports the professional development of an increasing flow of new personnel (just as the implications of baby-boomer demographics are kicking in).[1]

Another cross-agency community, the e-Regulation Community of Practice ("e-Reg"), was launched in the fall of 2001 to develop electronic filing and records management systems by sharing member experiences related to different software and application systems. It was sponsored by the "Knowledge Management Working Group," which was led by pioneering executives from the General Services Administration and the Navy—Shereen Remez and Alex Bennet—who were then part of a cross-agency group of Chief Information Officers called the CIO Council. The community included approximately 30 professionals in various disciplines, including information technology, knowledge management, and records management. They represented a number of departments—Defense, Interior, Agriculture, and Transportation—as well as agencies, including the Federal Energy Regulatory Commission, the General Services Administration, the Securities and Exchange Commission, the Nuclear Regulatory Commission, and others. William Bennett of the Federal Energy Regulatory Commission (FERC) was the lead coordinator for the group, which met every two months (with various informal exchanges in between) to share experiences, demonstrate tools, talk about standards, and work together on projects to accelerate the implementation of a government-wide mandate to convert record-keeping from a primarily paper-based system to an electronic one.[2]

Attracting, Retaining, and Developing Talent

Every agency in the federal government—like organizations nationwide—is faced with a demographic time bomb that threatens to decommission nearly half their employees between now and 2010. One way that communities of practice build organizational capabilities is by providing professionals a forum for learning; for testing ideas and innovations; and for building relationships and a sense of professional identity with colleagues. This informal sense of belonging among practitioners and associated opportunities for professional development are the most reliable hallmarks of organizations that attract, retain, and develop top talent.

A particularly striking example of a community devoted to professional development is the CompanyCommand.com community. The focus of this community is professional development for U.S. Army company commanders, a leadership position that is responsible for 120 to 250 soldiers and a $10 million budget—a role that can only be mastered by experience. This community envisions every company commander in the Army participating in an ongoing, vibrant conversation with peers and other experts about leading and building combat-ready teams. Determined to find a way to accelerate the learning process and provide encouragement and support for leaders in an extremely challenging and crucial role, a small group of experienced company commanders cultivated a community of over 1,500 past, present, and future company commanders worldwide. Members use a public website to get access to vetted tools; hear (and tell) stories about their experiences; read updates on development opportunities and new resources; and find others to get help or share interests. Community coordinators have been able to leverage the expertise of former commanders, connect "silos of excellence" among members, and accelerate the "time to talent" of isolated leaders in demanding roles. The power of community participation is particularly visible as members support their peers when they are serving in active battlefield conditions.[3]

Tools for Running a Community of Practice

Vital, strategic communities of practice orchestrate a constellation of complementary learning activities to promote professional development for members. These activities enable members to build tools and methodologies and moderate an online knowledge base at the organizational level. The experience of communities described in this research illustrates how a healthy community can promote effective learning, which in turn builds strategic capabilities that enable the organization to achieve outstanding results. Community members connected in a variety of ways—generally in self-initiated, informal activities, both public and private. This participation generated new ideas, diffused promising practices, and forged new professional relationships. As a result, cities improved their after-school programs, schools and businesses gained flexibility to enhance workforce skills, faith leaders united with police departments to reduce gun violence, and state highway departments cut down on traffic crashes.

The learning mechanisms used by all these communities were essentially the same. These are the same types of activities used by mature communities of practice in the private sector. Each of the activities—including face-to-face meetings, teleconferences, visits, projects, listserv exchanges, and website moderation—contributed a unique dimension to the overall network participation. (See Figure 2 on page 14.) A review of the constellation of learning practices used in these cases provides an instructive and robust template for implementing such communities in any context.

- **Face-to-face conferences** built trust and fostered a sense of joint enterprise that increased productive participation in all learning activities.

  > "I really appreciated the face-to-face meeting. It is expensive to bring us together; but when hearing about a project, it is important to see the person to know their level of enthusiasm; and it gives you a chance to sit down over sandwiches and share ideas that may not be on the agenda."

  > "We have more in-depth discussions about coalition building in person, versus over the telephone, because you need time for people to process the ideas and some of that takes place overnight—you need a couple days to sit and talk about it."

  > "I think you need an initial meeting to bring people together because so much of this work is relationship based. Then you can use technology from there."

- **Teleconferences** provide for low-cost, interactive problem solving, idea generation, and "on-demand" executive education. Monthly or semi-monthly teleconferences featured expert speakers and interactive discussion of problems and solutions among partners.

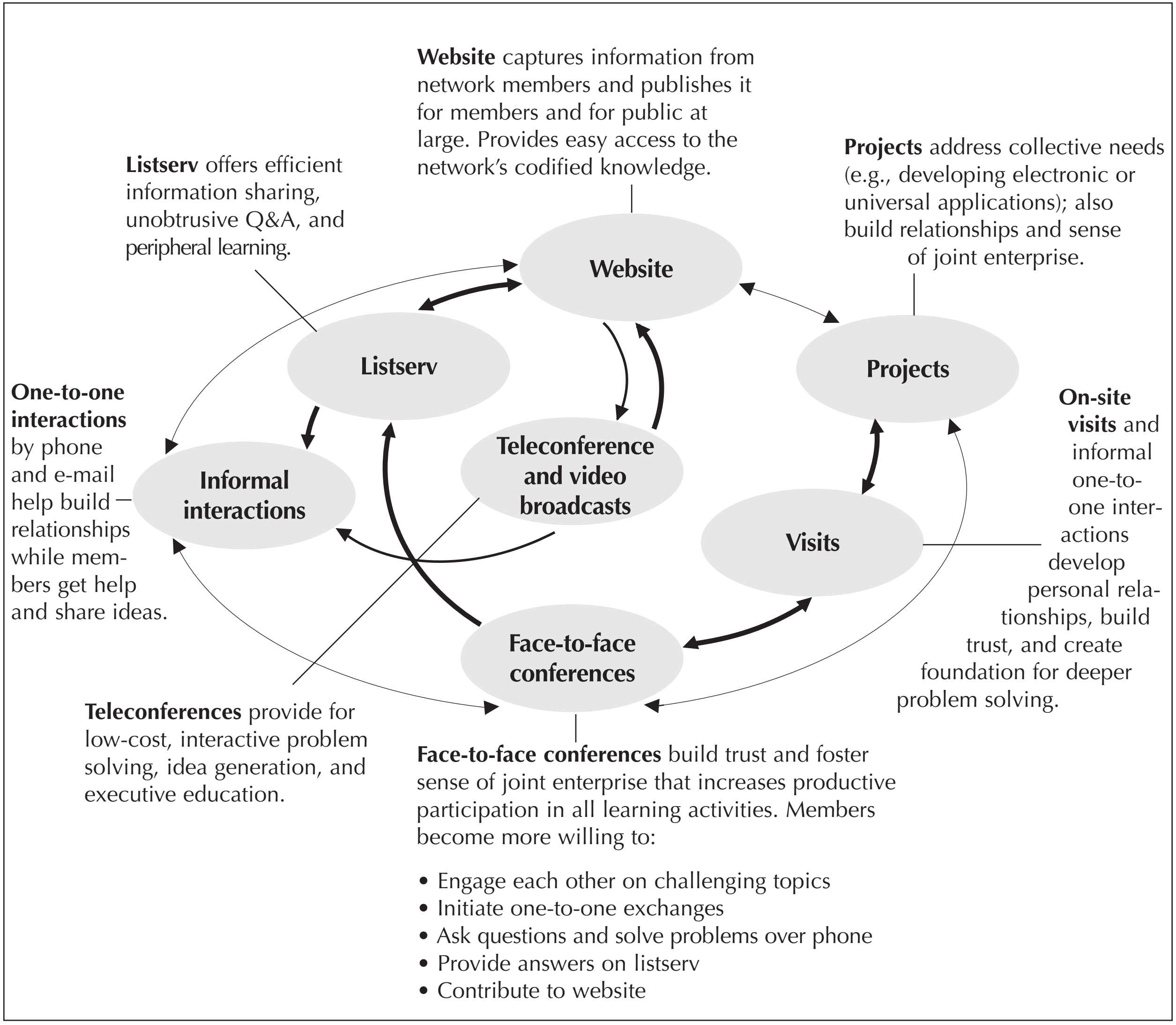
  > "On the calls we have guest speakers and then Q&A, and people talk about their own programs. You're able to ask questions and bring up issues."

  > "The teleconferences paint a verbal picture of what's working and allows you to ask questions. You can read about the best practice, but talking about it with peers gives it more life and vitality and helps you more fully leverage what there is to learn."

  > "Our satellite broadcast on 'one-stop' jobs-education centers had hundreds of downlinks and was a powerful way to demonstrate how different agencies were working together."

- **Special face-to-face meetings** were organized to learn about special topics. For example, the 21st Century Skills network held a meeting for members in Austin, Texas, to learn more about how one of the members had organized industry clusters to promote skill development and

Figure 2: Networks' Ecology of Learning Activities



job placement in industries such as hospitality and financial services. The Boost4Kids community coordinators organized a training session at the Atlanta office of the Centers for Disease Control to learn more about GIS methodologies. Various partners followed up by applying GIS mapping techniques to improve local results. For example, the coalition in Athens, Georgia, used GIS to focus outreach efforts in areas where they were mostly likely to find kids qualified to get health insurance. (Later, the SafeCities coalition also learned about GIS methods, which were helpful in that context as well.)

"We decided that we should learn more about GIS, and this has been a very helpful initiative."

- **Projects** address collective practice-development needs (e.g., crime-mapping methods) and also build relationships and a sense of joint enterprise.

  For example, a project undertaken by a subgroup of Boost4Kids members called the "California Caucus" (including members from three California counties) combined efforts to develop a universal, electronic application for various social services, as well as new program-evaluation approaches. The 21st Century Skills network made plans for an ambitious project to develop a national "electronic learning library."

> "In California, our three counties had an all-day workshop together where we carved out three general areas, and each county took responsibility for a project or initiative to develop a universal electronic application for all these social services benefits [that are split up now by siloed agency programs]."

> "The Skills Network is seeking support for projects, including one to create a world-class, public-domain, electronic "Learning Library"; and to establish a "Learning Distribution System" for delivering learning to counties nationwide, especially to underserved populations."

- **On-site visits and informal one-to-one interactions** develop personal relationships, build trust, and facilitate deeper problem solving.

> "Fort Wayne went to Highpoint to see how to make partnership [including players such as the mayor's office, police department, faith community, district attorney, FBI, local businesses, and others] real. People don't learn by reading books; they learn by doing things and seeing it in practice."

- **Federal agency-champion visits** to local partner communities helped agency champions learn more about partners' local goals and challenges and get help at state and federal levels. Champions helped a number of Boost4Kids participants break through long-standing barriers to innovate for improved results. Examples include: The Boost4Kids coalition in Hawaii increased utilization of a federal nutrition program; Georgia leveraged funds better to increase health-insurance enrollments for kids; Michigan resolved a regulatory dispute to get increased funding for Head Start programs; California achieved a breakthrough on an electronic application; and Iowa gained access to data on births to support new mothers and babies.

> "Our champion can call the state commissioner of insurance. This is high priority for families and kids, so we have met with the

Network Activity Vignette

The monthly teleconferences were the main convening forum for these far-flung networks. Teleconferences were held every two to three weeks, and they focused on a particular topic, such as after-school programs or methods for increasing enrollment of kids in a health insurance program. Conveners and network members identified topics together. Conveners arranged speakers, handled setup and scheduled logistics, facilitated discussion, and managed follow-up (such as documenting discussion and posting items on a listserv or website). Participants included partners, federal champions, and charter members—generally there were about 20 people on a given call. Participation was driven by interest in the topic and by members' desire to keep up with new ideas and connect with other members.

Here's an illustration of a network teleconference: It is 1 p.m. EST on Thursday, April 27, and 24 members of the Boost4Kids Network are joining their monthly teleconference. This month the topic is "Outreach to Youth." Members of the Baltimore coalition are the featured speakers. Audrey and her colleagues describe Baltimore's approach to a city-wide after-school initiative. They explain how Geographic Information System mapping techniques were used to compare locations of after-school activities and incidents of teenage crime. They tell participants how they can access and coordinate diverse funding streams to help get programs started, and how to measure program results. Partners from Vermont and Georgia describe their own successes and problems they had yet to solve. Federal champions from the General Services Administration and the White House offer help on getting more information on after-school programs and pointers for getting press coverage.

Information on resources mentioned during the call was later posted on the network's website. Several partners were encouraged to look again at their own after-school efforts and were motivated to explore new ways to improve them. Soon after, the Palm Beach coalition contacted the partners in Baltimore to get their help. After a number of consultations, Palm Beach adapted the Baltimore model to fit their own situation, and subsequently launched an ambitious county-wide after-school initiative. Their goal was to reduce crime rates and improve graduation rates just as successfully as their Baltimore peers.

> governor on down to bring these people to the table."

> "Having the federal people come here made a big difference for us locally–it helped us build trust, develop a relationship, exchange ideas, and feel more open to ask questions."

- **One-to-one interactions by phone and e-mail** help build relationships while members share ideas and get help they need.

> "I'm comfortable calling another police chief about 'chiefly matters' such as how they get funding; how to sell ideas to city managers; pitfalls when talking to the community—or about downsides that you may not hear on the teleconferences."

> "I have called partners in cases where I know they have done something that we're trying to do."

- **Websites** captured information from partners and published it for all network members and for the broader public. The website provided easy access to the network's codified knowledge.

> "We use the website as a place to put information after we talk; also to learn more about issues and to get follow-up information from meetings, for example, minutes and contact names.… It also lets you go into various states and see what they're doing. For example, you can learn about Louisville's mapping experience or go to a dedicated mapping website and learn more about it. This gives me background before calling my partner in Louisville to learn more."

> "[Our] website has an increasing amount of information listed by topic; educators can go there and find information on job banks."

> "The website is incredibly helpful for building capacity in our community by providing access to cutting-edge information and ideas."

- **Listservs** were highly effective for efficient information sharing, unobtrusive Q&A, and peripheral learning.

> "Pam and Bev [community coordinators] send out valuable information about grants, meetings, papers, resources—and the listserv goes to selected external groups as well as Boost4Kids members—and to many people beyond them on sub-lists that they have created."

> "After the calls, we can ask follow-up questions on the listserv."

Summary—Community of Practice Activities

The various learning activities provide for multiple ways to connect and learn—formal and informal, public and private, virtual and face-to-face. They constitute a learning ecology where various interdependent activities complement each other.

The teleconferences provide the heartbeat of the community—regular, easily accessible ways to keep up to speed on hot topics and hear what others are doing. The website provides a mechanism for catching up on resources or finding contact names or resources mentioned during the calls, while the listserv reminds members of what's coming up and highlights related news in the field such as new grant opportunities or partner accomplishments. Agency-champion and peer visits as well as informal back-channel conversations are ways for members to get help in areas where they want to learn and innovate—often following up on ideas or experiences they hear about from others. Informal conversations among member peers and with the community coordinator, combined with ongoing coordinator canvassing, help identify future topics for teleconferences and collective projects for the community or project teams to pursue. The face-to-face meetings provide a crucial foundation for all these activities. They provide a forum—"where we can break bread together"—to meet people in person and find connections. These personal relationships weave the community together and help build trust and mutual commitment. The overall constellation of learning activities enables practitioners—from a striking variety of disciplines, sectors, and locales—to discover and leverage their shared passion for improving civic well-being.

How Do Communities of Practice Get Results?

Communities of practice provide a social context for building and sharing ideas and experiences together, and for getting help from colleagues to put them into practice. The link between community participation and performance can be framed in a simplified model that posits causal links between (Snyder, 1996):

a. The community context (relationships, trust, reciprocity, shared values)

b. Collective learning (formal and informal)

c. New professional skills and organizational capabilities (codifiable and tacit)

d. Improved results Figure 3 depicts this model.

An example from the SafeCities case illustrates these linkages.

Community context: A SafeCities convener invited the police chief from Highpoint, North Carolina, to speak at the SafeCities launch conference. Members were interested to hear how Highpoint had cut firearm homicides in half through a combination of rehabilitation and enforcement efforts that focused on the city's most violent individuals.

Learning activity: Chief Quijas presented his case to network partners at the launch meeting in Washington, D.C. Members buttonholed him later during informal conversations to learn more, and they asked if they could visit to see the work firsthand. Subsequently, Indiana and Michigan partners visited Highpoint and observed its programs in action. Both coalitions then adapted the Highpoint model for application in their own locales. It was important for key players from the coalitions back home to talk face-to-face with Quijas and his partners. The police chiefs, mayors, and faith leaders from different towns met their peers and learned more about how the Highpoint model really worked; and they learned about the pitfalls to expect along the way.

Knowledge gained: Indiana and Michigan community members developed new ideas and motivation as well as "know who"—who to contact to learn more.They gained methods, skills, motivation, and external legitimacy (via a successful example and strong federal agency encouragement) to implement an innovative violence-reduction strategy.

Figure 3: What Are the Benefits of Networks?: A SafeCities Example

Community Context	Learning Activity	Knowledge Gained	Results
❶ Convener invited police chief from Highpoint, North Carolina, to describe how they reduced gun violence significantly through both rehabilitation and enforcement efforts that focus on the city's most violent individuals	❷ Chief Quijas presents case study to all network partners who attend launch meeting in Washington, D.C. ❹ Indiana and Michigan partners visit Highpoint to see program in action	❸ New ideas and interest—and know who to contact to learn more	
	❺ Indiana and Michigan partners adapt Highpoint model for local application	❻ Indiana and Michigan partners have methods, skills, and initiative to implement new violence-reduction strategy	❼ Implementing local versions of Highpoint model, with goal to achieve significant reduction in gun violence as demonstrated by Highpoint

Results: Implementation takes time, and generally there are bumps along the way—and results generally lag even when an intervention is implemented well. When data was collected for this report, no definitive results were yet available. Nevertheless, the goals in both Indiana and Michigan were to achieve significant reduction in gun violence on the same order of magnitude as the 50 percent reduction achieved in Highpoint.

The main purpose of the initiatives presented in this report was to improve results—healthy and educated kids, reduced gun violence, and a stronger, better-employed workforce. There are three main ways in which these communities made contributions at local, state, and federal levels:

- Increased access to information, methods, expertise, and resources
- Provided more influence with stakeholders to bust barriers and build support
- Heightened attention and initiative to try new approaches

Increased Access to Information, Methods, Expertise, and Resources

The array of network activities described here—including teleconferences, champion and peer visits, face-to-face case presentations, listserv announcements, website documents, and various informal interactions—all provide information about methods, expertise, and resources that members were much less likely to know about otherwise. For example, several SafeCities members asked for contact information from the police chief in Redlands, California, after he presented his exemplary community-policing initiative. But as one member later reported, she was unlikely to have contacted him if she had not made the personal contact on the teleconference. In fact, she was unlikely to have heard about it in the first place. Police chiefs, like most busy executives working in turbulent environments, are consumed with solving immediate problems. Moreover, without the personal contact, you are less likely to trust the source or have any hope for help adapting the idea to your unique context (Szulanski, 1996).

- Partners learn about new programs and funding opportunities through teleconferences and champion recommendations.

  > "We got a grant for character-based education to divert youth from the criminal path that we wouldn't have heard about or qualified as well for if not for SafeCities."

- Federal "agency champion" visits help partners address problems at the state level and get answers quickly about where to focus efforts to implement new ideas.

  > "When Pam [agency champion] tells us it's not a federal problem, then we don't spend three months waiting. We went through 10 different suggestions to find the denominator for the number of kids insured—and did it much quicker than we could have done otherwise."

- SafeCities' meetings and teleconferences reduce time for new mayors in Fort Wayne and Inkster to get up to speed on leading practices.

  > "We learned how community policing works, and now we have renewed a moribund community-policing program and stepped it up.... The Network gave us a quick window on best practices from around the country."

Provided More Influence with Stakeholders to Bust Barriers and Build Support

It matters to know that if you try a new approach, you'll get the support of key influencers along the way—both logistically and politically. Members were motivated to try harder to solve local problems—or ones involving state agencies—because they knew they had the support and credibility that federal officials could provide. They were impressed by how hard the federal coordinators and champions worked for them, and this gave them motivation to try just as hard at the local level. They knew they were not alone, and seeing the power of increased federal support on local and state players, they were encouraged to work harder to cultivate these relationships on their own.

- Federal champions helped ensure that partners got requested help from agency officials on gun tracing and in the process built a new relationship at the federal level.

> "Our champion's intervention influenced federal policy people to learn more about how to be responsive to local communities."

- Members of the 21st Century Skills community gained prestige, national prominence, and increased local stakeholder support for their innovation efforts.

> "When we were selected we got a press conference and editorial in the newspaper. This has made it a lot easier to get meetings with elected officials, who now see us as a major player and see our work as important. High-level university officials are more likely to listen to us and answer our phone calls."

Heightened Attention and Initiative to Try New Approaches

Knowing about an innovation is not the same as seeing it or hearing a participant describe in passionate and proud terms what they're doing and what they're achieving; or getting the details about the challenges they faced and how they overcame them. Network participation gives members a chance to meet others who are in the same boat; who have the credibility only a peer can have; and who have succeeded at doing things some never thought possible. It is not merely models and methods that count, but also the passion and encouragement of peers to try a new approach—peers who will listen to your woes during false starts, cheer your successes, and offer help when you ask. Civic initiative isn't easy. There are frequently conflicts among diverse constituencies and nay-saying by bystanders who criticize from the sidelines. A national network of innovating peers is a welcome home base and source of renewal for continuing the charge.

- Successes of partners in the areas of parolees, gun tracing, involving faith leaders, and after-school programs increased peers' attention to new approaches and willingness to implement them.

> "The Highpoint visit added ideas and motivation to an initiative that we had been planning for a year. Once the mayor visited, he wanted to do it.… Participation in the network has helped us venture into these unknown waters not alone."

The Federal Experience with Communities of Practice

The four case histories described here—three are a related set of cross-agency, intergovernmental communities, and one was sponsored by a single agency—provide a "thick description" (Geertz, 1973) of why we need to cultivate communities of practice to address today's challenges, what they do to operate and accomplish results, and how federal agencies can sponsor and support their development. The cases provide insights related to both theory and practice, and outline the unique role the federal government can play. These cases address a number of key issues:

- Why communities of practice are so effective—and why they should be used to complement and enhance conventional initiatives and policy mandates
- What communities can do to foster learning and innovation among members and increase capabilities that enhance strategic results
- How sponsoring federal agencies can focus communities on strategic issues without killing the internal leadership initiative that drives them

Many of the models and methods that these networks discovered and developed over time were not known when the first one, Boost4Kids, was started. The theory of the case about the nature of cross-agency communities is thus particularly robust because it was shaped primarily through practice—and especially because this practice evolved in the context of three separate cross-agency initiatives, each of which took advantage of what the others were learning along the way.

A key feature of the action-learning structures that emerged was how rooted they were in local priorities, which in turn drove a process that spurred cross-agency collaboration among federal players. The initiatives did not rely on cumbersome, top-down interagency collaboration—for example, around service integration—to build or sustain momentum. On the contrary, helpful interagency work—streamlining and more—emerged in response to learning among the networks and coaxing from sponsors and community coordinators.

Boost4Kids

History

Boost4Kids began as a variation on a standard technical assistance model, where a selected group of local "performance partners" would get special attention and policy waivers from "federal champions" from a variety of agencies. Several senior officials, including Pam Johnson and Beverly Godwin, sponsored by a special office organized by Vice President Gore—called the National Partnership for Reinventing Government (NPR)—helped identify special needs for each partner and linked the coalition members with appropriate officials in the various agencies. The purpose was to help local, multi-stakeholder civic groups get results and, in the process, to help agencies learn more about how to design and manage their programs to achieve greater impact nationwide.

The impetus to form the Boost4Kids Network came from leaders at several levels, including local, state, and federal. At the federal level, the initiative was

Boost4Kids

Domain: Boost4Kids focused on what it called "results for kids," including a number of interrelated outcomes such as school readiness, health insurance, nutrition, healthy behaviors, and child abuse. There is a great deal at stake in this area. At the time, California alone had a million children without health insurance. Of these, 750,000 were eligible for insurance covered by federal programs, but could not gain access to the right channels. The costs to children, to their families, and to society of untreated illnesses such as lead poisoning, asthma, and other ailments far outweigh the cost of preventative treatments covered by health insurance.

Community: The Boost4Kids Network included a wide range of federal agencies in addition to various foundations and nonprofits. Participating agencies included the Departments of Agriculture, Defense, Education, Health and Human Services, Housing and Urban Development, Justice, Labor, and Transportation; the Environmental Protection Agency, the National Partnership for Reinventing Government, the Office of Management and Budget, the Consumer Product Safety Commission, the Social Security Administration, the Federal Geographic Data Committee, and the Interagency Forum on Child and Family Statistics. Outside partners included the Annie E. Casey Foundation, Hitachi Foundation, the Institute for Educational Leadership, National Civic League, The Finance Project, and the State of Missouri.

Each member participated in the context of a "performance partnership" that consisted of a local community, a state, and a federal partner; each was assigned a federal agency champion to work with the partnership to help measure results and cut red tape. Local members came from all over the nation, including:

- **California:** Contra Costa, Placer, and San Diego Counties
- **Florida:** Pinellas and Palm Beach Counties
- **Georgia:** Athens Family Connection and Houston County
- **Hawaii:** Good Beginnings Alliance
- **Iowa:** Cass, Mills, and Montgomery Counties, State Empowerment Board
- **Maine:** Communities for Children
- **Maryland:** Family League of Baltimore City, Inc.
- **Michigan:** St. Joseph County
- **North Carolina:** Charlotte-Mecklenburg Resolves II
- **Vermont:** Vermont Regional Partnerships

Practice: The Boost4Kids Network included:

- Geographic Information System (GIS) tools and methods for identifying strategic sites for after-school programs and focused efforts to find kids who had no health insurance
- Templates for electronic, "universal" applications that allowed families to apply for multiple, related family services without getting bounced around from agency to agency to fill out dozens of forms
- Best practices for improving access to federal nutrition programs and for enhancing school readiness programs for kids, including better ways to use Department of Transportation funds to get young children to day-care facilities
- Ways to strengthen outreach to at-risk youth to encourage them to join after-school programs

an outgrowth of ongoing work by the "Reinvention Office" sponsored by the Office of the Vice President. While the office had focused since 1993 on the internal operations of agencies (streamlining paperwork, improving customer service, etc.), in later years it went beyond the federal government boundaries. In 1998, the State of Oregon asked NPR officials for program changes that would help them leverage federal dollars better to deliver healthcare benefits in the state. The partnership—later called the "Oregon Option"—was a great success. At the local level, another element of this catalytic combination was emerging. Dr. Robert Ross, director of Health and Human Services in San Diego County, was documenting how onerous federal regulations got in the way of healthcare results at the local level.

Vice President Gore's 1998 seventh annual "Family Reunion" brought together families and those that work with them to discuss and design better ways to strengthen family life in America. Dr. Ross was asked to speak at this national conference on healthy families. He presented his accomplishments at the local level, and then used his opportunity on the national stage to decry the federal constraints that prevented him from going further.

Dr. Ross described how San Diego County had cut overhead, streamlined administrative processes, and instituted progress measures. These efforts had freed up resources to serve children and families and improved results significantly. But he argued that the federal government was holding up further reforms. He held up an 800-page tome (called "the phone book") of application forms required by various federal and state agencies and explained that these were the forms a typical at-risk family of four—with a disabled father who had lost his job and a mother seeking employment and insurance for her kids—would need to complete in order to get the assistance they needed.

Ross explained that since the 1930s, when human services programs were first created, there had been 60 years of policy and program development spurred by demographic change, social upheaval, and political movement. As a result, local cities and counties were now constrained by an impossible tangle of highly targeted, unconnected programs and restrictive budget allocations. These make it difficult to treat children and families as whole persons in a social context, not as a "3717 kid" or "40A3 family"—known only in terms of the legislative program for which they qualify.[4]

The National Performance Review

The history of the organization that spawned three of the networks featured in this report actually begins in 1993. That year, President Bill Clinton established the "National Performance Review" (NPR), headed by Vice President Gore, as a major cross-agency initiative to streamline government structures, procedures, and regulations in order to create a government "that works better and costs less" (Gore, 1993). While the NPR office, made up of dozens of full- and part-time staff on loan from various agencies, achieved significant operational savings, its scope was focused on improving internal agency results related to operational efficiency, customer service, and employee empowerment (Kettl, 1998).

The NPR organization was nevertheless an important innovation in federal government—something like a "skunk works" (Peters and Waterman, 1982) for improving the cost and quality of internal government services. But many of the greatest opportunities for "really reinventing government in the context of lasting governance ideas" lie in crossing the sector boundaries of public institutions and civil society (Kettl, 1998). During NPR's first year, David Osborne, co-author of the influential book *Reinventing Government* (Osborne and Gabler, 1992), acted as a senior advisor to the NPR initiative. In 1994, he met with a group of 20 leading innovators from a variety of agencies to talk about how the federal government could encourage state and local cross-sector coalitions to take on more responsibility for the design and implementation of federal programs.

Although it is beyond the scope of this report to describe in detail the nature of the NPR office itself, it is fair to say that none of the cross-agency, intergovernmental communities of practice described in this report would ever have been launched without it. Moreover, even where federal teams and agencies supported the communities, the energy, skills, and influence of key players in the NPR office were crucial to their success.

Dr. Ross asserted before Vice President Gore and assembled audience that the current regulations were a rat's nest—overlapping, unconnected, and burdensome—and that they wasted funds and limited the ability of local agencies and non-government groups to help people in need. He challenged the federal government to find a way to reduce the red tape and help local groups get results.

Something had to change, he said, or nearly one million kids at risk each year in California alone would not get the health insurance they needed, with drastic consequences in both human suffering and eventual financial costs.

The federal officials attending the conference got Dr. Ross's point. They understood that the San Diego County situation was not unique. Furthermore, the Oregon Option experience suggested a practical way to make progress. In fact, NPR officials had already begun working with state officials in California and Hawaii to build on the Oregon success. But Ross's call raised the bar: How to accelerate the process?

The NPR group decided to recruit a larger group of results-oriented local cross-sector coalitions nationwide to participate in an "innovation network" where each participating group—and its state partners—would get the Oregon Option treatment. NPR officials would coordinate a network of officials from various federal agencies to work with the local coalitions to reduce paperwork and overhead expenses, and to channel funds and expertise more effectively to improve results. Federal agencies, in turn, would learn more about how to design programs and policies to have maximum leverage.

A steering committee that included federal champions from various agencies and NPR conveners[5] was formed. In February 1999 they published an invitation in the Federal Register and recruited "family-services coalitions" to join a national network of social innovators. Ultimately, 75 local groups applied and 13 were selected, based on criteria that included a track record of multi-sector collaboration, partnership with state agency officials, and a commitment to learn and innovate to achieve improved outcomes.

Boost4Kids was born. Its charter goals included:

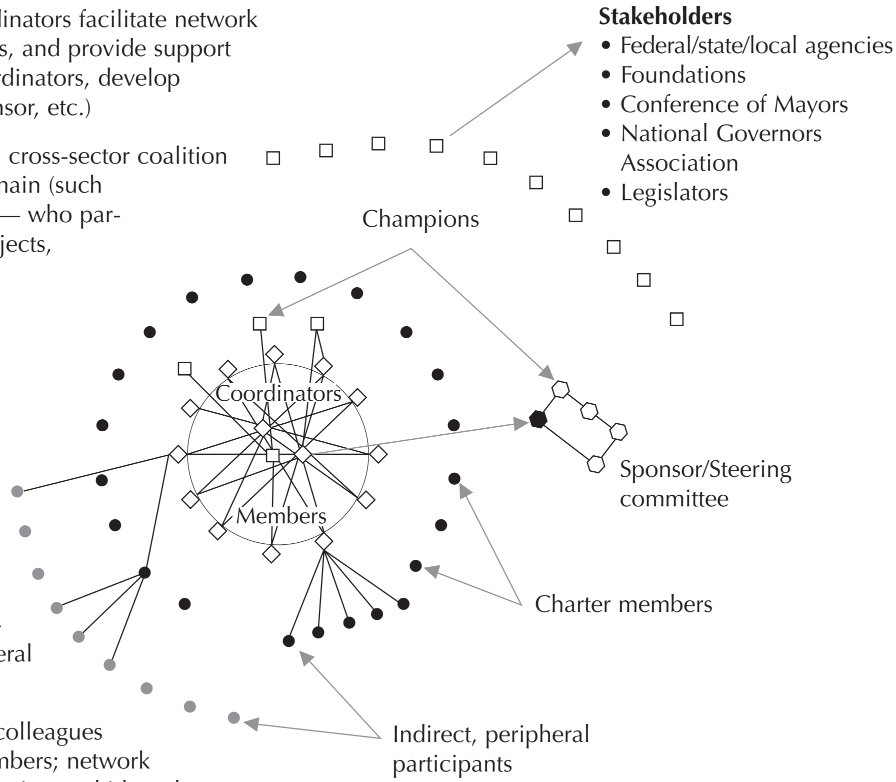
- Cut red tape and streamline services to get better results for our nation's children
- Achieve specific targets and results identified by performance partners
- Create better models for cross-government delivery of services for children
- Identify and resolve barriers at the federal, state, and local levels
- Learn promising practices to better manage for results and maximize resources

The original Boost4Kids network model was a kind of hub-and-spoke design, with the NPR office serving as the hub that brokered relationships between federal agencies and local coalitions—helping identify opportunities locally and then brokering assistance from appropriate federal agencies. For example, the State of Hawaii requested a waiver from the Department of Agriculture to disperse funding for its school-nutrition program so it could reach more of the neediest kids in the state. The NPR office helped them find the right person to talk with to find a solution. Figure 4 presents the Boost4Kids community network structure.

But once the network was formed, conveners, federal champions, and the performance partners all discovered additional ways the network could create value—essentially by moving from a hub-and-spoke model to one that actively facilitated peer-to-peer links as well. For example, when they began meeting each other in the initial teleconferences, members were very impressed with their peers and expressed interest in learning more—peer-to-peer—about what others were doing to improve results for kids in healthcare, school readiness, and other areas. Likewise, once the federal agency champions started working with partners to solve specific problems, they found out how helpful it was to hear what other agencies where doing to address a common constituency. For example, how did local problems affecting nutrition programs also show up in related transportation, health, and school readiness programs? Each program was housed in a separate agency, but clearly there were opportunities to learn across agencies about how to improve their collective impact, while reducing bottlenecks and overhead costs.

Figure 4: What Is the Overall Community Network Structure?

- 2 to 3 federal agency coordinators facilitate network activities, link with agencies, and provide support functions (coach other coordinators, develop technology, liaise with sponsor, etc.)
- 13 members—each a local, cross-sector coalition focused on a particular domain (such as workforce development)— who participate in conferences, projects, visits, listserv, etc.
- Agency champions provide technical assistance and intervene to help solve problems for members
- 60 "charter members" who participate through listserv and website
- Steering committee guides network development; includes sponsor, coordinators, support team, and federal agency champions
- Peripheral participants are colleagues of partners and charter members; network members pass along information and ideas that are posted on listserv or website
- Stakeholders include federal/state/local agencies and other groups who support or influence members and who could be influenced by their ideas and proposals



What started as a souped-up, cross-level variation on a conventional technical assistance model began to evolve into a peer-to-peer model linking all the participants together. Partners learned from their peers, agency officials learned from each other, and all participants—agency officials, NPR conveners, and partners—took collective responsibility for learning about and innovating ways to improve results for kids. This was more than a network for getting individual coalition (local) problems fixed. It was a community of practitioners with mutual interests in learning and innovating together for their collective benefit and, beyond that, the nation's. This model coalesced in a very concrete way when network participants met face-to-face as a group about six months after the initiative was launched.

The initial Boost4Kids face-to-face meeting took place in Nashville in June 1999, in conjunction with Vice President Gore's Family Reunion 8, and was funded by the Hitachi Foundation. The gathering included a reception for members and coordinators to meet informally as well as a formal day-long meeting. Network members established their purpose, identified issues, and discussed goals. Issues identified in Nashville became topics for biweekly teleconferences.

> "Meeting network partners face-to-face significantly increased trust to share electronically and over the phone."

Accomplishments

- Boost4Kids community coordinators organized a workshop on Geographic Information Systems and how to use it to target kids who needed health insurance. As a result, members increased enrollment in their local communities and reduced associated administrative expenses.

  > "The GIS training helped us move forward more quickly, because we got answers about laws related to confidentiality and talked with other Boost4Kids partners about how they dealt with it. It's a real capacity issue for us to address these issues; there's more motivation and direction when other sites are involved."

- Members heard about a model after-school program implemented by the Baltimore partner on a teleconference and then developed the idea with help from experienced practitioners in Baltimore—this led to improved after-school programs for elementary and middle schools in members' cities and regions.

  > "Stakeholders in our community think it's a big deal to be selected to Boost4Kids, and this gives us more credibility. The school district came to us recently regarding an after-school program idea. They asked for our help designing it and put our name on it as a way to encourage participation."

  > "Before Boost4Kids, there was interest in mobilizing local coalitions to improve nutrition and insurance results, but there was nothing happening. Without Boost4Kids, we would not have achieved these improved results. We took full advantage of the opportunity; we leveraged it to the max."

What Happened to Boost4Kids?

In 2000, Boost4Kids almost moved to the Department of Health and Human Services (HHS), but the department could not fund a coordinator (full- or part-time). The network continued to meet, with much of the focus on finding a sponsor to support one full-time equivalent (FTE) to continue in the role of network coordinator. After several promising discussions with officials at HHS, the funding initiative fell through. The department could not define or staff a job with the appropriate responsibilities. In any case, as the agency negotiated with Boost4Kids members to understand what level of support they needed, it was clear that a condition would be that the members focus much of their energy on one of its featured programs. Members were glad to focus on the objectives of this program, which were to increase access to healthcare and reduce health disparities. There was some tension during these negotiations nevertheless. While the healthcare objectives (for both adults and children) were important elements of Boost4Kids' mission, they did not align with the network's unique focus on the combination of factors influencing children's well-being.

Boost4Kids met one last time in conjunction with a related HHS conference, with travel paid by a nonprofit organization that had been involved in the network during the previous year and a half. Though the conference meeting was very successful and a number of plans were made to continue to learn and work together, the absence of a dedicated coordinator and agency sponsorship was sorely felt and several leading participants regretfully opted out soon after. This further deflated overall participation and eventually the network petered out.

Lessons Learned

- **Leadership (sponsor):** Usefulness of a catalytic event, such as the highly visible, compelling case made by Dr. Ross to mobilize action with the support of high-level federal sponsors.
- **Leadership (coordinator):** Key role of the community coordinator as a linchpin that keeps the community going—perhaps even more important than a high-level agency sponsor, given the value members attributed to their peer-to-peer learning and potential for collective influence in their field.
- **Practice:** Power of peer-to-peer learning as a mechanism for building and sharing capabilities—complementing the traditional function of federal technical assistance as well as the unique NPR focus on "barrier-busting."
- **Community:** Widespread interest among local community coalitions to link with state and

SafeCities

Domain: The SafeCities network focused on reducing gun violence, addressing issues such as gun-tracing methods, community-policing strategies, after-school programs, crime mapping tools and methods, and how to involve faith leaders.

Community: Federal partners included the Department of Justice's Office of Community Oriented Policing Services (COPS), the Executive Office for U.S. Attorneys, the Office of Legal Policy, and the Office of Justice Programs; the Department of The Treasury's Bureau of Alcohol, Tobacco and Firearms; the High Intensity Drug Trafficking Program of the Office on National Drug Control Policy; the Office of Management and Budget; and the National Partnership for Reinventing Government.

SafeCities local members include a variety of local coalitions in cities and regions nationwide: "Weed and seed" sites (funded by the Department of Justice) in Eastern Michigan and Atlantic City, New Jersey; SafeCities Partnership in Fort Wayne, Indiana: the King County (Washington) Violent Firearms Crime Coalition; Violence Prevention Coalition in Los Angeles; Springfield (Massachusetts) Violence Prevention Task Force; Safe City USA in Fort Worth, Texas; Centinela Valley (California) Juvenile Diversion Project; and police departments in Louisville, Kentucky; Miami, Florida; and Highpoint, North Carolina. Local SafeCities coalitions included community groups, law enforcement officials, mayors, public health officials, leaders of faith and business communities, and educators—and each has a federal point of contact to help achieve their goals.

Practice: SafeCities practice-development activities focused on tools and methods related to a number of gun-violence-reduction approaches that the Justice Department established as particularly effective for preventing gun violence.

- SafeCities teleconferences and visits to local communities described how to establish a broad, active local coalition that works with state and federal agencies and fosters collaborations among multiple constituencies and municipalities at the local level. There were several calls and visits, for example, to promote improved collaboration among police chiefs, mayors, and faith leaders (particularly those in high-crime areas who traditionally had weak ties with city authorities).
- Learning more about the principal sources of illegal guns and developing a comprehensive plan to interrupt sources of sales and distribution—including methods for identifying both high-volume storefronts and individual sellers.
- Approaches related to various prevention activities, such as community-policing strategies, after-school programs, and understanding how to deal with the linkages between domestic violence, substance and alcohol abuse, and gun violence.
- Methods for responding to illegal gun use, such as crime mapping and data collection and analysis of crime scenes, aggressive prosecutorial strategies (that facilitate collaboration of district attorneys at local, state, and federal levels), and the design of local gun-possession laws.
- How to improve the interaction between at-risk youth and law-enforcement professionals, creating educational marketing initiatives and increasing access to after-school programs.
- Finally, SafeCities members organized a significant effort to establish behavioral anchors that described high and low levels of competence for each of the principal gun-violence-prevention strategies. The purpose was for each agency and local membership coalition to be able to assess strategic capabilities in concrete terms—even if there were no reliable and relevant statistics available. For example, one city may do quite well at organizing a local coalition but have a severe deficiency in the area of aggressively prosecuting offenses.

federal partners and discover new ways to innovate for results.

- **Domain Legitimacy:** Value of the national "brand name" to increase support at the local level. For example, in one city the school principal became much more collaborative once the local coalition was selected by the Vice President's office as a Boost4Kids member.

SafeCities

History

The SafeCities and 21st Century Skills Networks built on the Boost4Kids model. Both arose, like Boost4Kids, out of discussions held in national forums—on the topics of public safety and workforce development, respectively. SafeCities launched about a year after Boost4Kids, and 21st Century Skills about three months later. The experience of both groups leveraged the Boost4Kids model, and the experiences and lessons learned from all three accelerated the evolution of the model over time.

The catalyst for SafeCities had been Attorney General Janet Reno's 1998 "Mapping Out Crime" report, which recommended the formation of a "peer-to-peer network." At first, it was not clear how many of the elements of the Boost4Kids model that SafeCities should adopt. For example, the community coordinators thought that the domain would focus on a much more limited area—in this case, techniques related to crime mapping—rather than on a broader domain defined in terms of social impact (as was Boost4Kids', which was defined simply as "results for kids"). Further, they considered convening the network primarily through an online technology forum, without regular teleconferences and other "live" ways to interact. At this point, Boost4Kids was considered an independent experiment rather than a model for others to build on and replicate in other domains.

About this time, the NPR was reflecting more broadly on inter-organizational approaches to innovation, particularly ones that could bridge the boundaries between federal, state, and local governments. Several NPR leaders connected with peers working in an innovative federal program in the United Kingdom sponsored by the Prime Minister's office, called the Social Exclusion Unit. The UK initiatives have focused on areas similar to NPR's—including "children and young people," "reducing reoffending," and "barriers to employment"—and are also run as partnerships with local authorities and voluntary organizations. The UK's Social Exclusion Unit thus includes initiatives that closely parallel the U.S. interagency community domains.[6]

The point of these programs, much like the NPR communities of practice discussed in this report, was to convene agencies and organizations across levels and sectors in the UK that had a role to play in these areas. The federal conveners in the Prime Minister's office organized meetings, coordinated the learning agenda and various activities, and helped link members from various constituencies and organizations to facilitate innovative solutions and improved results.

At about this time, the NPR group invited several outside speakers to talk to them about relevant organizing frameworks in the private and public sectors. One model, for example, applied a type of "center of excellence" approach to public service—proposing that a cross-agency entity like NPR connect innovating local groups, capture and filter ideas, and then disseminate them—with the expectation that local groups would report back on their results. (This model was something like the original Boost4Kids "hub-and-spoke" model, with an added dimension of performance accountability from local partners to Washington conveners.) Another model (proposed by the first author) was closer to the peer-to-peer model toward which Boost4Kids seemed to be organically evolving. In this model, the role of the convener functioned as a combination community organizer, activity coordinator, and knowledge broker. It emphasized the importance of voluntary membership in learning communities and did not grant the convener administrative jurisdiction or authority over participant actions and results. The network sponsor and conveners could of course emphasize results as a key focus and make it a criterion for participation. But the guiding principle for participation was more like one used in voluntary associations than the approach used in many organizational centers of excellence, where members are formally staffed to specific roles and regularly evaluated on their performance outcomes.[7]

These ongoing discussions highlighted and legitimized key elements of the Boost4Kids Network and influenced the SafeCities conveners to reframe their design along these lines. The SafeCities coordinators thus broadened their domain to focus on a compelling social issue—in this case, "reducing gun violence," and ditched the idea of limiting interactions to an online forum in favor of an emphasis on live peer-to-peer knowledge sharing and collaboration. They all recognized that police chiefs, mayors, and others were unlikely to participate actively in an online forum. They also followed the Boost4Kids start-up process. They began by convening officials from relevant federal agencies and developing a shared vision for what the network would be about and how they would work together. They adapted Boost4Kids' recruitment and selection documents and processes. In November 1999, 10 communities were selected—about the same number as Boost4Kids and based on similar criteria:

- Comprehensive prevention and enforcement strategies
- Commitment to achieve improved outcomes
- Measurement of results
- Participation of key stakeholders, including federal, state, and local law enforcement; education, faith, and other community leaders

The announcement of the SafeCities Network coincided with publication of FBI's crime-rate statistics, which showed significant variation across cities in areas related to gun violence and violent crime. One goal of SafeCities was to reduce these disparities and bring all cities up to the level of the best-performing ones.

During their initial introductory teleconference, members discussed how the group would work together and what issues they would like to address. Members were glad to share ideas over the phone, but strongly argued that they should all meet face-to-face—coordinators, agency champions, and partners—to get to know each other and build the kind of trust and familiarity that would facilitate sharing ideas and mutual efforts to act on them.

In addition to what they were hearing from participants, the SafeCities coordinators were emboldened by the success of Boost4Kids' face-to-face meeting. They were also encouraged by what they had learned about how private-sector organizations had developed similar types of networks. They agreed to sponsor a conference for participants, and designed it according to key dimensions of a community of practice. They made plans to meet in March 2000 for a face-to-face meeting in Washington, D.C. Members would learn more about federal agency resources, get to know each other, and make plans together about what issues to address and how best to promote learning and improve results across sites. The first SafeCities conference agenda focused on:

- What is SafeCities? (domain)
- What does SafeCities do? (practice)
- How does SafeCities work and who is part of it? (community)

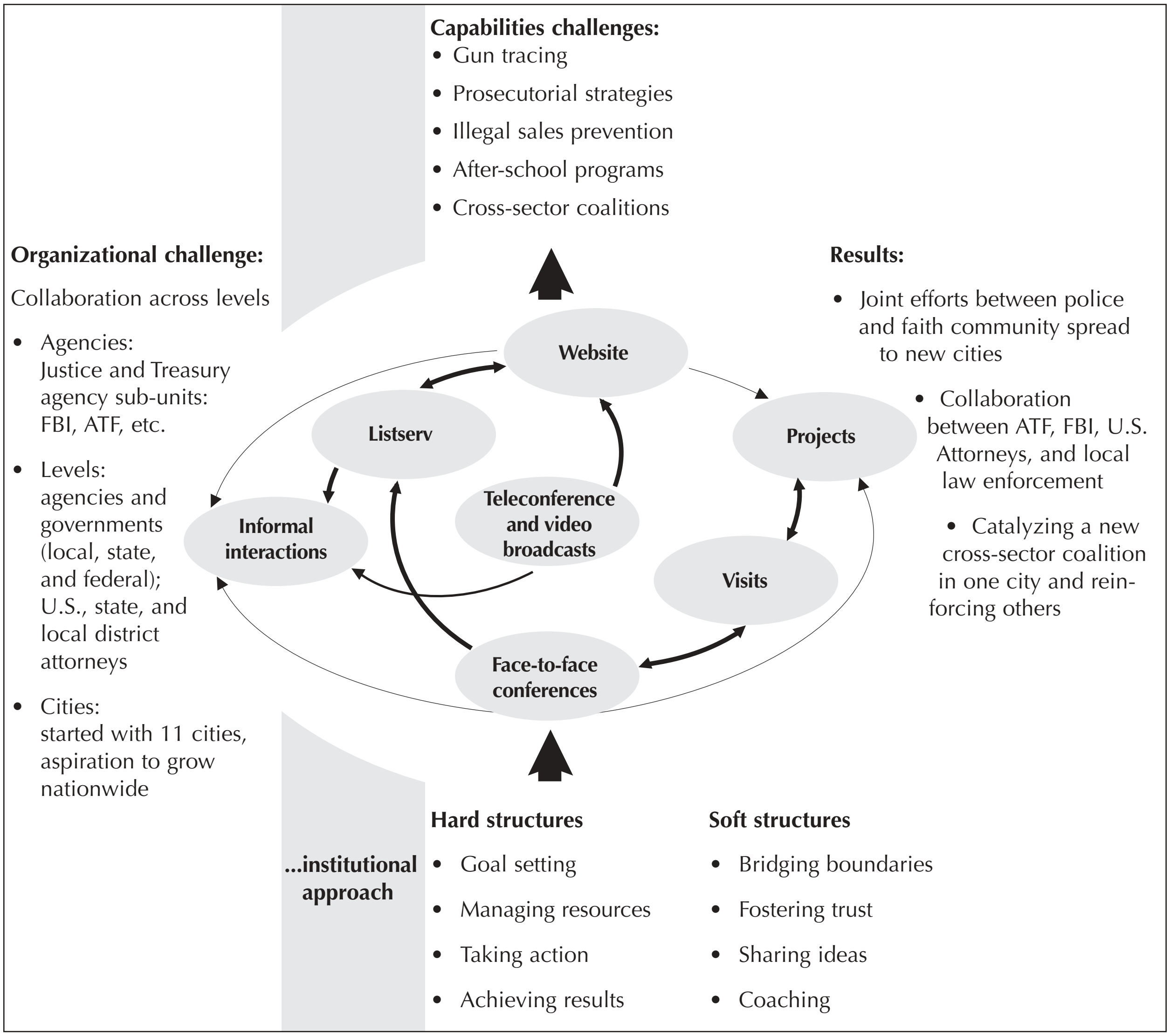
The conference included an evening reception and "fair" for members to meet each other and federal agency champions informally—plus many other opportunities over two days to learn about federal agency and foundation-sponsored programs and grants, hear an exemplary case study on reducing gun violence, define objectives, and get to know each other.

SafeCities coordinators Pam Johnson and Michael Seelman began the conference with background on communities of practice, and then framed the conference agenda in terms of the three basic dimensions of communities—topic *domain, community* membership, and *practice* tools and methods. During the conference members identified issues related to reducing gun violence (domain); got to know each other (community); and talked about practical methods they could use to reduce gun violence (practice).

> "We used a wonderfully elaborate technology during our meeting in Washington which helped us identify our top 10 issues as a group and come up with goals and objectives and kinds of projects to work on together."

Network members identified issues and four main outcomes: 1) identify causes and solutions of gun violence, 2) build partnership at federal, state, and local levels, 3) develop a national strategy that includes prevention and enforcement, and 4) share

Figure 5: Building Complex Capability to Reduce Gun Violence Nationwide



ideas and strategies inside and outside the core network members. They outlined a design for how network members would learn together—including teleconferences, champion and partner visits, and a website. The issues they identified during the conference sessions became topics for their biweekly teleconferences. The conference was a great success. The expert speaker from Highpoint, North Carolina, was so impressed with the quality and energy of participants that he asked if he could join, which he did (as an "honorary" member).

The conference was instrumental in coalescing members around a shared agenda, and building trust and reciprocity. The SafeCities teleconferences became more active and members were more forthcoming about selecting topics and offering to speak to the group about their experiences. The importance of fostering "community"—a sense of mutual trust, shared identity, and belonging—became more apparent as an important structural condition for success. (Wenger, et al., 2002, pp. 33-37) The SafeCities experience reinforced the value of peer-to-peer learning and helped demonstrate how it could complement and leverage the power of cross-level collaborations among federal champions, state officials, and local coalition members.

A meeting of several SafeCities coalitions in Fort Worth, Texas, illustrates how strongly members val-

SafeCities Vignette

It is 1 p.m. EST on Wednesday, April 12, and 29 members of local coalitions nationwide are joining their monthly teleconference. They are all members of the SafeCities Network—a community of practice focused on reducing gun violence and sponsored by a steering committee consisting of several collaborating federal agencies. This month the topic is “faith-based community strategies.”

Faith leaders from Fort Wayne, Indiana, and Highpoint, North Carolina, are the featured speakers. They describe how groups of faith leaders in their cities have achieved dramatic reductions in gun violence through collaborations of local faith organizations and police departments. Reverend Jordan from Fort Wayne describes the evolution of a collaborative effort that began in 1992 after a highly publicized accidental shooting of a teenager participating in activities at a local Boys’ Club. Jordan began holding meetings between gang leaders and city officials to talk together about how to stem the rising tide of violence in the city. These gatherings—which featured gang leaders giving presentations and putting on skits to communicate the importance of recreation alternatives and mentors for teenagers—were very successful. The meetings led to the development of a citywide “Stop the Madness” program and to later collaborations that included an alliance of churches, the police department, and community leaders.

Reverend Fails of Highpoint describes how faith leaders and the police department collaborated to reduce citywide violence by focusing on “the baddest of the bad”—individuals on parole or probation most likely to commit violent crimes. Their approach included faith leaders, school principals, social services agencies, and community leaders—as well as the chief of police, district attorney, and representatives from the FBI, ATF, and state- and federal-level prosecutors. The Highpoint model featured a “good cop, bad cop” approach that focused as much on helping these people find jobs and stabilize their lives as on aggressive law enforcement methods. Speakers field questions regarding how to get faith leaders and their congregations involved. The partner from Los Angeles describes a program in which clergy helped gather information on gun violence from congregation members, and a partner from Louisville talked about their clergy’s effort to pass firearm legislation and distribute trigger locks. Partners request the phone numbers of speakers and are encouraged to intensify or begin explorations of ways to involve the faith community to reduce gun violence. That summer, faith leaders from Inkster, Michigan, accompanied their mayor and police chief on a visit to Highpoint to learn how to develop their own program.

A follow-up initiative leveraged the lessons learned in the April 12 call. In October, a satellite broadcast reached over 50 sites nationwide and featured Reverend Jordan talking about youth violence and a new initiative to develop a training academy for faith leaders on topics such as crisis response and community policing.

“The faith community conversation was really useful. We have many churches in our community, but we haven’t been sure about how to involve the faith community. Fort Wayne talked about how after a tragic experience they got ministers involved. We wanted to know how to involve them without waiting for a tragic experience. The Fort Wayne example encouraged me to dig for more examples,” said a community member.

ued opportunities for peer-to-peer learning. The coalition members from King County, Washington, and Miami, Florida, visited Fort Worth to learn more about their highly successful public advertising campaign against gun violence. Participants in the meeting included a number of senior officials, including the King County sheriff, Miami’s police chief, the mayor and police chief from Fort Worth, and a contingent of others from all three cities. Michael Seelman, the SafeCities coordinator from Washington, helped to connect the key players and consulted with them about how to prepare for and structure the gathering. He had organized an earlier teleconference that featured the Fort Worth experience, which was the catalyst that motivated the Seattle and Miami groups to visit in person.

While the focus was on the Fort Worth experience, Miami also presented its successes with youth programs, and King County explained how they had organized a remarkably diverse coalition of over 30 municipalities in the Seattle area. One measure of the value members’ attributed to the visit was the time and expense senior officials and others invested to travel to Fort Worth and spend a day together talking shop. Another was the evidence of how much they learned. For example, King County Sheriff Reichart, a nationally recognized leader in the law enforcement field, took prodigious notes throughout the meeting. He highlighted this to his peers at the meeting's conclusion saying, "I've taken pages and pages of notes, and I almost never take notes!" The mayor of Fort Worth held a press conference to publicize the event as evidence of Fort Worth's leadership and active efforts to continue to learn and innovate. Finally, perhaps the best measure is what happened afterwards. The King County coalition stepped up their recruitment of support by local business organizations—as exemplified by the Fort Worth coalition—and began its own publicity efforts to raise awareness of ways to reduce gun violence. This experience illustrates the power of a relatively small investment at the federal level to catalyze significant efforts by local players to learn and innovate for national goals.

Accomplishments

- Federal points of contact visited partners to learn about their goals and challenges and in various cases helped them build their local coalitions and get support at state and federal levels. Examples: Miami police department strengthened relationships with federal partners in the Bureau of Alcohol, Tobacco, and Firearms, and U.S. and state attorneys' offices; Fort Wayne champion visit brought press attention and galvanized local coalition; visits to Springfield and Inkster help identify new strategies in areas of gun tracing and community courts.

  > "Our champion's intervention influenced federal policy people to learn more about how to be responsive to local communities."

- Peer-to-peer visits among SafeCities members helped transfer knowledge, spur innovation, and build network relationships. Mayors, police chiefs, and faith leaders from both Fort Wayne and Inkster went to visit Highpoint, North Carolina, to learn about innovative strategies for community policing and integrating parolees back into the community; the Highpoint partner learned as well from questions the partners asked—for example, about opportunities to improve after-school programs.

  > "The Highpoint visit added ideas and motivation to an initiative that we had been planning for a year; once the mayor visited, he wanted to do it. Now we have renewed a moribund community policing program and stepped it up."

  > "We have developed relationships with partners from Inkster and Fort Wayne who have come and visited. Now we call each other directly [without facilitation by the coordinator], and this includes contacts between members in like roles, such as ministers who are talking to each other."

What Happened to SafeCities?

SafeCities enjoyed a much smoother and more successful transition when the administration changed than did the other two cross-agency communities. SafeCities continued to have a full-time coordinator who was staffed by agency executives in the Department of Justice and supported by other agency champions. The staffing and support for the community coordinator was crucial to SafeCities' ongoing success. SafeCities continued its monthly teleconferences and pursued an ambitious project to develop capability measures related to strategic competencies for reducing gun violence—such as gun tracing, crime-scene evaluation, building local coalitions, and so forth. They also organized a satellite conference on preventing youth violence and an initiative to help faith leaders support local crisis response and community policing activities. In May 2001, members gathered for a face-to-face meeting to share experiences related to their various initiatives, talk about collective opportunities for projects and visits, and learn from presentations by various federal agency officials and non-government experts.

At the May 2001 meeting, Justice Department officials announced that funding for SafeCities (essentially the cost of one FTE, some travel, and occasional use of a phone bridge) would end in April 2002—and that a new program, called "Safe Neighborhoods," would begin. Although Safe Neighborhoods would provide funding for various local initiatives, the 30 members in attendance, including those from participating federal agencies as well as local ones—were very disappointed to hear the news. While they welcomed additional funding for local initiatives, they were adamant that the value of SafeCities participation went far beyond what federal funds alone could provide. It gave members opportunities to learn how to leverage current levels of resources in powerful ways that had few or no incremental costs—such as better ways to implement community policing or apply gun-tracing methods. SafeCities members were not asking for program money, but rather the continued opportunity to share ideas, innovate, and collaborate across local, state, and federal levels—including multiple agencies and constituencies at each level—to find better ways to reduce gun violence. SafeCities was working, and no grants program could replace the unique opportunities for innovation and impact that it provided.

After the announcement, Michael Seelman, the SafeCities coordinator, followed up with agency executives to help integrate some of what he called "the DNA of SafeCities" into the Safe Neighborhoods program. The name of the new program itself indicated the interest of program leaders to build on SafeCities' success. But the complex chemistry that made SafeCities so successful had few precedents in government at that time, and it was not obvious how best to build on its success or integrate key elements into the new program. Seelman listed a few of the most important elements of the SafeCities DNA: engaging local coalitions, recruiting support by agency champions, and stewarding a systemic array of proven gun-violence-reduction practices. Perhaps the most difficult element to understand or codify programmatically was how to cultivate and maintain the peer-to-peer exchanges of ideas, encouragement, and practical support.

In the spring of 2002, the SafeCities steering committee determined that it was time to conclude its role as the convener for the SafeCities community. Justice Department resources were now focused on the Safe Neighborhoods program and active agency champions could no longer focus on member coalitions. The SafeCities conveners in the Justice Department met with U.S. attorneys working on Safe Neighborhoods initiatives to brief them on how to leverage established relationships with leading local coalitions from the SafeCities community. Soon after, one of the U.S. attorneys applied a key element of the SafeCities DNA: He helped to organize a local summit that convened a coalition including the mayor's office, faith leaders, police, and community leaders.

In April 2002, SafeCities members said good-bye to each other during a final teleconference and thanked the community coordinator, sponsor, and agency champions. Although the group no longer gathers as a whole, individual members continue to enjoy the professional relationships they established, and Justice Department participants at both the coordinator and executive levels have continued to introduce the SafeCities DNA into other areas.

Lessons Learned

- **Leadership (steering committee):** Importance of having a steering committee to coordinate agency champions and help encourage and develop champions' ability to participate and contribute effectively.
- **Leadership (coordinator):** Key role of the community coordinator to arrange speakers, coordinate peer-to-peer and agency-champion visits, respond to inquiries, send out information on the listserv; facilitate teleconferences, liaise with sponsors and stakeholders; document notes from activities; supervise website development, and so forth. We can learn much from Seelman's experience as SafeCities' full-time coordinator. He demonstrated how much value a skilled coordinator can create if given the time and support.
- **Community:** Seeing the importance of full participation from all sectors—for example, those who are generally underrepresented in this domain, such as faith leaders and businesspeople in urban areas; also, realizing the value of including diverse municipalities in regions where municipal boundaries are hard to differentiate (as in King County) and crime patterns cross these boundaries.
- **Practice:** Power of site visits to foster peer-to-peer learning about complex practices—such as working with ex-offenders—and the importance of structuring these informal learning events to realize the full value of the opportunity.
- **Practice:** Learning about the value of "behavioral anchors" for measuring capabilities—even during the development process. Discussions about how to define and describe high, medium, and low levels of strategic competencies in action facilitated peer-to-peer learning, identified areas on which to focus collective work,

and provided a baseline for assessing the influence of the community on member results over time.

21st Century Skills

History

As SafeCities was being launched, a third network—called 21st Century Skills and focused on workforce development—was getting ready to launch. In January 1999, Vice President Gore had convened a leadership group from business, organized labor, education, and government to develop a set of recommendations for their peers that would ensure a prepared and thriving workforce in the 21st century. The report outlined five broad recommendations, including a recommendation advocating community-based partnerships that would cross multiple sectors and focus on clear, measurable goals for lifelong learning and skill development across a community. This last recommendation was an implicit proposal to create the 21st Century Skills Network. (This recommendation, in fact, stemmed from the committee's awareness of the successful Boost4Kids example).

By this time, the template for organizing a network was well established. A steering committee of agency champions was convened in February 2000. Ten local coalitions from around the nation were recruited and selected in April on the now-standard criteria—innovative, collaborative at state and local levels, and results oriented. (An added "no loser" policy meant that other applicants could also participate in some activities, though with less attention from coordinators and federal champions.) Members introduced themselves and their initiatives in early teleconferences, and then in June 2000, about 40 members from partner communities met face-to-face for a launch event in Washington, D.C. Given the lessons learned from Boost4Kids and SafeCities about the value of meeting early on face-to-face, the 21st Century Skills community planned a face-to-face conference up-front as a way to launch the community. At the launch, members had formal and informal opportunities to get to know each other better, prioritized issues to explore and projects to focus on, and met with senior-level agency officials to discuss better ways to leverage local, state, and federal expertise and resources for results.

The 21st Century Skills built on the launch template established by its sister communities. A computer-mediated polling system was used at the conference to facilitate the brainstorming and selection of issues the community would address. The community coordinator, Lynn Kahn, brokered a connection with another initiative she had been facilitating—a group of assistant secretaries from various agencies such as Labor, Education, and Housing and Urban Development—who were collaborating on a workforce-related program. The assistant secretaries were invited to participate in the conference and meet their counterparts working at the local level. Network members later reported that the opportunity to connect with senior agency officials was a highlight of the event.

> "Everything they put together was helpful. We discussed issues, formed groups, had lunch, drank wine, and went to the White House for a tour. It made us feel important, and Lynn was scurrying around to make sure we talked to the right people."

The 21st Century Skills Network was born. Its charter goals included:

- Increase the number of Americans with 21st Century skills and high-skill, high-wage jobs;
- Close the skills gap;
- Promote lifelong learning;
- Address barriers at the federal, state, and local level to increase the flexibility and effectiveness of resources; and
- Obtain technical support and share best practices and lessons learned across communities.

Accomplishments

- Champions work with community members to learn about their goals and challenges, to help them build their local coalitions and get support at the state and federal levels. For example: Laurens County, South Carolina, gets help working with state and federal partners to improve alignment of funding streams to meet local program-implementation needs, and the Colorado partner gets stronger support at the state level for distance learning and other adult-education initiatives.

21st Century Skills

Domain: 21st Century Skills focused on issues related to workforce development and education, such as distance learning, curriculum design, job vacancy surveys, and how to organize a local skills summit around industry clusters. Although most members agreed that the synergies among education and workforce development issues justified the range, others felt that the domain should have been subdivided to provide increased focus for knowledge sharing and collaboration activities. On the one hand, this contrasts with the experience of Boost4Kids, which insisted on a broad and somewhat complex domain related to the tangle of "results-for-kids" issues; on the other hand, it differs from the SafeCities community, which chose a relatively specific outcome-based domain: reducing gun violence.

Community: The 21st Century Skills' federal partners included members from the Lifelong Learning Interagency Strategy Group, with representatives from the U.S. Departments of Labor, Education, and Commerce, facilitated by the Vice President's National Partnership for Reinventing Government; it also included the assistant secretaries of executive agencies with Workforce Investment Act (WIA) responsibility. This allowed for cross-government coordination and resolution of policy and legislative issues.

Participating members in local coalitions included business leaders, chamber of commerce presidents, university vice presidents, city planning officials, and members of workforce development boards, citizen activists, community college deans, and others. Local coalitions included:

- **Colorado:** The Colorado Collaborative; Southeast Business Partnership
- **Florida:** The Broward Alliance
- **Massachusetts:** Pioneer Valley Planning Commission, Plan for Progress
- **New York:** Broome-Tioga Workforce Development Board; Network of Education and Community Organization (NECO) and State University of New York, Plattsburgh
- **Ohio:** Columbus and Franklin County United Way/Employment Vision Council
- **Oklahoma:** Office of Workforce Development, The City of Oklahoma City
- **Pennsylvania:** The Northern Cambria Community Development Corporation
- **South Carolina:** Laurens County School-to-Work and Lifelong Learning
- **Tennessee:** The University of Tennessee Agriculture Extension Service
- **Texas:** Greater Austin@Work Alliance
- **Utah, Colorado, Ute Mountain Ute Tribe, Navajo Nation, Southern Ute Tribe:** Southwest Educational Telecommunications Consortium

Partnership members included community-based partnerships, local governments, networks of local or state and local governments, and state or local workforce development agencies.

Practice:

- Shared methods for increasing participation among students in distance learning programs, as well as tips for designing curricula and methods for promoting adult peer-to-peer learning
- Shared templates and methods for using the results of job vacancy surveys and training evaluation models
- Insights and methods learned from site visits and related presentations about how to organize "skills summits" to promote a highly skilled workforce and effective placement mechanisms in a range of local industry clusters

The October 12 Call: "Distance Learning"

Approximately 20 network members are on the call. Elliot Massie, a world-renowned expert on distance learning, is the invited speaker; he outlines some of the key issues related to distance learning and adult education and then fields questions from participants. Massie explains that there is a growing need to develop high-quality, publicly available content now that technical barriers to learning have become relatively low.

- A participant provides links to several websites and organizations that could help in this area.
- Another question on ways to address motivation issues in distance learning elicits ideas from partners about helping adult learners to appreciate the value of what they are learning.
- A member asks how to help teachers of distance learning classes learn to develop compelling multimedia classes with effective lesson plans. Two other partners respond with ideas and a link to a website with more ideas and an 80-hour tutorial on the topic.

Ideas and information developed during several teleconferences such as this one contribute to content posted on the website and provided the foundation for a longer-term project to create a world-class, public-domain, electronic "Learning Library" that includes training modules, lesson plans, and best practices related to closing the digital divide and skills gap.

> "This network gives us connections to people in Washington who are listening and willing to see what they can do about our problems."

- Members help each other during formal interactions on calls and in meetings and through informal interactions to learn and innovate to improve results. The Maine partner got help from partners on ways to co-locate a one-stop job center with a community college; the Florida partner got help from Colorado on how to track credit for distance learning services to students from different school districts; Florida, in turn, helped Colorado learn to manage the availability of mentors to distance learning students who call for help.

> "I contacted another partner about accountability related to distance learning. I described our approach and he told me ideas I hadn't thought of; then I helped him come up with ideas that he hadn't thought of in a completely different area."

> "Just getting access to the 12 other coalitions with their expertise and resources is something we would never have access to from where we are."

- Community members begin to establish collective benchmarks that define high-level capability in the field of education and workforce development.

> "Information sharing is very valuable because even if I don't apply it, it helps me assess the relative sophistication of my programs with 12 other highly collaborative communities. Together we are establishing a benchmark, which spurs me to work harder to keep my projects up to snuff."

What Happened to 21st Century Skills?

21st Century Skills was still starting up when the administration changed. The NPR coordinator managed to find a champion at the Department of Education (ED), but agency officials there did not understand well what they had inherited. They tried pushing the network to focus on ways to implement the administration's focus on school improvement, but this was only one part of what the network was about (as was the case of Boost4Kids in relation to the HHS program). They had one face-to-face meeting, at which members articulated their learning agenda and explained their methods of interacting. ED officials could not provide the multi-agency sponsorship the network needed. There had always been a tension among members between focusing on issues related to education (such as distance education in rural settings) and issues directly related to workforce development (such as funding restrictions on technical training to support employment in local manufacturing plants). Without a convener who could rally the participation of multiple agencies, especially both Education and Labor, the network as conceived could not succeed. Moreover, aside from the strategic misfit, ED could not provide the level and skill of coordination and support that the network required. Afterwards, members tried to organize a project-planning conference on their own, but without active coordination and support they were not able to keep the momentum.

Lessons Learned

- **Leadership:** Power of engaging senior executives across relevant agencies (in this case, assistant secretaries and other sub-cabinet officials with responsibility for the Workforce Investment Act) and connecting them with local civic leaders to facilitate stronger shared understanding of policy options and implications.
- **Leadership (sponsor):** Importance of a sponsor who appreciates the full dimensions of the community's purpose and does not attempt to force-fit administrative policy priorities on a community whose domain is not so narrowly defined.
- **Leadership (coordinator):** Importance of a coordinator who can focus consistently on working with the network and liaising with agency champions; when this role is overburdened, activities do not get sufficient attention to create full value for members.
- **Domain:** Challenge of getting the domain scoped correctly—not too broad, not too narrow—and having time and support to work out the domain boundaries—especially because it is the foundation for all the work that the community members do together.
- **Community:** Value of having a strong contingent of businesspeople in the mix—ones who are assertive about their expectations of the federal government and willing to leverage political power to get increased attention from agencies to understand the local impact of federal policies.

Federal Highway Administration Rumble Strips Initiative

History

In 1998, a team headed by Mike Burk at the Federal Highway Administration (FHWA) saw an opportunity to help the agency meet an important strategic goal to reduce traffic crashes by 20 percent over 10 years.[8] Burk and his team believed they could do this by cultivating a community of practice to address a perennial problem: diffusing a proven innovation across all 50 states that had been effectively implemented so far in 15, but was spreading very slowly to others—despite its compelling record of reducing injuries and saving lives. The community was called the "Rumble Strips Community" because its domain was about issues related to proposing, planning, deploying, and documenting the beneficial results of rumble strips that alert drivers when they are in danger of running off the road. (Rumble strips are the washboard-like indentations at the side of the road that create a loud noise and palpable vibrations when run over by a car.)

The agency had stacks of reports and brochures documenting the research and explaining why, when, where, and how to plan and implement rumble strip installations. But safety engineers at FHWA felt helpless to communicate the information engineers and decision makers needed so it got their attention, told them what they needed to know, and motivated them to act. Burk's specialty was knowledge management, and he knew enough to know that information dissemination alone would not solve this problem. He decided to try building a community among safety engineers at FHWA and the states to tackle the problem. He had learned that such structures were considered an essential social infrastructure for any initiative with the intention of diffusing ideas and innovations. The old methods were not working, so he decided to try it.

Members

The target members of the highway safety community that Burk and his team wanted to reach were state Department of Transportation (DOT) staff engineers from all 50 states—but the community also included federal safety engineers nationwide as

Federal Highway Administration—the Rumble Strips Community

Domain: Reduce traffic crashes by applying "rumble strips" on the sides of roads to prevent run-off-road injuries and fatalities. Identify and promulgate what rumble strips can do to prevent traffic crashes, how to justify the investments, and ways to measure the impact.

Members: Targeted members are safety engineers in all 50 states; also includes safety engineers at federal level and participants from various sectors: academic, business, and citizen—such as cyclist groups.

Practice: Templates for making the business case for rumble strips, case studies and research on results, discussion forums on specific issues such as how to mitigate the negative impact for cyclists, a directory of practitioners that helps members find who can help, information on various types of rumble strips, and pros and cons.

well as governmental decision makers, researchers, and citizens. The core group of the community consists of federal engineers from the Safety Business Unit of FHWA. They are supported by the agency's internal Knowledge Management (KM) support team. During the community's start-up phase, Jim Growney, an FHWA engineer in Albany, New York, was allocated half-time to serve as the community coordinator. Growney took on the role because he felt a strong personal commitment to leverage the community-of-practice approach in order to accelerate efforts to build and share knowledge related to rumble strips. Since the start-up period, Growney spends about one day a week coordinating the community's activities. He moderates the online discussions, fields questions, and connects people over the phone. He also liaises with executive sponsors and the KM team and generally helps the community thrive as a context for learning and achieving its goal of accelerating the diffusion of rumble strips nationally.

Members have participated in the community largely online, using a facility designed by the agency's internal KM support team, led by Burk. Members discuss topics in the rumble strip online forum, and contribute and access relevant reports, brochures, and presentations in a shared repository. A directory of community members from government and industry provides information about members' areas of interest and expertise. Members can keep in touch by going to the community website and by subscribing to the repository and discussions via e-mail.

Participation by constituencies across sectors and disciplines is encouraged in order to promote broader support for deploying rumble strips and in hopes of spurring innovative approaches. In one case, a sub-community of cycling enthusiasts became quite active and challenged the highway engineers and policy makers to find ways to make rumble strips less troublesome to cyclists, who ride primarily on the sides of the road where rumble strips are located. The exchanges were sometimes heated and it took a while before members on different sides built trust, but eventually the input of cyclists led to a new appreciation by engineers of the unintended consequences of the strips and motivated them to create new designs that would mitigate the problems for cyclists.

It is not a trivial problem to recruit participation from busy professionals who are dispersed nationwide and staffed in various organizations at different levels. The FHWA KM team and the community coordinator actively promoted membership through a number of channels: They notified all state DOTs, promoted the community at the annual conference of the Transportation Research Board (the largest assembly of technical transportation officials), published brochures on rumble strips on the FHWA website and the Rumble Strips Community homepage, and registered the site with Internet search engines.

Accomplishments

The Rumble Strips Community made a concerted effort to test their hypothesis that the community would accelerate the diffusion of rumble strips nationwide and thus reduce injuries and fatalities. As for any rigorous effort to make a community's influence visible, Burk and the community's leadership group used both qualitative and quantitative measures—and collected data that would help connect community activities with results.

- One quantitative measure of community activity was the number of visits to the Rumble Strips website, which received 60,000 hits during its first month and settled at about 1,200 visits a month. The knowledge base and online forum was used primarily by state DOT staff, but also included visitors from academia and engineers from other countries. Other quantitative measures documented the impact on injuries and fatalities and associated socioeconomic costs. FHWA staff used research from states such as Wyoming and Pennsylvania to argue that rumble strips prevent approximately 100 crashes in a typical state, which equals a reduction of about 50 injuries and .66 fatalities. The team cut these efficacy numbers in half to be conservative. They estimated that the socioeconomic savings of implementing rumble strips one year earlier than expected (due to the activities of the Rumble Strips Community) would represent a savings of \$2.56 million dollars in associated costs. (Such dollar estimates, of course, cannot adequately measure the costs of human suffering.) This compares to the community's cost of one FTE to coordinate all community activity.

- Quantitative numbers help anchor the community's report on results, but qualitative data such as stories from members are required to connect causes and effects. In his report on the Rumble Strips Community, Burk cites two sample interviews with members who were asked about the value of community participation. An engineer with the Wisconsin Department of Transportation explained how the community helped him get better information on implementing rumble strips: "We'd call state by state and see what they were doing. We were also not sure who to contact. This way, the contact information is on the website." Burk also reported that an Ohio DOT administrator said "the rumble strip portal helped her finalize plans for a number of specialty highway safety applications. [She stated:] 'We also used data from the site to help develop Ohio's current policy on rumble strip use.'"

- Finally another accomplishment of the community—on a "meta level"—has been to provide a model for communities in other domains, which are also sponsored by the internal FHWA KM group (as well as to communities beyond FHWA). Since the visible success of the Rumble Strips Community, the FHWA has sponsored communities of practice in a number of areas, including environment and planning, air quality, high-performance concrete, and transportation asset management.

Lessons Learned

There are three principal lessons learned from the FHWA's Rumble Strips Community experience that Burk's report highlights: the importance of leadership, a compelling domain, and making results visible.

- **Leadership:** The FHWA KM report states that while coaching, support, and seed funding from the KM team was helpful, "strong leadership by community facilitators has been a critical success factor for the Rumble Strips Community." The report goes on to quote the community coordinator who says: "These sites don't run themselves…. Plus, a specialist must be involved in online conversations to answer questions and direct users to the information they're looking for; otherwise, the portal loses credibility."

- **Domain:** The Rumble Strips Community not only aligned itself with an important strategic agency objective—reducing the number of automobile crashes and related injuries and deaths—it also focused its attention even more narrowly on a particular subset of issues: reducing run-off-road crashes by implementing rumble strips. Getting the domain scope right is very important for attracting the right combination of people with passion and a desire to work and learn together. Moreover, the community got the support of stakeholders in the agency and states because its focus aligned so well with their strategic objectives.

- **Results:** The Rumble Strips Community helped to spawn other communities and garner continued support for its own work because it made a concerted effort to measure its influence on results and make these visible to stakeholders inside and outside the agency. For example, Burk's report is featured on the website of a federal government Special Interest Group on the topic of communities of practice. (See www.km.gov.)

Reflections on Case Studies

The cross-agency networks' various denouement stories describe a sort of reverse cascade that mirrors the sequence of bootstrapping start-ups as they launched. An overview of the endgame for all three of the cross-agency networks shows how crucial the role of a federal convener—including the network coordinator, agency champions, and an overall sponsor—was to their success.

Although the common factors in their demise are most striking, there were variations on this theme across the networks. Boost4Kids lost their coordinator immediately when the negotiations with HHS fell through; 21st Century Skills had help for a while, albeit a relatively unavailable coordinator; and SafeCities enjoyed coordinator funding for another year and a half. In every case, however, the bottom line was that even with highly talented and motivated members achieving compelling results, without a dedicated coordinator the networks died. Six months before Boost4Kids was broken up, one of its members stressed how important the coordinator role was: "I don't think we'd be here without Pam and Bev [the community coordinators]. They play the role that we play at the state level: to find information, give us ideas, follow up on ideas and requests, and generally keep things moving."

Three features of the initiatives described here are especially noteworthy: the basic structure of the networks, their quasi-evolutionary nature (or structured evolution), and members' voluntary participation. It is also worth noting two roles that have particular influence on the ability to sustain and scale such initiatives: the role of the sponsor and of a "meta community" made up of coordinators and support team members which facilitates learning about the processes for cultivating successful communities of practice.

Community Network Structure

The first key element—the community network structure—has been emphasized throughout the case descriptions. Key elements of the network structure include cross-level access and collaboration, peer-to-peer communication, and the size of the networks—about 10 coalition partners and 30 core participants in total. (While the FHWA network included more participants, the media for interaction were more limited—primarily via their online forum and individual phone calls to the coordinator, their relatively small face-to-face meetings, which included a core group of staff engineers based in headquarters.) This structural foundation was essential to solving problems in new ways, accelerating and enhancing learning among all participants, and reinforcing a joint commitment to innovate for improved results.

Quasi-Evolutionary Development

The voluntary and evolutionary nature of the networks is closely related, and both are crucial to success. McKelvey defines a "quasi-evolutionary" process as one in which both conscious design and organic evolution are combined as highly interdependent developmental forces (McKelvey, 1977). (In fact, he argues that every organization evolves this way—even if the relative emphasis on each varies.) This evolutionary characteristic applies both at the network level itself, as well as to the "meta" evolution of the network design across all three networks over time. (This "meta" level of design evolution is also apparent at FHWA, where the KM group has sponsored the development of a number of communities, building on their experience with the Rumble Strips Community.)

This contrasts with the engineering approach commonly used to design formal business units with standardized systems and procedures. Leaders must be much more cautious about defining learning objectives for communities upfront, until the members have time to work out which issues are on the critical path and are most compelling to the group. Loading up the community with ambitious projects early on can produce the "job redundancy" effect, as in: "I already have a full-time job, and I'm here to learn and innovate in areas that feed my development and my work—but not by taking on onerous projects I haven't got time for." Moreover, many of the parameters appropriate for specifying very clearly in teams and business units, such as externally defined objectives, boundaries, roles, and performance expectations, do not apply well to communities. This is not to say these don't exist, but rather that they are inherently fuzzier and more dynamic. There is an expectation that they will adapt to local conditions and be defined through negotiations among members and between members and sponsors—with the option, as volunteers, to pitch in with gusto or hang out on the periphery. SafeCities, for example, had an objective to "reduce gun violence," but there were always questions about how to measure this result, much less where to set specific objectives. The SafeCities community did set a goal to define and document behavioral descriptions of its strategic capability goals—but there was only a small team—all volunteers—for this initiative. Although the work was very productive, it did not progress nearly as fast as it would under the sponsored auspices of a project team. The benefit was that the community members owned the process. Had SafeCities continued, it would have provided an excellent test bed for experimenting and continually improving the instrument.

Voluntary Participation

The voluntary nature of these networks was also crucial, because participants did not report to the convener; rather, they joined of their own accord. Even more important than this structural feature, the ethic of voluntary participation was key to the spirit of mutual trust, reciprocity, and joint commitment—and to members' willingness to speak out on important issues. At the 21st Century Skills conference, for example, business leaders and college deans showed up alongside nonprofit leaders who were more directly dependent on support from federal programs. They spoke as one, however, about what changes they needed from the federal government to streamline processes and do more to coach states on how to effectively leverage funds and to adjust policies to take into account local conditions. In the context of the 21st Century Skills community, even nonprofit members were less likely to be cowed by an imperious federal official. Much of the power of the networks would erode if they lost the self-initiated participation of diverse constituencies—including those with no dependence on federal largesse.

Much of the learning that occurred—via teleconferences, visits, informed phone calls, and e-mail—depended on peer-to-peer trust and reciprocity. Voluntarism in any context is a fundamental condition for collaborative creativity and learning. Pay, performance management, and other extrinsic incentives and controls are weak levers for influencing people to offer their best ideas, admit when they're stumped, or go out of their way to help someone else. (That said, the prospect of greater leverage and influence is a real incentive and one that members certainly thought worth pursuing.) Network participants were expected to share ideas, experiment with innovations, identify problems, and ask for help. But who would know if they held back? The greatest resource of these networks was their passionate commitment to innovation, collaboration, and striving for improved results. Imposing external requirements that could not be negotiated with members would not work—as was demonstrated in several cases during the denouement of the three cross-agency communities.

Overall Initiative Sponsor

For cross-agency communities, it appears that a high-status, powerful source of sponsorship is important. This may be an artifact of the federal government culture that generally impedes collaboration across agency silos. Presidential orders and legislative mandates seem to spur initiatives across agencies. The mandate that requires agencies to convert to electronic record keeping, for example, has helped increase interest and participation in the e-Reg Community of Practice. But that community does not have nearly the level of support that the NPR cross-agency communities had—and if it did, members say they could be making much more progress.

The "Meta-Community" That Fostered the Communities' Evolution

The continuing replication, innovation, and successful execution of these networks were due in part to a kind of "meta-network" that had evolved among the conveners. Their "domain" in this case was network development and coordination. Coordinators and support staff would talk across networks—both in formal meetings and informally. (They all had desks in the same office). They talked about various elements of their emerging practice, including engaging diverse stakeholders during local visits, recruiting the right speakers for teleconferences, capturing useful information for dissemination, and solving bottlenecks with federal and state agencies. They also talked about problems and future challenges, such as finding continued funding for the community coordinator role (and whether to continue to position it at the federal level); enlisting more consistent and active support from champions in federal agencies; fostering better collaboration among agencies in their work with local coalitions; scaling these pilot initiatives; and getting stronger, more visible support from senior executives and political appointees. (We also see signs of a meta-community in the FHWA case, primarily consisting of members of the KM support team and coordinators of the several communities they support. Also, at the federal government level, there is the kernel of a meta-community consisting of leading coordinators (such as Bill Bennett at FERC) and KM support staff from various agencies—including those specifically interested in communities of practice—under the auspices of the KM.gov group.)

In sum, the cases described here provide a unique illustration of the role of federal leadership—and the benefits at federal, state, and local levels—from cultivating cross-sector, cross-level communities of practice. The "theory of the case" is that these communities are a linchpin for moving from centralized government to distributed, citizen-engaged governance groups that assume greater responsibility for socioeconomic outcomes at the state and local levels. Finally, the cases raise important questions about replicability, sustainability, and scale. These issues are second order, however, compared to a more fundamental one: What are the basic steps agency executives can take to cultivate strategic communities of practice?

How Federal Agencies Can Cultivate Communities of Practice

Foundation Building

Communities evolve through a series of developmental stages. There are five development stages during the community of practice life cycle. (See Appendix I for a detailed discussion of developmental stages of communities of practice.)

The first step in launching a strategic community-of-practice initiative is to establish a sponsorship and support structure to steward the overall community initiative. Agency executives should begin by assessing how a community of practice can contribute to their strategic objectives. This often means convening formal and informal conversations to talk about the relationships between communities of practice, capability building, and improving results.

Steps for establishing the strategic context and stewardship structure include:

- Organize and educate (informally as well as formally) a sponsor board that includes a high-level sponsor and steering committee members who will be instrumental to implementation
- Identify where to focus the community initiative—through an executive review of strategic priorities or by engaging a broader group of stakeholders in collective conversations to identify hot issues to focus on.
- Recruit leaders to assume sponsorship and support rules:
  - Select and orient agency champions
  - Establish sponsor board functions
  - Staff one support professional (or more) to coach community leaders and liaise with sponsor board
  - Recruit and develop community coordinators (could be one or several for a community, depending on size and intensity of activity; full- or part-time)

Of course, it is not necessary to have all these roles formally established to get started. But when these initiatives are successful, they typically rely on influential and skilled people actively filling sponsorship and support roles (Wenger, et al., 2002, |pp. 206-216). (Of course, there are many communities of practice that meet members' needs and never show up on the radar screen—and prefer it that way. The focus here is on strategic communities of practice taking on important agency and national challenges.)

In the civic context, communities of practice often form in response to some catalytic event that increases attention to a strategic civic issue and gets the attention of sponsors.[9] For example, the SafeCities network was spawned at a national meeting in 1999 where Vice President Gore agreed to convene a commission to respond to Attorney General Janet Reno's "Mapping Out Crime" report, which set new goals to reduce gun violence nationwide.

In fact, in all three interagency communities featured in this report, national forums on specific issues led to the formation of the communities. They helped to catalyze interest and energy by bringing diverse and passionate stakeholders together in high-profile events, with a sponsor who had the influence and prestige to motivate groups to act. In the FHWA case, it was a new strategic objective to reduce traffic crashes by 20 percent in 10 years. The community saw how it could build and diffuse a capability to make a significant contribution to that goal.

When executive-level sponsors play a strong role in catalyzing a community of practice, it is especially important to set appropriate executive-level expectations regarding what level of investments of time, attention, and money will be required to achieve anticipated results—and over what time frame. Ideally this is done collaboratively with network members—but if the network has not yet been organized, then executives should seek expert advice about setting expectations and determining what staff support will be needed. In the three interagency communities described here, an executive group—composed of a range of stakeholders related to each domain—defined the issues to address, and then community members were selected based on their interest in tackling those issues. In the FHWA case, while the strategic objective had been set by executives, middle-level managers took the initiative to organize a community on a topic area both tightly aligned with the agency strategy and compelling to safety engineers.

Key Roles in Creating Communities of Practice

There are several key roles relevant to cultivating strategic communities throughout the community development process—though specific interventions change as communities evolve. Key roles include the sponsor, steering committee, support team, agency champions, and the community coordinator. Each role is briefly described below.

Sponsor

The sponsor performs a number of essential functions to help communities launch, mature, and gain influence and legitimacy in their domain.

- Articulating a vision of a community-based approach to building capabilities for driving performance and achieving strategic objectives
  - Vision may include a constellation of communities addressing an array of capability areas—as in FHWA, where several communities are operating today, or in organizations such as DaimlerChrysler[10] and the World Bank, which have over 100 active communities
- Providing policy direction and ongoing reviews (generally annual or semi-annual) to assess community progress and developmental needs—types and levels of participation, accomplishments and results, development issues, and proposals for further development
- Allocating funding for coordination and support staff and for projects, travel, and other resources
- Championing the initiative among stakeholders to build support

Sponsor issues:

- For the interagency communities of practice described in this report, the support of the Vice President's office was extremely important for both symbolic and practical reasons. When an agency official—federal, state, or local—gets a call from the Vice President's office, they generally respond promptly. Moreover, such a high-level office has greater capacity to facilitate cross-agency collaboration and is less likely to take a perspective that is limited by parameters of agency-specific programs. As one member said: "The Vice President's office is better than any agency as a convener, because it's more flexible to represent people versus low-level agency sponsorship, where it may become focused on their policies and programs; this is more open and has a cross-agency perspective."

  The Vice President's overall sponsorship provided back-home legitimacy for members and helped to ensure that agencies would be responsive to requests for adaptations in policies and programs. It also influenced state and local officials to support the agenda of local coalitions, which in many cases had been weak or non-existent.

But there is a downside to high-level support from politicians and appointees—it lasts only as long as the sponsor stays in office. And even when newly appointed officials are sympathetic to the methods and purposes of these initiatives, they often do not have enough background knowledge or experience to continue supporting them. The FHWA case suggests that such initiatives may gain staying power when sponsorship and support processes become institutionalized in a department or agency—for instance, by an internal Knowledge Management office as well as by technical infrastructure and processes that establish collaboration expectations with states and citizens. (Even at the agency level, however, we have seen such offices get disbanded soon after the arrival of a new agency head.)

Cross-Agency Steering Committee

The steering committee provides strategic guidance for the network's development. For the cross-agency communities, the steering committees consisted of the sponsor, federal agency champions, community coordinators, and internal KM or consulting staff. Steering committees were especially helpful because they provided a transitional structure for institutionalizing cross-agency collaboration and collective support for network learning and innovation initiatives. The committees generally met about once a month. Champions and coordinators would discuss how well the champions' agencies were supporting their own participation, what issues they had been working on, and what results they were getting. Interestingly, because the issues raised by these communities did not fall neatly into one program or agency, the activities raised officials' awareness of their own need to collaborate in order to create value for citizens. In fact, these committees provided a model for an informal—though clearly intentional—structure that can serve as a highly effective forum for interagency collaboration.

Steering committee tasks include:

- Reviewing agency champion support and effectiveness
- Institutionalizing agencies' ability to support networks
- Identifying implications of lessons learned for cross-agency collaborations
- Providing or brokering resources

"The steering committee seems to be important for feeding back changes at the federal level to influence agency policy. It is helpful to have high-level commitment and involvement in agencies, but easy to lose their attention."

Steering committee issues:

- The main steering committee issues are cross-agency coordination and sufficient commitments of senior staff time and attention. There are few effective government-wide, systematic mechanisms to ensure agency collaboration. (Homeland Security may be the exception that proves the rule—it aims to foster collaboration, but only by combining agencies under one authority structure.) Kamarck (2002) and others have argued, nevertheless, for an approach that relies on cross-agency networks—rather than on a massive structural consolidation—to leverage complementary agency capabilities and encourage knowledge sharing among them. Given the power of established hierarchies in government agencies, it is difficult for cross-agency initiatives to be influential and sustainable without creating a concrete structure or establishing an explicit policy mandate and support by agency executives and political appointees.
- The agency collaborations seen in this set of case studies were driven largely by compelling appeals from members of the communities of practice who pointed out the waste and lost opportunities at the local level when agencies did not cooperate. Community members were in a unique position to help agency officials see the unintended negative consequences of uncoordinated, overlapping, siloed programs that did not consider the real-life context of problems at the local level. Ultimately, as these initiatives go to scale, a growing network of communities may gain sufficient external influence to motivate legislators, political appointees, and agency staff to collaborate across agency silos in ways that have failed historically. Until then, the cross-agency networks, in particular, seem to depend on high-level influence to bridge obstructive agency boundaries.

Support Team

The support team supports the launch and development of communities of practice by providing services at an overall initiative level (which may include anywhere from a few to hundreds of active communities). Support team functions include educational activities, initiative planning and coordination, coaching for community leaders, managing infrastructure (especially technology), and acting as a liaison among communities and with sponsors to facilitate ongoing learning and alignment.

The support team may consist of one or more full- or part-time members—staffed internally or contracted externally. Skills include those related to organization development, information technology, and strategy, as well as the emerging field of "knowledge management" (a term used to refer to a mix of people, process, content, and technology issues related to building, sharing, and applying knowledge). The team may be based in a specified unit—a Knowledge Management department, for example, or the office of the CIO or HR director—or it may operate as an ad hoc virtual team whose members report to the sponsor and steering committee.

The NPR support team was instrumental in promoting the replication, innovation, and successful execution of the cross-agency, intergovernmental communities. The support staff (several of whom also acted as community coordinators) worked together to develop an array of elements related to their emerging discipline. Support team members also addressed problems related to institutionalizing and scaling up the initiative, such as finding continued funding for the coordinator role (whether staffed inside or outside the federal government); enlisting more consistent and active support from champions in federal agencies; fostering better collaboration among agencies to respond to the local coalitions; scaling the pilot communities; and getting stronger, more visible support from senior agency executives and political appointees.

Wherever there is a significant community-of-practice initiative that is getting results, inevitably there is also a strong support team—whether it is a public, private, or nonprofit initiative. Mike Burk and his colleagues at the FHWA provided the support team function out of the Knowledge Management office, and they have helped launch a number of communities since the initial success of the Rumble Strips Community. The NPR office sponsored a team of senior staff that brought together a broad range of skills and stakeholder relationships, which enabled them to organize a very complex, cross-agency, cross-sector, cross-level initiative while continually reviewing results and innovating along the way. (In the NPR case, support team staff played several additional roles—including community coordinator, agency champion, and steering committee membership. It is not uncommon for skilled staff to play multiple roles; with the right skills and flexibility, this approach can promote overall agility and adaptability.) Community-of-practice initiatives are still very new for organizations, and there is much to learn in the early going. Support team staff can accelerate movement up the learning curve while promoting innovations along the way.

Support team tasks include:

- Educating government executives (formally and informally), as well as coordinators and others participating in the community initiative
- Developing an overall initiative plan for activities, players, and resources
- Providing coaching and logistical support to help communities get launched
- Liaising with sponsors and community leaders to review both successes and shortfalls for purposes of continuous improvement

Support team issues:

- It is a challenge to find an adequate mix of skills and expertise to staff a support team.
  - Communities of practice are a distinctive organizational form, and to date, few managers or organizations have much experience cultivating them in intentional and systematic ways. Moreover, these initiatives are complex—covering issues related to strategy, structure, technologies, performance measures, staffing, shared values, and leadership style. Sponsors should not underestimate the importance of professional advice and support to help ensure that early initiatives succeed as basis for leveraging that experience more broadly.

  - Change initiatives in organizations do not succeed without significant attention to leadership and other organization development issues. Technology-based initiatives such as EPS (Enterprise Planning Systems), for example, rarely fulfill their vendor's promises without accompanying structural, procedural, and behavioral changes. Communities of practice are no different—they are not a silver bullet unto themselves—and this is why access to skills in a range of disciplines is important.

- Another key issue for the support team—and related to its expertise—is its credibility and legitimacy with senior executives and other stakeholders whose support is critical for success.
  - Community initiatives present new ways of working, learning, and collaborating. The cross-agency communities, for example, demonstrated the value of connecting officials across agencies in areas of common interest—such as workforce development. Support team contributions were crucial in these instances, but it was unlikely that they could have made so much progress without strong professional credibility and support from high-level sponsors. For example, Lynn Kahn's executive relationships and reputation were crucial to convene a group of assistant secretaries and link them with the the 21st Century Skills coalition, while facilitating collective conversations about program and policy development.
- Finally, the support team must build a repertoire of tools to help expand the initiative and incorporate lessons from experience.
  - The support team can strengthen its influence by leveraging its experience to create tools, frameworks, cases, and other artifacts that can help sponsors and communities get up to speed quicker. It is easier to do this when members develop their own community to keep up to date on lessons from the field and available skills and technologies. Support team members at FHWA, the Navy, Army, GSA, and many other agencies have organized a knowledge management community for this purpose.

Agency Champions

In this case, a compelling dimension of the value proposition for members was direct access to influential officials in various federal agencies. Agency champions were designated to work with the communities to help members build capability and solve problems. The champion role presents a unique opportunity for officials in various federal agencies to work directly with citizen coalitions in the field who directly face the problems agency programs are designed to address. Agency champions and local civic leaders work together to adapt programs to fit local conditions and consider longer-term policy changes as indicated. Champions have a unique opportunity to learn how their programs work in practice and to incorporate what they learn in the strategic thinking and program designs of the agency.

Agency champion tasks include:

- Helping partners solve problems and build collaborative relationships with officials at local, state, and federal levels
- Providing a trusted federal point of contact for local community members
- Acting as a creative, solution-focused problem solver that leverages perspectives and resources across agencies to "get to yes"

An agency champion is an enthusiast, innovator, recruiter, convener, and advocate.

> "Communities need cross-agency help and this isn't in anyone's job description; but champions don't always have support, authority, and time to play this role."
>
> "As a federal champion, I learn so much by working directly with a community."

Agency champion issues:

- Because these roles are relatively informal, it is particularly difficult for agency champions to maintain time and attention allocation to community needs as administrators change and policies change.
  - There may not be much to do about this in the short term, but it is worth noting that the turnover of political appointees makes

it difficult to invest one's professional reputation in roles that may not last after the next election.

- The champion role is a challenging one. It requires strong technical expertise to understand how to respond to requests for waivers or policy changes, change-management skills to deal with bureaucratic inertia, and facilitation skills to negotiate priorities with network members. It is not necessary for any one champion to have all these skills—but it is important to know what is required and find a way to access the skills needed.
- Finally, a cadre of agency champions is especially critical for cross-agency communities, but may also be important in agencies where community initiatives cross several intra-agency department boundaries.

Community Coordinator

Community coordinators orchestrate activities, connect members, shepherd initiatives, and help to solve problems. They are crucial to communities' vitality and ability to achieve desired outcomes. Examples of functions they provide include:

- Organizing activities such as face-to-face meetings and teleconferences
- Guiding and facilitating network projects—for example, setting up GIS training, building a website, and developing capability measures
- Coordinating with state and national stakeholders (such as state government officials and foundations) and the federal steering committee for support and sponsorship
- Weaving relationships among partners and with experts and external stakeholders
- Moderating the listserv and website repository
- Planning ahead for the community's long-term development—addressing issues such as major projects, leadership, and growth

The skill of a community coordinator can make or break a community's success. Generally, for a community of 30 active members in a strategic area, the coordinator is ideally staffed half-time or more. The most successful of the NPR coordinators, Michael Seelman in the Justice Department, was nearly full-time, as was the coordinator for the Rumble Strips Community. Even when the coordinator has less time to devote, as was the case with Bill Bennett, the coordinator of the e-Reg Community, he can nevertheless be instrumental to the community's progress and accomplishments (albeit at a lower level of activity).

It is not only the time and commitment of the coordinator that is crucial, but their level of technical and interpersonal competence. The social competencies are particularly important, because in many communities—especially technical ones—social skills are harder to find.

The coordinator must play a variety of roles, including broker, boundary-spanner, connector, recruiter, and energizer for the community. As one cross-agency community member said: "There has to be someone whose sole responsibility is to keep the network going, to bring the issues to the table…. It has to be someone with connections and with access to decision makers who will return their calls and respond to requests to come to the table."

It is not necessary for the coordinator to be an expert in the field, but it helps to know enough to appreciate who should be involved, who should talk to whom, and to have legitimacy with members who feel it is important to know the business. In the cross-agency communities, the array of disciplines represented in each was so wide that no one person could be an expert in all of them in any case. But Seelman, for example, knew enough about the domain to recognize which members had mutual interests or where to point them to community resources. They can also do well by recruiting key core-group members to substitute for their own lack of technical expertise.

Core group of members

Often the community coordinator role is taken by two or more members who share responsibilities. But even when there is one person playing the role, the coordinator depends on a core group of members to help set and revise the agenda over time, cultivate participation, and vet the priorities for practice-development initiatives. The core group may be as few as three, but it is generally four to eight members who are considered thought leaders, or connectors, or who provide action-oriented leadership for the community of practice.

CompanyCommand.com, for example, has a phalanx of nearly 10 core-group volunteers to keep its 1,500-plus community participants humming.

Communities of practice differ from formal teams because they do not require equal commitments of time and resources from all members. Because members' involvement is voluntary, it varies widely, depending on members' interests and time. Even "lurkers" are welcomed—they help spread the word through their own networks. Nonetheless, there must be a core group to help provide a focus for the community, organize events, attract participation, and give legitimacy to the group as "the place to be" to find out about cutting-edge initiatives and practices—and to connect with leaders in the field.

> "I don't think we'd be here without Pam and Bev [the community coordinators]. They play the role that we play at the state level: to find information, give us ideas, follow up on ideas and requests, and generally keep things moving."

> "A good coordinator is a facilitator who can draw people out and encourage them to give and receive information. They also act as a knowledge manager. Whenever we have a call, they do minutes and provide follow-up information on phone numbers and websites."

Coordinator issues:

- For strategic communities of practice to succeed, it is essential to establish staff roles that are designed to coordinate cross-agency collaboration. The Department of Education sponsorship failed in part because it could not provide such coordination, and Boost4Kids' demise was inevitable once it was clear that HHS could not define a salary position for a job that had no precedent in the agency.

- Given their function as a broker and liaison with sponsors, it is important for coordinators to have the understanding and cross-agency relationships required of the role—again, this was missing in the cases of both Education and HHS.

- Establishing staff roles is one thing, funding them is another. The coordinator role, as we have seen, is essential. Funding for travel is key because occasional face-to-face meetings are so important—both for conferences and site visits. Many participants at the local level are volunteers or are working for nonprofits on shoestring budgets. Furthermore, even minimal financial support makes a strong symbolic statement—it demonstrates to participants that this initiative is seen as an important national priority, and it recognizes the significant contributions that participants make.

> "The network needs attention, dedicated staff, and needs some funding to make sure it lives on, not only for conveners and the website, but also travel funds for members to improve cross-cutting collaboration."

Conclusion: An Emerging Role for the Federal Government as Sponsor of Community Initiatives

Recommendations

The cases and analysis outlined here open up new questions about how community-based initiatives and traditional organizational structures should interrelate. What is the role of federal agencies in promoting communities of practice that seek to build capabilities to address national priorities—in domains that address the landscape of governance issues: education, economic development, health, housing, public safety, environment, culture, and others? We have argued that the federal government has a number of instrumental roles it can play—as a sponsor, champion, community coordinator, and support team—to cultivate communities that achieve results at both local and national levels. Overall, we propose three high-level recommendations that address key success factors for a broad community-based strategy to build civic capabilities for socioeconomic results:

- Sponsor and support communities of practice to achieve national outcomes that require ongoing innovation and action learning
- Align community goals and agency strategic imperatives and policy mandates
- Leverage the unique position of the federal government to broaden the scope and scale of pilot initiatives

These recommendations presume that government executives will see community-based capability-building initiatives as consistent with agency program strategies and the fundamental role of government to serve the public. They also assume that agency officials are ready to commit to an evolutionary development process that shares an increasing level of governance responsibility with locally based citizen coalitions.

For some, these community-of-practice structures may stir up the specter of a "hollowed-out" government. Kamarck (2002: 11) quotes H. Brinton Milward and Keith G. Provan, who refer to network-based governance structures as the "hollow state," which they define as "… any joint production situation where a governmental agency relies on others (firms, nonprofits, or other government agencies) to jointly deliver public services" (Milward and Provan, 2000). The emergence of network-based governance approaches, however, need not augur the end of government. To the contrary, government institutions provide crucial convening forums for working out nation-level issues that merit new legislation, national programs, and coordinated standards and protocols; and, of course, no other entity is positioned to negotiate international relations and provide national defense. Nevertheless, government officials may argue that cross-sector, cross-level network structures will hollow out agency mandates, undermine public-service initiatives, and weaken the fabric of civil society.

There are several ways to address these concerns: by seeing the emergence of communities of practice as an evolutionary process, not a cataclysmic revolution; by distinguishing the knowledge-building and knowledge-sharing functions of these communities with the primarily transactional focus of product- and service-delivery units; and by understanding that collaborative, boundary-crossing networks need not mark the loss of government's public-service identity and influence, but rather serve as an expansion of both.

Implementing Communities of Practice

Evolution of Role over Time

The development of communities of practice—individually or collectively—is an evolutionary process, not a revolution. Control over specific functions should be ceded as network structures demonstrate ownership, capability, and transparency of results. As we have seen, the federal government has crucial roles to play in this process—as national catalyst, sponsor, legitimizer, resource provider, and safeguarder (enforcer of critical public-trust protections, such as in vital regulations and standards).

Understanding Functional Distinctions of Learning and Transacting

The government must understand its role along dimensions of both transacting and learning—and the complementarity between them. Communities of practice operate amidst an ecology of institutions, both formal and informal. They complement formal institutions by crossing boundaries and fostering learning and innovation. They contribute to a cross-hatching structure that combines a focus on service delivery with the capacity to cross boundaries to discover and diffuse innovations—what Wenger and colleagues refer to as a "double-knit" organizational structure (2002, pp. 18-21).

In such a multi-dimensional system, formal political and service delivery organizations are still held accountable for using resources to get results related to social outcomes—they are *resource management structures*. In this role, they set strategic direction and policies, manage conflicts, and embody public values. Meanwhile, the communities of practice are responsible for building and sharing information, ideas, skills, methods, and influence to enable organizations to get things done—they are *capacity-building structures*.

Emphasizing accountability without building capacity is unlikely to deliver radically improved results. Executives need to design and manage each type of structure to do what it does best. Managers and organization members need to assure resources are applied to get results. Meanwhile, communities of practice must steward the learning activities and knowledge assets in their domain. Understanding and developing these structures as distinct, complementary entities helps strengthen and magnify their combined impact.

These complementary structures are woven together as much by members as by management policy. Members belong to both accountability and knowledge structures—they are "multi-members"—but the mode and focus of participation is different in each. Ultimately, we need more of both—accountability and capacity—and multiple ways to interweave them.

Philosophical Commitment to Participatory Governance

Is the federal government ready to support systematic development of strategic communities of practice? As communities of practice go to scale and gain political power, are legislators and policy makers ready to deal with them, at local, state, and federal levels? These networks will attenuate agencies' control over program design and implementation, even as they increase control over results by spurring collaboration, innovation, and diffusion of good ideas and proven practices. But radically participative management approaches are more—not less—difficult than traditional ones. Many conflicts, disappointments, and mistakes are inevitable along the way. Executive sponsors must feel strongly enough about the potential of these approaches to commit their time and energy without knowing for sure what it will take to succeed.

The challenge of sponsoring such networks, however, is not merely about a commitment of time and energy, but also a matter of mind-set. How willing are federal officials and network partners to negotiate roles and relationships as equal partners with a common mission? When federal officials participate in these networks effectively, they do so as partners; they cede unilateral control (or the semblance of it) over how policy gets determined and how public monies can be spent. It is not legitimate for federal officials to behave as privileged actors because they have special access to expertise, funds, and influential senior executives. The local players must be treated as equal partners in a larger governance system that serves and engages all citizens. This is a crucial mind-set to establish in order to elicit the foundation of trust, reciprocity, and shared values that will facilitate knowledge flows and collaboration across agencies, sectors, and levels. Current institutional silos are embodied not only in the informal elements of the organizational culture, but also in the formal structures, systems, and procedures by which federal officials are typically constrained. The SafeCities initiative to pilot capability benchmarks, for example, was hampered by agency restrictions preventing them from appearing to certify these benchmarks as an official policy position of the Justice Department.

Indeed, the quasi-evolutionary nature of cross-agency communities of practice described here is not simply an artifact of sponsors' initial unfamiliarity with these structures. In fact, these communities, like all living things, tend to evolve and mature over time—even if leaders believe they know what they want from the start. Intentionality can get in the way, in fact, if it overrides the unique, context-dependent path and pace of a community's evolution. You can't get there simply by methodically creating a logical design and then implementing it.

The evolution of Boost4Kids' emphasis on peer-to-peer learning might not have happened had executives stuck to their initial concept; and the FHWA Rumble Strips Community might not have worked so hard to improve rumble strip designs and gain the support of cyclists' advocacy groups. This is why the development process for communities is "quasi-evolutionary." The community's evolution depends on many factors, and these are constantly in motion for several reasons: the relevant knowledge base is dynamic, members come and go voluntarily, and there is no definitive set of roles, procedures, and project milestones you can determine from the beginning. As in any exploration of new ideas and new relationships, there are bound to be surprises along the way. The best approach is a an "emergent strategy" (Mintzberg and Waters, 1985) that depends on preparation, not prediction, as an organizing principle (Ackoff, 1983). This is why we refer to efforts that support the development process as ones of "cultivation," not management.

Finally, we should note that no matter how actively and capably the federal government supports the launch, growth, and diffusion of communities of practice, they cannot succeed without strong, dedicated network members. The majority of local and state partners in these networks were truly of national caliber. They were carefully selected for their distinctive commitments to innovation, collaboration, and results. But we should not take this condition for granted. Much of the value of participation for both local partners and federal agencies was the opportunity to work with innovative, action-oriented local coalitions who had much to share—both challenges and innovative proposals—and who were ready and willing to apply new ideas to achieve outstanding results. Although the federal role is crucial to the broad scope and national scale of these networks, this partnership arrangement cannot work unless both parties are ready to dance.

The promise of these communities of practice presents a challenge as steep for state and local agents as it is for their federal colleagues. After all, how many cities and regions nationwide have cross-sector stewardship groups that are as well organized, highly capable, and willing to deal with the messy conflicts and Byzantine local politics endemic to any real-life civic development initiative? Yet, we will need such groups at all levels—local, state, and national—to build a national governance capacity capable of taking on the 21st century challenges and opportunities before us.[11]

Appendix I: A Stage Model—Understanding How Communities Evolve

Communities of practice, like all living things, grow through distinct phases of development; thus it is best to understand the challenge of cultivating strategic communities in terms of the specific activities, methods, and tensions that occur in each developmental stage. Typically, community development stages include the following (Wenger, et al., 2002, pp. 68-70):

1. *Discovery:* identifying strategic issues to address—those that align with both strategic objectives and members' interests—such as reducing gun violence or automobile crashes
2. *Coalescing:* convening members to develop an action-learning agenda and building their collective commitment to pursue it together
3. *Maturing:* building on knowledge-sharing, clinics, and co-consulting activities—toward collaborations on innovation and application projects; growing beyond the initial group
4. *Stewarding:* establishing a prominent role in the field and taking stewardship for addressing leading-edge issues at scale
5. *Legacy:* beyond success, what's next—institutionalization as a formal organization; letting the community dissolve once the issues lose salience; segmenting the community into subareas as issues become more differentiated

The five-stage community development model (see Figure A.1) is, of course, schematic. It is based on a common pattern seen in many communities, but it varies for any particular community. Community development is generally not a linear progression—rather it often fluctuates; communities move ahead, slip back, rest a while, and sometimes leapfrog a stage.

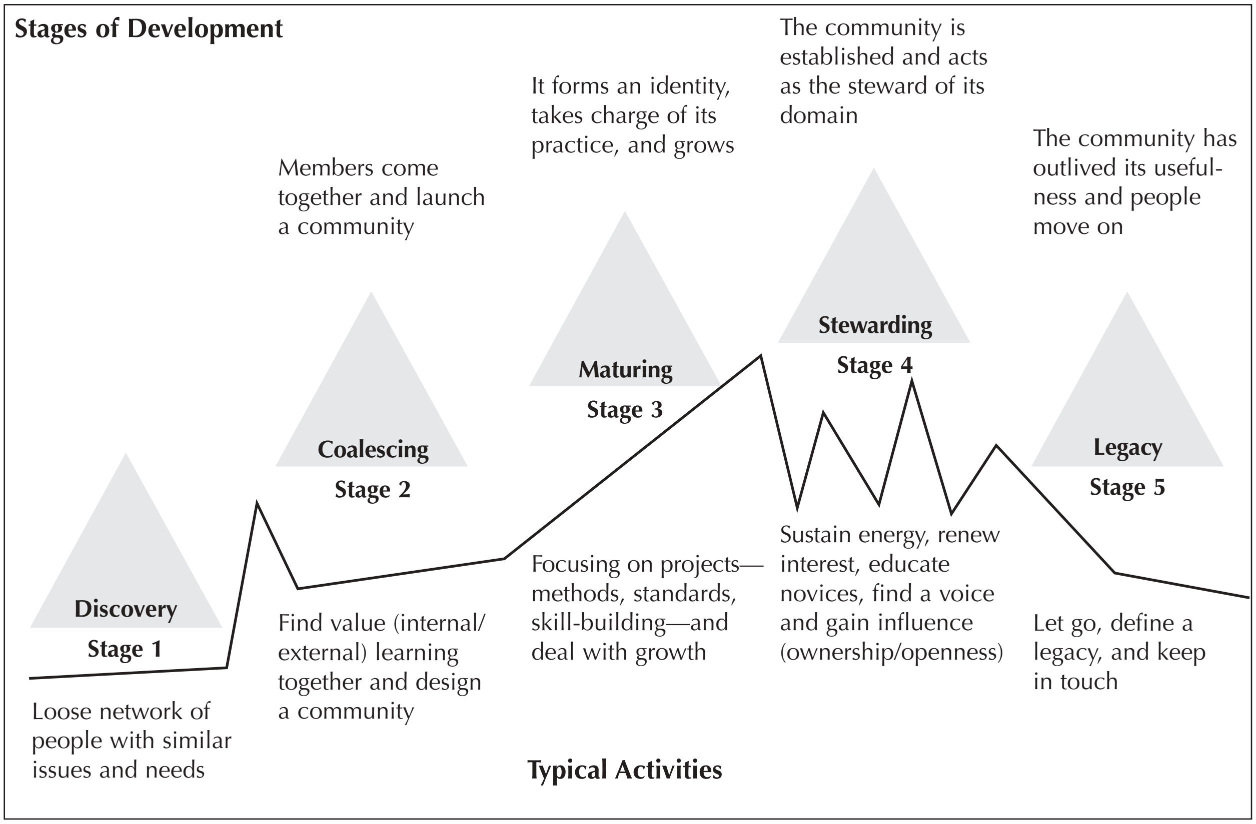
Although intentional, well-supported community initiatives may progress from the first to third stage in three to nine months, some will move faster and others may satisfy their needs well enough at stage two. Some move too quickly to stage three—driven by pressures to show visible results or to grow quickly—and thus overlook key developmental issues and end up regressing or losing steam altogether. A number of contingencies influence the quality and speed of a community's evolution: the complexity of its practice, the level of familiarity and shared experience of members, levels of sponsorship and support, member proximity and the quality of available communication facilities, leadership (including various types—thought leadership, coordination, brokering, etc.), and others.

The three cross-agency communities described in this report operated long enough to reach stage two or three, as defined here. The FHWA community seems to be operating at the "mature" level, with indications of stage 4 stewardship—it acts as a hub for developing a national practice. The stages model helps us see important achievements in progress and to anticipate what could be done if the community became even more influential.

Stage 1: Discovery

The purpose of the discovery process is to "find out whether there is a there there." The "there" in this case refers to compelling issues that will attract a

Figure A.1: Developmental Model of Communities of Practice



core of leading practitioners, a community of members who want to learn and work together, and an emerging practice of skills and techniques that promise to build skills and solve new problems.

Key management tasks:

- Identifying strategic objectives that require building and disseminating organizational capabilities, fostering innovation, or attracting and developing talent
- Considering what types of communities to cultivate
- Beginning to recruit community leaders—coordinator and core-group members who can take on stewardship of the community

In each of the cross-agency networks featured here, it was striking how easily the Vice President's office was able to attract top coalitions in each domain nationwide—especially when they offered no money; only an opportunity to connect with federal champions and peers to help them solve problems and learn. In fact, the only recruitment activity was to post an announcement in the Federal Register. This testifies to the recruitment power of an influential sponsor. Getting the right people in the room, particularly the core group of participants, is crucial to success. The danger here, however, is that the conveners depended too much on the prestige of their office and didn't do enough to go out and beat the bushes to find the best possible mix of partners in the first round. One thing they did well was gauging how many partners they could manage for each network—any more than 10 highly active coalitions and 30 members would have been too many for the conveners to serve. Also, a larger group would make it difficult for members to build a relatively quick sense of common ground and mutual trust.

In the FHWA case, the sponsors built on a relatively strong informal network among safety engineers at federal and state levels. In this case, it was more a matter of coalescing a latent community so it could take more intentional, collective stewardship of the practice—reducing traffic crashes.

Key management tasks:

- Establish methods for recruiting, selecting, and assimilating partners, steering committee, and champions
- Define clear roles for agency executives that minimize time required but leverage their influence
- Set aside sufficient time during recruitment and start-up by developing a shared vision and expectations for participation
- Get sustained participation by senior agency executives

Stage 2: Coalescing

At this stage a community comes together. Members get acquainted, form relationships, and get a sense of whether this is a club they want to belong to. Do these people have the skills, connections, experience, and willingness to work together? Members brainstorm issues and develop a shared learning agenda, and they talk about ways to connect and learn together—meetings, teleconferences, a listserv, etc. They might also assign responsibility to one or more members to help coordinate their activities and serve as a central point of contact for members and outsiders. At this stage, the community's practice development is primarily about helping members build skills and solve immediate problems. Members may present cases, conduct "clinics" in which they consult to each other, and pay mutual visits.

Common pitfalls at this stage are moving too quickly to launch ambitious projects in order to catalogue knowledge assets or build new tools; or relying too much on online media for member interactions. The cross-agency communities of practice in this case avoided all of these pitfalls. Their emphasis was on peer-to-peer interaction, with early opportunities to meet face-to-face. They identified a learning agenda based on collective interests and priorities, not according to some rigid agenda or outsider mandate.

Another trap the four communities avoided was depending too much on public activities and not emphasizing enough the one-to-one, informal communications that solve specific problems, strengthen personal relationships, and address issues that members may not be ready to deal with publicly. For example, the cross-agency communities placed much value on assigning partners to specific federal champions, encouraged off-line problem solving, and arranged to visit sites in person and to learn more about their specific, local needs. The FHWA coordinator also plays the role of knowledge broker for members distributed across 50 states. In all four cases, as well as in the other agency communities of practice mentioned, the coordinators have done an excellent job of weaving together both formal and informal, public and private activities.

Key management tasks:

- Assess the extent of federal agency support required for a specific community and make necessary allocations and preparations
- Meet with community members to commit to joint capability objectives and related performance goals
  - Also talk about how to assess whether capability goals are met—and how to link these accomplishments with related strategic performance outcomes
- Set up a schedule for occasional reviews and mechanisms for liaising more informally along the way

Stage 3: Maturing

At the maturing stage, members begin to plan joint projects—Boost4Kids' members worked together to develop an electronic application and SafeCities' members worked on capability benchmarks. Community members also began thinking about growth—either growing their own membership or splitting off sub-communities defined by region, topic, roles, or other dimensions that made sense. SafeCities organized a satellite broadcast that reached over 50 cities, and in at least one case catalyzed the formation of a local coalition while strengthening others. Members from all three interagency networks acknowledged that they would need to meet face-to-face to work out complex issues—conceptual, practical, and social—in order to collaborate effectively on ambitious projects. This is the time to consolidate the community's experience of its values, culture, and shared goals—and do this before growing so quickly that the community loses the collective sense of belonging that is at the heart of such networks.

The Boost4Kids and SafeCities networks were on the verge of moving into stage 3 activities (See Figure A.2). This was particularly true of SafeCities when, in its second year, SafeCities launched a collective effort to establish capability benchmarks in areas known to be top levers for preventing gun violence. Boost4Kids had also begun typical stage 3 projects: They arranged a joint training session for members on GIS, and a sub-group of three Boost4Kids partners in California worked together on a project to develop an electronic, universal social services application. But initiating such projects takes much time from a coordinator, and they demand a level of commitment from members that is hard to develop without more face-to-face meetings among the project leaders. Finally, a commitment to such projects requires equal commitment from federal partners who can provide assurance that these efforts will not be wasted; that once completed they will have a strong chance of getting implemented.

A danger at this stage is the eagerness to grow quickly—due to core-group aspirations or fueled by outsiders who see an opportunity to meet their own objectives. (The latter is particularly dangerous because when network efforts are driven from the outside, they can lose initiative, and sponsors will have "killed the goose that lays the golden eggs.") The NPR conveners held a number of discussions about "going to scale," but were cautioned about growing too fast before the networks had consolidated their development at stage 2. They needed to establish a solid basis of coaching and sponsorship before raising the bar in terms of size and activity. (As it turned out, the sponsorship was not sustained.)

Key management tasks:

- Talk with community leaders about what projects to launch and what additional staff, travel funds, or infrastructure is needed to support the growth and depth of community initiatives
- Begin more systematic efforts to document the value the community creates and make these benefits visible. As the community requires more staff, travel, and related dollars, it will

Figure A.2: Description of SafeCities Activities as It Moved from Stage 2 to Stage 3

	Stage 2: Coalescing	**Stage 3: Maturing**
Typical Activities	• Define domain focus so it has tangible value for members and their organization • Develop member relationships and trust • Develop ways for members to help each other by sharing tips and solving problems	• Identify and prioritize domain issues based on stakeholder as well as member interests • More rigorously organize the practice and fill in the gaps
SafeCities	• Topics with practical usefulness were the focus; regular documentation of value in reports submitted to conveners • Face-to-face meetings—as a network and during partner visits—were especially helpful for developing trust and personal relationships; visits by points of contact fostered openness and commitment • Teleconferences provided forum for sharing ideas and offering help; face-to-face meetings and visits were better for in-depth problem solving	• Began to identify a proven set of gun violence reduction strategies and measure partners' relative strengths and weaknesses—as basis for setting learning agenda • Started efforts to expand participation; for example, held satellite broadcast for over 50 cities • Made ongoing efforts to organize practice resources on the website; more yet to capture, annotate, and edit based on members' and external experts' collective experience and expertise

become increasingly important to demonstrate value—and especially in the face of inevitable administrative shifts. Even if current executives don't ask for it, do it anyway—both as insurance for the future and as a learning opportunity—using feedback on results to adjust the focus of activities.

- Encourage participation by members and commitment from stakeholders—inside and outside the agency, both line and staff—to support community initiatives to apply strategic capabilities, not only build and share them. (While individual members can apply new knowledge in their work, applying new organizational capabilities—such as e-commerce, for example—depends on support from the line organization.)
- Help community leaders think about their growth strategy—where to grow, how much, and how fast—and what resources in terms of staff, travel, and infrastructure will be needed to support the growth

Stage 4: Stewarding

At the stewardship phase, communities take on a publicly visible role as project leaders and standard-setters, establish a world-class forum where practitioners can connect and collaborate, and function as influential advocates for relevant policy changes. At this point, the community serves not only the needs of its members, but also those of surrounding organizations and society. They take active steps to link their efforts with established institutions and negotiate mutual alignment to increase the community's positive influence in the world.

Stewarding also means picking up on the growth theme begun during the maturing stage. While the community grows during the maturity stage, at stewardship, the community becomes even more strategic about where to grow and how far. Community leaders and sponsors may consider their vision of the ideal scope and scale of the community. Thus, the Rumble Strips Community knew right away it wanted to influence results in all 50 states. While the cross-agency communities began with 10 city pilots, their aspiration was always to grow nationwide. During the stewardship phase, communities begin more systematic efforts to pursue such growth strategies.

Typical community activities at the stewardship stage include establishing itself as a preeminent source of expertise and influence to achieve a specific objective (e.g., reduce gun violence); developing strong relationships with stakeholders (such as local, state, and federal agencies, legislators, and foundations); building world-class network tools and online resources; documenting their influence on results; and cultivating long-term, high-level sponsorship.

The Rumble Strips Community had many of the hallmarks of a stewardship-stage community. It took on a very specific, long-term strategic objective, well established in its field. It systematically marketed its initiative to all relevant members of its core audience—safety engineers in the federal and state governments (while also reaching out to stakeholders in other sectors). It established a robust social and technical infrastructure for connecting people and collecting (and managing) the best available content in the field (research, methods, directory of practitioners, calendar of events, etc.); the social infrastructure included funded roles for a community coordinator as well as a support team to provide coaching and technical assistance. Finally, the community took responsibility for developing ways to assess its contributions over time—a crucial commitment if it expects to sustain funding and support in the future.

Key management tasks:

- Support community legitimacy as a preeminent source of expertise in its field
- Work with community leaders as strategic partners to explore how to leverage capabilities more effectively inside the organization and in its markets
- Help community to develop self-funding mechanisms to sustain its growth and project-development aspirations
- Support community initiatives to institutionalize its capabilities—for example, setting standards in the field for capability benchmarks, professional certification, etc.

Stage 5: Legacy

The legacy or "transformation" stage can take several forms. It may simply mark the demise of the community as the topic morphs or loses relevance, members lose interest, or sponsorship evaporates. The community may not die out completely, but rather return to a lower level of activity—say the coalescing stage (or even the ad hoc, informal state typical during the discovery or "potential" stage). Alternatively, the community may split up along the lines of sub-topics, roles, or regions. The legacy stage may also mark the transition of a community into a more formal organization—a consulting group, for example, or a functional department in an organization. Finally, the community may reinvent itself and reframe what its domain is about as issues evolve. For instance, automotive engineers may decide to focus on electric motors rather than gas-powered, and begin all over again to discover the right diversity of skills, practices, members, etc.

It is common that communities of practice skip to the legacy stage whether or not they attain stages 2 to 4. In this case, all three cross-agency communities went from positions somewhere in the area of stage 2, and then directly to the "legacy" stage when they disbanded sometime after the administration changed. Their legacy includes their accomplishments, ongoing professional relationships, and the visibility and influence the networks have had as exemplars of national communities of practice.

Another model of transformation might have been a formalization of the networks as a new type of program. This didn't happen, although the Justice Department did name a new program "Safe Neighborhoods," which may in part have been a nod to SafeCities' successful efforts to engage local civic action groups in reducing gun violence. In the end, even if they had stabilized at the stage 2 level, the communities might have continued to have considerable influence. It is not clear, however, that members would have been satisfied with this. Network members were strong-willed and had high aspirations, and it is likely they would have lost interest had they not felt they were on a path toward the generativity and influence of a stewardship community.

Key management tasks:

- Negotiate and advise the community on how to manage the transition to new community topics or to new affiliations with formal organizations—at local, state, or federal levels, both governmental and non-governmental
- Help community find new sponsorship and support if they are vital and productive but in danger of collapse because they will lose crucial seed funding

Developmental Challenges

While the role of executives is important for strategic communities at all stages, this is particularly true as they are getting launched (from stage 1 to 2), and as they cross a threshold from the coalescing stage (where the focus is mostly internal among members) to the maturing stage, when the community becomes more focused on its role to build organizational capabilities and influence progress in the field.

All three cross-agency networks attained different degrees of stage 2 development, but all faced a steep challenge to move to stage 3. The developmental transition from stage 2 to 3 is truly a phase-change accomplishment. At this point, the knowledge assets and relationship capital of the community can be leveraged into projects, advocacy, and distributed membership with a much broader influence. The move to stage 3 can mark a significant expansion of the initiative. In this case, it could mean growing from one network of 10 to 20 or more networks of 10, with regional networks covering the nation and effectively building toward a stage 4 strategic capability to "influence the psychology and thinking of [the] nation" in their domain.

The position at the cusp of the transition from stage 2 to 3 is particularly delicate. Sponsor support is especially critical at this point. Depending on what level of support the network gets, it may enter a vicious or virtuous cycle of development—either a demoralizing regression or a transformative advance. A relatively small, incremental investment can have an inordinate impact on participant commitments, the production of new knowledge, innovation rates, and the growth of capabilities. These outcomes, in turn, drive increased interest, additional sources of funding, and growing influence on a broadening scale.

But this transition from stage 2 to 3 depends on key investments, and because sponsorship for communities of practice is so unfamiliar—and because the causal relationship between investments, capability, and the impact on results is not easy to track, few sponsors today are willing to make significant investments. The tragedy of this is that often it takes a relatively small investment, such as a single FTE, to move a community from a weak stage 2 to a vital stage 3 community, which then attracts additional sources of funding and support.

Private-sector firms that have sponsored dozens of communities over nearly a decade have seen patterns in community development related to investments of members' time and energy, staff support, and sponsor commitment. The presence or absence of a sponsor's incremental investment can affect a community's development spin, spurring a reinforcing cycle that can be either vicious or virtuous (see Figure A.3).[12]

The Effects of Incremental Investments and Cycles of Development

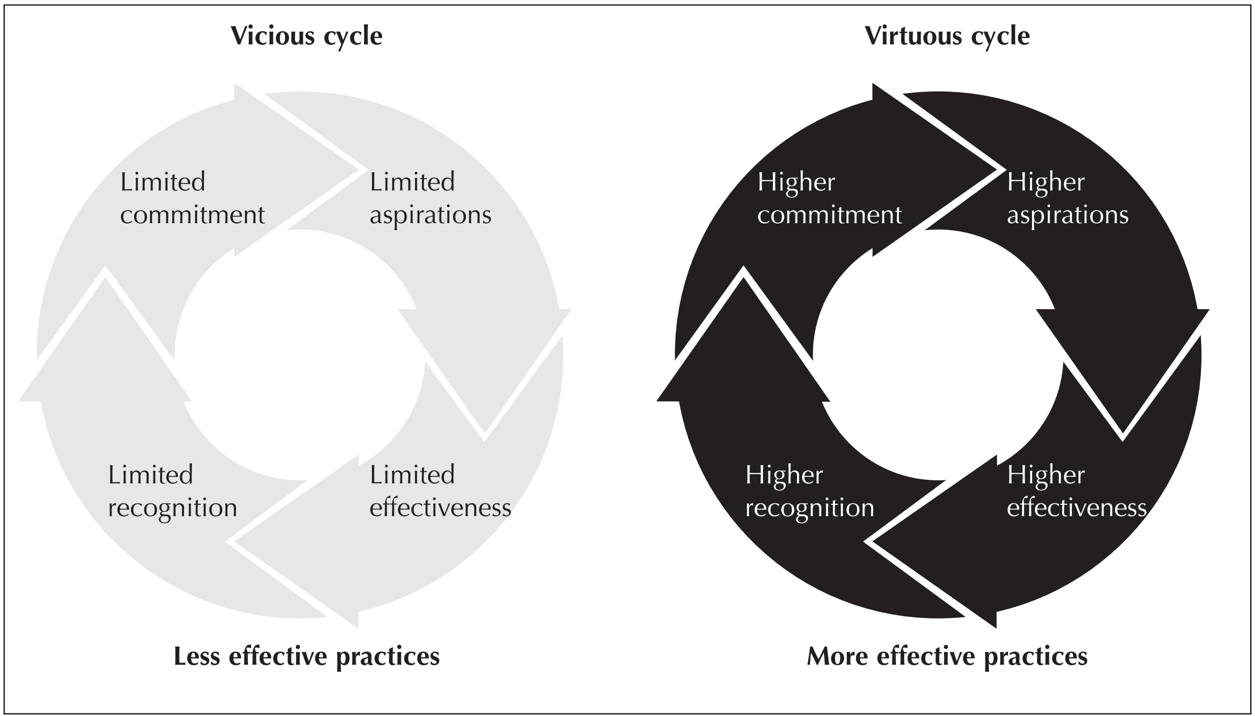
Vicious cycle: Spinning wheel without support:

- Insufficient sponsorship for funds, legitimacy, and influence
- Tenuous trust and sparse professional network with many missing links
- Spotty access to information, influence, and expertise; redundant overheads among local agencies
- Limited effectiveness and weak stakeholder support, ad nauseum

Virtuous cycle: Increasing energy getting results:

- High level of sponsorship fosters legitimacy, influence, and initiative
- Increased levels of trust and collaboration
- More building and sharing of information and expertise
- High impact on results, increased stakeholder support, and so forth

Figure A.3: Comparison of the Effect of an Incremental Investment on the Development of a Community of Practice



Thus, a relatively small investment at local, state, and federal levels can transform weak, ad hoc networks (both local and national) into powerful, self-sustaining communities of practice that achieve extraordinary results. It is remarkable how small an investment is required to catalyze 30 very busy, leading innovators from 10 cities nationwide to spend several hours a month learning new ways to solve problems, diffuse effective practices and lessons learned, and build stakeholder support and investments in local initiatives. The initial investment in these networks was only one full-time staff person. How often does the federal government get that kind of return on investment, leveraging the creative power of 30 local partners and an array of collaborating agencies for the price of one government staff member?

Appendix II: Going to Scale—The Evolution of Communities of Practice

Understanding Going to Scale

Once an agency or cross-agency community has been established and has demonstrated its ability to support results, sponsors may consider increasing investments to enable the community to address the full scope and scale of the issues included in its domain.

The federal government is in a unique position to cultivate an influential system of communities of practice that embrace a variety of problem or issue domains that span the nation. The challenge is to know what type of overall structure, as well as specific design elements and mechanisms, will allow the federal government to best leverage its unique assets. These assets include institutional legitimacy; knowledge and financial resources; infrastructure; influence over policy making, program design, and implementation; and a central role with sufficient scope and scale to serve as convener for organizing efforts in many domains nationwide.

The National Partnership for Reinventing Government conveners of the three networks discussed in this report were particularly interested in growing the scale of the networks, consistent with their national perspective. Despite some misgivings about going too fast, participants saw much value in going to scale, both in terms of their own learning as well as their ability to influence national and local results.

> "I'd like to see this go international. I'd like to talk to a bobby in London who doesn't carry a gun, or a policeman in Rome or Madrid. We have shared problems. They've got gun violence in the UK. You're more likely to be a victim of gun violence in London than New York City. And we've got officers here afraid to go to certain parts of our community."

> "There will come a point as this grows to scale that we will establish a critical mass to change the psychology and thinking and culture of the country about what we can do for kids and families."

Agency executives may also consider applying a community approach to an active program they are already rolling out. For example, Scanlon (2003) reports on a massive HHS campaign to get commitments from 3,000 communities nationwide. The case describes an approach much like a political campaign or systematically planned social movement. It reports how a group in HHS applied "social marketing" and highly visible events in local communities to get stakeholder commitments to address health access limitations and treatment disparities among diverse socioeconomic populations. The case does not address the practices that local communities will need to develop—such as coalition building; GIS mapping; analysis of patterns of access/disparity gaps; and alliance agreements between hospitals, clinics, employers, and social services agencies.

A community-of-practice approach could address the challenge to build capabilities in local communities. It could also spur the dissemination of best practices and innovations across a constellation of local communities who agree to form a community of practice together. In fact, HHS considered just this. As Boost4Kids was looking for an agency sponsor under the new administration, they began negotiations with HHS to take on the 100% access/0% disparity challenge as one of the key strategic objectives of the community. Had the alliance been implemented (HHS could not commit the staff, as it turned out), it would have been a terrific action-learning experiment to show how an intercity community of practice focused on healthcare could complement a social marketing campaign to increase attention and diffuse methods related to national healthcare objectives.

The three cross-agency communities, in particular, outline a powerful mechanism for going to scale while retaining the success factors observed in initial groups: local legitimacy and momentum; practitioner connectedness; learning and innovation; and visible contributions to civic outcomes. (Other communities described here also operate at a large scale, including the Rumble Strips, CompanyCommand.com, and Procurement Program Management communities—but the potential scale in those cases is not nearly as large as the cross-agency communities, which—like the HHS initiative—could include 3,000 county regions nationwide (and, eventually, cities on an international scale[13]). The cross-agency examples further suggest what a national rollout of these initiatives might look like—where equivalent network configurations exist at national, state, and local levels:

- *State networks:* Members of Boost4Kids' "California cluster" discussed a future scenario under which they would serve as the core group for starting up a state-based replication of the Boost4Kids model. Both the Vermont and Georgia coalitions were part of state-based networks with goals similar to Boost4Kids—also functioning as knowledge sharing and collaboration forums. Many problems that local coalitions faced were state related, not federal. The development of state-level networks could be a powerful lever for a national new-governance model.
- *Local networks:* The coalitions themselves operated as networks at the local level. Generally, their explicit focus was on specific project-based collaborations rather than on knowledge sharing and ongoing innovation. But a local coalition's commitment to learning is essential if diverse constituencies are going to achieve a shared understanding of relevant issues and build new relationships across long-standing divides.

The "going to scale" problem statement:
How do you significantly increase the scale of a community of practice initiative without losing core elements that members considered important—personal relationships, direct access to well-connected federal officials, and special recognition and access to learning opportunities?

Although network members hoped these initiatives would have national impact, they were generally averse to growing much beyond their original numbers. They, like the NPR sponsors, were unsure how to expand a model that depended so much on personal relationships and direct access to senior officials in the federal government.

> "We're very loathe to see bigger as better. When programs expand, they expand into oblivion, so how to expand the sphere of influence without expanding the program? The strength of the program is that it is relatively small, with one-on-one relationships with each other and people in Washington."

> "I am fearful that expansion beyond 13 will make it difficult to have dialogue; I don't want to go to lecture-hall mode where it is information dissemination and not a dialogue or small enough to build relationships."

There are a number of considerations relevant to scaling networks from local to global levels. The challenge is to frame the problem not merely in terms of increasing the size of the initiative, but rather by *expanding and replicating its current structure and context both horizontally and vertically—horizontally by going across regions and vertically by creating second- and third-order "communities of communities."* The point is to find ways to keep the essential functions of the network—influence, access, peer-to-peer learning with leading practitioners—while constructing a system of networks that can scale to a national level.

A Federalist Model for a National "Community of Communities"

The ability to scale these networks from single instances to a system of such networks on a national level could mean leveraging a "fractal" design. Fractal structures are characterized by substructures that have similar design features, such as the undulating edge of a coastline or the pattern of a river's tributaries that appear similar when sampled at various lengths (Wheatley, 1994, pp. 80-86, 130-133). Large networks, for example, often have major hubs with many links among them as well as with smaller hubs. These smaller hubs, in turn, are linked to each other and to still smaller clusters—and so on. Each size hub looks similar—each has the same ratio of nodes and satellite links. (See Figure A.4.) Applying such a design principle, it is possible to create a small-community feeling while extending a network at local, state, and national levels. In this case, it is possible to grow a "community of communities" in which each level of sub-communities share basic characteristics: a similar set of focal issues, shared values, and a common practice repertoire.

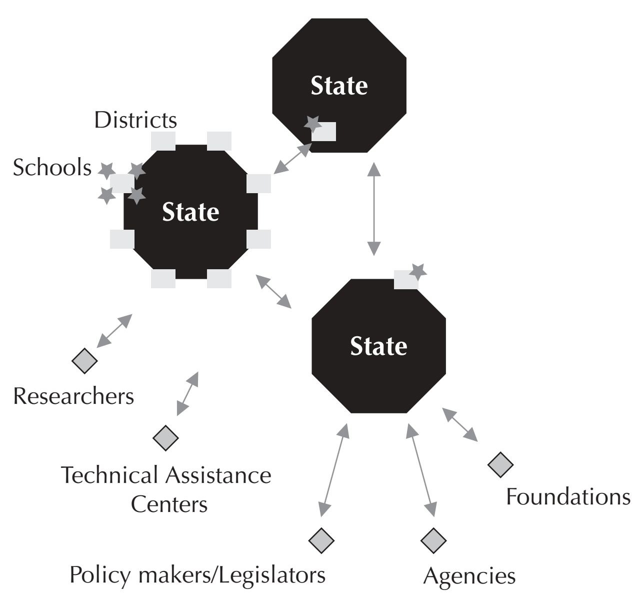
In network analysis terms, the fractal approach applies the advantages of "scale-free" networks (Matlis, 2002; Watts, 2003). In scale-free networks, a unique fractal configuration is repeated over and over. This is not merely a randomly dispersed network that exists at a national scale. Rather, the component networks—at each level—take on a specific configuration that prepares them for a clear path to replication.[14] At the lowest level (the initial "first order" network that includes approximately 10 local coalitions, as in the case of the cross-agency communities described in this report), there is a coordinator for every 10 or so local coalitions. Moving "horizontally," additional community networks can be created—each with their own coordinator and 10 or so local coalition partners. As these additional networks accumulate, a higher-level (now moving "vertically") second-order network of coordinators emerges (as it did in the NPR case; and as it has in the context of a Special Interest Group made up of community coordinators who are leading communities based in various federal agencies[15]). This second order of network coordinators helps ensure that the first-order networks are led effectively, and that they take advantage of opportunities to leverage shared investments—say in a training program, satellite broadcast, or website. They can also help network members enjoy the

Figure A.4: A Fractal Model for Going to Scale—Cultivating Communities at Local, State, and National Levels

Cultivate communities at multiple geographic levels: nation, states, districts, and schools

Define cross-hatching community domains by:

- Roles—e.g., professional development for principals/teachers
- Methods—e.g., technology in schools
- Curriculum—e.g., math and literacy methods
- Context—e.g., urban schools



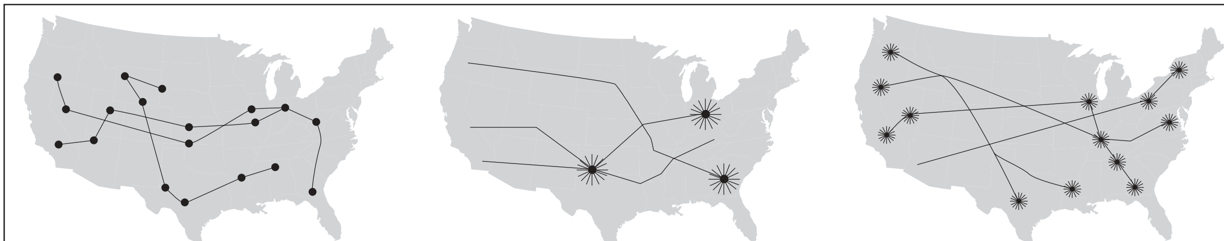
same influence and access to officials at various levels as the original NPR groups did. Meanwhile, network benefits are maintained, including opportunities within each network to build professional relationships with other innovators, to share ideas, and to get help and encouragement for implementing new approaches.

As the overall "network of networks" grows, the ratio of the number of connecting nodes to the number of hubs stays the same. (See Figure A.5.) It is always about 10—at each level. Whenever the number of individual baseline networks reaches about 10, then a new second-order network is launched. For example, if there are 10 SafeCities community networks nationwide (each of which has 10 or so local coalition partners), there would be a single second-order network of coordinators representing the 10 networks. If another five baseline networks get started, they would organize their own network of coordinators. At some point, there may be enough second-order networks (say three to five) to justify a third-order network.

In this way, a fractal network of networks could link hundreds of individual networks at different levels of aggregation. Across levels, various networks might collaborate on projects such as the development of a measurement instrument or policy recommendation. Other role-based groupings may emerge—mayors leading citywide initiatives, for example, or executive sponsors at the state and federal levels.[16]

The key insight of this design is that crucial features of these networks can be maintained, no matter how many participants join—as long as the basic configuration, organizing principles, and ratio of links to nodes is maintained. This fractal scaling approach allows the power of both the overall network and the influence at local levels to increase significantly. Networks can take several steps to maintain the essential nature and benefits of a single network while scaling up. For example, they can facilitate trust and sharing across networks by organizing occasional large-scale events (annual conferences, satellite broadcasts, etc.) where members throughout the broader set of networks attend.

Figure A.5: An Evolution Toward Increased Network Instances at a National Scale



Stage 1: 3 NPR networks—SafeCities, Boost4Kids, and 21st Century Skills—operating in 34 cities or regions. Options:

- Consolidate development of current networks at next level of maturity
- Create "meta-network" for current network conveners on topic of how to foster networks and leverage knowledge for results
- Build active, informed involvement of sponsor and stakeholders to support growth and further strategic development of these networks

Stage 2: Spawn regional chapters of current networks

- Share knowledge assets and publicize successes by inviting charter members and non-members to satellite broadcasts, website, and annual conferences
- Staff network conveners to guide and develop regional networks; conveners join a growing meta-network focused on how to foster successful learning networks
- Garner increased attention and support from state, local, and federal agencies, foundations, and nonprofit organizations

Stage 3: Add new networks and continue to spawn regional chapters until covering both national scale and broad scope of socioeconomic issues (public safety, families, workforce, environment, etc.)

- Build technology infrastructure, templates, and software to facilitate network formation
- Continue devolution of policy and program administration to local level
- Launch "executive networks" of mayors who want to develop their clients as "intelligent communities" that cultivate a constellation of local coalitions on various topics

The payoff for creating such an extensive, multi-tiered network is that it provides a magnificent learning laboratory to identify emerging issues and test proposals in practice with motivated sites. This natural laboratory leverages innovations and replication efforts throughout a national network of local coalitions who are ready and willing to share results quickly and convincingly with peers and stakeholders, and who can then help to translate these quickly into better policies and improved results.

The key challenge for skeptical pilot-community members is not "how will I get influence without direct contact," but rather "can I trust that a broader 'community of communities' can serve our local purpose as well as it does a national purpose?" The answer is, of course, "It all depends." Mostly it depends on the networks at all levels—local, state, and national—to establish a culture of trust, reciprocity, and shared values (i.e., social capital). This is the critical success factor for going to scale. And it highlights the importance of a kind of meta-community that helps the network gauge the pace and methods of growth, and the need for a strong sponsor board to provide help along the way. Sponsorship is especially important for the large-scale events that will be required as additional activities in the ecology.

Scaling is itself a "second-order" problem and a long-term challenge. The first step, of course, is to launch pilot initiatives to see what a community-based approach can do to promote agency objectives. These early experiences and related lessons learned and staff capabilities provide a robust foundation for growing and scaling the initiative over time. Finally, as the theory of communities of practice would suggest, agencies are more likely to learn quickly about launching and scaling community-based initiatives by forming a community of practice on the topic itself—one that includes key players such as executive sponsors, support team members, and successful community coordinators.

Role of Federal Government in Going to Scale

These considerations for scaling community-of-practice initiatives beg the question of whose role it is to lead the charge. For a variety of reasons, the federal government is uniquely positioned to help foster the evolution of nation-scale community-of-practice networks through five principal mechanisms: 1) leveraging infrastructure efficiency; 2) promoting agency learning and alignment; 3) diffusing learning and innovation across states and nations; 4) establishing standards for measuring performance outcomes; and 5) modeling an approach for diffusing ideas and methods that can be used at state and local levels.[17]

1. ***Leveraging infrastructure efficiency***
   - Serve as broker (or direct source) of investments in shared infrastructure for communities of practice that are addressing an array of domains (education, economic development, health, housing, public safety, etc.) nationwide. Social and technical infrastructure investments include online facilities, support staff, strategic partnerships with vendors, conference planning, etc.

2. ***Promoting agency learning and alignment***
   - Foster opportunities for learning among various agencies and between them and local and state constituencies. Community-of-practice initiatives enable local coalitions to learn more about agency policy and programs, while agencies learn more about the impact of programs at the local level. This multi-directional learning activity creates opportunities to improve policies and programs, as well as partnership agreements to implement them effectively.
   - Engage senior agency and congressional staff and representatives to shorten the policy development and improvement cycles based on experience in the field.

3. ***Diffusing learning and innovation across states and nations***
   - Leverage the legitimacy and visibility that the federal government can provide to local and state initiatives. Make much of its ability to give initiatives the aura of a "national priority"—especially with brand approval of high-level cabinet and executive office affiliations.
   - Facilitate international exchanges through established federal mechanisms for connecting internationally, such as offices and initiatives managed by the State Department, Department of Commerce, U.S. military services, and others.

Going to Scale: Options

For agencies that are ready, there are a number of mechanisms for building a scaled-up community-of-practice initiative that achieves impact at both local and global levels. Briefly stated, here are options to consider:

- *Establishing a foundation* of strong shared vision and values., including cross-community commitments to social norms and a collective vision of what their domain is about.
- *Multi-membership:* Members join first at the level of local baseline networks (the equivalent of "demes" in the place-based model of community governance in ancient Greece). But as the ecology of networks evolves along topic or role dimensions that span geographies, members may participate in communities at multiple tiers (the equivalent of the tribe, which includes 10 demes, or the Council of 500, which includes 50 representatives from each tribe) in ways that help interweave relationships in the broader community. (In fact, civic leaders may participate in communities of practice across domains—for example, both workforce development and public safety—and thus help connect themes, people, and practices across various dimensions.)
- *Shared technical infrastructure:* Communities of practice benefit from at least a minimal communications and knowledge-capture infrastructure, including a website, listserv, etc., for posting and commenting on local achievements, questions, news, etc. Ideally, such an infrastructure is designed for easy access and use both within and across networks. Longer term, it makes sense to use a common set of infrastructure facilities and tools to facilitate interoperability problems and reduce behavioral hurdles to users—learning how to use multiple tools, remembering passwords, etc.
- *Events at various levels*: Events can be designed to include communities across regions and at multiple tiers—local, regional, national. They may also be organized to include communities focused on different domains to encourage cross-pollination of ideas and to weave relationships that facilitate the flow of insights and methodologies across communities of all types. These events may be either face-to-face or virtual (using satellite technology, for example); synchronous or asynchronous (e.g., using computer-mediated discussion forums, or a grand tour in which members of various communities participate in a sequence of peer-to-peer visits across communities in various localities).
- *Subdivide along various dimensions*: geography, topic, role, and others. Topical and role-based subgroups provide a way to connect members across regions—strengthening the overall fabric and connectedness of the entire network.
- *Logistical support infrastructure:* Helps with local event planning, identifies resources, and coordinates projects at local levels and beyond.
- *Creating a "brand":* Participation is a recognized achievement, even if you are not the only group of its kind. Many members of the cross-agency communities mentioned the power of the brand of the network as having a positive effect on their credibility and influence at the local level.
- *Subsidiarity:* Where problems can be solved locally, they are. When they need regional or national attention, members can escalate the issues through mechanisms they develop within and across participating chapter communities. Local communities are likely to have much more influence and credibility for issues they raise to the federal level because they have been vetted by a representative group before being escalated.
- *Timescale:* Finally, the evolution of such a structure needs to be paced at the timescale consistent with building social relationships, not according to political impetus to demonstrate results immediately. Reconciling this with the realities of political life is invariably tricky. It is important to ensure that first-order communities have achieved a sufficient level of effectiveness and cohesion to build on. Many e-commerce start-ups during the dot-com era failed because they sought to make big revenues too quickly. We have learned, in that context and others, that it is important to focus on "community before commerce" in order to establish a foundation for sustained growth. This lesson applies to communities who grow too fast before they are ready for the sake of making a dramatic impact.

4. ***Establishing standards for measuring performance outcomes***

- Measuring results is key to the sustainability, scale, scope, and speed of innovation initiatives. Measures that make communities' influence on results visible are as instrumental for gaining peers' interest as they are for gaining sponsors' attention and investments (and these two are not unrelated). As already mentioned, the issue is *how* to measure, not whether. The federal government can help research, legitimize, and provide ongoing renewal for measurement approaches. It can also provide a way to publish results—perhaps something like a Bureau of Census version of the JD Power Quality reports—as a way of communicating the "state of the nation" in terms of civic capabilities within and across cities and regions.

- Maintaining national measurement standards is a traditional role for the federal government in many areas, such as air quality, weather, demographics, disease, and economic indicators. Establishing a strong foundation for measures of civic capabilities (in areas such as education, health, and economic development) would help to spur innovation and direct resources to innovators who were best able to achieve results.

5. ***Modeling an approach for diffusing ideas and methods***

- Model cross-agency, cross-sector, cross-level, participative governance approaches, and demonstrate this on a highly visible national scale as a way to influence and guide governments at state and local levels (as well as international). Provide a forum for "meta" learning across various networks—establishing a home base for learning about the skills, tools, methods, frameworks, and lessons learned that can help leaders at any level launch successful community-of-practice initiatives.

Appendix III: Communities of Practice as a Type of Collaborative Model

It is important to identify the basic structural elements of communities of practice as a basis for thinking about how to replicate, expand, and develop them further. What is the unique nature of this type of network? How do the main structural dimensions—domain, community, and practice—help to distinguish communities of practice from other types of networks? Finally, what does such a structural analysis tell us about how to assess their health and effectiveness—and help craft interventions for improving the vitality of community-of-practice networks?

In recent years, there has been an explosion of research and practical initiatives related to various types of networks. Network theory has drawn comparisons between patterns in social networks and those found in nature (for example, neural networks in the brain) and man-made systems (such as power grids and the Internet). Research applications have led to the development of mathematical and computer-based analyses that can identify structural elements such as "weak ties," "structural holes," and "rich hubs" (Watts, 2003). Generally, however, these rigorous theoretical works on network theory do not provide practical applications of their models to organizational case studies. The work by Robert Cross and colleagues (2001) is an exception.

Organization research and consulting have demonstrated the transactional efficiencies and knowledge-based advantages of interorganizational networks in the private and nonprofit sectors (Nohria and Eccles, 1992; Keyes, et al., 1996) and increasingly in the public sector (Agranoff, 2003; Kamarck, 2002). Meanwhile, more attention has been paid to interpersonal networks as mechanisms for communication, dissemination of ideas, and finding help to solve problems (Gladwell, 2000; Borgatti and Cross, 2003; Wellman, 1999). This work overlaps with organization research on professional networks, which, as mentioned earlier, are called by various names, such as "knowledge networks," "learning communities," and "communities of practice." Detailed research in this area is quite new, and there has been very little done to date related to applications in the governmental and civic sectors.

Communities of practice are distinctive as networks in large part because members feel a *communal commitment to steward practice development in a knowledge domain*—say, java programming, thoracic surgery, or "results for kids." Such a community focuses on compelling issues (*"a knowledge domain"*) that practitioners care about; cultivates a community of thought leaders, peers, and apprentices who want to connect with each other (*"communal commitment"*); and builds the tools and methods that practitioners use, while also capturing case studies and the stories they tell (*"steward practice development"*).

These key features of communities of practice—issue *domains, community* members, and shared *practices*—provide a framework for distinguishing at a structural level two broad types of networks—"discursive" and "community"—which are defined in terms of the relative degree of communality or mutuality in the network:

1. Members of *discursive networks* do not share a strong collective identity among themselves. This resembles something like a "six degrees of

separation" model, where one member knows somebody who knows somebody, etc.—without necessarily sharing any particular set of common values or interests.

2. Members of *community networks* share a sense of belonging and communal identity—such as a veterans association chapter, members of the local "dance community," or an online discussion group talking about ways to treat diabetes.

A more common way to categorize networks is by their functions. The "discursive-community" distinction is emphasized here because it highlights a fundamental structural distinction between communities of practice and the more familiar notion of networks. Networks may play a number of functions. Transaction networks trade goods, services, and "transactional" information (such as a job lead or investment opportunity); advocacy networks lobby for common causes; communities of interest enjoy shared interests and affiliations; and communities of practice build and share knowledge together. Transaction functions related to goods and services at either retail or wholesale levels depend greatly on network relationships.

When network roles are highly heterogeneous and the focus is on making transactions, there is little emphasis on building skills and capabilities together. In community-oriented networks, by contrast, the emphasis is on connecting people as a collective. In communities of interest, this means people with shared affiliations (for instance, college alumni) or interests (talking about mystery novels) (Wenger, et al., 2002, p. 42). The hallmarks of a community of practice that make it distinctive are that members both recognize themselves as a community and have a collective commitment to share and steward a practice. They are people who *write* the mystery novels, not merely fans who like to read them.

In practice, there are fuzzy boundaries between these types. Many networks display both "discursive" and "communal" qualities Communities of practice generally have a layer of "peripheral" members who are loosely attached to the more active core of participants—and therefore are less likely to have a collective sense of belonging. Conversely, conventional discursive networks will often have pockets or hubs where participants do feel a sense of mutuality—whether along lines of commerce, affiliation, or practice. Networks might also concurrently serve multiple functions, although generally they emphasize one kind or another. If a community-of-practice network, for example, becomes too transactional, then members may be less generous sharing time and expertise with each other—thinking, perhaps, there should be a direct quid pro quo.[18] But different types of networks can also be complementary. Members of a community of practice can become insular or "provincial"; their relationships with others in more discursive networks help to remind them of outsiders' views and provide leads to new ideas that expand a community's learning agenda.

The collaborative learning networks described here most resemble the "community of practice" model. Yet, they also show signs of activity that could be thought of in terms of the transaction or advocacy functions of networks (for example, getting access to senior officials who allocate funds or talking together about ways to influence agency policy).

Managed well, a network can perform multiple functions and take advantage of the complementarities that are possible. Transactional and advocacy interests invite knowledge-sharing connections; and a communal sense of identity and belonging among practitioners can facilitate transactions and joint advocacy initiatives that rely on trust and reciprocity. The danger for community-of-practice networks, as stated, is that commerce and advocacy will crowd out community- and knowledge-building activities. John Hagel, an authority on the e-commerce revolution, concluded that many of the dot-coms failed because they put "commerce before community." In the end, community members need to have a nuanced appreciation of a community's overall purpose, member interests, and its stage of development in order to balance the configuration of functions it can play (Harmon, 2001).

Appendix IV: Notes on Research Methodology

The research approach to the three NPR-based cross-agency cases described in the report was primarily qualitative, with significant participative observation and action-research dimensions as well. The first author was a consultant to the three cross-agency communities and participated in conversations with coordinators and members that influenced the communities' design and evolution over time.

- Primary research included approximately 75 interviews with community members and federal agency coordinators, champions, and sponsors
- Extensive interview notes and initial findings were summarized in three separate documents—each focused on a particular community—Boost4Kids, SafeCities, and 21st Century Skills. These reports were read and vetted by community coordinators and participants, who offered corrections where appropriate and discussed the reports with the first author in teleconferences and face-to-face meetings.
- Participation in activities supplemented formal interviews. These activities included conversations and presentations at face-to-face meetings and teleconferences, as well as formal and informal conversations with members and coordinators.
- Additional research included reviews of website materials; artifacts such as the original recruitment letters in the Federal Register; teleconference notes; listserv announcements and exchanges; presentation slides from face-to-face meetings; materials on local initiatives provided by members; member reports on accomplishments sent in to the federal coordinators; reports from academics, internal reviews (including material in a book written by Lynn Kahn, one of the coordinators); and analogue organizations (such as the Social Exclusion Office in the UK).

Qualitative methods were used to gain a "thick description" of these cases and to help to identify themes and patterns to explore when quantitative data were insufficient. Tables and other displays of primary interview and archival data were created to identify themes and provide supporting evidence. (These are available in documents created in preparation for this report.)

Research on the internal agency communities (such as the Rumble Strips Community, the Program Management Community of Practice (PMCoP), and CompanyCommand.com) and additional cross-agency communities (such as the e-Reg Community) was conducted in the context of a separate study that included over 20 interviews with members, consultative conversations and presentations, and reviews of internal community reports on activities and results.

Endnotes

1. Thanks to Noel Dickover for providing a synopsis of the Program Management Communities of Practice, upon which this brief description is based. See also: http://www.dau.mil/communities.asp

2. Thanks to William Bennett for providing a synopsis of the E-reg community of practice, upon which this brief description is based. See also: Wenger and Snyder (2003) at http://www.km.gov

3. Thanks to Pete Kilner and Nate Allen for providing a synopsis of the CompanyCommand community of practice, upon which this brief description is based. See also: http://www.companycommand.com/

4. Lynn Kahn, a member of the NPR team, reports revealing statistics that support Ross's point: "Fifteen agencies have responsibility for food safety; 144 major federal programs support children and families; and 154 federal offices have employment and training programs…. States and localities have the same problems…. Florida addresses juvenile crime with 200 activities spread across 23 state entities...." (2003: 98). Margaret Dunkle conducted the study that helped to substantiate Ross's argument. She documented how tangled is the plethora of siloed federal, state, and local programs that provide social services to families in need. See: http://www.childrensplanningcouncil.org/photopages/understanding_systems/showphotos3.asp.

5. The term "convener" is occasionally used in this report to refer to NPR community coordinators, particularly in reference to those who played multiple roles (such as Pam Johnson, Beverly Godwin, and Lynn Kahn), including community coordinator, agency champion, and internal consultant (also called "support team" in this report).

6. http://www.socialexclusionunit.gov.uk

7. Center-of-excellence programs in organizations are increasingly gravitating from a hub-and-spoke model, where the center captures best practices and disseminates them to the field, toward a peer-to-peer, community model that facilitates peer-to-peer exchanges among practitioners and collective responsibility for stewarding innovation (Moore and Birkinshaw, 1998).

8. This review of the Rumble Strips Community closely follows a report by Michael Burk, who was a principal organizer and heads up FHWA's Knowledge Management office. The office provides a common technical infrastructure for FHWA communities of practice, and members of the KM office have served as the support team for a number of them. His report is available at: http://www.km.gov/stories/FHWA_Rumble-Strips.doc

9. Many successful local civic coalitions have been spurred to action by a crisis. For example, the highly effective 10 Points Coalition for reducing juvenile violence was started in Boston when a gang member killed another during a funeral (being held for still another gang member). In another case, a civic coalition was formed in Silicon Valley during the 1990s when hard times hit the high-tech industry. Another in Cleveland was spurred when the Cuyahoga River caught on fire.

10. A leader of a community-of-practice initiative at DaimlerChrysler related that a local civic coalition in his town, Kirchheim unter Tech, riled the local city council to such an extent that the council attempted to undermine the group's credibility in the town. But the citizenry stood up to them and further increased the influence of the civic group and its various project-focused subgroups.

11. Kahn, the lead coordinator for the 21st Century Skills Community, builds on her experience to describe a governance model characterized as "democracy as a living system." She argues that "[i]n the 21st century, the basic building blocks of government are learning networks joined together as communities of practice to

improve results in a specific domain and cement in place the missing feedback loop between local results, national success and government policy. In places large and small, in all domains of democracy, this combination can achieve what hierarchy alone has failed to do—get results people care about" (2003: 158).

12. Thanks to Nathaniel Foote for this figure, which summarizes an aspect of his analysis of performance drivers for communities of practice at McKinsey & Co. (published in Wenger et al., 2002: 165.)

13. The Ayuda Urbana community of practice (www.ayudaurbana.com) was originally sponsored by the World Bank and includes a number of mayors and deputies from the capital cities of Central American and Caribbean cites. They address a variety of topics, such as urban slums and infrastructure (Wenger et al., 2002: 229). Another international case is one that included over 100 cities in developing countries worldwide that came together to reduce the human and financial costs of natural disasters (http://www.unisdr.org/unisdr/radius/leaflet.htm).

14. Examples of organizations that have used fractal structures to foster learning and innovation in large global communities include ones organized by Shell Oil petroleum engineers and McKinsey and Company consultants (Wenger et al., 2002: 126-128).

15. A number of community leaders of agencies in the federal government participate in a "meta-community" for community-of-practice leaders in the federal government. They have organized what they call a "Strategic Interest Group (SIG)," that has organized relevant documents and posts a calendar of events in an online repository used by a broader group interested in "knowledge management applications" (http://www.km.gov/cop/cop.html).

16. This model of radically participative democracy correlates with the original Western model of democracy that evolved in Athens 2,500 years ago, where 140 "demes" of citizen leaders governed at the village level; the demes were organized into 10 "tribes," each of which in turn chose 50 representatives from various member demes to participate in a governing Council of 500 members. Finally, an assembly body, open to all citizens, participated in the most important decisions of the state, including whether or not to go to war (Manville and Ober, 2003: 68-76; 103-104). This multi-tier governance network constitutes the original model of Western democracy—and provides a working model for the federated fractal model described here. Only in this case, the overall framework is organized by communities of practice as well as place—where practice-based communities can help to recover many of the original dimensions of a radically democratic model of governance that was developed in ancient Athens and has been an inspiration to nations of the world ever since.

17. In recent papers on the role of the federal government with respect to network forms of organizing, both Agranoff (2003) and Klitgaard and Treverton (2003) outline several functions that the federal government is uniquely positioned to provide: information clearinghouse, civic legitimacy, communications infrastructure, and overall convener (with both a national scale and a scope that covers the full terrain of civic-practice domains).

18. Putnam (1993) distinguishes two types of reciprocity—"direct," where the quid pro quo is expected, and "generalized," where no immediate trade is expected; nor is it expected in relation to a specific person. This latter type of reciprocal relationship corresponds to an expectation that "what goes around comes around," and is a hallmark of a culture that has a high level of "social capital."

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ABOUT THE AUTHORS

William M. Snyder is Managing Director of Social Capital Group, a research-consulting group that helps civic leaders organize community-based approaches to social and economic development. He is a co-founder (with Etienne Wenger) of CPsquare, an association of practitioners cultivating communities of practice in private, public, and nonprofit sectors. He has consulted for 20 years on large-scale organizational change efforts in the private and public sectors, and worked at McKinsey & Company on strategic knowledge initiatives for the firm and its clients. His research focus is on community-of-practice applications in organizations and civil society—at city, cross-city, and international levels.

Snyder's publications include "Communities of Practice: The organizational frontier," *Harvard Business Review* (January-February, 2000) with Etienne Wenger, and *Cultivating Communities of Practice: A guide to managing knowledge* (Boston, Harvard Business School Press, 2002) with Etienne Wenger and Richard McDermott.

Snyder holds A.B. and Ed.M. degrees from Harvard and a Ph.D. from the University of Southern California.

Xavier de Souza Briggs is the Martin Luther King, Jr. Visiting Fellow in Urban Studies and Planning at the Massachusetts Institute of Technology (2002-2004) and Associate Professor of Public Policy at Harvard University's Kennedy School of Government. He has conducted nationally awarded research on young people, housing desegregation, and economic opportunity. In the world of practice, he has been a community planner in the South Bronx; a senior adviser on economic development, affordable housing, and regional change to the White House and Congress while in the federal government; and a consultant to leading national and international organizations.

A sociologist by training, Briggs teaches urban policy and planning, community problem solving, negotiation, and strategy. His current research focuses on making diversity work incities, issues of housing and urban inequality, and democratic problem solving at the local level. He is a member of the Aspen Institute's roundtable on community change and an adviser to the World Bank's Community Empowerment and Social Inclusion Project and other policy groups. Briggs holds an engineering degree from Stanford, an M.P.A. from Harvard, and a Ph.D. from Columbia University, and has held fellowships of the National Science Foundation and American Sociological Association.

K E Y   C O N T A C T   I N F O R M A T I O N

To contact the authors:

William M. Snyder
Managing Director
Social Capital Group
41 Bowdoin St.
Cambridge, MA 02138
(617) 498-0903

e-mail: wsnyder@socialcapital.com

Xavier de Souza Briggs
Associate Professor of Public Policy
Harvard University
John F. Kennedy School of Government
79 JFK Street
Cambridge, MA 02138
(617) 496-2776

e-mail: xavier_briggs@harvard.edu

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For additional information, contact:
Mark A. Abramson
Executive Director
IBM Center for The Business of Government
1616 North Fort Myer Drive
Arlington, VA 22209
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