



IBM Center for  
The Business of Government

Collaborating Across  
Boundaries Series

# Engaging Citizens in Co-Creation in Public Services

## Lessons Learned and Best Practices



Satish Nambisan  
Priya Nambisan  
University of Wisconsin-  
Milwaukee

# Engaging Citizens in Co-Creation in Public Services: Lessons Learned and Best Practices

**Satish Nambisan**

Professor of Entrepreneurship & Technology Management  
Sheldon B. Lubar School of Business  
Professor of Industrial and Manufacturing Engineering  
College of Engineering & Applied Science  
University of Wisconsin-Milwaukee

**Priya Nambisan**

Assistant Professor  
Department of Health Informatics & Administration  
College of Health Sciences  
University of Wisconsin-Milwaukee





# Table of Contents

<b>Foreword</b> . . . . .	4
<b>Executive Summary</b> . . . . .	6
<b>Introduction</b> . . . . .	8
<b>Citizen Co-Creation in Public Services</b> . . . . .	12
Four Roles for Citizens in Co-Creation . . . . .	13
Mechanisms and Infrastructure for Co-Creation . . . . .	14
<b>Citizen as Explorer</b> . . . . .	18
Identifying and Reporting on Problems . . . . .	18
Contributing Data on Potential Problem Areas and Issues . . . . .	21
Analyzing Data and Discovering Problems or Patterns . . . . .	22
Recommendations for Citizen Explorer Initiatives . . . . .	23
<b>Citizen as Ideator</b> . . . . .	25
Conceptualizing Solutions for Narrow, Well-Defined Problems . . . . .	25
Conceptualizing Solutions for Broader Problems . . . . .	28
Recommendations for Citizen Ideator Initiatives . . . . .	29
<b>Citizen as Designer</b> . . . . .	31
Virtual Design and Prototyping Tools . . . . .	31
Data Mashups . . . . .	32
Participatory Design Workshops . . . . .	34
Recommendations for Citizen Designer Initiatives . . . . .	35
<b>Citizen as Diffuser</b> . . . . .	36
Online Citizen Communities . . . . .	36
Virtual Innovation Experience Centers . . . . .	38
Recommendations for Citizen Diffuser Initiatives . . . . .	39
<b>Strategies for Creating an Environment for Co-Creation</b> . . . . .	41
Strategy One: Fit the Approach to the Innovation Context . . . . .	41
Strategy Two: Manage Citizen Expectations . . . . .	42
Strategy Three: Link the Internal with the External . . . . .	44
Strategy Four: Embed Citizen Engagement in the Broader Context . . . . .	45
Conclusions . . . . .	45
<b>About the Authors</b> . . . . .	47
<b>Key Contact Information</b> . . . . .	49

## Foreword

On behalf of the IBM Center for The Business of Government, we are pleased to present this report, *Engaging Citizens in Co-Creation in Public Services: Lessons Learned and Best Practices*, by Satish Nambisan and Priya Nambisan, University of Wisconsin-Milwaukee.

Professors Nambisan and Nambisan present an innovative framework from which to view citizen “co-creation,” which refers to the development of new public services by citizens in partnership with governments. The authors present four roles that citizens can play in the co-creation of public services: explorer, ideator, designer, and diffuser, with examples of citizens playing each of these roles.

This report continues the IBM Center’s interest in the concept of public service co-creation and co-delivery. The report, *Beyond Citizen Engagement: Involving the Public in Co-Delivering Government Services*, by P.K. Kannan and Ai-Mei Chang, provided a guide for introducing and implementing a co-delivery initiative. Taken together, these two reports are on the forefront of increased insight into how governments can improve services through co-creation and co-delivery.

In their report, Professors Nambisan and Nambisan note that numerous forces are redefining citizen roles in the public sphere, “a shift from that of a passive service beneficiary to that of an active, informed partner or co-creator in public service innovation and problem-solving.” The authors offer four strategies for government leaders who wish to encourage citizen co-creation. They are:

- Fit the approach to the innovation context
- Manage citizen expectations
- Link the internal organization with the external partners
- Embed citizen engagement in the broader context

In addition to the Kannan and Chang report, the IBM Center has also sponsored a series of other reports that address specific approaches to co-creation and co-delivery. Two (*Challenge.gov: Using Competition and Awards to Spur Innovation* and *Managing Innovation Prizes in Government*) address how the



Daniel J. Chenok



Lisa K. Yarbrough

federal government is using competitions to engage citizens in the development of new ideas and new products. A third, *Federal Ideation Programs: Challenges and Best Practices*, discusses how the federal government can tap creative thinking from across the citizenry to come up with new approaches to solving problems. A fourth report, *Using Crowdsourcing in Government*, discusses how the federal government can leverage groups to build ideas into actionable strategy through increased citizen engagement.

Collectively, these reports are building a new body of knowledge on how government leaders can engage citizens in new ways, allowing them to participate more actively in the design and delivery of public services. We hope this report will assist all public managers as they continue their quest for innovative ideas.



Daniel J. Chenok  
Executive Director  
IBM Center for The Business of Government  
chenokd@us.ibm.com



Lisa K. Yarbrough  
Associate Partner, Strategy & Innovation  
IBM Global Business Services  
lisay@us.ibm.com

# Executive Summary

Three broad issues have made it imperative for government agencies at all levels to redefine the nature of their relationships and engagement with citizens in problem-solving:

- Fiscal austerity motivates new, less resource-intensive modes of problem-solving in government.
- The complex nature of the problems calls out for more collaborative approaches that involve external partners, including citizens.
- New information technologies make connecting with citizens easier and reduce the cost of such collaboration in problem-solving.

The confluence of these three forces has set the context for redefining citizens' role in public services—a shift from that of a passive service beneficiary to that of an active, informed partner or *co-creator* in public service innovation and problem-solving.

This report identifies four distinct roles for citizens in public service co-creation and problem-solving:

- **As explorers**, citizens can identify/discover and define emerging and existing problems.
- **As ideators**, citizens can conceptualize novel solutions to well-defined problems.
- **As designers**, citizens can design and/or develop implementable solutions to well-defined problems.
- **As diffusers**, citizens can directly support or facilitate the adoption and diffusion of public service innovations and solutions among well-defined target populations.

Significantly, these roles are not too different from the role of customers in private-sector innovation.

Drawing on examples from both the public and private sectors, the report elaborates on the nature of these four roles and the mechanisms that facilitate them. A wide range of mechanisms can be employed for citizen co-creation:

- Online contests and competitions
- Mobile apps
- E-petitions
- Innovation jams
- Virtual design and prototyping tools
- Open-source databases

- Participatory design workshops
- Online citizen communities

To better understand the appropriateness of these diverse mechanisms for various citizen roles, the report examines two foundational elements of the support infrastructure needed for hosting citizen co-creation activities: the innovation ecosystem and the innovation platform.

- **Innovation ecosystem** relates to the organizing structure for citizens and government agencies to collaborate on problem-solving and includes ways to:
  - Promote a shared worldview among all participants
  - Define the architecture of participation to coordinate collaboration activities
- **Innovation platform** relates to the venue for citizen co-creation and incorporates ways to:
  - Modularize or partition the problem-solving process
  - Facilitate knowledge sharing and interactions among all the participants

In addition to presenting different citizen roles and their associated mechanisms, the report offers strategies and best practices for government agencies to:

- Enhance the shared worldview
- Specify the architecture of participation
- Modularize the problem-solving process
- Support interactions and knowledge sharing

Four strategies will assist government agencies in creating the broader innovation environment to promote citizen engagement and co-creation:

- Fit the co-creation approach to the problem-solving context.
- Manage citizen expectations with regard to their involvement.
- Link or connect the internal organization with the external partners.
- Embed the citizen engagement initiative in the larger context of the agency's core agenda.

There is considerable promise and potential to make a transformation in citizens' role in public services. The citizen co-creation framework and the recommendations offered here to establish appropriate mechanisms, structures, processes, tools and technologies, and incentive systems will advance this objective.



# Introduction

*Government is not a vending machine, with bureaucrats dispensing services, but a platform—like Facebook, Twitter, and the iPhone—where citizens can build their own apps and interact with one another and come up with their own solutions.<sup>1</sup>*

—George Packer

Is the emerging vision of government as a platform too farfetched and unrealistic? Or does it portend a new era of citizen engagement in public service innovation? Indeed, with the advent of information technologies including social media, mobile computing, and data analytics, the nature and scope of citizen involvement in problem-solving and public service innovation are changing. Such technologies have the potential to redefine relationships and connections among citizens and between citizens and their governments, enable access to and analysis of public data in ways that will lead to innovative solutions, and offer new platforms to develop and host innovative services. In his book, *Citizenville*, Gavin Newsom (the current lieutenant governor of California and former mayor of San Francisco) champions the role of technology in reinventing government and envisions the application of online games, crowdsourcing, and other methods to engage citizens in problem-solving.<sup>2</sup> Recent initiatives in cities, including Chicago (the Smart Chicago Collaborative), Boston (Citizens Connect), San Francisco (ImproveSF) and New York (NYC BigApps), provide initial validation for such a vision of citizen engagement in identifying, discovering, and solving social problems.

At the same time, a broader set of imperatives has taken hold for governments at all levels to redefine their relationships and nature of engagement with citizens in problem-solving:

- Fiscal austerity has made it difficult to continue with some of the existing resource-intensive business models and problem-solving modes in government.
- The increasing complexity of the problems to be addressed demands collaborative approaches, not just among the government units but with external entities as well, particularly with citizens (who are often closest to and possess unique knowledge about problems).
- Finally, the availability of new technologies (e.g., social media) has radically lowered the cost of collaboration and the distance between government agencies and the citizens they serve.

The confluence of these three issues has set the context for redefining the citizen's role in public services—a shift from that of a passive service beneficiary to that of an active informed partner, or *co-creator*, in public service innovation and problem-solving.

---

1. "Change the World," by George Packer, *The New Yorker*, May 27, 2013, 44–55.

2. *Citizenville: How to Take the Town Square Digital and Reinvent Government*, by Gavin Newsom and Lisa Dickey, Penguin Press HC, USA, 2013.

Realizing such a transformational change in roles will, however, require more than just deploying a few social media technologies or tinkering with some existing government programs or processes. Indeed, technology is not likely to be the sole solution to weed out government inefficiencies and bring about innovative reforms.<sup>3</sup> It will demand entirely new perspectives on engaging with citizens in problem-solving, new ways of doing business with citizens, and new forms of connecting with citizens.

What are the different types of citizen co-creation possible in public services? Which existing structures and practices should we abandon, and which new structures and practices should we adopt? How can we deploy new information technologies to support citizens' emerging co-creation roles? More broadly, what are some successful approaches to government-citizen collaboration and co-creation in public services?

Involving citizens in problem-solving is not unlike involving customers (and other independent inventors) in product and service innovation in the private sector. A wide range of companies—from technology companies including IBM, Cisco, and Intel, to consumer companies including Procter & Gamble, Unilever, Fiat, Target, and Lego—have successfully embarked on initiatives to open up their innovation activities and incorporate ideas and solutions from varied external partners, including their customers.<sup>4</sup>

For example, IBM has used Innovation Jams extensively to generate ideas from its customers and partners on the application of novel technologies, particularly in tackling environmental problems. Similarly, Fiat launched the Fiat Mio project to crowdsource ideas for a futuristic concept car. Lufthansa has conducted contests to source innovative solutions from customers worldwide in order to make travel more efficient and enjoyable. Are some of these co-creation approaches adopted by companies applicable to the government? If so, are there some practical insights into co-creation that government leaders can learn from companies? The answer to both these questions is an emphatic yes.

In the last few years, several government agencies in the United States and across the world have embarked on novel initiatives to engage with citizens in collaborative innovation and problem-solving. Examples of co-creation in the public sector include:

- The U.S. government's crowdsourcing initiative, Challenge.gov<sup>5</sup>
- The Danish government's initiative to co-create climate strategy with citizens (Climate Consortium Denmark)
- The Swedish Federal Railways' collaboration with citizens in redefining public transport services
- The Finnish local government's partnership with senior citizens in reinventing senior living infrastructure
- The South Korean government's e-People initiative to support online civil petitions

Significantly, these early examples indicate that there are multiple ways in which governments can engage with citizens. Based on an analysis of the examples and case studies from the private sector and the public sector, this report identifies four distinct roles for citizens in co-creation.

---

3. For an expansive discussion of this, see *To Save Everything, Click Here: The Folly of Technological Solutionism*, by Evgeny Morozov, New York, NY: PublicAffairs Books, 2013.

4. See *The Global Brain: Your Roadmap for Innovating Faster and Smarter in a Networked World*, Nambisan, S. and M. Sawhney, Wharton School Publishing, October 2007.

5. Desouza, Kevin. *Challenge.Gov—Using Challenges and Prizes to Spur Innovation*. IBM Center for The Business of Government. 2012.

- **As explorer**, citizens can identify, discover, and define emerging and existing problems in public services. For example, the New York-based Datakind initiative involves citizen volunteers using their data analysis skills to mine public data in health, education, environment, and more areas to identify important civic issues and problems.
- **As ideator**, citizens can conceptualize novel solutions to well-defined problems in public services. For example, initiatives such as Challenge.gov and OpenIDEO employ online contests and competitions to solicit innovative ideas to solve important civic problems.
- **As designer**, citizens can design and/or develop implementable solutions to well-defined problems in public services. For example, as part of initiatives such as NYC Big Apps and Apps for California, citizens have designed mobile apps to address specific issues such as public parking availability, public transport delays, and more.
- **As diffuser**, citizens can directly support or facilitate the adoption and diffusion of public service innovations and solutions among well-defined target populations. For example, physicians interacting with peers in dedicated online communities have assisted government agencies in diffusing health technology innovations.

These four citizen roles imply different types of contributions in civic problem-solving, different types of government-citizen interactions, and thereby the need for different types of mechanisms and support infrastructure. In this report, we consider a wide range of mechanisms for citizen co-creation—from online contests and competitions to innovation jam sessions to e-petitions to open-source databases to participatory design workshops. In analyzing the appropriateness of these varied mechanisms for the different citizen roles, we consider two elements of the support infrastructure for hosting citizen co-creation activities:

- **Innovation ecosystem** relates to the organizing structure for an ensemble of actors (e.g., citizens, government agency employees, nonprofits) to come together and co-create service offerings. It includes ways to:
  - Build and sustain the community of innovators and promote a shared worldview among citizens and government employees
  - Define the architecture of participation to coordinate collaboration activities
- **Innovation platform** relates to the physical or virtual venue for citizen co-creation. As such, it incorporates ways to:
  - Modularize or partition the problem-solving process
  - Facilitate knowledge-sharing and interaction among all participants

Drawing on examples from the private and public sectors, this report elaborates on the four citizen roles and the mechanisms, support infrastructure, and practices that government agencies need to establish to be successful in citizen co-creation initiatives. The following page presents the recommendations contained in the report.

## Report Recommendations

- Recommendation One:** Enhance data transparency in high-impact problem areas.
- Recommendation Two:** Sustain online citizen communities focused on problem identification.
- Recommendation Three:** Close the problem-solving loop.
- Recommendation Four:** Frame the problem in a way that users can understand.
- Recommendation Five:** The broader the problem, the wider the net.
- Recommendation Six:** Use technologies to diverge and converge.
- Recommendation Seven:** Facilitate virtual design and prototyping.
- Recommendation Eight:** Have forums for community-based co-design initiatives.
- Recommendation Nine:** Promote data-based mashups.
- Recommendation Ten:** Promote theme-focused online citizen communities.
- Recommendation Eleven:** Enhance the “trialability” of government innovation.
- Recommendation Twelve:** Select the citizen engagement approach to fit the context.
- Recommendation Thirteen:** Adopt measures to enhance transparency.
- Recommendation Fourteen:** Adapt structures and processes to link the internal with the external.
- Recommendation Fifteen:** Embed citizen engagement as part of a broader agency initiative.

# Citizen Co-Creation in Public Services

In the private sector, there is a rich history of companies partnering with customers or product/service users in innovation and value creation.<sup>6</sup> Across industries (and particularly in the technology and consumer sectors), customers have played a key role in suggesting improvements and new features for existing products and services. For example, companies such as Hallmark, Lego, BMW, Ducati, and Procter & Gamble have all taken ideas and suggestions from customers to improve their products. In some cases, companies have depended solely on user-contributed ideas for designing their products (for example, Threadless, a T-shirt manufacturer, gets most of its design ideas from an online community of users).

Certain types of users—referred to as lead users<sup>7</sup>—have undertaken a more active role in innovation, often designing or developing a new or derivative product. For example, many skateboarding, windsurfing, and snowboarding equipment innovations have come from modifications made by sports enthusiasts to their own equipment over time. Other lead users have innovated completely new products to meet a need for which no product existed. A good example comes from the medical devices sector, where surgeons have devised new surgical equipment (e.g., the first heart-lung machine) that has subsequently been commercialized. With the emergence of the Internet and other information and communication technologies, the scope and depth of such customer involvement in innovation changed radically.<sup>8</sup> It has become possible for customers to get engaged in all the phases of innovation—from ideation to design and development to implementation and product support.

The role of citizens in public service innovation has a less well known, albeit equally rich history. Many social innovations (e.g., the environmental movement and Earth Day) have originated from ideas and suggestions offered by individuals outside the government. Often, it has taken a group of citizens or community-based movements to spur government agencies to act on such ideas. What has changed in recent years is the ability of individual citizens to not only develop innovative solutions to problems, but to play a more active role in discovering or identifying the root problems and in developing and/or implementing solutions. A large part of this can be attributed to new technologies that facilitate easier access to public data, enhance government transparency, and reduce the distance between the citizen innovator and the government agency.

---

6. For historical examples, see Leonard-Barton, D. 1995, *Wellsprings of Knowledge*, Boston, MA: HBS Press; Von Hippel, E., *The Sources of Innovation*, New York: Oxford University Press, 1988.

7. Lead users are users of a product or service that currently experience needs still unknown to the majority of other users and who also benefit greatly if they obtain a solution to these needs. Lead users typically create novel solutions to such needs. For more details, read MIT scholar Eric von Hippel's work on this topic.

8. See *The Future of Competition: Co-Creating Unique Value with Customers*. C.K. Prahalad and V. Ramaswamy. Boston: HBS Press, 2003. Nambisan, S. and P. Nambisan. "How to Profit from a Better Virtual Customer Environment," *MIT Sloan Management Review*, Spring 2008, 53–61.

## Four Roles for Citizens in Co-Creation

Based on the innovation (or problem-solving) process, this report identifies four distinct roles for citizens in public service co-creation: as explorer, ideator, designer, and diffuser. Broadly, these four roles relate to the four primary innovation phases:

- Identifying, discovering, or defining a problem (explorer)
- Conceptualizing a solution (ideator)
- Designing and developing the solution (designer)
- Implementing the solution (diffuser)

**Citizen as explorer:** The first role reflects citizens’ ability to discover or identify problems that are either invisible or unknown to government agencies. It also involves articulating problems in ways that would lead to practical solutions. It is widely accepted that citizens, being “closest to the ground,” are likely to be aware of current or emerging civic problems well before their (local or regional) government is.

Two things have changed in recent years that enable citizens to act on such information and thereby enhance their role as explorer. First, through expanding technological connectivity, it has become possible for citizens to share knowledge about potential problems more rapidly and efficiently. And it has become possible for citizens to share their perceptions about the problem with peers, thereby developing and articulating a more shared and comprehensive understanding of the problem. Second, higher levels of government openness and transparency, and the ensuing access to public data, have enabled certain citizens to mine open databases and discover potential problems (even those beyond their immediate context—for example, local environmental pollution). All of this has positioned citizens to assume a more proactive role in identifying and articulating problems in the public space.

**Citizen as ideator:** The second role reflects the capability of citizens (users of government service offerings) to bring knowledge about their unique needs and usage context to improve existing services or envision innovative solutions to civic problems. In the private sector, this

**Table 1: Four Roles in Citizen Co-Creation**

Citizen Role	Contribution
<b>Explorer</b>	<ul style="list-style-type: none"> <li>• Identify and define problems based on citizens’ understanding of the context.</li> <li>• Help discover problems by mining public data.</li> <li>• Articulate problems in ways that lead to practical solutions.</li> </ul>
<b>Ideator</b>	<ul style="list-style-type: none"> <li>• Suggest ideas to improve existing services or to solve new well-defined civic problems.</li> <li>• Contribute ideas (parts of solutions) to tackle broader problems.</li> </ul>
<b>Designer</b>	<ul style="list-style-type: none"> <li>• Help convert innovative ideas into actual implementable solutions.</li> <li>• Develop "design sketches" for specific features of a larger solution.</li> </ul>
<b>Diffuser</b>	<ul style="list-style-type: none"> <li>• Facilitate the adoption, diffusion, and use of new services (solutions) by peer citizens.</li> <li>• Serve as innovation evangelists in citizen communities and shape peer citizens' perceptions about new services.</li> </ul>

has been the most common role for customer innovators—generating ideas for improving existing products or developing new products. Often, the existing offering (product or service) provides the basis for customers to innovate, as their primary focus is on adapting that product to meet a new need and in the process, generate ideas to improve the product. This applies in the civic context also. Citizens may combine their innate creativity and unique knowledge about a service or problem context to conceptualize innovative solutions.

**Citizen as designer:** The third role reflects the capability of citizens to go beyond merely suggesting ideas or solutions and instead take an active part in developing or designing the solution, i.e., getting into the details of the solution and translating that into an actual service. This might require citizens to have deeper knowledge or expertise in some aspects of the problem-solving context (for example, coding skills to develop a mobile app, in-depth understanding of peer citizens' or community needs, knowledge about how a government agency operates, etc.). Further, in certain instances where the problem context is complex, individual citizens may contribute design components that address part of the problem or help customize a more general service to their particular community or local context.

**Citizen as diffuser:** The fourth role underlines the contributions that citizens can make in helping their peers adopt (or use) new services. It parallels the role customers have played in helping companies get the word out about new products and services and in facilitating the launch and diffusion of new products. For example, in the online and offline customer communities of companies such as Microsoft, Apple, and Harley-Davidson, individual customers assume the role of a product evangelist and influence peers' perceptions of new products, thereby facilitating their rapid diffusion. Such a role is increasingly relevant for citizens in diffusing public sector innovation. The basic mechanism is the same—leverage individual citizens' knowledge about the innovation and their reputation in the community to influence peer adoption decisions regarding that innovation or service.

In each of the above four roles, citizens apply their creativity and integrate their knowledge with that obtained from elsewhere (from peers, government agencies, public or private databases, etc.) to innovate. Importantly, individual citizens may not be interested in or even equipped to play all the four roles. In other words, some citizens may be best at playing the role of an ideator while some others may contribute as designer. Further, government agencies may be looking to engage citizens with playing only one of those roles in a given problem context—for example, an agency might want citizen help in identifying problems that may then be solved internally, or the agency might want to call for citizen help in developing solutions to a problem that government has already identified. In what ways can government agencies promote or encourage these different citizen roles in value co-creation and problem-solving? Two elements of the mechanisms and infrastructure are needed to support these different types of citizen co-creation.

## Mechanisms and Infrastructure for Co-Creation

A wide range of mechanisms can be employed by government agencies to facilitate the four citizen roles in innovation and problem-solving. These include mobile apps, e-petitions, open-source databases, data analysis communities, contests and competitions, innovation jams, open databases, participatory design workshops, and dedicated online citizen communities. While these mechanisms form the practical ways for government agencies to engage with citizens in different aspects of problem-solving, two themes or elements of co-creation underlie them (see Table 2):<sup>9</sup>

---

9. For more details on these two elements of co-creation in the context of service innovation, see Robert Lusch and Satish Nambisan, "Service Innovation: A Service-Dominant Logic Perspective," *MIS Quarterly*, forthcoming, 2014.

- An innovation ecosystem
- An innovation platform

**Innovation ecosystem.** Much problem-solving occurs in a collaborative environment of citizens interacting with peers and other relevant actors (e.g., government agencies or nonprofits). This necessitates an innovation community or an ecosystem. An innovation ecosystem offers an organizing structure for an ensemble of actors (citizens, government employees, nonprofits, etc.) to come together and co-create service offerings.<sup>10</sup> It incorporates the need to:

- Build and sustain a community of innovators and promote a *shared worldview* among citizens and government employees
- Define the *architecture of participation* to coordinate collaboration activities

**Table 2: Elements of Citizen Co-Creation**

Elements of Citizen Co-Creation	Objectives	Characteristics
<b>Innovation Ecosystem</b>		
<b>Shared world-view or situational awareness</b>	Helps to sustain the innovation ecosystem and bring coherency to citizen interactions/contributions	<ul style="list-style-type: none"> <li>• A common set of social and cultural assumptions regarding government services</li> <li>• Shared expectations regarding citizens' role in problem-solving</li> <li>• Common metrics to evaluate one another's contributions</li> </ul>
<b>Architecture of participation</b>	Helps to coordinate the problem-solving process and to clarify the sharing of the rights ("who will own what")	<ul style="list-style-type: none"> <li>• A set of rules and guidelines for participants' innovative contributions to be coordinated and integrated</li> <li>• Incentives and other means by which (e.g., rewards, prizes, open source licensing) citizens will derive value from their contributions</li> </ul>
<b>Innovation Platform</b>		
<b>Modularization of problem-solving process</b>	Helps to match the "right" citizen innovator with the "right" problem-solving phase	<ul style="list-style-type: none"> <li>• Modularizes or partitions the problem-solving process to make it more manageable</li> <li>• Brings together all relevant resources (data, knowledge, skills) to one phase of problem-solving</li> </ul>
<b>Communication infrastructure and rules of engagement</b>	Helps to provide a structure for knowledge exchange	<ul style="list-style-type: none"> <li>• Rules and protocols for interactions among the participants</li> <li>• Communication infrastructure to facilitate different types of interactions</li> </ul>

10. An ecosystem is a community of interacting entities—organizations and individuals (including customers or users)—that co-evolve their capabilities and roles and depend on one another for their overall effectiveness and survival (Iansiti and Levien 2004; Moore 1993). The concept of innovation ecosystem (or business ecosystem) is derived from that of biological ecosystem. For more details, see Moore, J. F., "Predators and Prey: A New Ecology of Competition." *Harvard Business Review*, 71(3), 75–86, 1993.; Iansiti, M., and R. Levien. (2004). *The Keystone Advantage: What the New Dynamics of Business Ecosystems Mean for Strategy, Innovation, and Sustainability*. Boston: HBS Press.



Citizen participants from varied backgrounds need to develop a shared perspective of their environment—i.e., adopt a shared worldview or situational awareness<sup>11</sup>—to ensure the innovation ecosystem’s survival and effectiveness. In the current context, such a shared perspective might include a common set of social and cultural assumptions regarding government services, shared expectations regarding their role in the problem-solving process, common metrics to evaluate one another’s inputs and performance, etc. A shared worldview ensures that actors in an ecosystem can interpret innovation or problem-solving opportunities coherently and come together quickly to exchange or integrate knowledge and ideas to pursue those opportunities. Higher levels of information-sharing among the different actors enhance the extent of shared worldview and situational awareness. The different mechanisms may vary in their ability to facilitate such information-sharing and thereby support the shared worldview among citizen innovators.

It is equally important to provide an architecture of participation that brings clarity to the way collaborative citizen co-creation will occur, as well as the way the “rights” (or the value) from the innovation will be shared among the citizens and the other participants.<sup>12</sup> Thus, the architecture of participation provides a roadmap or a set of rules and guidelines for the participants’ innovative contributions to be coordinated, integrated, and synchronized in a coherent way so as to lead to useful solutions. It also defines the means by which citizens will realize value from their participation (or be rewarded for their contributions). This could range from establishing different types of incentives (e.g., awards and prizes) that drive participation to designing new methods for sharing the proceeds or value among all the participants (e.g., open source licensing system).

**Innovation platform.** To succeed in citizen co-creation, it is not enough to build and sustain a community or an ecosystem. It is equally important to provide a venue (physical or virtual) for innovation and problem-solving. The innovation platform provides the venue for citizen co-creation and serves two key purposes.

- First, the innovation platform helps to *modularize (or partition) the problem-solving process*, i.e., it allows participants to focus on one phase or part of the problem-solving process (e.g., problem identification) and to share knowledge and resources related to that. Doing so enables attracting the right set of participants, matching citizen capabilities with problem-solving needs, and thereby enhancing the likelihood of success. It also allows the agency to share with citizens the problem-related data and knowledge on a need-by basis, thereby reducing information overload.
- Second, the innovation platform provides a *structure for knowledge exchange*, including the associated rules and protocols and the communication infrastructure to facilitate formal and informal interaction among the actors. The nature of the protocols or rules (how the different actors may interface or interact with one another) can affect the nature and extent of their involvement and contribution. For example, does the agency want citizens to interact with government employees? If so, what should be the boundaries of such interactions? If the rules of engagement are clearly specified and the scope of participant interaction is more open or broad, the innovation platform will support a greater degree of knowledge-sharing and innovation. Further, the platform also provides the communication infrastructure to support such interactions—this may range from face-to-face forums to online communities to social media-based sites. The objective will be to facilitate the optimal way of interaction as dictated by the nature of the problem-solving.

---

11. The concept of a shared worldview can be traced to network-centric warfare in which the basic premise is that a robust network of geographically dispersed military forces makes it possible to translate informational advantage into warfare advantage (Department of Defense 2001).

12. For more on the architecture of participation and its relevance in collaborative innovation, see the IBM Center for The Business of Government report, *Transforming Government through Collaborative Innovation*, by Satish Nambisan, 2008.

While innovation ecosystems and innovation platforms offer a conceptual map of the co-creation infrastructure, the mechanisms mentioned earlier (e.g., mobile apps, contests and competitions, innovation jams, etc.) reflect the specific ways in which they will be implemented or realized in practice. Note that the different mechanisms address to a varied extent the two elements.

# Citizen as Explorer

Problems are unlikely to be solved if they are not discovered or identified in the first place. Often, government agencies or organizations that bear the responsibility to solve civic problems have limited visibility into the problem context, and may remain unaware of the problems until they become very costly to fix or solve. Citizens who live in these very contexts are likely to be the first to be aware of the problems (in most cases, they bear the brunt of the problems). The disconnect between citizens (who have knowledge about the problem) and the government agency (which may have the resources to solve the problem) results in the problem not being identified in a timely manner, or not being defined well when it is identified, leading to wrong and/or costly solutions. New technologies and mechanisms help to reduce such a disconnect between citizens and government agencies and enable citizens to assume a more active role in discovering, identifying, and defining or articulating problems that need to be solved.

Social problems can be of different types, depending on their nature and how distant they are from the citizen's context. Some problems are very close and highly visible to individual citizens (for example, an accident-prone traffic intersection, pollution in a local pond or waterway, overcrowding in public parking facilities, etc.) while some are less visible and more distant from individual citizens (for example, broader environmental pollution or depletion of water resources). While citizens can play a role in identifying all types of civic problems (narrow or broad, direct or indirect), different types of mechanisms will facilitate this. Three possible approaches for citizens as explorers are:

- Identifying and reporting on problems
- Contributing data on potential problem areas and issues
- Analyzing data and discovering a problem (or patterns of a problem)

## Identifying and Reporting on Problems

Citizens, by virtue of their closeness to the problem context, can serve as government's "eyes and ears." Two mechanisms for this are mobile apps and e-petitions.

**Mobile apps.** Citizens use technology-based applications and systems to report local problems to the appropriate government agency.

Consider Boston's Citizens Connect initiative. Launched in 2008, Citizens Connect empowers residents to assume a more active role in locating and reporting civic problems. A mobile app allows citizens to report potholes, damaged signs, graffiti and more. The Citizens Connect app is available on popular mobile platforms, including iPhone and Android. The application allows citizens to report a problem by submitting a work request to the city. The relevant city agency evaluates the problem and assigns workers to address it. While such an app may seem simple, it significantly reduces the time it takes for local government agencies to become

## Best Practices for Citizen Explorers

### **Innovation Ecosystem: Shared Worldview**

- Enable citizens to view peer submissions
- Provide historical data on citizen submissions and government responses
- Categorize citizen-reported problems based on their type and geography

### **Innovation Ecosystem: Architecture of Participation**

- Enhance transparency on what is being done with citizen submissions (how the problems were/ will be resolved)
- Adopt industry-wide data standards to provide citizen data analysts with access to public data
- Establish community-based reputational rewards; provide ways for citizens to “reward” city employees who address the problem, as well as peer citizens who contribute the most

### **Innovation Platform: Problem Modularization**

- Clearly define the types of problems that citizens can report
- Use predefined rules to channel citizen-reported problems to the right agency
- Enable unified access to public data from multiple agencies that relate to a common problem area

### **Innovation Platform: Communication Infrastructure and Rules of Engagement**

- Provide accompanying online forums to enable interactions among citizens
- Connect citizens with government employees to address their reported problems
- Establish and promote problem-focused communities that include government agencies, citizen data scientists, and nonprofits

aware of potential problems in the community that, without timely intervention, could lead to more costly fixes. With over 20 percent of city service requests coming from residents' smart-phones, the mobile app has already changed the way Boston residents communicate with their local government.

Following the success of the initial versions of Citizens Connect, Boston has also focused on closing the problem-solving loop. When city workers solve or address a reported problem, they post an update on the same system (even providing a picture of the finished job) and thereby inform the citizen of what happened to their request. Future versions of the app will provide a feature similar to Facebook's “like” to enable citizens to thank or acknowledge workers for addressing their problem. All of this makes the citizen's engagement as explorer more meaningful and enables stronger connection between citizens and government agencies.

With the approval of the Commonwealth of Massachusetts, the city of Boston has extended this approach to other parts of the state. It has developed a similar mobile app, Commonwealth Connect, which enables residents in other Massachusetts communities to report on issues to the appropriate local municipality, even when the user doesn't know which department or municipality should respond.

Similar initiatives are evident in many parts of the United States, as well as in many other countries. For example, the FixMyStreet initiative—launched in the United Kingdom in 2008 by the nonprofit mySociety—involves an online portal for citizens to report on varied neighborhood

problems such as street lighting issues, potholes, and graffiti.<sup>13</sup> The platform has since been replicated and implemented in several other countries including Australia, Portugal, Greece, Germany, Japan, the Netherlands, Korea, and Canada. Derivatives of the platform that enable citizens to report on other types of civic issues have also been implemented—for example, FixMyTransport enables citizens to contact transport operators in Britain about problems with public transport.

All of the above projects reflect the power of mobile apps to help government agencies source the details of local problems from individual citizens (who experience it first) and reduce the cost of such reporting. As evidenced in Boston and elsewhere, such citizen reporting also helps to form tighter connections between citizens and the agencies, thereby facilitating future citizen engagement in other phases of problem-solving.

**E-petitions.** Governments can also use technology to better engage citizens in identifying broader problems in the civic arena. Referred to as e-petitions, such initiatives allow citizens to request public policy changes, regulatory changes, or the need to address corruption, inefficiency, and other reform issues. Typically, once a petition is submitted by a citizen through a government website, it is active for a period of time (one year) and if within that time frame, the petition attracts support from a predefined number of peers—100,000 for example—then the government takes up the issue for further consideration.

Several countries have implemented variations of the e-petition model. For example:

- The United States federal government has the We the People initiative
- The United Kingdom has the HM government e-petitions
- The South Korean government has the e-People initiative

The Korean government's e-People initiative offers a single place—the online petition and discussion portal—for Korean citizens to make civil petitions (administrative complains, policy change requests, etc.).<sup>14</sup> The system will automatically route the petition to the relevant agency—over 303 government agencies, local and national, participate in the initiative.

While such systems have some potential drawbacks (for example, anonymity of e-petitioners), the experience over the past five years or so indicates that they allows citizens to show collective support for specific reforms or policy changes and force government agencies to take action. In February 2007, an e-petition in the United Kingdom against road pricing and car tracking attracted over 1.8 million e-signatures (from a population of 60 million people) and forced the government to not make the change. Once such a strong support for a public policy change is visible to everyone, it becomes difficult for government agencies to shy away from the issue.

E-petitions form another valuable mechanism for government agencies to encourage citizens to identify and report on problems, as well as gauge the wider relevance or applicability of those problems. The success of such initiatives will, however, depend on the structures and processes the agencies have established to address or respond to those problems.

---

13. Founded in 2003, mySociety (<http://www.mysociety.org/>) is an e-democracy project of the UK-based charity, UK Citizens Online Democracy, that aims to build “socially focused tools with offline impacts.”

14. For more details, visit <http://www.epeople.go.kr>

## Contributing Data on Potential Problem Areas and Issues

The above two approaches employ technology to help citizens report on problems. They work well when the problem is very apparent to individual citizens. In certain contexts, however, the problems may be broader in scope and more diffuse in nature, hence less visible to individual citizens (or only part of the problem may be visible). An example is environmental pollution. In such instances, citizens may still be able to contribute data on parts of the problem that when put together—as open-source databases—could help define or clarify the potential problem.

One example is the Institute of Public and Environmental Affairs (IPE), a Beijing-based non-profit founded to bring awareness to environmental issues and problems in China. IPE was founded by Ma Jun, a preeminent environmental researcher, in 2006. Over the past several years, with the help of thousands of volunteers across China, Ma and his colleagues at IPE compiled an open-source online database of air and water pollution. The individual entries (e.g., data on minor and major environmental incidents in local factories and public places) were contributed by volunteers and verified by other volunteers or IPE. By building and providing open access to such a database, IPE has become a powerful platform to enable the citizen's role as explorer.

First, it helped in identifying specific problems—for example, the database has led to the identification of some 97,000 factories operating in violation of China's green laws. Identifying specific instances of environmental pollution led to government action on these and other factories. Second, such an open-source database has also enabled citizens to discover broader patterns in environmental pollution—for example, specific regions in the country where the most pollution was occurring, or particular industries that were most prone to undertake such activities. IPE released pollution maps derived from their citizen-built database; these maps help underline the broader environmental problems in specific regions.

The database has also become a powerful tool for citizens to motivate global companies to police their suppliers' environmental compliance. Companies such as Wal-mart, Nike, Coca-Cola, and GE have all partnered with IPE to identify Chinese manufacturing units (suppliers) that need to improve their environmental performance. Note that the IPE volunteers (citizens) do not play any role in solving the problem. Their involvement is limited to contributing data on part of the problem. By integrating inputs from hundreds and thousands of individuals, the problem gradually becomes defined in clearer terms.

Such an approach is also visible in the United States. For example, both Minnesota and Wisconsin have engaged citizens in monitoring the quality of water resources in the state. Minnesota's Citizen Lake and Stream Monitoring Programs involve citizen volunteers (over 1400) in measuring water quality (based on water transparency) in their neighborhood stream, lake, or river. Similarly, Wisconsin's Citizen-Based Water Monitoring Network engages more than 1000 citizens in measuring various aspects of water quality. The data thus gathered from individual citizens is sent to the state pollution control agency, which analyzes the data and identifies potential water problems.

Citizens can also play a more indirect role as explorer by enabling the automatic acquisition of data that could reveal problems. For example, Street Bump is a mobile app (produced by the Boston mayor's Office of New Urban Mechanics) that residents can use to help improve their neighborhood streets. As users drive along the city streets, the mobile app automatically collects data about the smoothness of the ride; specifically, the app records bumps that are identified using the device's accelerometer and located using its GPS. The data are uploaded to a central server where they can be analyzed. The data enable both the fixing of specific problems

(e.g., potholes) and identify broader patterns of problems that could, in turn, guide the planning of long-term infrastructure investments. Another such example is Foodborne Chicago, an app produced by Smart Chicago Collaborative that trawls Twitter for mentions of food poisoning in Chicago, enabling a team of administrators to connect with affected people and encourage them to report details to the Chicago Department of Public Health.

As the above examples illustrate, citizens can play a key role in acquiring data—either directly or indirectly—that could reveal specific problems or broader problem areas in varied civic contexts.

## Analyzing Data and Discovering Problems or Patterns

Over the past several years, government agencies at all levels have embarked on initiatives to increase the transparency of their operations. One way to do that has been to make available more and more data (on health, education, transportation, etc.) to the broader public. For example, the U.S. government launched its [Data.gov](http://Data.gov) site in 2009. While such data have the potential to reveal both simple and complex problems, this increasingly calls for sophisticated data analysis capabilities and resources that many government agencies may lack. The situation is similar for many nonprofit and charity organizations. They too possess large amounts of data that, with proper analysis, could reveal areas for improvement, but they lack the requisite data analysis capabilities. Thus, another way for citizens to play the role of explorer involves contributing their skills and capabilities in analyzing public (and private) data and discovering problems in varied civic contexts. While not everyone may possess such data analysis skills, the case of New York-based Datakind shows that an increasing number of people do have such skills and are willing to contribute them for the broader social good.

Jake Porway, a New York-based data scientist, had considerable experience in working with big data in the private sector—analyzing online clicks and other consumer behavior. In 2011, he was intrigued by the idea of applying such skills for social benefit. He proposed to the New York data community the idea of spending “a weekend hacking on some medical data.” The response—over 300 people signed up—indicated this could be a powerful means of engaging citizens in discovering problems.

Subsequently, Porway and a few colleagues set up Datakind ([datakind.org](http://datakind.org))—to connect organizations (public and nonprofit) needing help in interpreting their data with data scientists willing to use their talents for non-commercial ends. This has grown into a broad-based movement—with chapters in different regions including one in the United Kingdom—with a broad mission of “using data in the service of humanity.” The stated goal of Datakind is to bring “together leading data scientists with high impact social organizations through a comprehensive, collaborative approach that leads to shared insights, greater understanding, and positive action through data in the service of humanity.”

Datakind facilitates citizen-led problem discovery in two ways. First, it organizes weekend events called DataDive™ that bring three selected social or government organizations that have well-defined data problems together with volunteer data scientists to tackle their data challenges. These weekend events enable the organizations to identify key operational problems and gain other useful insights on potential opportunities revealed by the data. The second approach, DataCorps™, engages volunteer data scientists in longer-term problem identification. A select group of data scientists works on volunteer data projects part-time for periods of one to six months. In some instances, the volunteer data scientists are housed within private companies that take on the projects. For example, Google gives 20% time to three scientists for a month to execute such a project.



Datakind has helped to discover and analyze problems in a wide range of contexts, including city government, health care, education, and transportation. For example, the New York City Department of Parks and Recreation wanted to find out how their block pruning programs were working. A DataDive organized by Datakind indicated that pruning the trees at risk for certain types of hazards caused a 22% reduction in the number of times the department had to send a crew for emergency cleanups and highlighted other areas for improvement in pruning practices. Similarly, volunteer data analysts have been working on helping medical organizations to discover weak links in so-called cold chains—the transportation routes for vaccinations and organ transplants. Other organizations that have used the services of Datakind include the World Bank, The Grameen Foundation, and the Red Cross.

Similar data-analysis communities have been organized in other parts of the world. For example, the Development Data Challenge initiative has organized data analysis events in Washington, D.C., London, and Helsinki.<sup>15</sup> It brings together volunteer data analysis experts to work on data from development projects across the world. In one instance, a volunteer team used data from the UN Development Program (UNDP) to map settlements in South Sudan's Central Equatoria State and their distance from water sources. Such collective efforts help reveal potential problems in ongoing international development projects, as well as opportunities to enhance project execution.

Note that this approach can also be combined with the earlier approach of citizen-based data collection. For example, consider the case of the Minnesota Citizen Water Monitoring Program—it could be redesigned so as to get the citizen-collected water quality data into an open source database which then could be mined (or analyzed) by another set of citizen volunteers for identifying water problems. In such a situation, the role of the state's pollution control agency would be to partition the problem identification into two parts (data collection and data analysis) and facilitate and provide continuity for citizen engagement in both activities.

## Recommendations for Citizen Explorer Initiatives

As the above examples illustrate, several mechanisms can be used to enable the different ways in which citizens can play the role of explorer. Government agencies can employ strategies and practices to enhance shared worldview, specify the architecture of participation, modularize the problem-solving process, and support interactions and knowledge sharing.

Based on the above discussion, the following recommendations are for government agencies intending to cultivate the citizen's role as explorer.

### **Recommendation One: Enhance data transparency in high-impact problem areas.**

Citizens with data analysis skills and capabilities are a limited resource. Rather than diffusing such a resource among a broad set of problems, government agencies should make judicious use of it by identifying high-impact problem areas where citizen-led data investigation would be most feasible, productive, and valuable. In addition, often data in those high-impact areas may come from multiple parts of the government and/or be in different formats. Thus, to reduce the burden on citizen data analysts, government agencies will need to put together such data and publish them in a common standard conducive to analysis. In short, the lead agency should ensure that public data on potential high-impact problem areas (e.g., health, disaster recovery, education) are made available to citizens and other interested groups in ways and formats that would enable or fuel problem discovery.

---

15. <http://developmentdatachallenge.org/>



**Recommendation Two: Sustain online citizen communities focused on problem identification.**

Often problem discovery calls for multiple data points and multiple perspectives, indicating the significance of building a community of citizen explorers. Sharing of problem perspectives in such citizen communities contributes to a shared worldview of the problem context and more comprehensive understanding of the problem. Different citizen explorers may also demand different types of incentives for their engagement (different strokes for different folks). As such, agencies will need to establish incentive systems that reflect the diversity of their citizen explorers. In short, the lead agency should establish and sustain online citizen communities focused on problem identification by providing citizens with visibility into peer citizen submissions (thereby enhancing their shared worldview) and by creating varied community-based reward systems (e.g., reputational rewards).

**Recommendation Three: Close the problem-solving loop.**

Sustaining the long-term interest of citizen explorers requires citizens to derive meaning from their engagement in problem discovery. This in turn calls for government agencies to readily share with citizens information on the actions taken to address the problems they identified (in other words, what happened and/or what were the outcomes). In certain instances, this might be done by bringing together the problem identifier (citizen) and the problem-solver (government employee). In other instances, it might just mean providing a greater level of transparency to the agency's internal problem-solving process. In short, the lead agency should ensure that the citizen's role as explorer is made more meaningful by closing the problem-solving loop whenever possible.

# Citizen as Ideator

The citizen's role as ideator involves conceptualizing solutions to fairly well-defined problems. The focus is not on specifying the details of the solution. The ideator comes up with an innovative idea to solve a known problem, even if the idea itself needs further refinement and development.

The role of an ideator is perhaps best illustrated by the engagement of customers in private sector innovation. Customers often contribute ideas for improving an existing product by modifying existing features or creating new features. Such a role has been played in a wide range of industries.

In the software industry, customers of companies such as Microsoft or Salesforce have contributed ideas for developing new features to improve existing software applications. Similarly, customers of companies including Ducati, Harley-Davidson, and others have suggested innovative ideas to improve performance of their motorbikes. In the consumer products sector, companies such as Unilever, P&G, and Henkel often receive innovative ideas from their customers to improve their products, product packaging, etc. In all of these instances, the customer's role as ideator is largely limited to providing innovative ideas (or solutions) that in turn have to be designed and developed by the companies themselves. In other words, an ideator addresses the "what" (innovative solution) question rather than the "how" question (the implementation of that idea or the design of the solution).

Citizens can play a similar role in conceptualizing solutions to problems that they (or their communities) face. Such innovative ideas or solutions will then need to be developed further and implemented by the relevant organization (government agency, nonprofit, etc.). To enable the role of citizen as ideator, the problem has to be well-articulated or well-defined, but can be narrow or broad in scope. A set of examples illustrates how citizens may play this role in varied contexts. Two approaches for citizens as ideators are:

- Conceptualizing solutions for narrow, well-defined problems
- Conceptualizing solutions for broader problems

## Conceptualizing Solutions for Narrow, Well-Defined Problems

When a problem is fairly well-defined and narrow in scope, it is possible for the organization seeking the solution to communicate it to a large crowd of potential innovators and to invite solutions. This can be done through online contests and competitions (or crowdsourcing initiatives) as well as through simple website submissions. In recent years, several companies (for example, Innocentive) have come into being to play the role of intermediary in this process. Such innovation intermediaries help connect organizations that seek solutions (seekers) with individual innovators who possess the solutions (solvers).

## Best Practices for Citizen Ideators

### Innovation Ecosystem: Shared Worldview

- Promote an open process by allowing participants to see/comment on one another's interpretation of the problem/idea submission
- Share as much background information about the problem context as possible so as to provide a common starting base for idea generation
- Share information on how the potential solution may need to work with other ongoing projects/initiatives

### Innovation Ecosystem: Architecture of Participation

- Clearly define and publicize the process (and the accompanying rules and policies) for conducting the contest or the jam session
- Clarify how the intellectual property rights associated with the submissions (ideas) will be managed
- Clearly define the process for identifying winners and specify the awards

### Innovation Platform: Problem Modularization

- For contests and competitions, carefully select problems with well-defined boundaries
- For innovation jams and workshops, carefully select problems that can benefit from diverse perspectives and interpretations
- Articulate problems using terms that a diverse set of citizens (non-employees of the organization) can understand and relate to

### Innovation Platform: Communication Infrastructure and Rules of Engagement

- Tailor the features of the platform to match the diversity of the target participant population
- Establish forums for participants to interact with one another and/or with moderators (prior to, during, and after the event) to clarify rules, policies, and assumptions
- Employ IT-based tools to help (participants) converge upon ideas—for example, online idea ranking and participant voting, and text analysis tools.

While crowdsourcing has recently become very popular in both the private and the public sector, the underlying concept of holding contests and competitions to source solutions from individuals and other entities outside an organization's boundaries is not really new.<sup>16</sup> For example, in the 1990s, companies such as Staples, Gillette, Sunbeam, and Bell Sports all organized competitions and idea hunts to seek innovative product ideas from individual innovators. A more extensive competition was held by Dial Corporation (now part of Henkel AG & Co.) in the early 2000s. Dial's Partners in Innovation initiative, launched in 2003, originated as a website where individual inventors could submit patented ideas which Dial would then evaluate for commercial potential. As part of this initiative, Dial also launched a contest for individual inventors called the Quest for the Best. In this contest, individual inventors were invited to submit patented (or patent pending) ideas to Dial. Dial specified the product categories in which it was seeking innovative ideas. The number of submissions ran into the hundreds and a panel of judges within Dial then screened those ideas and selected three winners. Dial agreed to pursue these three top ideas for more formal market evaluation and feasibility analysis. The agreement was that if one of these ideas were commercially attractive, Dial would buy the patented idea from the inventor.

16. For details on crowdsourcing applications in the government sector, see *Using Crowdsourcing in Government*, Daren Brabham, IBM Center for The Business of Government, 2013.

Technology now allows companies to open up idea competitions to a global pool of innovators and thereby find a more diverse set of innovative ideas and solutions. Consider the example of Lufthansa and the Future of Hand Luggage contest.<sup>17</sup> In 2012, Lufthansa launched this contest to simplify the hand luggage process and make flying a more enjoyable experience. Passengers often face numerous difficulties when traveling with hand luggage—they may need to unpack and repack their luggage at the security desk, and once inside the plane, they need to find space for stowing away their bags. Lufthansa’s objective was to source innovative ideas to simplify the luggage handling processes and to improve the look and function of hand luggage.

While the problem was fairly narrow and well-defined, the company decided to further specify the nature of the problem with a set of questions that its customers could address: Could checking in luggage be done faster and more efficiently? Is it right to try to convince aircraft passengers to strictly follow the rules of procedure during flights? What would an optimized piece of luggage look like? Would the optimal materials used to make hand luggage be different from those usually used today?

The company conducted a limited-time online contest to seek innovative ideas from its customers worldwide. The ideas were evaluated by senior Lufthansa personnel and the top four ideas were awarded prizes. The winning ideas included a system of simple tags to encourage passengers to place their hand luggage in predefined areas, a multifunctional carry-on bag that consists of two compartments, a user guide for passengers consisting of a number of useful infographics and tips on how to pack luggage while saving space, and a design for lightweight, stackable, and stylish suitcases (so shaped that they can also provide a comfortable seat for passengers if necessary).

Given the relatively low cost of holding such online contests and the presence of innovation intermediaries (such as Innocentive) that can organize such contests on behalf of client companies, crowdsourcing has become a favored means to seek ideas from outside.

Such online contests have also taken place in the public sector and enable the citizen’s role as ideator. Consider the case of the Community Foundation of Greater Birmingham, a charity organization in Birmingham, Alabama. In 2009, as part of its 50th anniversary celebration, the foundation embarked upon initiatives to make the city “cooler.” Specifically, the foundation identified a physical space, a parking lot owned by the city of Birmingham, which could become the focus of such effort. The foundation then asked the community to come up with ideas for that “physical site that will transform Birmingham into a cooler, more vibrant city.” Specifically, the ideas had to be “cool,” realistic, sustainable, and have a broad appeal so as to draw people of all ages from all over the region.

To broaden the nature of ideas solicited, the foundation conducted an online contest (Prize2theFuture) that would allow people from all over, not just the citizens of Birmingham, to contribute ideas. The organization also offered prize money for the winning ideas. More than 1000 ideas were received, including ideas to develop a stockyard (public open-air plaza designed around stackable repurposed shipping containers), a magic city station (a large building that reflects the character and shape of a railroad station), and a bazaar (which, in addition to having shops and restaurants, will also enable visitors to use Apple store-like technology to understand the rich history of the city of Birmingham). The winning idea, offered by a local resident, was called One Birmingham Place. The idea involved replacing the parking lot with a multi-use facility with eight elements that can tap into performance, social media, theater, and visual arts. Among the eight elements are an outdoor stage for performances that

---

17. For more details on this contest, see <https://innovation.lufthansa.com/start.php>

can double as a shaded raised seating area during the day, an open access computer lab, an outdoor projection wall to show images of Birmingham, and a café.

Note that the winning idea was only a concept. It has to be developed further by architects before it can be implemented. That process is currently underway. The foundation and the city hope to implement the winning idea, as well as ideas from other entries, in the broader effort to realize the original goal of making the city a “cooler place.”

Significantly, such online contests are most effective when an organization has clearly identified the problem and is able to articulate it in a way that is understandable to people outside the organization. However, when the problem context is not well-defined or is too broad in nature, other mechanisms may need to be used to facilitate the citizen’s role as ideator.

## Conceptualizing Solutions for Broader Problems

When the problem is too broad in scope and when solutions require combining different ideas, online contests and competitions are unlikely to work. In such contexts, forums that facilitate the sharing of different perspectives of the problem, the contribution of ideas, and building upon each other’s ideas are needed. IBM’s experience with Innovation Jams illustrates this.

IBM started its Innovation Jams initiative in the early 2000s as a way to engage its employees in defining (or identifying) the core values of the company. A Values Jam enables a collaborative approach toward defining what the company should be all about. The company soon learned that the same approach could be used to find solutions to more complex issues and problems.

One such problem was identifying future technology investment areas. Given a wide range of emerging technologies, the company had to decide which were worth pursuing, and which types of business opportunities (and commercial applications) would be feasible in those areas. Traditionally, such decision-making would have involved senior managers and technologists within IBM (and, to a limited extent, input from external consultants and experts). However, IBM decided to throw open the discussion to a broader audience. In 2006, the company organized the Innovation Jam, aimed at identifying and evaluating business opportunities associated with different emerging technologies. The Innovation Jam—a massive limited-time online brainstorming session—involved 150,000 people from 104 countries, including IBM employees, scientists and researchers from universities, business partners, and customers. Over two 72-hour online sessions, participants posted more than 46,000 ideas as they explored IBM’s most advanced research technologies and considered their application to real-world problems and emerging business opportunities. These ideas were then carefully examined and pruned to identify the 10 most promising business opportunities. Over the years, IBM has invested millions of dollars in new business creation based on the output of the Innovation Jam.<sup>18</sup>

A jam is a massive online discussion that enables a diverse set of participants to put forward innovative ideas (related to a broad topic) and also to build upon each other’s ideas. Given the deluge of ideas, subject-matter experts and moderators as well as technology (e.g., text-analysis tools) must be employed to channel the idea generation and bring coherency to the discussions. Further, theme analysis and qualitative research are conducted after the jam to identify major themes and insights, as well as the most promising ideas and concepts.

---

18. Visit IBM JAM events page: <https://www.collaborationjam.com/>. Also read, “An Inside View of IBM’s Innovation Jam,” *MIT Sloan Management Review*, Fall 2008.

Innovation-type jams can be applied to engage citizens in solving broader and more complex civic or social problems. For example, in 2005, the Government of Canada and the United Nations Human Settlements Programme (UN-HABITAT) organized a three-day Habitat Jam.<sup>19</sup> Thousands of participants—from urban specialists to government leaders to residents from around the world—discussed issues of urban sustainability. Their ideas shaped the agenda for the UN World Urban Forum, held in June 2006. People from 158 countries registered for the jam and shared their ideas for action to improve the environment, health, safety, and quality of life in the world's burgeoning cities. While the Habitat Jam was a demonstration project, its success indicates the promise of such approaches to engage a large number of citizens in solving important social issues and problems.

Another example is the Climate Consortium Denmark. The Danish government wanted to formulate a new strategy to combat climate change while driving new business growth. Rather than limiting the idea generation process to key government agencies and departments, the Danish government organized an Innovation Jam (a series of workshops) that brought together government representatives, businesses, and citizens as well as academics, experts, and artists. Such an approach helped government agencies to get innovative ideas and policy suggestions from a diverse set of stakeholders and go beyond the usual agency turf wars that typically dominate policy debates.

Other examples of engaging citizens as ideators in solving broad problems include:

- The city of San Francisco seeking cost-saving and revenue-generating ideas from its more than 26,000 city employees to improve overall finances
- The effort by California State Assembly member Jared Huffman to generate ideas from citizens for new legislation
- The initiative by Amnesty International to seek innovative ideas to help those working to uphold human rights in the face of unlawful detention

In these and other instances, the problem was broader and the innovative ideas received from individual citizens may only address part of the problem. Put together, the different ideas help the organization to start developing more comprehensive solutions.

## Recommendations for Citizen Ideator Initiatives

Two mechanisms can be used to support or facilitate the citizen's role as ideator. The first type is contests and competitions (crowdsourcing) in varied formats. They work best when the following five key factors have all been addressed:

- Clear framing of the problem
- Clear specification of the incentive/award
- Clear identification of the potential solver population
- Clear definition of the process
- An effective platform to manage the process<sup>20</sup>

The second type of mechanism involves time-limited (online or offline) brainstorming or innovation jam sessions that help bring people together to identify, discuss, and build upon varied ideas and solutions related to a broad problem.

19. For more details about the Habitat Jam, visit <http://www.globaldialoguecenter.com/exhibits/backbone/index.shtml>

20. For more details on these five factors, see "Spurring Innovation through Competitions," *MIT Sloan Management Review*, Fall 2013.

The following recommendations will help government agencies and other organizations to cultivate the citizen's role as ideator.

**Recommendation Four: Frame the problem in a way that users can understand.**

A problem can be solved only if it is well understood. Experience in the private sector shows that solutions can be successfully sought from external entities only when the problems are articulated in ways that are devoid of organization-specific terminologies and meanings. Thus, the test for the government agency seeking the solution would be: can a citizen with limited understanding of the internal workings of the agency interpret and understand the problem? The agency can only expect a useful solution if the answer is yes. In short, the lead agency should ensure that the problem is articulated and communicated in terms that citizen innovators can understand and relate to.

**Recommendation Five: The broader the problem, the wider the net.**

Research informs us that the more complex the problem, the more diverse the knowledge required to solve it. And the best way to ensure the application of diverse knowledge and perspectives is to engage with a diverse set of solvers (citizens). Thus, the lead agency should cast a wide net to generate ideas from a large and diverse set of citizens who can provide different perspectives to generate solutions for broad-scope problems.

**Recommendation Six: Use technologies to diverge and converge.**

As noted previously, there is much to be gained from engaging with a large and diverse set of citizen ideators. At the same time, it holds the risk of attracting a large set of seemingly conflicting ideas that don't lead to a workable solution in a timely manner. New technologies can help agencies in addressing both these issues. Online contests and online brainstorming techniques help ensure a global pool of participants (i.e., to diverge the solution seeking process). Online idea voting and ranking tools, text-analysis tools, and other qualitative analytical tools could help agencies to process and formulate solutions from a diverse set of ideas and suggestions (i.e., to converge the solution process). In short, the lead agency should adopt new technologies to both broaden the participant base and converge upon a set of relevant solutions and ideas.

# Citizen as Designer

Citizen contributions can go beyond new ideas or concepts to solve a known problem. Citizens can also participate in and contribute to the fuller development of those innovative ideas or concepts into practical, implementable solutions. This is a relatively new role largely enabled by the advance of new IT-based tools that support knowledge sharing, visualization and virtual prototyping, and collaborative idea building.

Examples from the private sector, where customers have assumed a more active role in the actual design and development of new products and services, illustrate the potential for the citizen's role as designer. Three approaches for citizens as designers are:

- Virtual design and prototyping tools
- Data mashups
- Participatory design workshops

## Virtual Design and Prototyping Tools

The first approach involves providing extensive IT-based or virtual design and prototyping tools to enable individual innovators to build on an idea and to design and develop a prototype of the solution. Although this approach may not be valid in all contexts, the automotive sector's experience illustrates its feasibility.

BMW, the German automaker, has used its online customer community to help design features for its cars. In 2003, the company set up a customer innovation lab, a virtual environment with online design tools for customers to develop their innovative ideas—particularly those related to telematics and driver assistance systems.<sup>21</sup> Over 1000 users shared their ideas on innovative telematics, online services, and driver assistance systems of the future. The participants made suggestions in a structured multimedia environment that enabled them to view, evaluate, and build upon proposals made by other participants. Two hundred and fifteen design ideas for innovative services and products were generated. The selected ideas were then elaborated with selected set of users. In the end, two design ideas initially triggered by the Customer Innovation Lab were realized by BMW and introduced to the market.

More recently, as part of its Urban Driving Experience Challenge, BMW conducted a design competition wherein customers were asked to not just contribute innovative concepts to improve the driving of premium vehicles in the future, but also to develop those ideas into more detailed designs. The company received over 3,500 design boards based on 400 innovative concepts; these design boards helped BMW identify a number of high-value design features that could be incorporated in future cars.

---

21. Co-Creation Lab, BMW. <https://www.bmwgroup-cocreationlab.com/home>



## Best Practices for Citizen Designers

### **Innovation Ecosystem: Shared Worldview**

- Provide a broader historical perspective for citizen co-designers to develop a shared understanding of the problem context
- Enable citizen co-designers to share with one another the assumptions that underlie their individual solutions and designs

### **Innovation Ecosystem: Architecture of Participation**

- Offer web-based tools that would help citizens to visualize their solutions and build virtual prototypes
- Adopt open sourcing licensing schemes for citizen-submitted solutions and designs to enhance benefits for the broader community

### **Innovation Platform: Problem Modularization**

- Define the context where the solution will need to work so that citizen co-designers could evaluate their designs
- Help integrate design parts offered by different citizen co-designers

### **Innovation Platform: Communication Infrastructure and Rules of Engagement**

- Provide forums (online or offline) to promote design-related conversations among citizen co-designers, community leaders, government agencies, nonprofits, etc.
- Connect data owners (agencies) with citizen developers and create data warehouses to promote mashups

A more extensive example of the designer role is provided by the Fiat Mio project. In 2009, Fiat, the Italian car company, wanted to create a futuristic concept car and decided to engage with its customers and other innovators in this venture. To facilitate this co-design, Fiat deployed an open collaboration platform on the web and invited participants to submit design ideas and help develop the concept car. More than 17,000 participants from around the world submitted more than 11,000 ideas. They were stimulated to think in broad terms about traffic and life onboard. Significantly, the participants not only contributed design ideas but also helped in making numerous detailed design decisions (for example, door configuration, car color, etc.). The design concepts were then carefully put together by Fiat and resulted in the specifications of the Fiat Mio Concept Car, officially launched at the Sao Paulo Auto Show in October 2010. The car's final specifications were submitted under the Creative Commons license (an open source license) that allowed it to be in the public domain, open to everybody, including Fiat's competitors.

The central idea behind this approach is to enable participants to develop features of their solution (idea) and to visualize them virtually so that they can articulate the details better. As such, in the civic innovation context, this approach may be suitable when solutions involve developing physical objects (e.g., redevelopment of public places), user interfaces (e.g., forms and other documents that citizens use to interact with government agencies). In pursuing this, government agencies can learn from the experience of companies in the private sector.

## Data Mashups

A second approach involves providing the data and the tools needed for users to design and develop solutions to address specific problems. Such an approach is often referred to as a mashup. While it began in the private sector in the mid-2000s (specifically, in the web

services market), more recently, the same approach has been used successfully in the public sector context.

The mashup movement represents the creativity of independent developers in mixing and matching different preexisting innovation components from multiple sources or companies to develop new and innovative services. For example, in the web services market, companies such as Yahoo, Google, Zillow, and Flickr provide the data and other innovation components. The application programming interfaces (APIs) published by the large companies provide the primary mechanism for independent innovators to combine components from the different companies. The tools used to develop mashups are simple enough for end users to use and do not call for any programming skills. Thus, independent developers (innovative users) apply their creativity to combine these innovation elements in different ways to create new offerings.

For example, Wikipediavision combines information from Wikipedia and Google Maps to show in real time the origins of anonymous edits to Wikipedia. Similar mashups have involved taking location data from Flickr photo tags and transposing them against the U.S. map—in effect, creating a photo guide of the different places and people in different parts of the country.

What is the incentive for large companies, such as Google, to offer such free access to their data? Mashups allow companies to tap into the creativity of external innovators in ways that enhance the visibility and usage of their own products.

More recently, the mashups movement has been extended to fuel innovation in the public sector. In 2010, the Center for Digital Government, in collaboration with the state of California, city and county of Los Angeles, city and county of San Francisco, Google, and Microsoft, announced the launch of Apps for California. This web application development contest sought the best ideas to improve government transparency and services. The state of California made available over 400 million major data sources and 100 million data records. This publicly available information covered almost every facet of government, including budget, land use, health statistics, highway traffic, labor and much more. Citizen developers were invited to dive deep into the data and then imagine applications that would provide value to California's residents and businesses, promote collaboration and government efficiency, and ensure data accessibility and usability.

Many of the resulting apps (mashups) offered highly innovative services to California residents. For example, California Cage Fight is an app that allows residents to compare their county with other California counties on a whole range of factors including population growth, unemployment rate, per capita income, new housing units, and number of employees in agriculture. Zonability is a mobile app that gives property owners, real estate developers, and economic development corporations fast and easy access to San Francisco zoning ordinance information and enables them to communicate with city planners. Overall, it allowed the state of California to leverage the creative potential of its citizens and create new rich services to benefit the public good.

Similar mashup initiatives have been launched in other states to encourage citizen-driven mobile apps development that would enhance the quality and efficiency of government services. For example, New York City's BigApps contest provides more than 350 sets of official data for the public to create apps. In 2011, the winner was the Roadify iPhone app that used city traffic data to provide commuters with on-the-spot updates and alerts on the latest road, bus, and subway conditions. Similarly, CivicApps for greater Portland has involved citizens creating apps from public data sets released by the city government to address important civic

issues and problems.<sup>22</sup> Data sets also came from inter-jurisdictional agencies including city, county, and regional authorities. All the citizen-developed apps are licensed under open source for anyone to use, customize, or extend for the benefit of the broader community. As the mayor of Portland, Sam Adams, notes, “Through CivicApps, we’re harnessing the phenomenal talent of Portland’s mobile and software development communities. At the same time, we’re making the best use of open data to improve government for citizens and increase transparency.”

## Participatory Design Workshops

The third approach, participatory design workshops (also known as cooperative design workshops), has its roots in the Scandinavian countries. By actively involving the key stakeholders (customers, citizens, end users) in the design process, the resulting design is usable and meets the real needs of the beneficiaries. The approach has been employed in a wide range of contexts including software design, urban design, product design, and public policy planning. The core objective is to move from merely consulting with a community (or citizens) to co-designing with the community.

Consider Finland’s Living Lab project.<sup>23</sup> The project was initiated in 2000 by a group of retired women in Finland who wanted an alternative for senior housing. The project involved the design and construction of the *Loppukiri* house (in English: last spurt)—a senior housing arrangement based on neighborliness and self-help. The citizen group (Active Seniors Association) managed to negotiate with the city of Helsinki the assignment of a price-regulated lot that permitted more concrete planning. While professional design consultants assisted the group, the design work was largely conducted as a collaborative (or collective) work driven by the future inhabitants of the senior housing. The group employed several co-design strategies including the concept scenario work, the construction of an iterative specification document with clear ownership, paper and functional prototypes, etc. Through a series of design workshops, the concept scenarios and ideas were translated into specific features and architectural elements. In addition, following an ideation workshop in 2005, the group came up with a design to implement a digital “community calendar.” Overall, the participatory approach resulted in not only a design that was true to the citizen group’s needs but also the identification and design of several elements (e.g., digital community calendar) that would not have been created if only the local government and professional designers had been involved.

Similar civic-innovation projects (involving co-creation with citizens) are evident in other places too. For example, the City Repair in Portland, Oregon, a volunteer-driven initiative, adopts the principles behind participatory design and focuses on engaging citizens and communities in co-designing and creatively transforming public places into sustainable, community-oriented urban spaces.<sup>24</sup> Several successful projects have resulted from this initiative—e.g., Intersection Repair led to the transformation of a misused street intersection into a successful community square.<sup>25</sup> All the projects emphasize collaborative decision-making and design by the community with limited or no involvement from local government agencies or design professionals. A similar initiative in the United Kingdom, the Participle initiative ([participle.net](http://participle.net)) involves developing and experimenting with new ways for citizens to get involved with their communities (and government) in transforming the way public services are designed and delivered.

---

22. CivicApps. <http://civicapps.org/>

23. For more details, see “Coordinating everyday life: the design of practices and tools in the Life Project of a group of active seniors.” Andrea Botero and Kari-Hans Kommonen. ([https://reseda.uiah.fi/Taik/jsp/taik/Publication\\_Types.jsp?id=6463117](https://reseda.uiah.fi/Taik/jsp/taik/Publication_Types.jsp?id=6463117))

24. “City Repair.” [www.cityrepair.org](http://www.cityrepair.org)

25. “Intersection Repair.” <http://cityrepair.org/about/how-to/placemaking/intersectionrepair/>

Recent efforts in this area have also focused on developing web-based tools and technologies to facilitate citizen engagement in co-design of community spaces. For example, the Urban Mediator project (<http://mlab.taik.fi/urbanmediator/>) in Finland has led to the development of a web-based platform that enables citizens (users) to create, obtain, and share location-based information and integrate that with city customer services and other community portals to drive innovation.

## Recommendations for Citizen Designer Initiatives

The citizen co-design mechanisms described here fall into two categories:

- Use of virtual tools and access to data
- Co-design of workshops and processes

Based on the above discussion, the following recommendations are for government agencies and other organizations intending to cultivate the citizen's role as designer.

### **Recommendation Seven: Facilitate virtual design and prototyping.**

Visualization and testing are critical for a community of citizens to interactively co-design solutions. It allows them to share their designs, test and critique them, and build on another's ideas. The availability of new technologies enables organizations to offer such virtual prototyping facilities in a cost-effective manner. Thus, where appropriate, the lead agency should provide web-based tools for citizen co-designers to prototype and visualize their solutions.

### **Recommendation Eight: Have forums for community-based co-design initiatives.**

A good design calls for viewing the solution from the perspective of diverse stakeholders. Such an approach allows making the right design trade-offs and decisions. It is thus imperative that government agencies bring together citizens as well as other community-based stakeholders in the design process. In short, the lead agency should fund and/or promote forums to host community-based co-design initiatives that would bring together citizen co-designers, community leaders, nonprofits, etc., to design and solve local civic problems.

### **Recommendation Nine: Promote data-based mashups.**

The widespread adoption of mobile devices has made them the best avenue for government agencies to provide citizens with access to data-based services. At the same time, new programming tools and standardized interfaces have made it easier for citizen designers to develop innovative data mashups for such mobile devices. The only potential barrier is the ready availability of public data; government agencies can play a key role in identifying, standardizing, integrating, and publishing appropriate public databases. In short, the lead agency should promote mashups that serve the public good by providing access to data in ways and formats amenable to app development.

## Citizen as Diffuser

The fourth citizen role—as diffuser of innovation—relates to the individual citizen’s potential to be a change agent or catalyst in enhancing the adoption of a new government service by peers. It has been well documented that innovation adoption is a social process whereby the adoption decisions of potential adopters are influenced by the evaluations of the opinion leaders in the same community (here, peer citizens).<sup>26</sup>

In the private sector, many companies have realized this potential and have employed the services of their customers (users) to influence the purchase/adoption decisions of their peers. Adoption of solutions to problems in the civic context is no different and many of the practices employed by private companies to facilitate adoption of new products and services can be applied in the case of civic innovations as well.

Two approaches for citizens as diffusers are:

- Participating in online citizen communities
- Participating in virtual innovation experience centers

### Online Citizen Communities

Online customer communities have become the primary vehicle for customers to interact with one another and share ideas and opinions regarding a product or service. In some cases, such customer communities form organically (for example, the Macintosh User Group, or MUG, originated as localized user groups for Apple Macintosh products) whereas in other cases, companies actively facilitate the creation and management of customer communities (for example, [Salesforce.com](https://www.salesforce.com)’s user group). In whatever way they form, it is widely acknowledged now that such communities’ peer relationships can have profound impact on their decisions related to the purchase and/or use of new products and services.

Consider the example of Microsoft. In the early 1990s, online forums such as CompuServe became the venue for Microsoft customers to interact regarding their use of various products. A set of volunteer “expert” customers was soon dishing out advice and suggestions to peer customers to solve specific product-related problems. Over a period of a few years, the company realized that many customers preferred to interact with peer customers to not only resolve the problems they were facing with existing products, but to inform themselves about new Microsoft products and services. A more careful analysis of the online community’s interactions revealed that there were a few expert customers who had assumed the role of product support specialists by advising and helping peer customers in product usage. Through their contribution to the online customer community, these customers had also built up considerable

---

26. For more on the social process of innovation adoption, read Rogers, E. M., *Diffusion of Innovations* (5th edition). Free Press, 2003.

## Best Practices for Citizen Diffusers

### **Innovation Ecosystem: Shared Worldview**

- Share information about the problem(s) that triggered the innovation—the origins of the related problem, who experienced it, and how it impacted them
- Allow citizens who directly experience the problem to tell their story and provide a broader perspective for peers

### **Innovation Ecosystem: Architecture of Participation**

- Offer web-based tools to help citizens “experience” and form opinions about the innovation
- Provide varied forms of community-based reputational rewards and other incentives to promote peer interactions in the online citizen community

### **Innovation Platform: Problem Modularization**

- Clearly communicate to the opinion leaders in the citizen community the innovation (the boundaries or scope of the innovation, key features, benefits) and how it will be implemented
- If feasible, allow citizens to adopt the innovation part by part so as to minimize the associated learning curve and make it easier to adapt to the changes

### **Innovation Platform: Communication Infrastructure and Rules of Engagement**

- Host, fund, or provide other types of support for theme-focused (innovation focused) online citizen communities
- Allow interactions between citizen opinion leaders and agency employees and other entities (who developed the innovation)

reputational capital as the go-to people for advice on Microsoft-related products and services. Indeed, they were not only helping peer customers solve their product issues, but also sharing their own opinions and perspectives on new Microsoft products, thereby influencing peer customers' product purchase decisions.

Once Microsoft realized the value of these expert customers, the company set about to reward them for their services and win them over given their outsized influence on peer customers. Microsoft established the MVP (most valued professional) program in 1993 to recognize the contributions of its “expert” customers. Individual customers were evaluated and ranked based on their quantity and quality of contributions in the online customer community and the top contributors were awarded the Microsoft MVP title.

From around 37 MVPs in the first year of its existence, the program has expanded to include around 4,000 MVPs in 90 different countries. In addition to the social or community recognition, the MVP title also provides other more tangible benefits to the expert customer, including an invite to the annual MVP Summit at Microsoft headquarters (Redmond, Washington), free and early access to new Microsoft products, and discounts to some of the technology conferences. In return, over the years, Microsoft has built a stable team of volunteer Microsoft product evangelists who help the company by enhancing customer satisfaction with new products (by helping solve product use problems) as well as championing and recommending new products and thereby facilitating their rapid adoption.

Other companies have also instituted similar customer community-based programs and initiatives to facilitate their customers' role as innovation diffuser. For example, Harley Davidson, the Milwaukee-based motorcycle company, has for decades helped support the Harley Owners

Group (HOG). Similarly, in 1985 Apple established the Apple User Group Connection (AUGC) to host and promote peer-customer interactions aimed at championing Apple products.

The common theme among all these customer community initiatives and programs is the explicit recognition by companies that their customers can play a very influential (and valuable) role as the change agent by shaping the product perceptions of their peers. Prior research in management and marketing has shown that customers trust the opinions and comments of their peers more than that of the company. Several factors contribute to this: peers perceive expert customers as “one of us,” the expertise of volunteer customers, and their commitment to the welfare of the peers as evidenced in their interactions.

Much of this is applicable in the civic context to enhance the diffusion of new citizen-facing policies, practices, and other government innovations, e.g., the adoption of online service systems by DMV or new recycling practices by local governments. The rapid adoption of much of social and government innovation requires individual citizens to understand the how and the why of the innovation—i.e., how should the citizen use the innovation and why should they adopt it (what benefits will they derive from adopting it). Similar to new products and services in the private sector, such issues are better communicated by peers through interactions in online (or offline) citizen communities. Government agencies can facilitate this by establishing or promoting such online communities and sharing information with the opinion leaders in those communities.

For example, consider the adoption of electronic medical record systems (EMRs) in the health care industry. For the last few years, the U.S. federal government has been promoting the adoption of EMRs by physicians across the nation as part of its National Health Information Infrastructure (NHII) initiative. Financial incentives, new regulations, and more have been tried to enhance the rate of diffusion of EMR, with limited success. It has increasingly become clear that grassroots-level activities are needed to persuade hundred and thousands of physicians to adopt the technology. The government has funded state-level regional extension centers (REC) to conduct such activities. The most important part of the RECs has been to set up online physician communities to engage individual physicians in the role of diffuser. RECs in states such as Missouri, Illinois, New York, Arizona, Maine, and others have all established such online communities where physicians can interact with peers and share stories, concerns, and experiences regarding health IT adoption. As recent research shows, such peer interactions are much more powerful than financial incentives and other methods in enhancing adoption.<sup>27</sup> Early adopters not only assuage the concerns of non-adopters, but also share critical insights on enhancing the benefits that individual physicians can derive from EMR adoption, thereby critically influencing the physician adoption decisions.

These and other examples indicate that online citizen communities can become a valuable vehicle for citizens to play the role of a diffuser in facilitating the adoption of innovation—particularly when there is a focused theme (such as EMR technology) that binds together the community members.

## Virtual Innovation Experience Centers

Another approach applied in the private sector that may be relevant in certain civic innovation contexts involves establishing a virtual (IT-based) center for potential users to “play” with or

---

27. See Nambisan, Priya (2014). “EMR adoption among office-based physicians and practices: Impact of peer-to-peer interactions, peer support and online forums.” Proceedings of the 2014 Hawaii International Conference on System Sciences (HICSS), Kona Big Island, Hawaii.



experience the innovation and thereby develop favorable impressions about it (in turn potentially translating into adoption decisions). For example, Samsung, the consumer electronics company, set up such a virtual product launch center for its new products (including mobile phones). The center (accessible online) employed interactive simulation technologies to enable customers to test the product features and evaluate the product performance and value. Similar efforts have been adopted by other companies (for example, Japan's Suzuki). Thus, the objective of such a virtual innovation experience center is to enhance the users' perceived diagnosticity with regard to an innovation.

As research informs us, a key criterion for innovation adoption is the trialability of the new product or service, i.e., how easy is it for potential users to experiment with the innovation and understand its features, capabilities, and value. The higher the trialability, the more likely that an individual will be convinced of its value and adopt it. The virtual experience center described above enhances innovation trialability or customers' perceived diagnosticity and thereby facilitates broader adoption.

In certain instances of civic or government innovation, such virtual centers may be beneficial—for example, a new way of registering a car at DMV, a new form of Medicare reimbursement, etc. In particular, the new health exchanges (being implemented as part of the Affordable Care Act) can be communicated more effectively through such virtual centers. Not all social or government innovations may be amenable to this approach. Agencies need to carefully evaluate the promise of such virtual centers.

## Recommendations for Citizen Diffuser Initiatives

The following recommendations will help government agencies and other organizations to cultivate the citizen's role as innovation diffuser.

### **Recommendation Ten: Promote theme-focused online citizen communities.**

As noted previously, to play the role as innovation diffuser, citizens need to interact and share knowledge with peers, build their reputation in the community, and thereby influence adoption decisions. This calls for a forum or an online community that can host such interactions and knowledge sharing. At the same time, unless there is a common theme or focus to bind the citizen community, such online forums are unlikely to be sustainable. Government agencies can fund, provide the infrastructure, or extend other types of support to establish and sustain online citizen communities. Government agencies may also need to provide additional innovation-related information to complement citizens' knowledge base and set up incentives and reward systems to promote interactions and acknowledge citizen contributions. In short, the lead agency should promote online citizen communities focused on specific innovation themes (for example, health insurance, disaster recovery) that facilitate peer citizen interactions and knowledge sharing and support the citizen's role as innovation diffuser.

### **Recommendation Eleven: Enhance the "trialability" of government innovation.**

The more citizens can try out new government services, the easier it would be for them to make adoption decisions. Given the advances in information technologies, it has become easier and cost-effective to build virtual prototypes that would enable citizens to experience new services. In building such virtual innovation experience centers, agencies should focus on helping citizens answer the following questions about the new service or innovation:

- How would I interact with the new service?
- What information would I need to provide?



- What would be the service outcome?
- How much time would it take to deliver?
- What specific benefits would I get?
- Are there any risks associated with the new service?

In short, the lead agency should explore and adopt measures (for example, establish web-based virtual innovation experience centers) that would enhance the trialability of its innovations and help citizens experience them so as to make informed adoption decisions.

# Strategies for Creating an Environment for Co-Creation

The four roles described here reflect varied types of citizen contributions to solving problems in the civic context. Importantly, they also reflect different phases of problem-solving and imply different types of enabling structures, mechanisms, and incentives—i.e., different environments to promote citizen innovation.

Four strategies, in association with the broader innovation environment, promote citizen engagement and co-creation:

- **Strategy One:** Fit the approach to the innovation context.
- **Strategy Two:** Manage citizen expectations.
- **Strategy Three:** Link the internal with the external.
- **Strategy Four:** Embed citizen engagement in the broader context.

## Strategy One: Fit the Approach to the Innovation Context

Mechanisms that can be employed for enabling citizen innovation or co-creation can be placed broadly into the following groups:

- Contests and competitions
- Workshops and brainstorming sessions
- Data collection
- Data access and virtual tools
- Dedicated communities

In addition to the issues considered so far, there are some other issues that government agencies and organizations should consider when selecting the most appropriate approach for a citizen innovation context. We identify four key issues here. The different approaches (or mechanisms) vary in how well they relate to each of these issues. Table 3 captures this.

- **Duration (short-term or long-term):** Is the citizen engagement for a predefined time (typically short-term) or a longer, more continuous period of time? This would depend on the nature and scope of the problem; however, depending on the duration of the innovation process, some of the mechanisms may be more appropriate than others.
- **Individual or collective:** Is the agency looking for citizens to participate on an individual basis or as a group? In other words, does the problem-solving context call for stand-alone inputs (e.g., reporting a local pollution incident) or for citizens to build upon one another's ideas and inputs (e.g., co-designing a public policy)?
- **Prerequisites:** Does the citizen's role in problem-solving demand a set of prerequisites—for example, access to data, access to special tools and techniques, prior knowledge of the problem context, knowledge about how a government agency operates, etc.?

**Table 3: Fitting the Approach to the Context**

Approach/Mechanisms	Duration (Short-Term or Long-Term)	Individual or Collective	Prerequisites: Data and Tools	Problem Partitioning
<b>Contests and competitions, web-based suggestion box, etc.</b>	More suited to short-term engagement	More suited to individual inputs	More suitable when prerequisites are minimal	More suited when both problem and process can be partitioned
<b>Workshops/brainstorming sessions: Innovation Jams, participatory design workshops, etc.</b>	Suited for short-term and long-term	More suited to collective inputs	More suitable when prerequisites are minimal or moderate	Suited even when problem and/or process cannot be partitioned well
<b>Data collection: Mobile apps, e-petitions, open source databases, etc.</b>	More suited to short- to mid-term engagement	Suited for individual inputs	More suitable when prerequisites are minimal	More suited when both problem and process can be partitioned
<b>Data access and virtual tools: virtual design and prototyping tools, databases (for mashups)</b>	Suited for short-term and long-term	Suited for individual and collective inputs	Suitable even when prerequisites are high	Suited even when problem and/or process cannot be partitioned well
<b>Dedicated communities: data analysis communities, online citizen communities, etc.</b>	More suited to long-term engagement	Suited for individual and collective inputs	More suitable when prerequisites are minimal or moderate	Suited even when problem and/or process cannot be partitioned well

- Problem partitioning:** Is the problem and/or the process modularizable? In other words, can the government agency partition the problem into different parts or modules, or partition the process of problem-solving into different phases or activities? Note that, depending on the nature of the problem and the context, some problems afford higher levels of partitioning. Further, the higher the level of partitioning possible, the easier it would be to for citizens (with diverse set of expertise and knowledge) to participate.

Depending on the nature of the problem context, government agencies can also modify the mechanisms and/or form combinations of the mechanisms, i.e., adopt hybrid mechanisms (for example, contests and competitions that are open to members of a dedicated online citizen community).

### Recommendation

**Recommendation Twelve: Select the citizen engagement approach to fit the context.**

The lead agency should carefully select the mechanism (approach) to engage citizens in innovation and problem-solving by considering a range of factors related to the problem context, including the duration of citizen engagement, the mode of citizen engagement (individual or collective), the prerequisites for citizen engagement, and the ease of problem partitioning.

### Strategy Two: Manage Citizen Expectations

It is critical for government agencies to manage the expectations of citizen innovators with regard to their involvement in problem-solving. Managing such citizen expectations can not only ensure

their continued involvement but also, importantly, minimize the potential negative outcomes. Citizen expectations can be on different aspects of their engagement with problem-solving:

- Nature, extent, and duration of their involvement
- Knowledge and skills they need to bring to the activities
- The actions that will ensue from their involvement/inputs
- The benefits they (individually or collectively) will reap from involvement

The best way for government agencies to manage such expectations is to be open and transparent in every way possible.

There are three types of transparency that government agencies should pursue in this regard: role transparency, process transparency, and outcome transparency.

**Role transparency** clarifies citizens' perceptions about the specific role (or roles) they will play in the problem-solving context. Are they going to provide ideas for solutions, or be involved in further development of those ideas? Enhancing role transparency requires making explicit the problem-solving activities citizen will be involved in, the skills and capabilities they will need in order to participate, and the type of ideas/inputs that citizens will need to provide.

**Process transparency** clarifies the innovation or problem-solving processes and activities—the nature of the processes/activities, who will be involved, the nature of interactions required, the duration and timing of the activities, and how the processes will relate to the organization's (government agency's) other activities. Another aspect of process transparency relates to the incentives, or rewards, and the "rights" associated with citizen engagement. If there are incentives, what will be the process to distribute or provide those incentives? Further, if citizens offer innovative ideas and solutions, how will the intellectual property rights associated with those ideas be managed? For example, will the government "own" those ideas or will the government allow private companies to act upon those ideas and profit from it?

**Outcome transparency** clarifies the outputs associated with the problem-solving process. Enhancing such transparency requires the government agency to keep citizens informed about what is happening with their contributions; i.e., what did the agency do (or plan to do) with their ideas? What will be the time frame for acting upon citizen ideas? How will citizens be able to see or experience the outcomes once they are implemented? Such transparency helps to close the loop in problem-solving and ensures the future engagement of citizens in similar efforts.

Clarity about citizen roles, innovation and co-creation processes, and outcomes can reduce the potential for misplaced customer expectations regarding involvement, leading to a more positive citizen experience. Private companies have adopted several strategies to enhance such transparency in customer innovation. Such practices are equally relevant to public citizen innovation. For example, some companies have tried to enhance clarity by making customer roles and processes explicit through published policies and guidelines. Open discussions with the customer community about involvement have also helped to clarify perceptions and expectations. Maintaining archives of customer interactions in earlier problem-solving initiatives is another useful practice. Still another is periodically reporting to customers on the status of product improvement ideas.

Similarly, making explicit the organization's policies regarding intellectual property rights is critical for enhancing outcome transparency. Microsoft, for example, has instituted a Community Solutions Content program that allows Microsoft MVPs (customers) to author product support content that is hosted within the customer community as part of the company's product knowledge base, but owned by the community. The underlying principle is to bring clarity to "who

owns what” with regard to intellectual assets and to communicate that effectively to the citizen community prior to their engagement.

These and other strategies and practices from the private sector apply equally well in the public sector context to enhance the transparency of citizen co-creation. For example, government agencies may make explicit all the rules, policies, and guidelines for citizen engagement in an innovation context. Similarly, agencies may institute new mechanisms to communicate frequently to citizen innovators about the progress in idea development and implementation.

## Recommendation

### **Recommendation Thirteen: Adopt measures to enhance transparency.**

The lead agency should adopt a set of measures to enhance role transparency, process transparency, and outcome transparency associated with citizen engagement in innovation and problem-solving.

## Strategy Three: Link the Internal with the External

The best way for government agencies to benefit from the creativity of citizens is to ensure that they adopt strategies that would link the “internal” (the agency employees, structures, and processes) with the “external” (citizens and citizen communities). It ensures that the problems identified or solutions offered by citizens are acted upon by the agency and result in viable new services, policies, or offerings. Here, too, strategies and practices can be adopted from private companies.

Several companies have created dedicated staff positions to connect their external customer innovators with internal product development teams. For example, Microsoft has specially designated employees called buddies who play such a bridging role. Buddies interact directly with customer contributors in online communities and ensure that their inputs are fed to the appropriate people within the organization.

Another strategy has been to create new communication mechanisms. For example, some companies use formal communication methods such as white papers to provide vision and direction to customers’ innovation and value co-creation activities. Other companies have used more informal mechanisms—for example, SAP holds “ask-the-expert” discussions that bring together company insiders and customers to discuss a wide range of product and technology issues. Similarly, IBM’s Innovation Jam involved company employees as well as customers. Companies have also started using social media to facilitate informal conversations between internal experts and customers. Microsoft’s Channel 9 is an online forum that incorporates technologies such as blogs, podcasts, vodcasts, and wikis to promote open conversations between customers and Microsoft employees.<sup>28</sup>

Another approach has been to adopt new structures and processes to better integrate customer inputs into the company’s innovation pipeline. This has ranged from instituting new processes to evaluate customer ideas and suggestions, to selecting appropriate innovation projects for customers to get engaged in, to managing intellectual property rights. Research has shown that instituting appropriate innovation processes to accommodate ideas and inputs from customers is critical to ensure that companies really benefit from such inputs.

---

28. For more details, visit: <http://Channel9.msdn.com>.

Many of these strategies and practices are relevant for government agencies seeking ideas and solutions from citizens. Indeed, if such changes are not made to internal structures and processes to adapt to external citizen engagement, it is unlikely that such ideas and solutions would see the light of the day. As many companies have experienced, without appropriate internal processes, external ideas experience a “slow death” and lack of results would drive away citizen innovators from future involvement.

## Recommendation

**Recommendation Fourteen: Adapt structures and processes to link the internal with the external.** The lead agency should make appropriate changes to its internal structures (e.g., create new roles), processes (e.g., institute processes for project selection), and systems (e.g., establish new communication forums) to ensure that contributions made by external innovators (i.e., citizens) are acted upon by internal actors (i.e., government employees) and lead to concrete outcomes.

## Strategy Four: Embed Citizen Engagement in the Broader Context

The final strategy relates to framing the citizen engagement initiative in the larger context of the government agency’s core goals and objectives. This would allow the agency to look at the initiative not as a stand-alone activity (or as following a trend) but as an important ingredient of its overall approach towards fulfilling its agenda.

In the private sector, companies that have adopted such an approach with regard to customer innovation have realized greater levels of success. Some companies have embedded their customer innovation activities within their overall customer relationship management framework. This lets the company enhance the customer experience by finding synergies with a customer’s other product-related interactions. For example, companies such as BMW, Microsoft, and Ducati invite their leading customer contributors (innovators) to annual brand events to build relationships and enhance the opportunities to benefit from customers’ ideas.

While these and other such practices may not be directly transferable to the context of citizen innovation, it does indicate the potential for government agencies to view their citizen innovation initiatives in a larger context (say, as part of an approach to better governance). Such a perspective will not only allow the agency to broaden the areas where citizen ideas and inputs may be sought and applied but also help citizens to view their engagement as part of a broader movement (with larger goals and outcomes of social good).

## Recommendation

**Recommendation Fifteen: Embed citizen engagement as part of a broader agency initiative.** The lead agency should try to embed its citizen engagement efforts in a larger initiative associated with its core agenda and thereby make such efforts more meaningful to both the agency and the participants (citizens).

## Conclusions

The benefits associated with engaging with customers and users in innovation have been extensively recorded in the private sector. Evidence so far suggests that the benefits from citizen engagement in civic problem-solving are equally tangible, valuable, and varied. However, the challenges associated with organizing and executing such citizen co-creation initiatives are also many, and imply the need for government agencies to adopt an intentional, well-thought-

out approach. In this report, drawing on examples from the private sector as well as the government sector, we have identified many approaches and best practices.

While technology is an important enabler of citizen engagement in innovation and problem-solving, technology by itself should not be the reason for instituting citizen co-creation initiatives. Instead, the motivating objective should be to help the government get a deeper personal connection with its citizens and their problems and issues. The citizen co-creation framework and the recommendations offered here are intended to help government move in this direction.



## About the Authors

**Dr. Satish Nambisan** is a widely recognized researcher and thought leader in the broad areas of entrepreneurship and innovation management. He is Professor of Entrepreneurship and Technology Management in the Management department at the Sheldon B. Lubar School of Business, University of Wisconsin-Milwaukee (UWM). He also holds a joint position as Professor of Industrial and Manufacturing Engineering in the College of Engineering & Applied Science at UWM.



He conducts research in the areas of entrepreneurship, technology and innovation management, and technology strategy. His current work focuses on open innovation, collaborative innovation, innovation ecosystems, technological entrepreneurship, technology commercialization, customer co-innovation and value co-creation, and social innovation and social entrepreneurship.

His research publications have appeared in several premier management journals, including the *Harvard Business Review*, *MIT Sloan Management Review*, *Stanford Social Innovation Review*, *Management Science*, *Organization Science*, *Research Policy*, and *Academy of Management Review*.

He has authored two books: *The Global Brain: Your Roadmap for Innovating Faster and Smarter in a Networked World* (Wharton School Publishing, 2007) and *Information Technology and Product Development* (Springer, 2009). Professor Nambisan is the author of the IBM Center report, *Transforming Government Through Collaborative Innovation*.

Prior to joining UWM, he was Professor of Technology Management and Strategy at the Lally School of Management, Rensselaer Polytechnic Institute. During the year 2005–2006 he was Visiting Faculty at the Kellogg School of Management, Northwestern University. He has also held visiting appointments at the Institute for Entrepreneurship and Innovation, Vienna University of Economics and Business Administration, Vienna, Austria.

Dr. Nambisan speaks, consults, and conducts executive education both domestically and internationally in the areas of innovation management, technology management, corporate entrepreneurship, and product development. His clients include Microsoft, 3M, P&G, SAP, Sharp Laboratories, ASAE, and the Philadelphia Science Center.

He obtained his PhD in Management from Syracuse University, and his MBA from XLRI Institute (Jamshedpur, India).

**Dr. Priya Nambisan** is an Assistant Professor of Health Informatics & Healthcare Management at the Department of Health Informatics & Administration at the College of Health Sciences at the University of Wisconsin-Milwaukee (UWM).

Her primary research interests are in the areas of health care innovation, health informatics, health care management, consumer co-creation in health care, social media and consumer health informatics, and technology policy in health care.

Her research falls at the intersection of three important and emerging themes in the area of health care:

- Meeting the needs of informed and actively participating health care consumers (which implies the relevance of information seeking, communication, and information science)
- Health care organizations that interact with one another and with their customers (which implies the relevance of health services research, health care administration, marketing communication, organizational research, and knowledge management)
- The development and use of new health information technologies (which implies the relevance of technology management, information systems, human computer interaction, and usability research)

Her research work has been published in journals such as *Journal of the American Medical Informatics Association*, *Health Care Management Review*, *MIT Sloan Management Review*, *Online Journal of Public Health Informatics*, and *Journal of Business Research*.

Dr. Nambisan obtained her PhD in Communication Technology from Rensselaer Polytechnic Institute, and an MS in Nutrition Science from Syracuse University. She did her post-doctoral work at the University of Wisconsin-Madison at the Center for Health Enhancement Support Studies.

After completing the MS degree, Dr. Nambisan worked as a public health coordinator in the Ministry of Health, Government of Singapore, Singapore.

Before joining UWM, Dr. Nambisan was an Assistant Professor at the Department of Health Administration and Policy at the College of Health and Human Services at George Mason University, Fairfax, Virginia. Prior to that, Dr. Nambisan was an Assistant Professor at the Department of Health Policy, Management and Behavior, School of Public Health at the University at Albany, SUNY. She was also an affiliated faculty at the Department of Informatics, College of Computing & Information, at the University of Albany, SUNY.



# Key Contact Information

## To contact the authors:

### **Satish Nambisan**

Professor of Entrepreneurship and Technology Management  
Sheldon B. Lubar School of Business  
Professor of Industrial and Manufacturing Engineering  
College of Engineering & Applied Science  
University of Wisconsin-Milwaukee  
P. O. Box 742, Milwaukee, WI 53201  
(414) 229-6865

e-mail: [nambisan@uwm.edu](mailto:nambisan@uwm.edu)

Web: <http://www.satishnambisan.org>

### **Priya Nambisan**

Assistant Professor  
Department of Health Informatics and Administration  
College of Health Sciences  
University of Wisconsin-Milwaukee  
P. O. Box 742, Milwaukee, WI 53201  
(414) 229-7136

e-mail: [nambisap@uwm.edu](mailto:nambisap@uwm.edu)

Web: <http://uwm.edu/~nambisap>



# Reports from **IBM Center for The Business of Government**

For a full listing of IBM Center publications, visit the Center's website at [www.businessofgovernment.org](http://www.businessofgovernment.org).

*Recent reports available on the website include:*

## Acquisition

*A Guide for Agency Leaders on Federal Acquisition: Major Challenges Facing Government* by Trevor L. Brown  
*Controlling Federal Spending by Managing the Long Tail of Procurement* by David C. Wyld

## Collaborating Across Boundaries

*Coordinating for Results: Lessons from a Case Study of Interagency Coordination in Afghanistan* by  
Andrea Strimling Yodsampa  
*Collaboration Between Government and Outreach Organizations: A Case Study of the Department of Veterans Affairs*  
by Lael R. Keiser and Susan M. Miller  
*Using Crowdsourcing In Government* by Daren C. Brabham  
*Developing Senior Executive Capabilities to Address National Priorities* by Bruce T. Barkley, Sr.  
*Beyond Citizen Engagement: Involving the Public in Co-Delivering Government Services* by P. K. Kannan and  
Ai-Mei Chang  
*Implementing Cross-Agency Collaboration: A Guide for Federal Managers* by Jane Fountain

## Fostering Transparency and Democracy

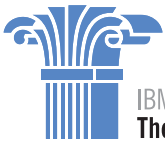
*Assessing Public Participation in an Open Government Era: A Review of Federal Agency Plans* by Carolyn J. Lukensmeyer,  
Joe Goldman, and David Stern

## Improving Performance

*Incident Reporting Systems: Lessons from the Federal Aviation Administration's Air Traffic Organization* by  
Russell W. Mills  
*Predictive Policing: Preventing Crime with Data and Analytics* by Jennifer Bachner  
*The New Federal Performance System: Implementing the GPRA Modernization Act* by Donald Moynihan  
*The Costs of Budget Uncertainty: Analyzing the Impact of Late Appropriations* by Philip G. Joyce

## Using Technology

*Federal Ideation Programs: Challenges and Best Practices* by Gwanhoo Lee  
*Rulemaking 2.0: Understanding and Getting Better Public Participation* by Cynthia R. Farina and Mary J. Newhart  
*The Use of Data Visualization in Government* by Genie Stowers  
*Mitigating Risks in the Application of Cloud Computing in Law Enforcement* by Paul Wormeli  
*Challenge.gov: Using Competitions and Awards to Spur Innovation* by Kevin C. Desouza  
*Working the Network: A Manager's Guide for Using Twitter in Government* by Ines Mergel



IBM Center for  
**The Business of Government**

## About the IBM Center for The Business of Government

Through research stipends and events, the IBM Center for The Business of Government stimulates research and facilitates discussion of new approaches to improving the effectiveness of government at the federal, state, local, and international levels.

## About IBM Global Business Services

With consultants and professional staff in more than 160 countries globally, IBM Global Business Services is the world's largest consulting services organization. IBM Global Business Services provides clients with business process and industry expertise, a deep understanding of technology solutions that address specific industry issues, and the ability to design, build, and run those solutions in a way that delivers bottom-line value. To learn more visit: [ibm.com](http://ibm.com)

### For more information:

#### **Daniel J. Chenok**

Executive Director

IBM Center for The Business of Government

600 14th Street NW

Second Floor

Washington, DC 20005

202-551-9342

website: [www.businessofgovernment.org](http://www.businessofgovernment.org)

e-mail: [businessofgovernment@us.ibm.com](mailto:businessofgovernment@us.ibm.com)

Stay connected with the  
IBM Center on:



or, send us your name and  
e-mail to receive our newsletters.