By G. Martin Wagner, Forum Editor

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Forum Introduction: Five Management Challenges in an Internet-Enabled World

The Internet, along with its enabling technologies, has transformed the world and the way we live. It bridges distance, fosters civic engagement, and transforms how institutions operate. Like all transformations, it brings with it unique management challenges. These challenges arise from the fact that the changes are not just in degree but in kind. Yes, we do some things faster, but, more important, we are doing new things in new ways.

Organizations that use a vertically integrated command-and-control structure need to adjust to more open and horizontal business processes. Organizations that have traditionally performed functions internally or contracted for services find that cross-organizational collaboration can be more effective. New technologies like blogs short-circuit traditional information flows. Other new technologies offer new opportunities for service delivery and can even lead to new roles for government. Finally, new technologies leave some people behind, creating a digital divide between new "haves" and "have-nots" that calls for the development of mitigation strategies. This forum examines these five management challenges and suggests some approaches to overcoming them.

Challenge 1: Managing Horizontally Across Organizational Silos

The organizational structure of today's governments, particularly the federal government, reflects the structure of the large corporation of the 20th-century. It tends to be vertical, with many management layers. It puts a strong emphasis on command and control and rigorous adherence to process and procedure. It made excellent sense in a 20th-century economy, but in many ways is in conflict with current best management practice. Today, effective organizations have changed their structures to meet the demands and opportunities presented in the current environment. Effective organizations have become flatter, operate more horizontally, and farm out support functions to specialized groups with specific expertise. This new alignment enables such organizations to capture the efficiencies brought about by technological advances and changes in the workforce. One of the most difficult management challenges is how to operate more horizontally in an organizational structure that still emphasizes the vertical. Though difficult for private sector companies, it is doubly difficult for government agencies—agencies that operate in a framework of laws not easily updated and constrained by a wide range of stakeholders.

Challenge 2: Managing Collaboration Across Organizations

In "The E-Government Collaboration Challenge: Lessons from Five Case Studies," authors Fedorowicz, Gogan, and Williams survey five case studies in which governmental organizations have collaborated with other organizations to achieve a public policy objective. The report looks at the political, administrative, and technical challenges; examines how these challenges were overcome; and outlines recommendations on how to manage in this environment. This is important since, increasingly, cross-organizational partnerships enabled by information technology are more effective than "do it yourself" approaches.

Successful strategies for managing across organizational boundaries have more in common with politics and entrepreneurial behavior than classical business management. They also must be grounded in the specifics of what technology can do today and where it is going.

Five Management Challenges:

1. Managing horizontally across organizational silos
2. Managing collaboration across organizations
3. Managing new collaborative technologies
4. Managing the introduction of new services
5. Managing the digital divide

Challenge 3: Managing New Collaborative Technologies

In "The Blogging Revolution: Government in the Age of Web 2.0," author David Wyld looks at the rise of blogging. Weblogs, or blogs, enable individuals to communicate with a wide audience—allowing users to quickly generate and disseminate content via the Internet. As a communication platform, blogs afford an open medium for the exchange of content and ideas. In most instances, participating in a blog takes almost no technical skills, making participation easy. The result can be a highly interactive and fast exchange of information with many more participants than has been the case in the past.

As a collaborative technology, blogging fosters connection and, in some cases, disruption. It facilitates communication in different directions; it seems to articulate an alternative approach to the flow of information in contrast to the "controlled" nature of the flow of communication emblematic of large bureaucracies. Within an organization, blogging has the potential to short-circuit established ways of doing business. Arguably, blogging represents an open and horizontal approach to communication erupting in organizations known for centrally controlled vertical information flows. As a result, blogs and the other technologies of Web 2.0 offer much promise, but not without risk. It is critical to leverage the fruits of this technology's promise, while being mindful and vigilant about its risks.

Challenge 4: Managing the Introduction of New Services

In "Can Governments Create Universal Internet Access? The Philadelphia Municipal Wireless Network Story," authors Jain, Mandviwalla, and Banker examine what happens when government intervenes in a new market rather than waiting for that market to evolve. A confluence of factors has recently made municipal wireless networks (MWNs) a potentially feasible option for municipal governments seeking to promote more equitable and universal access to the Internet within their communities. The city of Philadelphia was looking to make itself more attractive to business, to enhance its residential appeal, and to mitigate the so-called "digital divide." This report describes the drivers and inhibitors to municipal wireless networks such as the effort in Philadelphia. The authors describe how municipal government can be a catalyst for the adoption of technology with the goal of promoting social and economic change as well. The Philadelphia story offers important lessons and insights for other municipalities and governments.

Challenge 5: Managing the Digital Divide

In "Bridging the Digital Divide for Hard-to-Reach Groups," authors Boeltzig and Pilling survey the effectiveness of programs to address the digital divide. As the Internet becomes pervasive, its universality is not as apparent: It still does not reach everybody. In some cases, it may not reach those who might benefit most from its capabilities. Boeltzig and Pilling identified specific groups of people who typically are not connected to the Internet and examined the circumstances of each: rural, poor, disabled, seniors, and ethnic minorities. Recommendations are aimed at increasing access for these targeted groups. The authors also provide valuable recommendations aimed at service or application providers, who have a major role in increasing both access and accessibility. ■

Challenge 1: Managing Horizontally Across Organizational Silos

By G. Martin Wagner

Insights on the first management challenge draw primarily on the federal government's electronic government efforts. To a large degree, these involve taking business processes managed at the agency level, optimizing them, and pursuing a government-wide citizen-centric approach. Agencies must change their processes to become dependent on other organizations, and adjust their programs to recognize that citizens often deal with multiple agencies and seek more consistency from government programs.

The 20th-century organizational model adopted by most private sector corporations and governments of the time was rigidly hierarchical as well as vertically integrated. Such a model rested on a "command and control" approach with a strict adherence to process and procedures. It came into being as a means of delivering economies of scale while minimizing transaction costs and facilitating the control of information among specific hierarchical managerial layers. To some extent, such an approach reflected the economic realities of the day.

At the time, it made sense to do things in-house rather than depending on outside resources. In this model, it made sense to impose onerous procedures to ensure that organizations manufactured the right product. It made sense to have layers of approval to justify and leverage the effectiveness of more expensive staff. It made sense to package information and flow it up and down the hierarchy to facilitate decision making. It was easier to control information and protect trade secrets.

New Economic and Technological Realities: Changing How Work Is Done

Today is different. What made sense then may not make sense now.

- Decades of economic growth mean people's time is more expensive as economic growth becomes manifest in incomes and labor costs.
- Decades of improvements in production efficiency mean that goods and services have gotten relatively cheaper.
- The growth of the knowledge economy and other changes in society mean that people are better educated.

One result of this changing dynamic is placing more emphasis on worker productivity, even at the price of paying a bit more for the tools workers use. To illustrate: Thirty years ago, faxing a document meant taking it to an organization maintaining expensive, temperamental fax machines. Fifteen years ago, offices had their own fax machines. Currently, faxing tends to be an individual capability, and some think the days of faxes are numbered. We went from spending staff time to keep the fax machine busy to using a fax to make staff time more productive.

Advances in information technology have driven as well as enabled the evolving organizational model. Five trends have changed the economic landscape, thus resulting in the necessitated transformation of business models. They are:

- The plummeting cost and improving reliability of computers
- The plummeting cost of reliably storing information
- The plummeting cost of reliably connecting computer processing and information between any two places on earth
- The slower rate of improvement in writing and managing software
- The increasing difficulty of getting and keeping skilled people

These trends have triggered changes in how and where work gets done. Today's world calls for a more horizontal set of business processes than in the past. These economic and technological advances have led to substantial changes in how private sector corporations are organized; the federal government, however, has experienced fewer changes in its overall structure and has remained largely vertical in its organizational model.

For a government agency to fulfill its mission, it involves many non-core business processes that support the agency and its programs. In today's environment, however, these business processes may be approached separately and managed as components. Certain non-core business processes may be managed more effectively by a recognized third-party specialist at a significant cost saving to the government agency. Fielding out non-core business support processes to a third party requires careful attention to the roles and responsibilities of both the third-party managers of the process and those in the agency that depend on program results. This requires careful selection of metrics and a governance process for all parties.

The private sector has implemented management changes along these lines and provides a good reference model for what the federal government has been attempting to do with electronic government (i.e., e-government). In fact, much of the progress to date has been for functions that are common to the public and private sectors—for example, travel management, acquisition, and payroll.

The Appeal of the Status Quo

Although it is extremely difficult to move to a horizontal business model, none of the reasons are technical. The following are the most important hurdles to be overcome in moving to the new operational model:

- People are comfortable with existing processes. They don't want to change. Costs are either built into budget baselines or are simply unknown.
- Entrenched incumbent companies delivering services to the government resist the threat of additional competition. They find ways to slow things down or trigger political concerns.
- Agencies are understandably loath to surrender control to a third party. Earlier rounds of consolidation in the name of cutting costs have not always been successful. Agencies find ways to slow the process down.
- The entire budgeting, management, and oversight process through the Office of Management and Budget to the Congress is built around an agency view. Joint development of a multi-agency solution is viewed as in conflict with the management and control apparatus of government. Management efficiency is in conflict with authority and control.

Given these concerns, it is surprising how much progress has been made.

A Strategy for Achieving the Electronic Government Value Proposition

At its core, the value proposition for electronic government is simple. Embracing a technologically enabled horizontal business model improves efficiency and effectiveness. More important, it forces the government to evaluate its programs from a "customer" standpoint rather than having each agency look at its own program. This "outside in" perspective forces different program managers to recognize that multiple parts of the government talking to the same people in different ways detracts from program effectiveness. Being consistent with other agencies dealing with the same citizens helps program effectiveness and citizen satisfaction.

However, most agency managers are quite comfortable following traditional processes, and appeals to theoretical improvements are often unwelcome. In addition, many individuals and organizations, both inside and outside government, have a vested interest in maintaining the status quo. Finally, a transition from one way of operating to another requires an investment. Funding that investment generates extensive debate over who will pay for it. The problem of externalities exists in federal budgeting as well as the overall economy. So how has the federal government approached the problem? There are seven elements to the strategy:

Securing leadership buy-in. Senior members of the administration have pursued this as a management priority. Although often handled as a technology matter, it is also handled as part of agency management priorities, thereby helping to ensure senior management attention rather than being delegated to the "techies."

Developing a vision collaboratively (but not too collaboratively). The electronic government initiatives were jointly developed with interagency teams that helped develop the initiatives and were in a position to address the real impediments to success. The input from the working level was strong enough to make adjustments, but the final decisions to proceed were very much at the leadership level.

Implementing incrementally. The vision led to plans with incremental deliverables, so each quarter it was possible to see if real progress was being made rather than simply a plan to do yet another plan.

Leveraging change agents. Every organization has individuals who understand the value proposition as a new way of operating and who possess the talents to make progress. The electronic government program encouraged, protected, and leveraged these people.

Enforcing progress. Progress against milestones was enforced through the budget process and with color-coded ratings of agency progress. Agencies were ranked on their progress as green (good), yellow (some issues), and red (poor). A simple color scheme had the virtue of netting out technology specifics to enable the right conversations at senior agency levels.

Being program driven, not technology driven. Initiatives were designed around program results rather than enhancing a technology capability.

Aligning around technology trends and enforcing technology standards. Initiatives were designed to be consistent with technology trends and scaled to support the whole government.

Progress

The federal government looked at many of the operational processes within each agency, found common elements, designated some agencies to perform those common elements on behalf of other agencies, and instituted a process to resolve issues between the sharing agencies. Almost every one of the strategies involved taking a business process existing in several agencies and forcing a more common approach across the government as a whole. In addition, the e-government program uses a business architecture for the entire federal government that explicitly looks for commonality of business processes across agencies. Common elements are then candidates for a common approach. The vertical meets the horizontal.

Table 1 shows the number of organizations involved in the core electronic government initiatives. It shows that most involve multiple agencies performing related functions. Organizations can be departments or bureaus, but in all cases they involve working jointly and horizontally.

In general, the goal is consistent with best management practice in the United States today. Nonetheless, it is difficult to execute organizationally. Each agency has a tradition of doing for itself what it is now being asked to share. Although there are many common elements, there are many differences that need to be addressed. Each agency is a vertical management silo that could gain by sharing a horizontal business process, but getting there is difficult. The complete transition will take many years. ■

Table 1: Number of Organizations Involved in Implementing Electronic Government Initiatives

Government to Citizens		**Government to Business**	
Initiatives	**Number of Organizations**	**Initiatives**	**Number of Organizations**
GovBenefits.gov	76	E-Rulemaking	160
Recreation One-Stop	11	Expanding Electronic Tax Products for Business	1
IRS Free File	1	Federal Asset Sales	25
GovLoans.gov	6	International Trade Process Streamlining	11
USA Services	32	Business Gateway	34
		Consolidated Health Informatics	22

Government to Government		**Internal Efficiency and Effectiveness**	
Initiatives	**Number of Organizations**	**Initiatives**	**Number of Organizations**
Geospatial One Stop	26	E-Training	13
Disaster Management	32	Recruitment One-Stop	112
SAFECOM	11	Enterprise HR Integration	12
E-Vital	1	E-Clearance	30
Grants.gov	26	E-Payroll	26
		E-Gov Travel	24
		Integrated Acquisition Environment	All
		E-Records Management	All

Source: *www.whitehouse.gov/omb/egov.*

Challenge 2: Managing Collaboration Across Organizations

By Jane Fedorowicz, Janis L. Gogan, and Christine B. Williams

Insights on the second management challenge are adapted from the Center report "The E-Government Collaboration Challenge: Lessons from Five Case Studies," by Jane Fedorowicz, Janis L. Gogan, and Christine B. Williams (Washington, D.C.: IBM Center for The Business of Government, 2007). The report examines approaches for overcoming the management challenges that arise when agencies collaborate across organizational boundaries to accomplish objectives.

Governments at all levels are increasingly turning to cross-organizational collaboration to achieve joint outcomes, and information technology is an important enabler for shared data and processes. This report examines five cases of e-government collaboration:

- California Franchise Tax Board: Integrated Nonfiler Compliance Program
- U.S. Treasury: Internet Payment Platform
- Capital Wireless Integrated Network
- U.S. Centers for Disease Control and Prevention: Bioterror/Rapid Syndromic Surveillance Initiative, "BioSense"
- Wisconsin Livestock Identification Consortium

These cases provide a wide variety of collaborative efforts between agencies, levels of government, and public-private sectors.

The report finds that public managers face similar challenges in using a common technology platform—such as the Internet or compatible radio frequencies—to drive and enable collaboration, and that there are common lessons learned and recommendations for others who may want to attempt similar efforts.

The case studies examined political, administrative, and technical challenges, and we conclude with recommendations for public managers interested in using technology to both drive and enable interorganizational collaboration. The case studies are summarized in Table 1.

In each example, public sector organizations identified a common problem and came together to design and implement a solution through collaboration and data sharing using an IT platform.

These five case studies represent a range of collaborations:

- Different combinations of public and private sector collaboration
- Different governance models (i.e., a third-party consortium versus control by an initiating public sector participant)
- Different cross-jurisdictional boundary spanning (i.e., by level—federal, state, local—by jurisdiction, or by agency function)

Challenges to Collaborating via Common Technology

The case studies we examined revealed three sets of challenges that interagency collaboration initiatives face when using technology to support the collaborative effort. The cases we studied addressed these challenges in a variety of ways with varying outcomes, and yield several important lessons learned.

Political Challenges

- Challenges from the external environment: What are the catalysts and constraints that inspire the effort?
- The challenge of shared goals: How does the project team meet varied expectations?
- The challenge of getting and keeping support: What roles do champions play?

Administrative Challenges

- The challenge of governance: How does the leadership group exercise—and agency participants delegate—control over the collaboration?
- The challenge of implementation: What is needed to make it work?
- The challenge of financing: How can a viable business plan be achieved?

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Table 1: Summary of the Five Case Studies

	California Franchise Tax Board's INC Program	U.S. Treasury's Internet Payment Platform	Capital Wireless Integrated Network	U.S. Centers for Disease Control and Prevention's BioSense	Wisconsin Livestock Identification Consortium
Focus/Goal	Identify people who underreport income	Streamline procurement and payment processes	Improve first-responder effectiveness	Identify and respond to bioterror or disease outbreaks	Track infected and potentially infected livestock
Collaborators	City, county, state, and federal agencies	Federal agencies and private sector vendors	City, county, state, and federal agencies	City, county, state, and federal agencies, and private sector businesses	State agencies, private sector businesses, and industry associations
Functions	Tax administration, licensing boards	Procurement, accounting	Police, fire, EMS, park services, transportation	Hospitals, laboratories, public health	Farmers, hobbyists, public health, USDA
Governance	Central control by state agency	Central control by federal agency	Consortium; compact not yet ratified	Central control by federal agency	Consortium of business and government leaders
Project stage	Fully operational	Time-bound pilot test	In rollout	Early in rollout	Early in rollout
Timeliness of data exchange	Monthly/annual sharing	Weekly sharing	Real time	Daily	Daily

Technical Challenges

- The challenge of data: How are data shared effectively?
- The challenge of legacy systems: What are the technical roadblocks?
- The challenge of standards and sourcing: How can the system best employ available building blocks?

Recommendations for Successful E-Government Collaboration

Collaboration across agency boundaries is hard; there is no guaranteed recipe for success. These initiatives face challenges from within participating organizations, from within the governing organization, and from sources completely outside of the initiative. Decisions made about one aspect of an interagency initiative will affect its design or use in unexpected ways. Political enablers and constraints compete with administrative practices, organizational processes, and technological opportunities, resulting in complicated and sometimes sub-optimal design decisions for the technologies and processes participants will use. Although there is no one best way to design an interorganizational collaboration, we can offer some helpful hints that should improve the likelihood of success. We conclude with 10 recommendations for managers involved in e-government collaborations.

Recommendation 1: Create opportunities for collaboration out of crises and other precipitating events.

Where a need exists, an effective leader can emerge and articulate a case for action. To articulate that need, effective leaders should be constantly vigilant for indications in the environment that point toward new needs and new solutions. The business press can help government leaders

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Key Lessons Learned

Political

1. Compelling events do not necessarily succeed in galvanizing interagency initiatives. Effective leaders do not wait for a crisis before they issue their call to action.
2. Legislative and regulatory requirements can act as a catalyst or impose constraints. Requirements may be contradictory and will compete for time, attention, and resources.
3. Long-term viability depends on achieving a critical mass of participants, but increasing their number and diversity can bring pressure to add or revise goals.
4. Interorganizational systems require multiple champions at multiple levels, and these needs and roles change over time.

Administrative

1. Governance structures need to accommodate representation of key participating organizations—and these change over time, requiring reorganization or expansion of their boards.
2. An initiative may falter or even fail if its leaders make unwarranted assumptions about the level of readiness of the organizations that should participate. Participants should anticipate making accommodations to implement and support the collaboration.
3. Project managers often fail to adequately plan for staffing and retraining. Consulting participants and proceeding according to a series of announced steps or with a phased-in timetable helps.
4. Adoption depends on achieving both financial and operational value for all stakeholders in excess of their costs and risks. It is difficult to obtain financial commitment when benefits accrue more to the common good than to individual participating agencies. Expanding system functionality or adjusting the technical requirements to achieve buy-in will increase costs and risks for the collaboration.

Technical

1. Participants will share data far more readily than they will cede ownership of or control over access to the data.
2. Data-sharing issues are easier to address when data are owned, retained, and maintained by the originators.
3. Retaining data in a single location controlled by a single organization increases their accuracy and timeliness.
4. Tie-ins to legacy systems place limits on system architecture and on the ability to adopt state-of-the-art solutions.
5. Standards decisions can affect the ability of agencies or business partners to participate in a collaboration. Organizations that actively participated in standards development organizations were better able to weigh the trade-offs between customized versus standardized solutions.

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identify business solutions that could potentially be adapted to e-government needs. Technical publications can help leaders become aware of potentially useful tools to support collaboration solutions. And stakeholders in each leader's community are often excellent sources of information about problems, opportunities, and innovations. Don't wait for the crisis to unfold; find a way to make the case that an inter-agency collaboration can help to avoid a crisis or capitalize on an opportunity.

Recommendation 2: Establish a shared understanding of goals and objectives.

Some collaborators come together to solve one problem and subsequently choose to address other problems or needs. While this can improve stakeholder buy-in, it also can raise the costs of participation. The purpose of an initiative and specific project goals should be re-assessed frequently to ensure that consensus still exists. Although a solid working relationship built on mutual trust is essential, it is also necessary to formalize relationships among participants through contractual agreements and a representative governing board or entity. The governance structure may need to expand over time to include new stakeholders, and agreements may need to be renegotiated or amended.

Recommendation 3: Cultivate a team of champions.

Interagency collaborations are fragile entities; at any turn, a roadblock may emerge and events can rapidly spiral downward when many different stakeholders are all attempting to achieve something together. An interagency initiative needs multiple champions—for the overall collaboration, for each of the participating organizations, and for the different levels of involvement and the different challenges that occur over time.

Recommendation 4: Assess readiness and facilitate participation in the collaboration.

A small town sheriff's office and a large metropolitan police force are worlds apart in their internal information systems, employees, controls, and organizational histories, yet both may have reason and ability to participate in interagency initiatives. It is not always disastrous if one potential participant opts out of the collaboration, but sometimes one reluctant participant could be the missing link that renders an interorganizational system ineffective. If system success hinges on attaining a critical mass of participating users, then the collaboration leaders need to find efficient ways of qualifying participants or providing them with the training and resources needed to come on board.

Recommendation 5: Leverage opportunities to combine data from multiple sources within the boundaries of social expectations.

Great value can be created when data from multiple sources are combined. However, combining sensitive data sources may trigger citizens' fears that government is invading their privacy. Cross-boundary access methods are far more difficult to administer than in-house ones. It is imperative that inter-agency collaborations establish appropriate controls to protect access to the data and prevent misuse. Conduct audits of an interorganizational system on a regular basis to ensure that its controls are effective. The penalties for data misuse should be widely publicized and systematically enforced.

Recommendation 6: Develop a business model for long-term viability.

The arguments and evidence that persuaded funders to contribute to a unique initiative in the immediate aftermath of a crisis or mandate may be much less persuasive later on, particularly when critics question why the initiative still is not self-supporting. To paraphrase strategic management consultant Michael Porter, find your path to profitability and march on down it. In practical terms, this means fully identifying all of the costs: to initially design and develop a working system; to maintain and enhance it over time; and to fund the ongoing operational costs once that critical mass of users is on board. It also involves identifying an initial set of benefits that can be realistically achieved, followed by continuous monitoring of actual usage to uncover hidden benefits, and then helping participants get and see those benefits so they will be willing to share the operating costs.

Recommendation 7: Understand—in detail!—how data are to be exchanged and used.

If data need to be acted upon within minutes, they are managed differently than if data are needed once a month. Security and privacy constraints often dictate what can be shared and with whom. Collaborators need to recognize that there are always trade-offs among the competing data qualities of timeliness, accuracy, and completeness. It is necessary to clearly specify who will retain stewardship of the authoritative version of various databases, what steps will be taken to protect the data, and what remedies and penalties will be put in place should parties fail to comply with these requirements.

Recommendation 8: Consider leading-edge technologies, but accept the legacy reality.

Every IT manager wants to use the latest and greatest technologies, because they open the door to faster, more flexible, and more data-rich collaboration. However, given that it is so expensive to retire a legacy system, it may be easier to provide manual workarounds or to write special data-sharing translators. The translator option is preferable, unless the initiative is a short-term pilot test or the manual workaround is a one-time event (such as when archived data are supplied by one organization to another).

Recommendation 9: Solicit many informed opinions on what software tools to use, and choose them carefully.

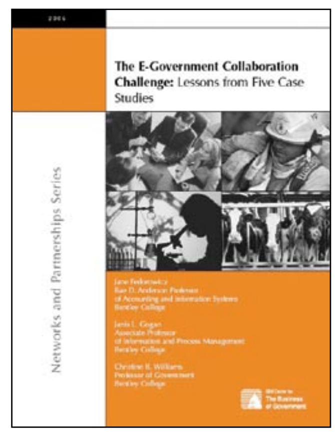
Open-source software is an appropriate choice for organizations that have adequate technical depth, but it can be a disastrous decision if the choice is based merely on the initial cost of the software. Software or tools that are donated by vendors may not be all they seem or may not be adequate to the tasks at hand. Obtain outside expertise to walk through the total-cost-of-ownership issues before selecting hardware and software. An interorganizational system is harder to manage when its architecture is not coherent.

Recommendation 10: Adhere to standards and, if possible, help set them.

Project leaders should consider the short- and long-term implications of adopting particular standards. Initiatives will be more successful if standards already exist in use or are agreed to by participants. If different participants support competing standards, challenges increase. The collaboration may choose to impose a single standard on its users, or choose to expend resources on the development of middleware to translate among them. Furthermore, adopters must be prepared for the evolution or replacement of standards. If possible, the development team should include standards experts on the team. The next best choice is to obtain outside expertise to review standards-related issues across all of the hardware, software, and communications technologies that are proposed or in use. Do not leave standards decisions to either general managers or programmers, who may not fully understand the implications of their choices. ■

TO LEARN MORE

The E-Government Collaboration Challenge: Lessons from Five Case Studies
by Jane Fedorowicz, Janis L. Gogan, and Christine B. Williams



The report can be obtained:

- In .pdf (Acrobat) format at the Center website, www.businessofgovernment.org
- By e-mailing the Center at businessofgovernment@us.ibm.com
- By calling the Center at (202) 515-4504
- By faxing the Center at (202) 515-4375

Challenge 3: Managing New Collaborative Technologies

By David C. Wyld

Insights on the third management challenge are adapted from the Center report "The Blogging Revolution: Government in the Age of Web 2.0" by David C. Wyld (Washington, D.C.: IBM Center for The Business of Government, 2007). It examines the rising impact of a new collaborative technology that can have a profound impact on both internal operations and interactions with external stakeholders. Blogging is an example of a technology that can completely change what people do, not just another way to do the same things more effectively. The report suggests some approaches for managing in a rapidly evolving environment in which the future is unclear.

There can be no doubt that the Internet has profoundly changed our work, our lives, our entertainment, and our politics. Now the Internet itself is undergoing perhaps its most radical change ever, as we are seeing what many experts have coined the development of "Web 2.0."

With Web 2.0, there is a sea change occurring wherein the web has become a truly participatory media; instead of going on the web to read static content, we can more easily create and share our own ideas and creations. The rise of what has been alternately referred to as consumer- or user-generated media (content) has been hailed as being truly groundbreaking in nature. This ability to create web content by simply typing words and pointing and clicking, without having to know *anything* about computer programming, has been touted by Tim Berners-Lee, the developer of the World Wide Web, as being much more in line with the original vision of what the web should be.

As of 2007, we are still likely in the early stages of the development of what will become Web 2.0. However, blogging is certainly at the forefront of Web 2.0 technologies. In a nutshell, a blog can be differentiated from a website in that it is a web vehicle that is easier to create and update, typically by simply typing into a preprogrammed interface. From a definitional perspective, a blog refers to an online journal that can be updated regularly, with entries typically displayed in chronological order. While blogs now encompass not only text but video and audio as well, it is generally accepted that if the individual posts, items, or articles cannot be linked to separately via a permalink (rather than just linking to the whole site), then the site in question is not a blog. Blogs are also commonly referred to as a weblog or web log, with *blog* used as the short form of these terms. *Blog* is also a verb, meaning to write an article on such an online journal.

As detailed in this report, blogging is an activity that is increasingly moving from the fringes to the mainstream, with intense interest in both corporate America and public offices as to how to join the conversation. There are currently 60 million blogs in existence as of April 2007, and the blogosphere (the sum of all blogs) is growing at a rapid rate, with everyone from teenagers, CEOs, and, yes, politicians—from the halls of Congress to city halls across America—joining in the conversation.

In the first part of the report, the state of blogging across the American public sector is examined, seeing how pioneering leaders (let's call them "blogoneers") in the public sector are making use of this new technology to foster improved communications both with their constituencies and within their organizations. Blogging is fast becoming a new tool for promoting online *and* offline engagement.

Just as in the private sector, public officials are finding blogging to be an excellent way to communicate both within their organizations and with their wider constituencies. This is exemplified by the rapid growth of blogs created and maintained by public officials in the United States and abroad. The author provides a comprehensive assessment to date of the blogging activities found across all levels of government, including blogs from:

- Members of Congress
- Congressional committees and caucuses
- Governors and lieutenant governors
- State legislators
- City managers and mayors
- Police and fire departments
- College and university presidents

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This report includes a case study of the experience of the U.S. Strategic Command (STRATCOM), which has led the way in using blogging to transform the culture and flow of information, prompted by the need for speed in fighting today's challenges.

STRATCOM is now at the forefront of the military's attempts to revamp to fight the War on Terror in the Information Age. In response to the threat of a rapidly evolving enemy that can sense and decide quickly, STRATCOM is seeking to implement 24-hour, real-time, secure communications from generals to warfighters (Kelly, 2006). The centerpiece of the effort is the Strategic Knowledge Integration (SKI-web). Part of STRATCOM's classified network, SKI-web is nothing less than a 24/7/365 virtual intelligence meeting, with blogging and chat as essential parts of the operation. Blogging is central to the efforts of Marine Corps General James E. Cartwright, commander of STRATCOM, to transform the culture and information flow. Everyone, from generals to frontline warfighters, is encouraged to blog. Lieutenant General Robert Kehler, the deputy commander of STRATCOM, observed that on SKI-web: "We expect and encourage everyone to blog. In fact, you buy your way into the blog with the value you add, not the rank you hold. We have a command chain in STRATCOM, not an information chain, an infosphere, if you will, within which command is exercised" (Rogin, 2006, n.p.). Inside STRATCOM, the non-hierarchical, free flow of information in blogs is proving to be nothing less than "an enormous cultural change" (Kelly, 2006).

Public officials are encouraged to engage in blogging in the honest, open, and consistent manner that is required to promote civic and organizational engagement—and ultimately to succeed—in this exciting time in the history of our democracy. To facilitate this for the reader, the report examines the lessons learned by these blogoneers and presents a series of tips for public sector bloggers, based on an analysis of the best practices available today.

In the second part of this report, the rise of blogging and user-generated media is examined as a wider social phenomenon, which many are now commonly referring to as Web 2.0. In Blogging 101, an overview of the history of blogs and the growth and diversity of the blogosphere is presented. The report then examines how blogging has taken hold in the corporate realm, and how leading firms and innovative executives and companies are entering the blogosphere. Blogging is also examined as an effective mechanism for improving internal communications and for managing knowledge, projects, shifts, and even the corporate culture. The potential downsides of blogging, in terms of both the personal productivity and employment issues as well as the security and liability concerns, are examined. The importance of monitoring the blogosphere for what is being said about you and your organization is discussed.

10 Tips for Blogging by Public Sector Executives

Based on an analysis of the best practices and advice for public officials, as well as private sector executives, here is a brief "cheat sheet" of tips for entering the blogosphere.

Tip 1: Define yourself and your purpose. In 1992, Ross Perot's running mate was Vice Admiral James Stockdale, a Vietnam War hero and former prisoner of war. At the vice presidential debate, he infamously began with the rhetorical questions: "Who am I? Why am I here?" (Holmes, 2005). While these questions didn't lead to victory for Stockdale, they can for you. You should, at least mentally but perhaps in your first post, state the reasons you are starting your blog, what you hope to do with it, who you hope will read it, and so on.

Tip 2: Do it yourself! Do not have someone else write your blog. While you may enlist assistance for any technical aspects that you feel uncomfortable with (and with the blogging tools available today, this really should not be an issue), you must be the author to make it authentic and interesting to your audience.

Tip 3: Make a time commitment. Before you begin your blog, know that you must make a personal commitment to have the time available to not only regularly post to your blog, but to read and respond to comments made on it. And if the comment section is managed, you or perhaps a subordinate must make decisions on which comments will be posted on the blog and which will not. You should work blog writing and reading time into your regular schedule, and if you know you will be unavailable for a period of time, invite a guest blogger(s) to fill your virtual shoes. Remember, in the blogosphere, 10 days without posts could mean the death of your blog, as readers will be drawn elsewhere in virtual space.

Tip 4: Be regular. While related to the first two tips, the need to regularly post to your blog merits particular attention. In short, if you do not regularly post updated material to your blog—*interesting material*—whatever readership you have will quickly fade away.

Tip 5: Be generous. If your blog is nothing but an exercise in self-centeredness and self-congratulation (or links to organizations congratulating you), then your readership will tire of it. Use your blog as a platform for your jurisdiction, your staff, your family (to an extent), and so on. Take the opportunity to highlight special people in your district or community, and let your blog be a channel for spotlighting your area, not just yourself. Provide praise, applaud unsung heroes, and point out people in need of special help. In short, do good works with your words.

Tip 6: Have a "hard hide." You cannot have a thin skin and engage in blogging. You will receive comments that range from the thoughtful and insightful to the unwarranted and the unprintable. You will also surely be praised by some tech-savvy constituents for using a new communications medium, while others will call your office or write a "snail mail" letter to ask what's wrong with the more established forms of communication.

Tip 7: Spell-check. This almost goes without saying, but it is surprising how many blog posts have spelling and/or grammatical errors. When spotted, such mistakes can generate satirical comments, spawn bad publicity in traditional and non-traditional media, and detract from your message. As the saying goes, "That's why God made a spell-checker!"

Tip 8: Don't give too much information. While it is great to be honest and open in your blog, you can do it to the extreme. Let the blog be a window into your thoughts, your work, and your travels, but remember the blunt admonition of the anonymous (2003) author of *The Blogger Manifesto*, "Nobody gives a [expletive] about what you had for breakfast" (n.p.).

Tip 9: Consider multimedia. While you must concentrate on providing timely updates to your blog, making them interesting and well written, having good content is not enough. It is crucial that you have an easy-to-navigate, visually appealing layout to your blog. In today's environment, there is a ratcheting up of blog standards, and in a short time it will be almost expected that video and audio elements be included on blogs. While you must learn to walk before you run, you should seek out links to audio/video sources to go multimedia at no cost. Then you can begin to consider recording and producing your own audio/video content to offer as posts or podcasts on your blog.

Tip 10: Be a student of blogging. You should make it a regular habit to spend time each day being exposed to

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blogs other than your own. Find favorite blogs (political and non-political) and subscribe to them using a news reader or aggregator program (using RSS or Atom feeds). With these tools, you can view updates from your favorites in one place, without having to surf to multiple sites. Finally, check out the top-ranked blogs (according to Technorati or ComScore), and use this as an opportunity to benchmark the best of the best.

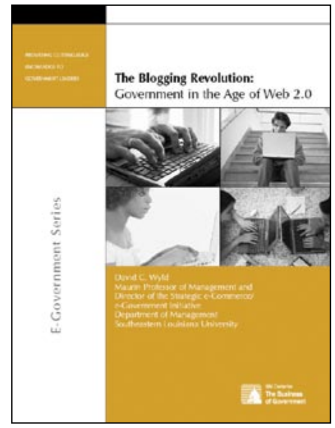
Conclusion

In *Wikinomics: How Mass Collaboration Changes Everything*, Don Tapscott and Anthony Williams (2006) propose that we are seeing the development of a new economic model whereby the whole notion of organizations and companies may be being revised and upended by mass collaboration capabilities. Using the wiki model that underlies Wikipedia, permanent, temporary, or one-time collaboration between individuals and companies of all sizes, outside the boundaries of traditional hierarchies and located anywhere on the planet, can join forces to produce content, goods, and services.

And now, with the advent of a whole host of technological advances, we are not just surfing the web, we are engaging it. We can create and control our own content through user-generated media technologies, which allow us to do so without sophisticated computer programming knowledge. In fact, it only takes one finger at a time to type, and typing is the foundation of blogging, the foremost technology of what is being hailed as the "Web 2.0 revolution." By exercising our fingers and our minds, blogging will provide unique opportunities for promoting engagement and "managing by wandering around" in the digital age. ■

TO LEARN MORE

The Blogging Revolution:
Government in the Age of Web 2.0
by David C. Wyld



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Challenge 4: Managing the Introduction of New Services

By Abhijit Jain, Munir Mandviwalla, and Rajiv D. Banker

In "Can Governments Create Universal Internet Access? The Philadelphia Municipal Wireless Network Story," authors Jain, Mandviwalla, and Banker examine what happens when government intervenes in a new market rather than waiting for that market to evolve. A confluence of factors has recently made municipal wireless networks (MWNs) a potentially feasible option for municipal governments seeking to promote more equitable and universal access to the Internet within their communities. The city of Philadelphia was looking to make itself more attractive to business, to enhance its residential appeal, and to mitigate the so-called "digital divide." This report describes the drivers and inhibitors to municipal wireless networks such as the effort in Philadelphia. The authors describe how municipal government can be a catalyst for the adoption of technology with the goal of promoting social and economic change as well. The Philadelphia story offers important lessons and insights for other municipalities and governments considering similar initiatives.

As the Internet becomes an increasingly indispensable component of the global economy, Internet access is an increasingly important arbiter of which societies and peoples will have access to the tools and information necessary to adequately exploit social, economic, and educational opportunities. However, due to various reasons, around the world certain geographical areas and populations lag behind others in terms of Internet access.

The case of the Philadelphia municipal wireless network (MWN) provides an example of government acting as a catalyst for the introduction of technology—with the intention of promoting social and economic change. The case also provides important lessons for municipalities and governments contemplating similar roles in developing MWNs.

Role of Governments

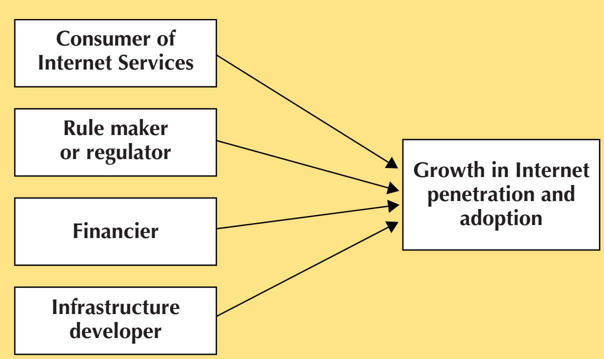
According to Gillett et al. (2004), there are four nonexclusive ways in which government can intervene to act as a catalyst to encourage growth in Internet penetration and adoption. It can act as (1) a consumer of Internet services, (2) a rule maker or regulator, (3) a financier, and (4) an infrastructure developer (see Figure 1). Table 1 on page 58 lists the elements of this framework and provides relevant examples.

Government interventions are advisable mainly under conditions of unacceptable degrees of market failure; i.e., when free-market entities are uninterested in or incapable of providing desirable levels of infrastructure or services in free-market conditions. There is broad consensus that monopolistic and quasi-monopolistic conditions can be problematic, and that governments should try to create market conditions where monopolies are discouraged and competition is encouraged. If government interventions result in certain technologies or entities achieving monopolistic stature, governments may again need to intervene to ensure that such monopolistic conditions do not stifle the adoption of new and risky technology, and that service offerings continue to grow in the future.

Lessons Learned & Recommendations

The Philadelphia initiative is one of the largest and most ambitious wireless projects in the world, and the city was one of the first to announce and start working on an MWN. Governments have great power to act as catalysts for introducing changes in society. The city government of Philadelphia intervened to accelerate the availability of low-cost, reliable wireless Internet access throughout the city. This may be

Figure 1: Catalyzing Roles for Government



Source: *Gillett et al., 2004.*

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Table 1: Examples of Government Roles

Government Role	Example of Government Action
Consumer	Introduce e-government, use e-mail for internal communications.
Rule maker or regulator	Introduce laws to regulate subscription fees charged by ISPs or to encourage competition among ISPs. Provide access to government-owned assets and properties, such as rights-of-way assets, that may be needed for installation of network components. Require government-funded libraries to offer Internet access to the public.
Financier	Offer tax incentives or subsidies for developing Internet access infrastructure in neglected areas. Support fundamental research into new Internet access technologies via research grants.
Infrastructure developer	Act directly to create access infrastructure by laying down a network and offering services, as happens in the case of government-owned utility companies.

Source: *Based on Gillett et al., 2004.*

considered a low-level goal, a means to an end, but there was also a much higher-level goal. The city government's intervention can be framed as the use of technology by government to promote social change and reduce disparity.

When the city government of Philadelphia announced its wireless initiative, it faced strong opposition from stakeholders who objected on the grounds that the city was in poor financial condition and that such projects were better addressed by the private sector. Nevertheless, the city was undeterred; it succeeded in acting as a catalyst among various stakeholders and in engaging citizen support to help solve a major public challenge. The city government acted as a catalyst by taking on various roles, such as champion, facilitator, steering committee, policy maker, partner, coordinator, consultant, project manager, referee, regulator, and capacity builder. It removed barriers to resources and provided incentives and a legislative framework to give stability to the new infrastructure. In summary, the Philadelphia case demonstrates that government's role as catalyst can indeed work. However, municipalities will continue to face challenges and barriers similar to the ones faced by Philadelphia. The following discussion of short-term recommendations and longer-term sustainability considerations should prove helpful to municipalities contemplating an MWN.

Short-Term Planning and Implementation Recommendations

1. A strong champion is required.
From 2004 to about the middle of 2006, the original champion of the project was Dianah Neff, CIO of Philadelphia. Since the summer of 2006, Greg Goldman, CEO of Wireless Philadelphia, has taken on a leadership role. Both Neff and Goldman championed the MWN in the media and in the community, and when it was needed they mounted a vigorous defense of the project. They had to work extremely hard to rationalize competing visions and maintain public interest, while simultaneously staying current with technological developments. The champion of a project of this nature is subject to a large number of external and internal forces and competing claims; the champion must handle pressure from different constituents while remaining conscious of the socio-political context and complexity.

2. Diverse stakeholder interests must be managed.
The city government had to manage the demands and challenges of different stakeholders, including telecommunications companies, civic leaders, community groups, the media, the state government, city politicians, and the public. For instance, when both Verizon and state legislators appeared to be against MWNs, the city government coordinated a solution whereby Philadelphia could be excluded from anti-MWN legislation. To put pressure on them to exclude Philadelphia, the city government facilitated communications by various activist groups and NGOs to communicate the message that the digital divide problem in Philadelphia could not be addressed solely through private sector efforts.

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Short-Term Planning and Implementation Recommendations

1. A strong champion is required.
2. Diverse stakeholder interests must be managed.
3. Private and public interests will need to be balanced.
4. The "application" of the municipal wireless network must be identified.

Long-Term Sustainability Considerations

1. The digital divide is a tenable justification over the short term but faces long-term challenges.
2. Municipal wireless networks need insulation from unpredictable, large-scale external forces.
3. The technology of municipal wireless networks will change.

3. Private and public interests will need to be balanced.
With planning and creative thinking it is possible to create structures that can optimize the interests of both the public and private sectors. In Philadelphia, a nonprofit organization (Wireless Philadelphia) will lead the social consciousness goals of the project, while a large, well-known for-profit organization (Earthlink) will lead the technical and management aspects of the project.

By creating a nonprofit with the mission to lead the digital divide elements of the city's vision—and by providing the nonprofit with the authority and sustainable funding to take action—Philadelphia seems to have at least, in the short term, created a viable structure for realizing its social consciousness goals. By partnering with Earthlink to build the network, the city has avoided involvement in activities where it had little experience and credibility. It has also, to some extent, made moot the philosophical and political challenges to the role of government in building MWNs.

4. The "application" of the municipal wireless network must be identified.
A question that has been asked of MWNs is, "If you build them, will they come?" Setting up the infrastructure will not guarantee success, and enabling access is not synonymous with adoption or an effective application. In Philadelphia, the decision was to focus on Internet access as the main "application"; other cities have focused on more tangible applications such as wireless meter reading. Yet even with simple Internet access, Philadelphia will face challenges in ensuring adoption and effective use. The current efforts of Wireless Philadelphia to connect with and use existing community groups to distribute the $9.95 digital inclusion accounts is one positive first step to ensure adoption.

Long-Term Sustainability Considerations

1. The digital divide is a tenable justification over the short term but faces long-term challenges.
The principal method by which Philadelphia was able to minimize opposition to the MWN project was by calling attention to Philadelphia's considerable digital divide. This indicates that government involvement with MWNs may not be advisable in the absence of a compelling social rationale. The existence of such a rationale gives government the moral confidence to pursue radical measures and encourages stakeholders to support these measures. However, the danger is that projects based on the digital divide may not be able to deliver measurable success.

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2. Municipal wireless networks need insulation from unpredictable, large-scale external forces.
MWN projects are subject to unpredictable and large-scale social and political forces. For instance, in the U.S., most projects are vulnerable to the four-year election cycle. If the process of building an MWN is currently under way, and new community leadership is elected, there is no telling how the new leadership may choose to act with regard to the MWN.

3. The technology of municipal wireless networks will change.
A recent new development, called Broadband over Power Lines (BPL), allows Internet access to be supplied via power connections. Because buildings are typically already wired for power, this technology could remove the cost advantages of deploying wireless networks. In addition, approximately 90 percent of the telephone lines in the U.S. are currently DSL capable (Hearn, 2006). DSL prices are falling rapidly, with a connection currently available at around $15 per month. Lower-income consumers are typically more price conscious, and if the cost of DSL falls below the cost of wireless connectivity, consumers will likely go with the cheaper solution. A change in technology does not necessarily remove the underlying rationale for MWNs. Future projects will need to plan around such developments and create structures that are focused on the underlying need of the municipality rather than the capabilities of the specific technology. It is unclear if the structures created in Philadelphia would survive a change in technology and if Wi-Fi-based wireless technologies will be in use 10 years from today.

Final Reflections

In this final section, we reflect on three basic questions: Was the wireless project in Philadelphia a good idea? Did Philadelphia do a good job? Should other cities consider similar projects?

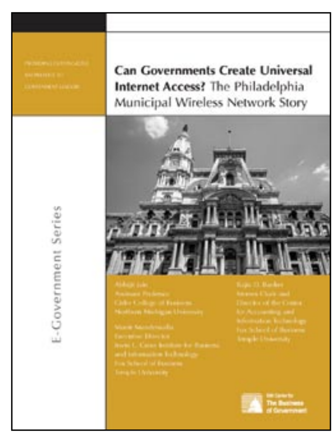
The answer to all three questions is yes. The project was a good idea for the city because the digital divide issue is real, the technology is feasible and cost-effective, and the private sector was not moving fast enough. The project also seems to have improved the image and civic pride of the city. We expect that the imperatives in other municipalities will be different given different geographic, demographic, political, and historical contexts. Overall, the city did do a good job in getting the project approved and implemented.

The digital divide perspective was the right perspective for Philadelphia and, to its credit, the project has remained true to that original orientation. However, the project took much longer than expected to start implementation. We expect planning and implementation to go much faster in other municipalities.

Finally, we strongly believe that other municipalities should consider similar projects. The time is right, the technology works, and even though the issues that Philadelphia faced will be different for other cities, the possibility for meaningful social and economic impact remains. ■

TO LEARN MORE

Can Governments Create Universal Internet Access?
The Philadelphia Municipal Wireless Network Story
by Abhijit Jain, Munir Mandviwalla, and Rajiv D. Banker



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Challenge 5: Managing the Digital Divide

By Heike Boeltzig and Doria Pilling

Insights on the fifth management challenge are adapted from the Center report "Bridging the Digital Divide for Hard-to-Reach Groups," by Heike Boeltzig and Doria Pilling (Washington, D.C.: IBM Center for The Business of Government, 2007). The report addresses strategies to meet the challenges of reaching those left behind by evolving technology.

In both the United States and the United Kingdom, considerable emphasis has been placed on government information and services being online, and increasingly on the possibility of carrying out online transactions (e-government). The intention has been to deliver better quality, more convenient services to individuals, and also to increase efficiency and cut costs. While both countries are well on the way to Internet delivery of government services, this does not necessarily mean that all citizens are equally able to access them. *In both countries, those who have most to gain from e-government may have least access to it*—people on low incomes, older people, people with disabilities—thus providing evidence of a continuing digital divide.

In both countries, a number of initiatives have been set up that are intended to address the disadvantage of being "unconnected" for people with the most potential gain from e-government. The barriers include lack of Internet access, affordability, lack of basic technology skills, fear of technology, and lack of perceived need for Internet access. And in the case of some people with disabilities, these barriers include the lack of assistive devices to use computers and problems in accessing websites using such devices.

Highlighted in this report are 12 initiatives, six from the United States and six from the United Kingdom, that have been effective in terms of engaging targeted non-users in Internet use and, to some extent, online government services. We conducted in-depth case studies of three initiatives in each country. In the United States, these were the Computers for Homebound and Isolated Persons (CHIPS) Program in Knoxville, Tennessee; eRutherford in Rutherford County, North Carolina; and the Foundation for Successful Solutions–Project T.E.C.H. in Los Angeles, California. The initiatives in the United Kingdom were CareOnLine in Leicestershire; Leeds Libraries IT Learning; and the Leicester Disability Information Network (LDICN). These projects particularly targeted efforts at certain groups of people.

Information on the other initiatives was obtained by interviews with program managers and documentary research. In the United States, these initiatives were Computers for Families (CFF) in Santa Barbara, California; Digital Sisters in Washington, D.C.; and Housing Works in Boston, Massachusetts. In the United Kingdom, they were Carpenters Connect RegenTV, London Borough of Newham; Cascade, Nottingham; and Community Heritage Store, West Norfolk.

Through this research, we developed 10 recommendations that we believe will be effective in encouraging Internet access and use of e-government services. The recommendations, with some best practice advice, are aimed at both practitioners and policy makers, with the goal of moving forward with developing e-government services that meet the needs of *all* citizens.

Recommendations Aimed at Increasing *Access* to Targeted Groups

Recommendation 1: Offer free computer and Internet access to targeted groups.

In the United Kingdom, according to the Office of National Statistics, the cost of equipment and online access were the third (14 percent) and fourth (11 percent) most common reasons for not having home Internet access.

Best practice advice to practitioners: Projects should take into account people's needs for long-term computer and Internet access if new users' interest and use is to be sustained. The full benefits of Internet access cannot be realized without home access, and this is particularly the case for older people and people with disabilities.

Best practice advice to policy makers: Policy makers should consider various options for providing free or affordable Internet access to low-income groups, older people, and people with disabilities.

Recommendation 2: Provide long-term support to organizations seeking to reach targeted groups.

Program staff across the two countries highlighted the importance of providing help with Internet access and support on a long-term basis as a means of encouraging participants to use the Internet and possibly online government services.

Best practice advice to practitioners: Projects should help users plan their next steps after completing the training. Providing long-term access and support increases participants' confidence, is likely to assist them in increasing the range of their Internet activities, and often has a positive impact on their learning progress.

Recommendations Aimed at Increasing *Access* to Targeted Groups

1. Offer free computer and Internet access to targeted groups.
2. Provide long-term support to organizations seeking to reach targeted groups.
3. Create partnerships with other organizations to share resources and expertise.
4. Create strategies for long-term project sustainability.

Recommendations Aimed at Increasing *Use* by Individuals in Targeted Groups

5. Engage individuals in targeted groups by starting with what interests and concerns them.
6. Raise awareness of the benefits and encourage use of e-government services among targeted users.
7. Improve usability of the Internet and e-government services to targeted individuals and groups.
8. Improve computer and Internet "accessibility" for people in targeted groups.
9. Create a comfortable learning environment and provide informal training opportunities to targeted users.
10. Involve targeted users by constant consultation.

Best practice advice to policy makers: Getting more people—especially those with low incomes, older people, and people with disabilities—to use the Internet and possibly online government services requires long-term policy commitment and support.

Recommendation 3: Create partnerships with other organizations to share resources and expertise.

Program staff across the two countries highlighted the importance of building partnerships to share resources and expertise and to exchange information and experiences.

Best practice advice to practitioners: Projects should build partnerships with other organizations to share expertise and resources and to provide complementary activities.

Best practice advice to policy makers: Fostering a closer relationship between government organizations that offer technology access and training is one way in which policy makers can promote access to the Internet and to e-government particularly.

Recommendation 4: Create strategies for long-term project sustainability.

However effective initiative strategies are, and however successful they are in encouraging marginalized people to use the Internet and online government services, this can make only a limited impact if the initiative is not sustained.

Best practice advice to practitioners: Projects should build in strategies for project sustainability from the beginning.

Best practice advice to policy makers and funders: Funding should be made available both on the basis of track record and on the basis of need.

Recommendations Aimed at Increasing *Use* by Individuals in Targeted Groups

Recommendation 5: Engage individuals in targeted groups by starting with what interests and concerns them.

Our study suggests that lack of interest and lack of *perceived* need are often due to lack of awareness of what the Internet can offer.

Best practice advice to practitioners: Projects aimed at encouraging non-Internet users to use the Internet should gear publicity or organize events to the interests and concerns of particular groups, rather than simply focusing on the availability of Internet facilities or training.

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Best practice advice to policy makers: Policy makers should continue efforts to bridge the digital divide by increasing awareness of the Internet's benefits to non-users, as well as taking measures to overcome barriers for specific groups.

Recommendation 6: Raise awareness of the benefits and encourage use of e-government services among targeted users.

The whole basis for the research project reported here is that those who could benefit most from using government online services are less likely to use these services.

Best practice advice to practitioners: Projects should find ways of publicizing the concrete benefits of using e-government services in terms of convenience—time saved, 24/7 availability—for services that are relevant to particular groups of people.

Best practice advice to policy makers: Initiate campaigns through the media demonstrating the concrete benefits of using online government services directed toward non-users.

Recommendation 7: Improve usability of the Internet and e-government services to targeted individuals and groups.

Government websites continue to be less user-friendly and publicly accessible than they ought to be.

Best practice advice to practitioners: Projects should provide guides to government websites and find ways to make them easier to use.

Best practice advice to policy makers: Policy makers, in addition to enforcing existing standards and guidelines for accessibility of government websites, should provide incentives to government organizations to make their online services as user-friendly as possible by obtaining feedback from service users.

Recommendation 8: Improve computer and Internet "accessibility" for people in targeted groups.

Studies indicate that many people with disabilities need assistive technology to use a computer and the Internet.

Best practice advice to practitioners: Managers of projects to provide Internet access should be aware of the assistive technology needs of people with disabilities, and know where people's needs can be identified, assistive technology obtained, and training given in its use when they are unable to do so themselves.

Best practice advice for policy makers: Adequate funding should be available so that the assistive technology needs of people with disabilities can be identified, their cost can be met, and adequate training in their use provided.

Recommendation 9: Create a comfortable learning environment and provide informal training opportunities to targeted users.

Many users in the projects in our study, especially seniors, thought that they were incapable of using a computer and the Internet or felt uncomfortable using technology. This often became a barrier to technology learning.

Best practice advice to practitioners: Projects should aim to provide comfortable learning environments, suited to the needs of their particular user groups.

Best practice advice to policy makers and funders: Policy makers should fund informal as well as formal learning, using "soft outcomes" and "distance traveled" as measures of achievement.

Recommendation 10: Involve targeted users by constant consultation.

Involving users in the design and implementation of the initiative was important for making sure that users' needs were met and continued to be met.

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Best practice advice to practitioners: Feedback mechanisms should be built into project design from the beginning.

Best practice advice to policy makers: Policy makers should provide incentives to government departments to actively involve consumers, or different groups of consumers, from the beginning in the design and implementation of government websites.

Conclusion

E-government is becoming the new face of governments in the United States and the United Kingdom. There is evidence that the Internet can improve government service delivery, making it more effective, efficient, and responsive to peoples' needs. Yet there is considerable evidence that those who are most reliant on government services, and could benefit most from the convenience of online services—people on low incomes, older people, and people with disabilities—are less likely to use them. There is no indication that this situation is substantially changing.

In this project we identified a number of initiatives in both countries that have found effective ways of addressing and, to a certain extent, overcoming barriers to Internet and e-government usage by these groups. We then clustered those strategies that were common to many of the initiatives into 10 recommendations. We described and illustrated these recommendations, and suggested ways in which policy makers can assist the development and maintenance of such initiatives.

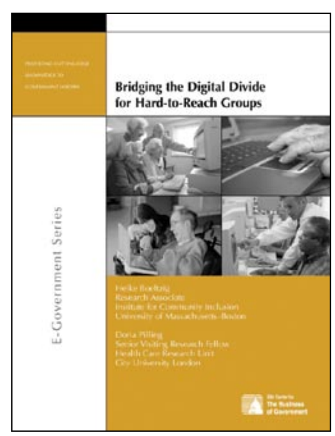
One of the main barriers tackled by these initiatives is convincing people that the Internet, particularly online government, is relevant to their needs and concerns. Overcoming people's fears that they lack the skills and confidence to use the Internet was another obstacle that the initiatives tried to address by providing informal training in an environment in which people feel comfortable. Another barrier is affordability, particularly for some people with disabilities who need assistive technology to use a computer and the Internet. All the initiatives identified provided free or affordable Internet access for varying lengths of time, and many tried to meet people's assistive technology needs.

The other major barriers are the websites themselves. They often not only present problems for people with disabilities and those using various assistive technologies, but also are complex and difficult to navigate, and may not contain the content people most want. Several of the initiatives tried in different ways to provide guidance to make the Internet easier to use, with some working with local governments to improve the user-friendliness of their websites. Engaging users in the design and implementation of the initiative was likely to make it more effective.

We hope that the 10 recommendations identified in this research and the best practice advice will guide practitioners and policy makers in their efforts to increase access to and use of the Internet and online government services. ■

TO LEARN MORE

Bridging the Digital Divide for Hard-to-Reach Groups
by Heike Boeltzig and Doria Pilling



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