

Summary

One of the key promises of e-government is a reinvented government. The vision includes improved access for citizens, increased efficiency, lower costs, and greater effectiveness. While many governments have already implemented electronic service initiatives, the bulk of the work is still to come.

E-Government: Creating Tools of the Trade is designed to support e-government work at all levels of government by offering practical advice, successful models, and well-grounded guides. The focus of this project is centered on the many aspects of "how" to design, build, and evaluate e-government initiatives.

The project work began with an extensive environmental scan that served as the foundation for an E-Government Roundtable for government managers in New York State. The tools produced are in response to the expressed needs of those professionals engaged in e-government work.

Publications & Results

Practical Guides (2)



Untangle the Web: Delivering Municipal Services Through the Internet

Tue, 01 Dec 2002

The Web offers people and organizations a new way to interact and communicate. This report provides a framework for helping local governments achieve the benefits of the Web without being overcome by its complexity.

Making a Case for Local E-Government

Mon, 01 Jul 2002

Local and county governments are exploring the best ways to implement e-government. This report details the strategies, funding, barriers, and benefits brought to bear by several New York State local e-government pioneering initiatives, with insight and advice for their colleagues.

Online Resources (1)

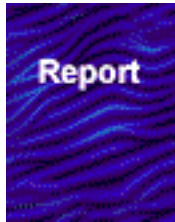


e-Gov FirstStop

Tue, 01 Apr 2002

The Internet offers an overwhelming amount of information about e-government. This new Web resource provides the top quality material by providing a carefully selected collection of e-government resources including executive-level briefings, research and best practice reports, case studies, and Web sites. Please note that **e-Gov FirstStop** was developed as a prototype resource and was operational from April through September of 2002. It has not been updated since September of 2002 and will not be updated in the future. It is temporarily unavailable.

Reports and Working Papers (5)



Creating and Maintaining Proper Systems for Electronic Record Keeping

Sun, 01 Dec 2002

E-Government is changing the way government conducts business and captures records created during that business. This paper provides a framework for developing new e-government systems that foster electronic records management.

XML: A New Web Site Architecture

Sat, 01 Sep 2002

As Web sites have grown in size, complexity, and prominence, site management has become a growing concern for Webmasters, system administrators, and organizations as a whole. This paper discusses how XML technology simplifies the entire site management process.

The Future of E-Government

Mon, 01 Jun 2002

This paper is based on testimony presented to the New York City Council on a sustainable definition and model of electronic government.

Information Access in an Electronic World: A policy panel summary transcript

Wed, 01 Mar 2002

Policies about online government information were a focus of attention following September 11th. This document provides a thought-provoking examination of how information policy issues were reassessed in response to those events.

What Citizens Want from E-Government

Sun, 01 Oct 2000

Governments in the US are using a variety of methods to find out what citizens want from electronic government services. This report presents those methods, and weighs the pros and cons of each of them.

Journal Articles and Conference Papers (2)



Journal
Article

Electronic Government: A Vision of the Future that is Already Here

2002

Though they may be going unnoticed, e-government initiatives are changing the way that the public sector works. This article introduces a four-faceted vision of e-government and describes some of the ways that it is already changing government.

Realizing the Promise of Digital Government

October 2000

Many of us have already experienced the potential of the Web to change our relationships with other individuals, businesses, and now government. This article discusses the transformation needed before we can realize the promises of electronic government.

Lessons Learned

E-Government: Creating Tools of the Trade

Boiled down to its essence, electronic government promises to make connections. Citizen to government. Government to business. Local to state. State to federal. Agency to agency. The possible connections and their implications are practically limitless.

The work needed to make those connections effective for all will occupy public agencies for the foreseeable future. This work is very important, highly visible, and admittedly difficult. Lots of new ground is being cleared, but the old reliable tools are not enough to do the job. In a recent environmental scan of the e-government landscape, the Center for Technology in Government found both promise and challenge. Those working to achieve the vision of e-government often need to find or invent some new tools and solutions along the way. Here are some of them.

A path through the vast amounts of information being disseminated about e-government to those really useful items that can help e-government projects move forward. There is a tremendous amount of activity out there. Technology companies, professional associations, government reports, technology trade journals, and consulting companies are all weighing in on e-government. It's difficult to cut through it all to identify the material that offers sound analysis and usable advice.

A strategy that closes the distance between the skills needed and the skills available to achieve e-government. The brain drain of highly skilled government IT workers is a concern on many levels. According to civic.com, a Council of State Government poll said that 47 of 50 states reported a shortage of IT workers. Experienced people who have worked with an agency's technology systems for the past decade or two are retiring or leaving for better pay in the private sector. Competition between government and private companies for new graduates with new skills and for seasoned professionals with deep experience will continue to be a challenge.

A way to bridge the gap between government expectations and citizen awareness of e-government services. While 84 percent of government officials said the Internet has improved their outreach to citizens, only 29 percent of citizens (and 37 percent of business leaders) are at all familiar with e-government, according to a recent Hart-Teeter poll conducted for the Council for Excellence in

Government. While this number will change as more government services and transactions go online, this dichotomy must be reflected in early expectations for e-government.

A strategy for reaching the people who need government services regardless of their access to the Internet. A gap, commonly known as the "digital divide," exists between those households that have access to the Internet and online services and those that don't. Online services don't work when citizens don't have the necessary computers and Internet connections to receive them. And these citizens, who tend to be isolated or poor, may be the ones most in need of government services. That means traditional (or multiple) modes of service delivery may be needed for some time to come.

A transformation from our tradition of program-driven services to e-government's promise of integrated service. Like any new technology project, electronic government is difficult, but it's made even more difficult because it places so much pressure on the entire enterprise. The e-government vision is a vision of integrated information and services. This means radical changes may be needed in what happens behind the Web site that citizens see. New business processes, different information flows, changed policies, advanced security measures, and new data management methods are all part of the integration story. This deeply transformational work is why leadership is so critical, and why a new report from the Kennedy School of Government at Harvard University, "Eight Imperatives for Leaders in a Networked World," says "to be an effective leader in our networked world, you need to engage IT issues. You need to play a key role in establishing strategic direction, implementing specific projects, and formulating new public policies."

A shift from yesterday's static Web to the new dynamic Web. The future of an agency's work now rests in new and evolving technologies that support real-time, dynamic interactions. The Web began in government as an exciting way to present static content to virtually anyone. It required new presentation skills and technologies, such as HTML; the agency's business rules were applied before the content was posted on the Web site. Some e-government applications will still be of this type, but most will move to a dynamic state. In these applications, the business rules must be applied on the fly as information from users interacts with agency databases to produce new services. These applications demand dynamic technologies involving data access, database management, authentication, and security of a very different nature from the old Web. The dynamic Web makes closer connections between an agency's internal systems and the outside world, presenting new risks and demanding new tools and techniques for managing them.

A way to offer services through e-government portals that resolves the issues associated with privacy and data sharing. Service and data integration projects are classic examples of being on the "bleeding edge" of technology. Ask anyone who has worked on one. According to the National Electronic Commerce Coordinating Council, "Sharing data from multiple sources is a challenge that has become more fundamental as portal technology advances." Yet system architects continue to face "the same barriers that have plagued client/server and mainframe application developers." Data integration requires new business processes, increases technical complexity, demands reliable security, and presents serious data privacy, quality, and ownership issues.

A road map from where we are now to where we want to be in the future. According to "Creating Citizen-Centric Digital Government," a new guide from the National Association of State Chief Information Officers (NASCIO), "In the coming years, citizens will use the Internet to build a relationship with government that is personal, custom-built for each user with features that are accessible. Digital government will be easy to use, consistent in its appearance and functionality, offer a complete selection of services that are unified across agencies, and available around the clock. Citizens will be aware of their rights to privacy and able to control governmental use of their personal information." Yet, according to a study conducted by Brown University, "Government Web sites are not making full use of available technology, and there are problems in terms of access and democratic outreach."

Supporting "Government Without Walls"

To help realize the promise of the future, NASCIO also reported that chief information officers and IT executives across the country want guidelines and frameworks that address e-government, case studies that illustrate how other agencies and states are developing e-government, model policies,

best practices stories, and proven methods for engaging top executives and legislators. To help fill those needs, CTG will offer an e-government roundtable on March 22, where we'll ask you, the people creating e-government services in New York, to tell us what you need to know to succeed.

We will use the results of this roundtable to guide us to projects and investigations that answer the pressing questions of those engaged, or about to be engaged, in e-government work. In addition, we will continue scanning the state, national, and global environment to identify and report best and current e-government practices. In partnership with the New York State Forum for Information Resource Management's E-commerce Standing Committee, we'll also take a close look at new technologies that may be around the next bend. Our goal? An array of reliable, timely, and practical tools for the builders of a government without walls.

Public Events

A Report from the E-Government Roundtable Center for Technology in Government, April 2001

How do you build a "government without walls?" Technology can help--but not without vision, skill, and an array of other tools and resources designed for a new way of working.

On March 22, 2001, 79 representatives from 43 organizations (including 35 state agencies, 3 local governments, and 5 non-profit or private sector organizations) met in a roundtable event to discuss key aspects of e-government development in New York State. They identified 45 topics of concern and selected 17 of them for small group discussions. Each discussion group elaborated on the characteristics or dimensions of one topic, and then suggested related tools, techniques, and activities that would help them move toward e-government goals.

The eight themes below emerged from the roundtable discussions, and cover the full scope of the e-government challenge. They range from planning and design, to adaptation, implementation, and evaluation. They focus on both user needs and agency capabilities. Special attention is focused on the need to transform existing operations, and to build the relationships that will bring government services to the customer rather than the other way around. Over the next year, CTG will respond to these themes by working with state and local agencies, as well as corporate and academic partners, to produce a variety of "tools of the trade" for e-government. Some of these will be new resources, others will compile information that exists in other places and present it a readily useful way. While our platform will be e-government initiatives in New York, we hope and expect these products will also support e-government development in many other places.

Needs analysis for citizens, businesses, and government

Because e-government encompasses Government to Citizen, Government to Business, and Government to Government applications, the characteristics, needs and capabilities of users vary greatly. Designers need to specify who their users or customers are, and what they need or expect from an e-service. They must also understand the technological capabilities of users and the extent of context, content, or policy knowledge that is necessary for them to use an e-service. This category of user-oriented concerns also includes the need for outreach, education, and marketing of e-services, and consideration of multiple service delivery mechanisms that will make e-services widely accessible.

Alternative service designs

E-services can be designed in a variety of ways, each generating different costs and benefits to both government and users. Some design choices include the methods of user or customer access; the kind of data that will be collected and how it will be used; the level of security that must be maintained; the extent of record keeping that will be necessary; the hours of service availability; the nature and extent of user or customer support; and the degree of responsiveness and customization. Agencies also need ways to stay abreast of their technology options for these features. In addition, agencies need to have good baseline performance data, as well as projections of future demand. These figures

will help them make informed design decisions, including which services need extensive re-thinking, and which deserve expensive 24x7 on-line support. Agencies also need to be able to choose wisely among options to buy, build, or borrow their service applications. They also want to be able to present their executive leaders with well-reasoned business cases for e-government investments.

Back office transformation

Like an iceberg, the invisible part of e-government may well be the largest. Significant behind-the-scenes changes are necessary for successful and cost-effective e-government applications. Back office capabilities soar in importance when agencies move from the static presentation of information to dynamic services that involve direct communications and transactions. Back office transformation usually includes major business process and work flow improvements; fundamental re-thinking of data definitions and data quality factors; and records creation, maintenance, and preservation rules. This much change entails a large amount of risk, so risk assessments of various kinds are needed. If an e-service involves more than one program or organization, then data sharing, process linkages, and system integration add more risk and complexity. These critical transformations can be extremely difficult, time consuming, and expensive. Consequently, they require strong and consistent executive level support.

Security, authenticity, and citizen trust

These considerations have both government and user dimensions. Customer beliefs about the trustworthiness of electronic services are as problematic for government as they are for business. Users need to be able to trust that government is handling information about them with care, confidentiality, and security. They also need assurance that the information government provides to them is authentic and trustworthy for their use. Government has complementary concerns. For many applications, government needs confidence that users are who they say they are. Agencies also need to be certain that their service systems are well-protected against hacking, fraud, and misuse.

Collaboration

The benefits of collaboration across program, agency, and jurisdictional boundaries include economies of scale, new resource development, less duplication of effort, and more customer-oriented services. Due to their often limited resources, local governments and smaller state agencies, in particular, stand to benefit from collaboration. Citizens and businesses would benefit most from the simplicity and responsiveness of integrated services and streamlined processes. Despite these payoffs, incentives seldom exist for intergovernmental sharing and collaboration. These might include special funding for cross-agency initiatives, more latitude for demonstrations and pilot programs, and education and guidelines for managing multi-organizational projects. Collaboration would also be encouraged by inventories of skills, services, and programs and by adoption of key technical and data standards.

Expertise

E-government demands many kinds of expertise ranging from program knowledge to project management to technical skill. Today, the most problematic factor is the difficulty government experiences in recruiting and retaining people with IT expertise. Agencies are looking for practices and strategies that have been successful for other jurisdictions. In many cases, agencies supplement their own staff with contractors, making contract and contractor management a critical new skill area. In this competitive market, government managers need to know where to find the right expertise, and how to manage it well. This often means bringing consultants up to speed on the agency's business, coordinating them with employees, and managing the transfer of knowledge in both directions.

E-Government service evaluation

How do you know if your e-government service is effective or affordable or available when and where it is needed? Periodic planned evaluations can answer these crucial questions. These can be designed to compare an e-service to its traditional counterpart, to assess user or customer satisfaction, to determine cost-effectiveness, or to identify areas for improvement, enhancement, or cancellation. Evaluations of this kind can be classified as return on investment or ROI studies. They need reliable data on a variety of factors, including full costs collected over some extended period of

time. This kind of information allows for points of comparison to earlier forms of service, earlier time periods, or benchmarks in other jurisdictions.

Knowledge building and sharing

Throughout the roundtables, participants called for ways to tap into the expertise, experience, and knowledge available across state and local government. They talked about the creation of a repository of accumulated knowledge about e-government expertise, tools, projects, and results. This resource could include

- reference information about such topics as training opportunities
- tools and guidelines for various e-government activities and decisions
- case studies, briefing papers, and lessons learned
- lists of experts and peers willing to lend their advice
- links to external resources in other states or the private sector

They also envisioned interactive features such as listservs, moderated discussion groups, and electronic collaboration tools that would make it easier to tap into each other's knowledge and experience. Participants also wanted to engage in hands on investigations and prototyping of applications, especially ones that can be replicated in different localities or that involve interorganizational collaboration.

Next step: which tools to build?

The roundtable discussions produced many ideas and suggestions for action. Some of the suggestions were outside the ability of an applied research organization like CTG to address (for example, suggestions that certain laws be changed). Most of them, however, present excellent opportunities for research, development, and education that could benefit many agencies.

The following list presents the suggested tools that CTG might produce over the next year. Our immediate next step is to ask government managers to help us prioritize these ideas. Once we understand which ones are most important to the people who are building e-government applications, we'll invite agencies and corporate and academic partners to participate in their development.

Executive Briefing Papers

- Briefing paper for top executives on the critical need for back office transformation
- Briefing paper on the elements of trust in e-government
- Briefing paper on the realities of working with contractors

Technology Briefing Sessions

- Methods and issues of data sharing
- Evaluating and choosing methods of authentication
- Making the transition from static to dynamic use of the Web

Practical Guides

- Guide to identifying e-government customers and their needs
- Guide to privacy risk assessment
- Guide to making e-service design decisions
- Guide for deciding when 24x7 is the right choice for service availability
- Guide to collecting baseline measures on cost and performance of existing services
- Guide to building a business case for e-government applications
- Guide for managing and using electronic records in e-government
- Guide to back office readiness for e-government
- Guide to promoting the use of e-government services
- Guide for conducting a return on investment (ROI) analysis for e-government

Hands-on Investigations and Prototypes

- Create a Web-based resource that serves as an e-government knowledge repository and encourages the sharing of questions, ideas, answers, and general knowledge about e-government
- Local government e-government application laboratory
- Interagency e-government application laboratory

Case Studies

- Case study of a customer needs analysis
- Case study of an e-government marketing effort
- Case studies of interagency or intergovernmental collaboration projects
- Case study of an e-government service evaluation

Research and Best Practice Reports

- Top reasons for citizen distrust in electronic communication
- Strategies for dealing with the government IT skills crunch
- Business process implications of e-government

Press Releases & News Stories

Press Releases

Center for Technology in Government Publishes Guide for Analyzing IT Investments
Mon, 22 Nov 2004

Center for Technology in Government Report Details Local e-Government Benefits and Barriers
Fri, 13 Sep 2002

e-Gov FirstStop Launched by CTG: Web-based e-Government Resource a Knowledge-Sharing Partnership
Thu, 23 May 2002

Center for Technology in Government Releases First E-Government Tool: New Guidebook Helps Local Governments Develop Web-Based Services for Citizens
Wed, 20 Jun 2001

Center for Technology in Government Developing Electronic Government Tools: Series of Tools to Help Governments Build Electronic Services and Programs
Thu, 31 May 2001

NYS Officials Examine Challenges of E-Government: Center for Technology in Government to Develop Helpful Tools for Practitioners
Thu, 22 Mar 2001

News Stories

New guidebook helps launch and maintain local government Websites National Electronic Commerce

Coordinating Council, June 28, 2001

Booklet offers municipalities Web advice Capital District Business Review, June 20, 2001

E-gov resources on the way Civic.com, June 20, 2001

Technology center developing e-gov tools Capital District Business Review, June 4, 2001

E-gov't concerned about retaining workers Capital District Business Review, March 22, 2001

Partners

The E-Government: Tools of the Trade project was based on the insight and input of a legion of e-government practitioners including representatives of 50-plus local governments, more than a dozen state agencies, valued academic and corporate partners, and numerous other university and government colleagues. CTG gratefully acknowledges their participation and contributions to the realization of these e-government tools. A complete listing of these partners is provided in each of the individual "tools" publications.

Center for Technology in Government

- Sharon Dawes, Project Director
- Theresa Pardo, Deputy Director
- Mark LaVigne, Project Manager
- Darshana Apte, Graduate Assistant
- Donna Berlin, Internet Coordinator
- Donna Canestraro, Project Support Manager
- David Connelly, Graduate Student
- Meghan Cook, Project
- Jim Costello, Web Applications Developer
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- Michael Ling, Graduate Student
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- Jochen Scholl, Project Support Manager
- Stephanie Simon, Information Coordinator
- Derek Werthmuller, Director of Technology Services

Funding Sources

This project was funded by a portion of CTG's New York State budget allocation.

Original Scope of Work

Every construction job needs the right tools. Building an e-government demands policy, management, and technology tools for planning, design, implementation, and evaluation.

E-Government: Creating Tools of the Trade will produce practical resources to help design and implement e-government. This project responded to the expressed needs of government managers

who are engaged in this work.

They asked for guidelines and frameworks that address e-government planning, design, and implementation. They also wanted resources that encourage and enable e-government knowledge sharing, executive level briefings, technology awareness sessions, research and best practice reports, and case studies in collaboration.

How this work will benefit the business of government

One of the key promises of e-government is a reinvented government. The vision includes improved access for citizens, increased efficiency, lower costs, and greater effectiveness. While many governments have already implemented electronic service initiatives, the bulk of the work is still to come. "Creating Tools of the Trade" is designed to support that work at all levels of government by offering practical advice, successful models, and well-grounded guides. Our focus will be centered on the many aspects of "how" to design, build, and evaluate e-government initiatives.

The tools

CTG is working with state and local agencies, as well as corporate and academic partners, to produce the following tools of the trade for e-government.

An e-government knowledge repository is a Web-based resource that provides public officials with an array of practical references and resources for the development, implementation, and evaluation of electronic government. It also provides an interactive environment in which people can discuss their ideas and concerns about technology, policy, and management issues.

Making the transition from the static to the dynamic Web is a presentation series and White Paper that discussed some of the technologies that are changing the way everyone presents data on the Web, from XML to the next generation Internet.

Business process implications of e-government is a research and best practices report that will discuss the process analysis and process improvement dimensions of e-government service design and operation.

Making A Case for Local E-Government is a report on the state of local e-government in New York. It is designed to be communication tool for local governments in the planning, development, and implementation of e-government strategies.

A guide to building a business case for e-government will be part of the second edition of our *Making Smart IT Choices* guidebook. It will lay a framework for building a case for funding, support, and buy-in for electronic government.

Briefing paper for top executives on the critical role of business process transformation in realizing the promise of electronic government is a report that will present the strategic and economic reasons for "end to end" design, so that e-government investments can achieve their goals.

Guide to managing electronic records in e-government is an article that offers best practice advice and guidelines about how to design and manage the records associated with e-government applications.

Guide to collecting baseline measures on cost and performance of existing services and guide to conducting a return on investment (ROI) analysis for e-government will cover the essential need to set goals, measure performance, assess costs, and evaluate the benefits of e-government investments.

How the tools were selected

These tools reflect the needs of the people who are creating e-government services in New York. On March 22, 2001, 79 representatives from 43 organizations (including 35 state agencies, 3 local governments, and 5 non-profit or private sector organizations) met in a roundtable event to discuss

key aspects of e-government development in New York State.

Based on 26 recommendations made at the roundtable, CTG conducted an on-line survey and encouraged government managers to vote for the products they felt were most important or useful to their work. The survey results identified the priority concerns of several groups: state agency managers, local government officials, program and administrative professionals, and IT professionals. This collection of high priority concerns has become our initial working list. Other items may be added in the future.

Related Web Sites

State and Federal E-Government in the United States, 2002

<http://www.insidepolitics.org/Egovt02us.html>

Researchers at Brown University annually gauge how governments at all levels are making use of commonly available information technology.

Building Better eGovernment: Tools for Transformation

<http://www.nga.org/center/egovernment/>

This National Governors Association toolkit includes best practices designed to help state governments streamline government and improve customer service.

Partnership for Intergovernmental Innovation (PI2)

<http://policyworks.gov/intergov>

This site, sponsored by the General Services Administration's (GSA) office of Intergovernmental Solutions, includes what citizens say they want in an electronic government.

Creating Citizen-Centric Digital Government: A Guide for the States

<http://www.nascio.org/>

This document is a statement of NASCIO's long-term vision to support the states in the evolution of digital government.

The Digital Divide Network

<http://www.digitaldividenetwork.org>

The Digital Divide Network Web site brings attention to the gap between those people and communities who can make effective use of information technology and those who cannot.

DG (Digital Government) Online:

<http://www.dgrc.org/dg-online/>

DG Online presents the latest developments in advanced computer and IT research for Digital Government along with news and viewpoints on the most important e-government issues.

EGovLinks

<http://www.egovlinks.com/>

eGovLinks is designed to provide rapid and easy dissemination of e-government-related information.

e-Government: The Next American Revolution

<http://www.excelgov.org/displayContent.asp?NewsItemID=2191&Keyword=ppStudies>

This blueprint is designed to provide recommendations and priorities for the national design of e-government.

Harvard's Eight Imperatives for Leaders in a Networked World

http://www.ksg.harvard.edu/exec_ed/3e/eight_imperatives.htm

This report outlines a road map for leaders to establish strategic directions, implement specific projects, and formulate new public policies for information technology issues.

Knowledge Management.Gov

<http://www.km.gov/>

Knowledge Management, in the context of e-government, is leveraging the collective knowledge of agencies to fulfill the missions of government.

New York State Office for Technology

<http://www.oft.state.ny.us/>

New York's Office for Technology is committed to fast-paced, but purposeful change and believes that program needs drive technology, and not the reverse.

New York State Forum for Information Resource Management

<http://www.nysfirm.org/>

Part of the Rockefeller Institute of Government, the Forum is a network of public officials and state government organizations concerned with information management, policy, and technology.

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