innovations

Center for Technology in Government

University at Albany, SUNY

Making Smart IT Choices Maximizes Government IT Investments
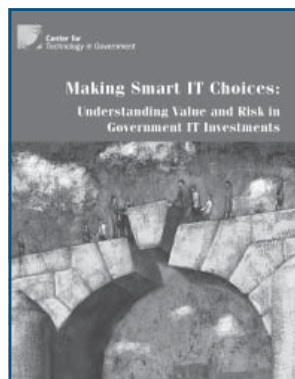
From the largest Federal government agencies to the smallest municipalities, decisions about when and how to invest in information technology (IT) have never been more important. With constrained budgets and high expectations for e-government, today's public sector leaders must make sound choices about how to spend money on IT projects that aim to improve services to citizens and businesses.

Our recently released guidebook provides a framework for helping managers reduce risks and maximize benefits of these government IT investments. *Making Smart IT Choices: Understanding Value and Risk in Government IT Investments* provides practical methods to gather and assess the information for building a sound business case.

One of the most difficult decisions government managers must make in today's e-government environment is how to invest effectively in technology that will actually help program and policy initiatives succeed," said Center Director Sharon Dawes. "By focusing on both value and risks, *Making Smart IT Choices* can help government agencies make the best use of scarce taxpayer dollars."

Making Smart IT Choices is based on our tested methodology for making well-informed decisions about the use, development and design of effective government information systems. The guidebook provides practical methods for assessing goals, stakeholders, processes, capabilities and costs for government IT initiatives.

This guide offers our best thinking about how to define an information technology project and make a solid case for needed financial and organizational investments. It will be completed in three installments.

This first installment, which can now be downloaded from our Web site, has four chapters and begins by considering the special characteristics of the public sector as an environment for making management decisions and IT choices. In the second chapter, we describe an analytical process that accounts for program goals, stakeholders, processes, costs, and technology alternatives. In chapters three and four, we guide you through the process of turning your analysis into a business case and presenting it to various audiences.

The second installment, which will be available by the end of the summer, presents a wide variety of

CTG History Series — Part Two: Building Collaborative Partnerships To Improve Government

In the mid 1990's the potential of Internet-based technologies to help organizations collaborate was just beginning to sink in.

In New York, CTG was helping state and local agencies consider how the Web could be a strategic resource and developing a framework for sharing geographic information across the state. Concurrently, CTG's work on identifying best practices in state-local information systems was opening new doors to intergovernmental collaboration.

For more information, see the *Did You Know?* insert inside.

Current Projects Tackle Integration

Sharing and integrating information across government organizations is the focus of three current CTG projects. They look at the social, policy, management, and technology issues of how public sector organizations grapple with barriers to sharing data and integrating systems.

State-Local Internet Gateway Prototype Project

A CTG partnership project is building a prototype gateway this summer that will simulate the integration of three distinct government to government transactions through one portal. Even though the integration will not involve live agency systems, the prototype will demonstrate what such an integration effort would look like to users. It will also uncover many of the behind the scenes issues – such as business process analysis, resource allocations, and relationship building – that need to take place to make such a system operational.

The prototype will be designed to test whether such an integration effort would provide state, county, and municipal governments with greater efficiency, higher quality data, and more consistent and coordinated services.

Modeling Interorganizational Information Integration

With a grant from the National Science Foundation (NSF), the Center is modeling the issues associated with cross-agency information integration. In the first phase of this project, CTG is participating in two intensive integration projects. The first is with the New York State Criminal Justice Information Technology Group, as they explore ways to integrate additional applications into New York's eJustice portal. The second is with the New York State Department of Environmental Conservation as they develop a strategic plan to develop standards so they can integrate GIS from the various division within the agency.

A multidisciplinary team of researchers from the University at Albany will model these integration projects and then test them through field observations, interviews, and surveys of integration projects in other states.

Assessment Model for Criminal Justice Information Sharing

With a grant from the U.S. Department of Justice, Office of Justice Programs, the Center is developing a guide that will help justice-related agencies assess their capability to embark on information sharing and integration initiatives. The team working on the guide is looking at justice information sharing projects across the country to identify factors that play a role in cross-agency integration initiatives. These factors include governance, policies, leadership, resources, technology compatibility and knowledge, and strategic planning, among others.

CTG Participates in National Conference on Digital Government Research

By all accounts, this year's National Conference on Digital Government Research, *dg.o2003*, illustrated increasingly wide breadth and depth in the world of digital government research.

The annual conference, hosted by the Digital Government Research Center and the National Science Foundation (NSF), provides a venue for researchers to share knowledge and results. The May conference, held in Boston, highlighted digital government research projects being conducted all over the world with presentations, poster sessions, and system demonstrations.

CTG staff members made five presentations at the conference.

Bridging Research and Practice to Benefit Government

Sharon Dawes presented "Research-Practice Partnerships," which discussed how the Center's Using Information in Government (UIG) program became an NSF-funded project called Knowledge Networking in the Public Sector. The three-year longitudinal study examined how information and knowledge was shared in seven intergovernmental initiatives that were part of UIG.

According to Dawes, in order to have tangible benefits for the public sector, digital government research must address real world problems and account for context, complexity, and culture. The UIG and Knowledge Networking projects did this through case studies, field research, and multidisciplinary analysis involving agencies as partners.

For more information on the UIG and KDI projects, visit *www.ctg.albany.edu/projects*.

Challenges & Strategies for Conducting International Public Management Research

CTG Graduate Assistant Ophelia Eglene presented a paper that discusses the challenges of conducting an international study that crossed continents, countries, governments, languages, and cultures. The paper was a result of CTG's *New Models of Collaboration* project that was conducted in partnership with CEFRIO, a Canadian research organization based in Quebec. New Models included 15 case studies across two continents, four countries, and three different languages. The paper presented was co-authored by Dawes and Eglene.

For more information and results from the New Models project visit *www.ctg.albany.edu/projects/cefrio*.

E-Government and Internet Security

As more government services and information are being provided over the Internet, agencies must prepare for increased risks to security and infrastructure. Two CTG Graduate Assistants who are Ph.D. students in the Rockefeller College of Public Affairs and Policy prepared a paper that drew parallels between the evolution of e-government and the growing focus on Internet security. Ramon Gil-Garcia presented the paper that he co-authored with Luis Luna-Reyes as part of a five-paper student session on the second day of the conference.

"While we have the technical capacity to ensure secure transactions over the Web, there are some services that need more security than others," said Gil-Garcia. For instance, voting over the Internet must be secure and ensure confidentiality and anonymity, while submitting a dog license application doesn't require the same security needs. The level of security must be determined by the potential risks posed in each e-government transaction being developed.

Finding our Future: A Research Agenda for the Research Enterprise

Tony Cresswell, CTG Deputy Director, presented the results of a recent partnership project that sought to identify an approach to getting the most value from the $112 billion the US government invests in research each year. *Finding our Future: A Research Agenda for the Research Enterprise* details the challenges facing the research enterprise, outlines an ideal future, and presents a research agenda and action recommendations for moving toward that goal.

CTG Partnership Profiles

CTG was founded on partnerships with people in government, academic, and corporate organizations. Individuals from each of these sectors make unique and critical contributions to our work, and each gains distinct benefits.

This issue of *Innovations* spotlights Kim McKinney and Kathleen Newkirk, two of our local government partners working on the NYS State and Local Internet Gateway Prototype project.

Kim McKinney, Broome County

Kim McKinney has been involved with Information Technology (IT) since she started working, first in the private sector, and for the past eight years as Broome County's IT Director. McKinney is currently president of the NYS Local Government IT Directors Association (LGITDA).

Broome County's IT Department is working on a number of projects. Three examples include the use of mobile units in public safety patrol cars, Geographic Information System (GIS) technology to assist bus-riders, and the development of Broome County's web portal.

Public safety officers have already started using mobile units that are connected to the county switchboard. By September, officers will be able to file reports from the field instead of filling out forms at the end of a shift.

Broome County's public transit will soon put GIS technology to use. Riders will be able to login to BC Transit, type their current location and destination, and be given personalized directions on where to board the bus and where to make transfers.

Another highlight is the development of Broome County's web portal, *www.gobroomecounty.com*. The site is used primarily as an information resource, but residents will soon be able to conduct a number of pay services through the portal.

Recent highlights

McKinney is currently co-chair of the NYS Chief Information Officer (CIO) Council's Intergovernmental Communication Committee (ICC) with Bruce Sauter, CIO for the NY State Office of Real Property Services. The ICC aims to bring state and local CIOs together to identify critical barriers to information sharing and provide recommendations for overcoming those barriers.

Around the corner

Business continuity is on the top of McKinney's "to-do" list. Budget cuts made Broome County's subscription to a "business recovery site"—equipment reserved at another location that could be used to back-up a system in case of an emergency—fiscally impossible. Broome County is now working to obtain a system which would allow the IT office to have their own in-office business recovery site.

Thoughts on IT in County Government

While current budget cuts are constraining county government, legislators realize the importance of IT to overall service delivery. Broome County officials realize that they cannot afford, politically or practically, to cut IT from their budgets. As McKinney said, "we're no longer just support. We've become an integral part of county government."

Another area of concern for McKinney is the increasing role of IT departments in the economic development of rural areas. McKinney agrees that broadband does not have an established presence in places like Broome County. If businesses are expected to develop in these regions, making broadband available to them is very important. "[Broadband has] become just as important as highways and the other things businesses are looking for."

Kim recommends these resources to her colleagues:

www.computerworld.com —Articles and editorials on a range of IT topics.

www.informationweek.com —In-depth analysis, news, research, and perspectives on the latest business technology trends.

www.gcn.com —State and Local Government Technology, Enterprise Architecture, E-Government, and Procurement.

Kathleen Newkirk, Town of Bethlehem

Kathy Newkirk is the Bethlehem, New York Town Clerk. In over 11 years of service, she has received ten grants totalling more than $170,000, most through the New York State Education Department's (NYSED) State Archives Local Government Records Improvement Fund. Newkirk's partnership with CTG started in 1997 when she contributed to the publication "Best Practices in State-Local Information Systems: Tying a Sensible Knot." Since then, she has participated in a variety of Center projects.

As Town Clerk, Newkirk is responsible for capturing minutes of town meetings and authorizing permits and licenses. She has also taken a critical role in the town's IT infrastructure. Currently Newkirk and her four-person staff are working on a NYSED grant-funded project designed to establish a "historic presence" on the Town of Bethlehem Website – *townofbethlehem.org.* Visitors have access to an index of town archives, including archived photos.

Around The Corner

"Election years change everything," says Newkirk, who started preparing for November's election in April. The over 31,000 residents in the Town of Bethlehem live scattered over 52 square miles. Newkirk and her running mates do most of their campaigning door to door. It seems to work, as she has served three consecutive terms, and is trying for a fourth this fall.

IT Trends in Town Government

One of the hottest trends for IT in municipal government is the use of Geographic Information Systems (GIS). The Town of Bethlehem is currently doing a needs assessment for GIS. Newkirk believes GIS can affect many different areas in local governments, but the one that is most relevant to her is how it affects elections. Towns can use GIS to help with redistricting, address databases, and voter analysis.

Newkirk uses local resources such as the Bethlehem Youth Corps volunteers to assist with data entry and records management. "We don't have a very big budget, and not having to pay for work that takes a lot of time really helps." Membership in the International Institute of Municipal Clerks (IIMC) also has its benefits. Newkirk claims that towns are at all different stages of development when it comes to the use and implementation of Information Technology, and if she ever has a question, she can rely on her contacts to help out.

Kathy recommends these resources to her colleagues:

www.archives.nysed.gov/a/grantsawards/ grantsawards_lgrimf.shtml –New York State Archives Local Government Records Management Improvement Fund (LGRMIF) supports records management and archives-related projects in local governments of all types and sizes throughout New York. In addition to the competitive grants program, the LGRMIF also supports disaster recovery grants.

www.iimc.com/aboutIIMC/mission.html –The International Institute of Municipal Clerks.

Smart IT

tools and techniques that can help you through the analysis. In a final installment planned for this fall, we will publish a series of case studies that provide practical examples of how these concepts, tools, and techniques were used in some of our projects.

Last year Mark Forman, the Federal Government's director of e-government, called on agencies to submit business cases for their IT projects. *Smart IT* provides a framework that can help such managers develop sound arguments for why their projects deserve financial and political support.

Making Smart IT Choices reflects two critical principles revealed repeatedly through ten years of government partnership projects at CTG. The first principle is that any IT effort needs to focus on the business or service objective of the organization, rather than on the technology itself. The second principle is to identify all of the various stakeholders involved, and understand and account for their needs, resources and capabilities.

This publication combines information-gathering strategies with a business case design framework that CTG produced initially for the U.S. Department of Justice. Taken together, the guidebook provides an all around resource for leaders who are embarking on new e-government (IT) projects. *Making Smart IT Choices* is part of a series of CTG resources designed to support the use of information and information technology in government. All these resources are available at *www.ctg.albany.edu/publications/*.

dg.o 2003

The poster session and the report are well-timed, as NSF considers the development of a new Cyberinfrastructure research program. The new program is the next step in NSF's involvement in the evolution of the computational infrastructure that included the invention of early versions of the Internet and Mosaic, which has evolved into our modern-day Web browser.

To download a copy of Finding our Future, visit *www.ctg.albany.edu/publications/reports/finding_our_future*.

Turning to Digital Government in a Crisis

Information technology and pre-established interorganizational relationships proved to be among the most critical success factors in the wake of 9-11, according to Cresswell, who presented newly-released results from the Center's pilot study on government response to the World Trade Center attack.

"Some of the most successful activities rested on years of relationship and trust building among key individuals," according to Cresswell. "The level of collaboration between public, private, and nonprofit organizations was unprecedented." Partnerships that developed within hours were a result of years of familiarity and trust in the competence of the individuals and organizations involved.

For more information on CTG's Turning to Digital Government project, visit *www.ctg.albany.edu/projects/wtc1*.

For information and stories about the dg.o 2003 Conference, visit *www.digitalgovernment.org/*.

XML

not part of the initial reasons to redesign the site. "For one thing, the number of visitors on our site more than doubled since the XML site has been live," said Jim Costello, Lead Programmer Analyst. "Because Google crawls each of the 4,000 pages of our site, it sends us people looking for a wide range of government technology information."

Another benefit is the interest generated among government professionals who want to learn how to leverage XML technologies for their own agencies. In response to a growing number of requests, the Center plans to offer a series of training workshops this fall aimed at professional audiences who want to explore the possibilities of XML for Web development and maintenance.

For more information about using XML for Web site development, see our White Paper at *http://www.ctg.albany.edu/publications/reports/xml*.

Making Connections

…in New York State

New York City Council, New York City
> Deputy Director Theresa Pardo presented lessons learned from CTG's Homeless Information Management System project, at a New York City Council hearing on "*A Review of New York City's Efforts to Implement a Human Services Extranet.*" The hearing was held by the Select Committee on Information Technology in Government on February 6, 2003.

Association of Towns, New York City
> Project Associate Christina Pagano and Technology Services Director Derek Werthmuller presented "Using Technology in New York State and Local Governments: Insights, Experience, and Projects" at the Association of Towns Annual Conference on February 17, 2003.

New York State Forum for Information Resource Managers, Web Masters Guild, Albany
> Derek Werthmuller presented "Open Source in Government" on March 7, 2003.

> Derek Werthmuller and Lead Programmer Analyst Jim Costello led an open forum discussion on "Migrating XHTML to XML" on May 2, 2003.

Marist College and Mid-Hudson Chapter of the American Society for Public Administration, Poughkeepsie
> Center Director Sharon Dawes delivered the luncheon keynote address at a conference on the future of e-government at Marist College on March 21, 2003.

NYS Local Government IT Directors Association, Utica
> Christina Pagano presented "State-Local Internet Gateway Prototype Project" on May 13, 2003.

Government Finance Officers Association (GFOA), New York City
> Deputy Director Anthony Cresswell presented "Return on Investment Analysis for IT Investments" at GFOA's annual conference on May 18, 2003.

…beyond New York State

National Governors Association (NGA), Washington, D.C.
> Anthony Cresswell presented "Assessing Capability for Sharing Justice Information" to state and federal government representatives at an NGA Justice conference on January 24, 2003.

U.S. Department of Justice, Washington, D.C.
> Tony Cresswell and Donna Canestraro presented "Assessing Capability for Sharing Justice Information" at the Office of Justice Program's funded projects meeting on February 25, 2003.

American Society of Public Administration (ASPA), Washington, D.C.
> Sharon Dawes presented "E-Governance and Civic Engagement" and "New Models of Collaboration" at ASPA's 64th Annual Conference on March 16, 2003.

National Conference of State Legislatures (NCSL), Boston, MA.
> Sharon Dawes moderated a panel called "New Models of Collaboration" at NCSL's annual conference on April 25, 2003.

National Partnership for Advanced Computational Infrastructure (NPACI), Urbana, IL
> Derek Werthmuller presented "Outreach to Government: Information, Computation, and Public Problems" at NPACI's "All Hands" meeting from April 29 to May 2, 2003.

Crossing Boundaries, Ottawa, Canada
> Sharon Dawes presented "Information as a Public Resource" at the Crossing Boundaries Conference on May 8, 2003.

dg.o2003, Boston, MA
> Several CTG staff members presented papers and research results at the National Conference on Digital Government Research from May 19-21, 2003.

E-Gov 2003, Washington, D.C.
> Project Support Manager Donna Canestraro and Communication Manager Mark LaVigne presented "Making Smart IT Choices" as a tutorial for state and federal agency managers on June 9, 2003.

> Project Associate Meghan Cook presented "Successes in Local E-Government" as part of a panel on Breaking Down Barriers for Results on June 12, 2003.

CTG Leverages Innovative XML Solutions

CTG projects often encourage our government partners to "think outside the box" to develop innovative solutions to the challenges they face.

When it comes to our internal projects, we try to follow our own advice by learning by doing, then targeting that new knowledge toward project innovation.

For example, when our Web site began growing at an exponential rate, our Technology Services Unit began to search for innovative solutions for managing the design and content.

When we first investigated the risks and benefits of XML, the Web site consisted of approximately 1300 pages and experienced, on average, 1200 visitors per day. While the average visits per day fluctuated, the number of pages that needed to be maintained grew monthly.

Early investigations turned out a number of minor, yet valuable, successes. The first was the development of an XML-based conference paper submission and review application. The second was a popularly downloaded white paper on the process of converting HTML to XML. And the third was a series of presentations on XML Technology for public sector audiences.

Based on the understanding gained working on these projects, the Technology Services Unit began to rethink Web development and maintenance, and apply that new thinking to the Center's own Web site. The result is that the Center has recently converted all of its Web content to XML.

"Moving to XML allowed us to separate content, development, design, and programming; which means we manage modular files and documents instead of thousands of Web pages," said Derek Werthmuller, director of the Center's technology services unit. "The separation also gives us greater flexibility for testing new features and capabilities on a modular basis without redesigning every page."

CTG's shift from HTML to XML is one of the case studies discussed in a soon-to-be-released guide on conducting Return on Investment for Government IT, and will be the basis for a new White Paper on the practical application of XML.

The team discovered a number of tangible benefits that were

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