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ANNUAL
REPORT



Center for
Technology in Government



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MISSION

The mission of the Center for Technology in Government at the University at Albany is to foster public sector **innovation** that generates **public value** and supports good **governance**. We carry out this mission through applied research, knowledge sharing, and collaborative problem solving at the intersection of policy, management, and technology.

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Mark Schmidt

University at Albany

From the Director

CTG's work in 2010 addressed complex challenges related to the relationships between data, government, and society. Internationally, public sector leaders set new strategic directions aimed at making government data a societal asset of value to citizens and government. Our research continues to show us that creating the information-centric infrastructures necessary for this transformation calls for capabilities that go far beyond technology alone. They require critical non-technical capabilities in areas such as information management and cross-boundary governance. Creating these new capabilities involves redefining relationships between government, the private sector, and other key stakeholders. CTG's projects continued to build new understanding of these relationships and the challenges organizations face in using them to create change.

Preliminary findings from one CTG research project, funded by the US National Science Foundation, shed light on critical contextual factors that hinder or enhance the performance of Transnational Public Sector Knowledge Networks. Sharing knowledge and information through these transnational networks across cultural and national boundaries can address critical global problems such as health and safety, air quality, or disaster response. We've learned how these networks function in the area of air quality and will expand these findings and new research to other policy domains (page 7).

CTG continues to strengthen its international research partnerships across Canada, Mexico, and the United States in a collaborative project to develop a data interoperability framework to integrate and share product related data from government, the social Web, and the private sector to improve consumer choice (page 27).

Right here at home working with New York State agencies, several CTG projects focused on creating new data collection strategies to inform policy at both the state and national levels. CTG partnered with the NYS Office of Cyber Security to collect broadband speeds directly from New York State citizens rather than traditional methods that rely solely on broadband providers (page 21). Continuing this line of research, CTG is partnering with the NYS Office of Children and Family Services to design a first of its kind data collection strategy in support of federal foster care policy.

Both of these new models of data collection will assist state and national government leaders as they design policies that benefit citizens by being better informed by the

very same citizens they serve. They will also provide new insights into the use of social media and other technologies to collect citizen and service data.

CTG is part of a National Science Foundation-funded initiative (page 23) to develop curriculum to prepare the next generation of financial market regulators to be more prepared to deal with the complexities of modern financial markets, better understand how to collect, monitor, and analyze trillions of financial market transactions, and shepherd the development and use of cutting edge information technology to improve financial market regulation.

Finally, our work on opening government, precipitated by the Obama Administration's *Open Government Directive*, led to the development of a new tool to support governments throughout the world in planning and designing open government programs focused on providing public value (page 2).

This important work could not be accomplished without the many organizations and individuals who participated in and supported our work in 2010. We look forward to next year as we continue to work both in the United States and globally to help governments navigate the intersections of policy, management and technology innovation toward the creation of public value.

Sincerely,

Theresa A. Pardo



Delivering Public Value Through Open Government

Transparency, participation, and collaboration are meaningful when they enable groups of people to pursue their objectives. A public value framework can help to determine the value of government activities from multiple stakeholder perspectives.

The Obama Administration's *Open Government Directive* raised to prominence the principles of transparency, participation, and collaboration as "the cornerstone of an open government." What lies at the heart of the open government vision is broader access to government data and creating new opportunity for citizens to contribute expertise and perspectives to government decision making. What is not yet clear is what types of value can be delivered and to whom through *transparency*, *participation*, and *collaboration* focused initiatives. While these three open government principles resonate in familiar and positive ways, it is not obvious how government agencies can best create new systems and services organized around them and ultimately deliver desired and measurable benefits to government and non-government stakeholders.

Data.gov is an example of a new system that was created with the principles of transparency and citizen engagement in mind. Hundreds of thousands of data streams were uploaded with the goal of enabling new opportunities for public use of this information. Inherently, most agree the act of creating data.gov produces value. But even if one assumes that the data is both usable and of high quality, which cannot be taken for granted, does the act of making greater amounts of government data available to the public by itself equate to *greater transparency*? How can the benefit of such an investment be understood and measured?

Equally, asking questions about the nature and extent of value created through engagement initiatives is critical to understanding what works and what doesn't and to using those lessons going forward in future efforts. Does more involvement result in *better* decisions? Or is it something about the nature of the involvement that matters most? To what extent does the design of the engagement interface influence the quality of the participation? These questions and many others like them have not yet been directly confronted. Unfortunately, many open government efforts are taking place in contexts that currently lack the conceptual frameworks and the performance benchmarks for evaluating their success.

A PUBLIC VALUE APPROACH

To begin to fill the gap in the ability of open government innovators to measure the impact of their efforts, CTG has developed an approach to address critical questions of public value. In our approach, transparency, participation, and collaboration are best viewed as instrumental to the accomplishment of democracy in that they enable citizens to perform their various roles as citizens. That is, transparency is not an end citizens pursue for its own sake. Citizens may desire their government to be transparent, but that is largely because something else is at stake: information and actions must be transparent so that citizens can scrutinize and assess the concrete outcomes of government action.

Metrics that merely quantify how many datasets are available or how frequently opportunities to participate or collaborate are available, while useful for some purposes, cannot be taken as unequivocal indicators that open government efforts have created public value. Similarly, participation for the mere sake of participating is an empty and alienating exercise; instead, citizens participate in order to produce government action that responds to and reflects their input in meaningful ways.



Public value, in the most general sense, focuses attention on the collective and societal interests that are served by particular institutional arrangements and actions of government. A public value framework can help to determine the value of government activities and do so from multiple stakeholder perspectives, not just a generalized, and thus ambiguous, *citizen* viewpoint. Much of the discussion around open government initiatives has been geared towards the broad all-inclusive category of *citizens*. By treating and analyzing such a diverse population as one undifferentiated group, any analysis falls woefully short of understanding the value of specific government actions.

Instead, each government action needs to be treated as potentially presenting value to multiple and diverse stakeholders from both inside and outside the organization. To be most useful, the analysis of public value must center on particular stakeholder groups and their interests, not *the citizen* in a broad sense. The distribution of value across multiple stakeholders will vary according to their particular interests and expectations for government. It will also vary in the benefits they receive from the same government action; some stakeholders may also suffer from an action. Therefore, considering public value as an aggregate indicator of government outcomes misses the variety of interests and possible benefits across many stakeholders.

The basis of the public value rationale is the link between government action and the multiple types of public value that can accrue. Public value types distinguish between the *intrinsic* value of government as a societal asset and the

substantive value of government actions and policies that deliver specific benefits directly to individuals, groups, or organizations. Public value can be described in terms of seven general types of value that capture the range of possible results of government actions.

- **Economic** – impacts on current or future income, asset values, liabilities, entitlements, or other aspects of wealth or risks to any of the above.
- **Political** – impacts on a person’s or group’s influence on government actions or policy, on their role in political affairs, influence in political parties, or prospects for public office.
- **Social** – impacts on family or community relationships, social mobility, status, and identity.
- **Strategic** – impacts on a person’s or group’s economic or political advantage or opportunities, goals, and resources for innovation or planning.
- **Quality of Life** – impacts on individual and household health, security, satisfaction, and general well-being.
- **Ideological** – impacts on beliefs, moral, or ethical commitments, alignment of government actions or policies or social outcomes with beliefs, moral, or ethical positions.
- **Stewardship** – impacts on the public’s view of government officials as faithful stewards or guardians of the value of the government in terms of public trust, integrity, and legitimacy.

Of these types, the first four are impacts related to the substantive private interests of individuals or groups. The remaining three types are related to intrinsic or societal and democratic outcomes. The public value of stewardship results from greater integrity, responsiveness, and legitimacy of government, leading to increased trust and satisfaction with the government overall. Ideological public value aligns government action with moral and ethical preferences or beliefs.

From identifying these seven basic types of value impacts, we can move to considering issues related to how value is created. Value is produced by value generating mechanisms; identifying these mechanisms allows us to specify the means by which a government action is related to the production of one or more public values. The value generating mechanisms reveal the instrumental pathways by which a given government action is related to the creation of a value. According to our framework, actions to affect

OPEN GOVERNMENT: WHAT’S AT STAKE?

Citizens may desire their government to be transparent, participatory, and collaborative but that is largely because something else is at stake:

- **Transparency.** Information and actions must be transparent so that citizens can scrutinize and assess the concrete outcomes of government action.
- **Participation.** Citizens must see that participation will produce government action that responds to and reflects their input.
- **Collaboration.** Collaboration only makes sense where participants can contribute useful expertise and experience, and where substantive decisions are under consideration.

transparency, participation, and collaboration belong within this group of value generators. Taken as a whole, the set of value generators consists of:

- **Efficiency** – obtaining increased outputs or goal attainment with the same resources, or obtaining the same outputs or goals with lower resource consumption.
- **Effectiveness** – increasing the quality of the desired outcome.
- **Intrinsic enhancements** – changing the environment or circumstances of a stakeholder in ways that are valued for their own sake.
- **Transparency** – access to information about the actions of government officials or operation of government programs that enhances accountability or influence on government.
- **Participation** – frequency and intensity of direct involvement in decision making about or operation of government programs or in selection of or actions of officials.
- **Collaboration** – frequency or duration of activities in which more than one set of stakeholders share responsibility or authority for decisions about operation, policies, or actions of government.

Connecting a value type with a value generating mechanism makes clear how a government program results

in one or more public values. For example, an IT investment in putting license application and renewals online may increase efficiency or effectiveness and yield strategic or financial public value for stakeholders that use such licenses.

Transparent, participative, or collaborative actions taken by government may have the effect of enabling a citizen to derive substantive financial, social, political or strategic values and/or intrinsic value related to government itself. For example, when provided with environmental information (with transparency as the enabling value generating mechanism), a citizen may derive several different types of value. In this case, a citizen who acquires information about a toxic chemical release in his neighborhood may derive social benefits for his/her family and the community, but may also gain greater trust in the stewardship of a government agency that provides such information. But conversely, it is also possible that some stakeholders will derive negative public value from this release of information. The same citizen who learns of a toxic chemical release may sue the business allegedly responsible, resulting in negative public value for that business stakeholder. It is also possible that a group of internal governmental stakeholders may accrue positive political and strategic value by releasing the information because it meets an open government requirement; while another set of internal stakeholders may see that as negative political impact.

Therefore, determining the value of any government action requires the systematic analysis of multiple stakeholder perspectives so that both positive and negative impacts are identified and understood. The information generated through this careful analysis enables more informed decisions to be made about open government initiatives.

KEYS TO PUBLIC VALUE ANALYSIS

A public value analysis requires that an agency link its open government initiatives to its mission and priorities. The open government principles of transparency, participation, and collaboration are best viewed as strategies that government takes to accomplish organizational objectives (which should already be rooted in public values), that provide the opportunity to achieve greater or additional value through incorporating these democratic practices. More information, participation, or collaboration may enable better decisions that provide stakeholders with financial, social or strategic values while also enabling them to achieve the



stewardship value of increased trust in the responsiveness of government.

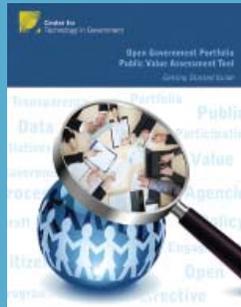
Government leaders may benefit from this approach by using it to plan, design, and assess open government initiatives. The selection and design of open government initiatives can be enhanced by a clear understanding of who is served by a particular initiative, by specifying what values an initiative seeks to create, and by understanding the value generating actions that are required to achieve benefit. This is a recipe for clear-minded planning and design that can improve the progress of open government. Planners can conduct their analyses by initiative, asking what stakeholders and values are targeted by initiatives in their portfolios, insuring that initiatives each have a discernible audience and specific outcomes. They can also analyze their portfolios by stakeholder, asking which initiatives serve which stakeholder groups and in what ways each will derive value across the full portfolio.

Government leaders may also benefit from using this approach to evaluate their open government initiatives, as they, rather than the public at large, are better situated to evaluate a specific initiative. Agencies should be cautious in their use of metrics that report on events or incidents rather than outcomes. Metrics that report on numbers of datasets available, numbers of downloads, participation opportunities, and numbers of discussion posts, for example, are useful to report on the level of activity of both the government and citizens, but they do not give insight into the expected related benefits.

ACHIEVING OPEN GOVERNMENT GOALS

Government agencies or ministries serve the public at large through their commitment to serving particular groups of people with specific needs and desires. A public value

OPEN GOVERNMENT PORTFOLIO PUBLIC VALUE ASSESSMENT TOOL



The *Open Government Portfolio Public Value Assessment Tool (PVAT)* offers government leaders an approach to make more informed decisions about their portfolio of open government initiatives.

The tool provides a structured way to assess the public value of an initiative so that an agency can review the

expected public value across their entire portfolio of open government initiatives. The information generated from using this tool can then support decisions about the mix of initiatives in a portfolio and how to adjust the mix to enhance the agency's public value.

The underlying research for this tool was funded by an Early Action Exploratory Research Grant (EAGER) from the U.S. National Science Foundation. The tool's conceptual design was developed and tested in cooperation with the U.S. General Services Administration (GSA), several federal, state and local agency representatives, and scholars interested or involved in open government.

The PVAT is available to download at: www.ctg.albany.edu/publications/online/pvat

analysis requires a relatively complete inventory of stakeholders for a government agency or unit.

Further research is needed about the nature of transparency, participation, and collaboration as instrumental concepts themselves, since they are so easily misunderstood. The open government principles can be relatively easily operationalized. However, doing so without reference to value carries the risk that such actions will be empty scaffolding. Transparency, for example, will not be achieved through the mere downloading of data sets. The data sets must consist of reliable and valid data, the data must be useful, and, most crucially, they must enable citizens to do something they find valuable and important. If not, transparency is just another empty promise, and will contribute to growing cynicism within the electorate.

Similarly, participation and collaboration must be meaningful and directed toward goals that are carefully defined and acknowledged by ample government feedback. Further, the citizen input they generate must be represented in outcomes that are visible to stakeholders in the decisions and the value produced.

Actions to promote transparency, participation, and collaboration may initially take more time and resources. However, they bear the promise of ultimately improving policy performance by creating shared understandings of current performance and generating pressure to improve, increasing the pool of applicable ideas, tapping into new sources of expertise, and building civic capacity. All these may ultimately turn out to be the key to concrete improvements in policy outcomes and the quality of public services.

Achieving such outcomes will inevitably require changes in the structure and organization of government. Despite the new and innovative capabilities that new technologies introduce, innovations that focus on technology alone all too often reproduce existing rules, routines, norms, and power relations. The promise of open government is to provide a source of pressure that counteracts these tendencies. This promise may be fulfilled provided that open government changes the nature of relationships between stakeholders and government. These changes can produce innovative forms of organizations that enable groups to link across organizational boundaries and functions. The creation of public value may be the best possible argument for stimulating and justifying such structural changes.

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Building Transnational Knowledge Networks to Tackle Global Problems

Much of the work of a transnational knowledge network is embodied in the effort to bridge or shrink “contextual distances” so that the participants can create shared meaning and productive collaborations.

Sharing knowledge, information, technology and practices across cultural and national boundaries has become a means to address critical global problems. As governments strive to improve public health and safety, protect the environment, respond to disasters, or promote international commerce, they are engaging in new kinds of knowledge sharing networks as mechanisms for regional and global collaboration.

In her 2004 book, *The New World Order*, Anne Marie Slaughter describes these networks as a key feature of 21st century governance, arguing that the international system is not only one of formal relationships among sovereign states, but also of less formal links among public, private, and nonprofit entities that interact with each other on the basis of expertise and interest rather than formal power. These networks rely heavily on informal interaction, persuasion, and information and require new kinds of knowledge sharing and information systems that combine both social and technical dimensions.

A fundamental challenge for transnational knowledge networking is that every participant comes to the engagement deeply embedded in layers of context. Every participant, whether an individual or an organization, communicates, acts, and understands the world through well-established, contextual lenses. These lenses can be conceived as three layers of context that reflect national culture and political systems, a wide array of organizational factors, and the characteristics of the technology, data, and expertise they share. Much of the work of a transnational network is embodied in the effort to bridge or shrink “contextual distances” so that the participants can create shared meaning and productive collaborations.

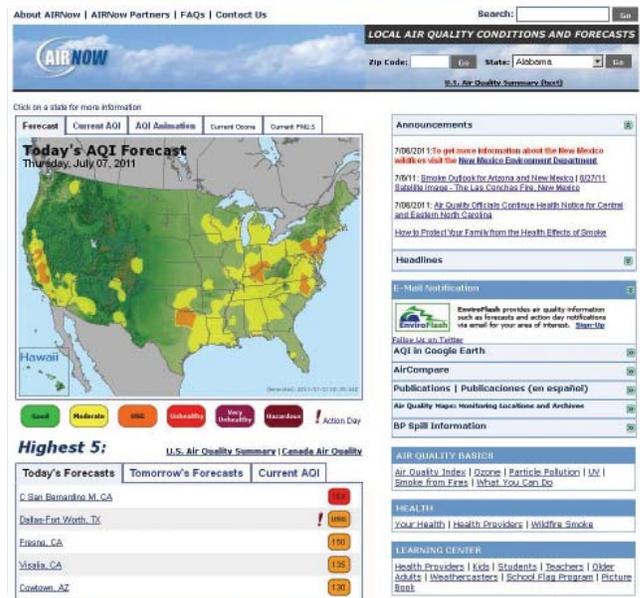
Preliminary findings from a recent CTG research project, funded by the US National Science Foundation, shed light on critical contextual factors that may hinder or enhance the performance of Transnational Public Sector Knowledge Networks (TPSKNs). The research involved analysis of the first-hand experiences of government and partner organizations in China and the United States who are working together on air quality issues.

THE CASE OF AIRNOW-I SHANGHAI

AIRNow-International (AIRNow-I) is an initiative led by the US Environmental Protection Agency (EPA) to redesign the US air quality monitoring and public reporting system to be scalable, interoperable, portable, and affordable to any country. Its guiding vision is a readily usable worldwide platform for gathering, analyzing, and sharing air quality information to improve public health.

Our case study assessed the internationalization of AIRNow through a collaborative project between EPA and the Shanghai Environmental Monitoring Center (SEMC) in China. We traced the history of air quality policy and management in both countries and then explored the structure and dynamics of their joint effort to build AIRNow-I Shanghai. Our goal was to understand the influences of the separate Chinese and American contexts on the participants and their interactions, and to identify the ways in which they dealt with important contextual distances to produce results.

The AIRNow-I Shanghai project operated under the broad provisions of a bilateral ten-year cooperation agreement established in 2004. At that time, China was in the early stages of air quality policy development and emerging public awareness of environmental issues – similar to where the US had been in the 1960s and 70s. Despite the differences in policy development and experience, the project offered benefits to both countries. For EPA it was an



opportunity to internationalize AIRNow in a way that would produce not only a platform for many different countries, but also a revamped system for the United States. For Shanghai, the project was a means to advance air quality monitoring and control in rapidly developing parts of China and to address new public policies concerning air pollution.

EARLY CHALLENGES

The project faced considerable challenges from the start due to differences between the countries and organizations involved. Some of these differences reflect the divergent social, economic, and political contexts in the United States and China; others reflect differences in goals, organizational factors, typical approaches to work, technical capabilities and the resources available for the effort.

The United States and China had different reasons for participating and sought different, but not necessarily incompatible, goals. For the US, it was a first effort to expand real-time air quality reporting for public use in a developing country; for China it was a means to advance air quality monitoring and management as an internal governmental function.

Political and organizational cultures also combined to create quite different contexts for the work in the two countries. For example, the US partners had a fair amount of discretion and long-standing relationships between the government and private sector contractors who carried out much of the work. By contrast, the Chinese partners worked



As part of the Shanghai Expo 2010, the US EPA and the Shanghai Environmental Protection Bureau (EPB) launched AIRNow International, with real-time air quality data reporting from the World Expo site.

within a tightly structured hierarchy building new relationships and understandings along the way.

Language presented another challenge. Much work was done remotely and over the phone, few of the Chinese were comfortable with spoken English, and only one member of the American team was familiar with Mandarin. In addition, neither side started with enough money to support the work they wanted to do and neither country provided funding from regular operating budgets. Physical distance also imposed challenges, from crossing over 10-12 time zones to the expenses of travel for the face-to-face work that was necessary to design, build, test, and implement the system.

CAPACITY BUILDING

Given these challenges, a long “courtship period” of technical exchanges and scientific visits helped build relationships that were essential in the eventual system development work. During this early period from 2004-2008, lacking sufficient political and financial support to move forward with system development, both sides committed some money and time to a series of technical exchanges where staff traveled between the China and the United States over a period of about three years, essentially sharing knowledge and information related to air quality reporting and forecasting.

Participants in both countries characterized this period of exchanges as capacity building both in terms of technical knowledge and in learning more about one another as individual professionals. Most of the events could be narrowly viewed as knowledge transfer about forecasting

from the United States to Shanghai. However, from a broader organizational and social perspective, the events also developed familiarity and the capability to work together, creating the foundations for personal relationships and a level of trust among the organizations involved.

DEVELOPMENT PHASE

Joint work on system development finally began in April 2008 with the signing of a formal agreement laying out goals and responsibilities for the project, and both sides finding enough funding to go forward.

Once The US and Shanghai teams moved into the development phase, a more focused and detailed working relationship began to emerge. The information and knowledge sharing that occurred during the previous several years helped them get to know each other as fellow scientists and technicians. However, trust, communication, and collaborative work processes still needed to evolve and mature as the work became more technical, specific, and results-driven. The participants had to learn how to actually work together across time, distance, and cultural differences.

Information technology and collaboration tools helped bridge the language, cultural, and even physical distances. Email and remote demonstration software proved to be very important forms of communication because they put information into written or visual form where it was more likely to be understood in the same way by all. Personal commitments to constant communication, literal and cultural translation, and simple hospitality encouraged more trust and openness that helped in problem identification and problem solving. One American team member who was born in Hong Kong and the Chinese team leader who had spent months at a US research lab provided essential cross-cultural linkages across the two teams. For all, growing knowledge of practical conditions (such as the effects of rapid development and urbanization) and technical capabilities (such as the science of air quality forecasting) contributed to a more complete and nuanced understanding of the possibilities and the limitations of the project and to a successful outcome.

ACCOMPLISHMENTS

AIRNow-I Shanghai made its official debut on May 10, 2010. EPA had spent approximately \$1.5 million and China about RMB 900 thousand on the direct costs. Both sides had invested nearly six years in learning and relationship building as well as joint system development. Several months earlier

LAYERS OF CONTEXT IN TRANSNATIONAL KNOWLEDGE NETWORKS	
Layer	Factors
National Context	<ul style="list-style-type: none"> • Culture • Political support • Laws and policies • Language
Organizational Context	<ul style="list-style-type: none"> • Goals and interests • Trust and past relationships • Executive support • Perceived risk • Perceived costs and benefits • Organizational culture • Leadership • Authority and hierarchical structures • Rules and procedures • Resources • Absorptive capacity
Knowledge and Information Context	<ul style="list-style-type: none"> • Type • Value • Sensitivity • Confidentiality • Degree of standardization • Embeddedness • Codifiability • Technology characteristics

the core system developed for AIRNow-I Shanghai had replaced the old domestic AIRNow software in the United States.

China and Shanghai achieved a variety of important policy, management, and technology goals. These achievements included an air quality information monitoring, management, and reporting system for the city of Shanghai for which AIRNow-I is the core system; successful experimentation with a totally new international cooperation model; successful public use of the system during World Expo 2010 Shanghai; the cultivation of a well trained cross-functional team at SEMC; staff development and scientific training; and enhancement of Shanghai’s reputation for leadership in China.

Accomplishments for the US included a new US domestic AIRNow system; a successful implementation of the AIRNow-I platform for global use; enhancement of EPA’s international leadership position in air quality monitoring and improvement; and deep on-the-ground experience working on a familiar topic in another culture.

For both the United States and China, the project led to several important joint accomplishments such as tangible

outcomes associated with the ten-year bilateral MOU; trusted working relationships and a technical basis for regional air quality strategies in China; and a variety of re-usable tools and techniques for communication and collaboration.

LESSONS LEARNED

Given the accomplishments as well as the challenges presented in this case, we offer these lessons for future engagements in transnational knowledge sharing.

Consider the broad historical and political context.

Efforts like AIRNow-I are not general exercises in international engagement. They are specific investments in a particular policy domain where the countries involved can be in different stages of development and pursuing different policy goals. Developing a shared understanding of similarities and differences in context and history should be among the first steps in these initiatives.

Find the mutual benefit in separate national intentions. The nations participating in a transnational knowledge network are likely to have somewhat different intentions and goals. Success of the network depends on finding an adequate overlap among these different goals so that progress is made toward separate objectives, while at the same time achieving an acceptable level of mutual benefit.

Give critical attention to the early phase of engagement. The cultural, political, organizational, technological and other differences among participants present many opportunities for misunderstanding and wrong assumptions. The early period of engagement is therefore critical for establishing shared understanding about fundamental goals, roles, expectations, capabilities, resource limitations, and working assumptions.

Recognize the power of personal commitment and individual leadership. The individuals involved in complex transnational projects all have responsibilities associated with their organizational positions, but the success of these efforts is strongly linked to personal commitment and leadership that goes beyond formal position. These individual contributions are a necessary complement to organizational action.

Recruit participants who can work in multiple languages and cultures. Transnational projects require at least some participants who speak multiple languages and are comfortable working in more than one culture. Ideally, these would be people who have lived and worked for substantial periods in these different contexts and

LESSONS FOR TRANSNATIONAL KNOWLEDGE SHARING

Based on the AIRNow-I Shanghai case, the following key lessons can be used by those considering future engagements in transnational knowledge sharing:

- Consider the broad historical and political context. Express clear national intentions while seeking mutual benefits.
- Give critical attention to the early phase of engagement.
- Recognize the power of personal commitment and individual leadership.
- Recruit participants who can work in multiple languages and cultures.
- Employ multiple methods and channels of communication.
- Be open to different forms of knowledge sharing and knowledge building.
- Assemble complementary, adequate, and appropriate resources.
- Plan the duration and intensity of the effort for the “distance” to be covered.
- Build in a path to sustainability.

appreciate how values, norms, and beliefs underlie perceptions, relationships, and actions.

Employ multiple methods and channels of communication. Since the participants in a transnational network are likely to be separated by physical location as well as by time, language, and culture, the chances for miscommunication and non-communication are high. These risks can be mitigated by employing and coordinating multiple forms and channels of communication at the technical, managerial and policy levels.

Be open to different forms of knowledge sharing and knowledge building. Transnational projects like AIRNow-I are not technology transfer projects in which a donor builds a factory or gives a complete system to a recipient. Rather, they are long term engagements in which two or more countries work together to create value in the form of knowledge, expertise, and shared results. This kind of work requires patience and genuine openness to a mutual learning process.

Assemble complementary, adequate, and appropriate resources. Many kinds of resources go into transnational knowledge sharing projects, including expertise, data, funding, technology, facilities, and relationships. In a successful effort, each participating entity brings some collection of resources to the table that are commensurate with both its own interests and its commitment to the network goals. Different funding sources, rules, and cycles can make this difficult, but not impossible, to achieve.

Plan the duration and intensity of the effort for the “distance” to be covered. Transnational knowledge sharing appears to need a long gestation period of relationship building before explicit goals are set or projects are launched. Once underway, the work of the network is inevitably slowed by differences in location, language, culture, and political and organizational considerations. When these differences are large, the time period for achieving sustainable results is likely to be measured in years rather than weeks or months.

Build in a path to sustainability. To achieve long lasting mutual benefits, the plan for any transnational knowledge sharing project needs to include a path to sustainability that makes sense in the context of that particular effort. A rough strategy and resource estimate for sustaining the effort should be part of the plan.



The world faces a growing number of regional and global problems that no nation has the authority, capability, or resources to solve on its own. Our study of TPSKNs shows how sovereignty, unique cultural characteristics, and national contexts introduce conflicts and distances that complicate transnational cooperation. We have learned that while governments are the essential core of these networks, successful ones often include non-government partners such as private firms, civil society groups, and research institutions. Effective TPSKNs need time to develop, rich communication, and a basis for trust among the participants. When these factors are present, these multi-faceted networks can use a variety of formal and informal means to foster learning, collaboration, and problem solving.

Sharon S. Dawes, Senior Fellow

G. Brian Burke, Senior Program Associate



Government in a Mobile World

The mobile platform offers new opportunities for governments to engage with citizens by either capturing attention at the citizen's point of interest or offering new ways to interact when the person feels most ready to do so.

Government services, staff, and development efforts will be increasingly mobile in coming years as devices and applications continue to proliferate at an astounding rate. Industry experts stress how quickly the change is coming. Within the next five years, "more users will connect to the Internet over mobile devices than desktop PCs." "By 2014," according to Gartner, "90 percent of organizations will support corporate applications on personal devices."

In the current mobile landscape over 1 billion people already own mobile devices. The iPhone App Store holds over 350,000 active apps and the downloads of those apps stands at over 10 billion (there are only 6.9 billion people currently alive on the planet). That's why Gartner put tablets and mobile apps on its list of top 10 technologies that enterprises should invest in for 2011.

The usual concerns that come with any technology innovation also accompany the mobile world: security, accessibility, privacy, development, deployment. As with any technology, mobile brings its own unique characteristics to these concerns. While critical for government, the single most important fact is that developments in the mobile world will directly impact nearly every aspect of government operations including delivery of services, citizen engagement, allocation of IT resources, staff support, and training.

DELIVERY OF SERVICES

Mobile activity in the business world is fast becoming the norm. The past holiday season featured shoppers using their smartphones to scan product codes in retail stores in order to pull-down price comparisons of similar items at neighboring stores. The sales of eBooks recently surpassed paperback book sales on Amazon. Banking transactions are now commonly conducted via mobile phones. With this new area of use comes the expectation that all services, including government services, should be available in a similar fashion. While many government entities have already entered this arena, all will be expected there soon.

The State of Arkansas is one of the leaders for delivering government services via mobile devices. On <http://mobile.ar.gov>, citizens can access a wide array of services, such as secure payment processing for real estate taxes, voter registration status, employment opportunity search, and others. The services are available on any smartphone operating platform, including iPhone, Blackberry, Google Android, Windows Mobile, and Palm.

Likewise, the New York State Department of Transportation offers a 511NY Mobile Web service and a



USA.GOV MOBILE APPS

The USA.gov website, apps.usa.gov, is a good starting point for discovering more about mobile apps in government. The site currently lists 31 different apps, such as the FBI's Ten Most Wanted, FCC's Mobile Broadband Test, Find a Health Center (near you), UV Index (wherever you are), and Veteran's Affairs Mobile. These are just a small sampling, but give some indication of the range of interests, audiences, and features that government agencies provide via mobile devices.

This site only lists "mobile apps," which are applications designed for and deployed on specific mobile operating platforms and available (for free) through the app stores of these platforms. The other approach to mobile development is "mobile sites" that use standard code (HTML5, CSS3, JavaScript) and can "run" on nearly any mobile device just like a website on a browser. There are pros and cons to each method. Many government agencies develop and deploy their mobile offerings via both methods—511NY is one good example of this dual approach.

511NY Mobile Web app for up to the minute real-time information on traffic, transit, and travel conditions. The mobile Web provides traffic and transit information, and a trip planner, as well as incident, construction, special event, and speed information. Users can access cameras, weather forecasts and alerts, and get travel times for bridges and tunnels.

Mobile service delivery is even more advanced at the international level. In many developing countries mobile phones are often the only internet connection and a simple text message can have a significant impact. In Africa, for example, a mHealth platform called ChildCount+ empowers

**MOBILE STRATEGY FOR GOVERNMENT:
FIVE KEY ELEMENTS**

- **Look inward and outward.** The benefits of mobile extend beyond apps that enhance citizen services to policies, practices, and applications that improve an agency’s workforce performance.
- **Accept that mobile is everywhere and it’s here to stay.** Do not dismiss or delay your adoption of mobile technologies because “it’s just the latest trend.”
- **Recognize that mobile is more than another delivery mechanism.** Mobile brings a new set of capabilities – such as GPS location services, cameras, remote control, and testing – that can be leveraged to redefine how, what, when and where services are delivered.
- **Address security, compliance, and identity management.** Do not take shortcuts around the very real and possibly new security and compliance issues that the adoption of mobile raises.
- **Evaluate mobile apps versus the mobile Web.** If device features are not so critical, a mobile Web approach may be better and vice versa. But apps can also take more time, money, and resources to develop and deploy. Identifying why you are developing and for whom can help you decide.

communities to improve child survival and maternal health by using SMS text messages to facilitate and coordinate the activities of community-based health care providers. The goal is to help reduce child and maternal mortality, by 66% and 75% respectively, by actively monitoring children for malnutrition, malaria, and other childhood illnesses. On another front, Kenya’s iHub—an innovation hub and nexus point for the local tech community in Nairobi—is leading the way for advances to make mobile payment systems work better or to provide more timely and useful agricultural information to farmers. In Singapore, a worldwide leader in eGovernment, nearly 350 mobile government services are available.

CITIZEN ENGAGEMENT

The mobile platform offers new opportunities for governments to engage with citizens by either capturing attention at the citizen’s point of interest or offering new ways to interact when the person feels most ready to do so.

Two examples from city and state government show how this is being achieved.

The City of Salem, Massachusetts, developed an iPhone app to promote tourism and engage visitors. The app serves as a mobile brochure and tour guide, but then goes a step beyond with timely events listing, coupons, and tickets to attractions that can be looked up and purchased over the iPhone. Because it’s a mobile app, you can look up a restaurant or motel, pull up a map, and get directions from your current location. Based on the success of the visitors app, the city began looking into development of a residents’ app that would synch up with the city constituent services center for reporting problems such as potholes.

The New York State Senate released the first mobile app (available on Android, iPhone, and iPad) by a state legislature, which provides direct access to the latest news, legislation, meeting agendas, calendars, votes, videos, and more. You can also find your Senator, read their blog, track their bills, and more.

The world watched the impact of mobile technology and social media on the “Arab Spring” uprisings in 2011, but citizen engagement with mobile devices extends throughout the international stage and into all aspects of life. For example, one year after an earthquake devastated Haiti, *Survivors Connect*, an organization that uses technology and social media to empower citizens around the world to address slavery and violence, has set up a text message helpline to report crimes in the country. The project, known as *Ayiti SMS SOS*, enables anyone in Haiti to text a central number if they witness or experience an act of violence. A team of trained social workers/helpline operators will



respond or refer the case to the appropriate authorities. The helpline makes use of near ubiquitous ownership and reliability of mobile technology in Haiti; and texting is cost effective, discrete, and fast.

ALLOCATION OF IT RESOURCES AND STAFF SUPPORT

While the mobile platform may not be the only platform in years to come, it is the platform with the greatest growth, greatest reach, and greatest use among young and emerging populations. IT units need to confront this emergence from two perspectives.

First, development efforts need to take mobile delivery into account, and perhaps even as the primary option. This means design and programming skills have to be upgraded or acquired, since mobile platform skills are not necessarily the same as the general Web or desktop skills. Also, program and business units must be educated to think of mobile delivery in their program planning.

Second, IT units must be prepared to support a variety of mobile devices (phones, smartphones, iPads, tablets, etc.) deployed throughout their staff. The days of desktops and laptops being the only machines assigned to staff are quickly receding. As more work gets done on portable, mobile devices (often at lower cost and more effectively), the demand (and compelling business case) for assignment of these devices to staff will grow. This will put new demands on IT departments to incorporate these devices safely and efficiently within their networks and business processes.

TRAINING AND BEYOND

Typically, new technologies require new training. This may be true for mobile technologies as well, but the real interesting aspect of training is what mobile offers in terms of delivery. The question isn't "What training do we need to deliver mobile," but "What training can we receive via mobile." And that's where the future looks very promising and exciting.

Johnson & Johnson, number 33 on the Fortune 500 list, with over 250 companies in 57 countries, knows the challenges of training a large, diverse, and scattered workforce. Recently, they've turned to mobile devices to deliver media-rich, mobile learning via their staff's BlackBerry smartphones. As a result, they've seen a reduction in compliance issues, improved employee performance, and an engaged and aligned, though remote and highly mobile, workforce. Improved devices, improved software, and

CTG RESEARCH ON MOBILE

CTG is talking with government practitioners to find out more about how mobile is impacting their organizations and work practices. Information gathering workshops are being held with groups at the state, city, and federal levels. Preliminary findings affirm that mobile is a top priority across the board and that agencies see its many impacts affecting three major areas: citizen services and participation, workplace skills and processes, and interoperable collaborations.

Agencies are looking for examples and best practices for mobile implementations, how to assess the ROI and public value, and how to structure business cases for mobile adoption. Nearly all have mobile projects and plans in place or currently under way, ranging from lines of business applications to support field workers to SMS Amber alerts (text messaging) to mobile e-learning. Governments are taking a thoughtful approach, not just looking for a quick, high-profile killer app, but exploring long-range beneficial application of the technology that leverages its capabilities to better serve citizens and government workers.

improved wireless networks have made this possible. This trend will continue to grow, especially as stronger processors and 4G networks bring faster speeds, multitasking, and true streaming multimedia to the mobile, wireless world.

Government agencies have equally pressing demands for informing and training their large, diverse, and increasingly mobile workforce. eLearning via mobile, or mLearning, is an emerging field, but one with great promise, especially as iPads and tablets become more prominent. In a world where over 50 percent of all employees spend up to half of their time outside the office and more than 75 percent of all Internet viewing is carried out on wireless platforms, the potential of eLearning is undeniable. Governments will need to turn to this option not only for their own staff, but to reach out to the public in delivering their information and services. The platform is changing and everything else will change with it.

James Costello, Web Application Developer



Government Accountability Through Spending Transparency

A global challenge informed by information management and cross-boundary governance.

Governments of the world are facing both national and global demands for greater levels of transparency that allow not only citizens but other nations to hold them accountable for their actions. These internal and external pressures and government responses have been fueled in part by innovations in information and communication technologies (ICTs) and the expanding capabilities of governments to use technology effectively.

Recent advances in ICTs have enabled governments to make tremendous amounts of data in digital form available to the public through Web-enabled platforms and applications. Making such data available to the public is seen as an important first step in achieving greater government accountability through improved transparency. One specific example of these global government accountability efforts is in the area of spending transparency. Government responses to the demand for spending transparency often take the form of national level legislation, international agreements, or Web-enabled access to

information. Examples of each include the spending reporting requirements mandated in the 2009 American Recovery and Reinvestment Act (Recovery Act), the US and Brazil led Open Government Partnership initiative, and USAspending.gov.

Making government spending data available to the public through new collection, integration, and sharing strategies requires new organizational as well as technological capabilities. More specifically, governments need innovative information management and cross-boundary governance strategies. Information management innovations include effective use of enabling information technologies and a culture of information stewardship that acknowledges the public value of government data. Cross-boundary governance innovations include new policies and processes that enable disparate groups of agencies that own or maintain spending data to make decisions across traditional organizational boundaries. Combined, such capabilities allow groups of diverse organizations to effectively create, collect, integrate, and share public information in ways that support both organizational purposes and shared transparency goals.

The experiences gained by New York State in overcoming the challenges it faced in implementing the Recovery Act spending reporting requirements provides valuable insights into the types of transformative information management and governance practices that worked for these agencies. Such practices can be of use to other governments at all levels and internationally who seek success in delivering a level of spending transparency that relies on multi-level, multi-jurisdictional reporting and provides sufficient, timely, and accurate data for citizens to hold their government accountable.

THE RECOVERY ACT

The Recovery Act reporting was a first of its kind effort to collect relatively real-time spending data on all tiers of awards and sub-awards issued by the US federal government. In addition, recipients were required for the first time to report on, not just expenditure data, but accountability and outcome measures such as job creation.

CTG conducted a series of forums with NYS agencies to identify and document some of the important implementation insights and lessons learned from Recovery Act reporting experiences. As little or no federal assistance for new infrastructure or processes was given to the states to meet this requirement, New York, like most states, had to rely on a mix of existing and newly developed resources, relationships, and processes to track and report on



RECENT DEVELOPMENTS IN UNITED STATES' SPENDING TRANSPARENCY

In 2006, bi-partisan support enacted the Federal Funding Accountability and Transparency Act, (FFATA) which established the website USAspending.gov. This single searchable website for all federal spending summarizes major categories of federal spending, provides an IT dashboard for major technology projects, identifies the top government contractors and assistance recipients, and links to procurement information and related resources.

In 2009, the Recovery Act enabled the creation of both a back-end, and front-end, system for reporting spending data. FederalReporting.gov was the back-end, central, government-wide data collection system for federal agencies and recipients of stimulus funds. Recovery.gov was the front-end, web-based system created with the expressed purpose of allowing "taxpayers to see precisely what entities receive Recovery money in addition to how and where the money is spent."

Requiring multi-tier reporting as we saw in the Recovery Act requirements was an important departure from the 2006 FFATA model of relying solely on state agency reporting. This departure has spurred the introduction of a 2011 bill to replace FFATA, the Digital Accountability and Transparency Act (DATA Act). The OMB Watch, a nonprofit research and advocacy organization that tracks developments in federal spending transparency, compared the current FFATA legislation with the DATA Act. They argued that while the DATA Act looks to further institutionalize multi-tier federal spending transparency and create common data elements and yet another website to display spending data, it differs in that it includes a sunset provision, contains vague definitions of who recipients are, and is missing important data elements and processes for data checks.

OPEN GOVERNMENT PARTNERSHIP



One example of recent global government accountability efforts is the **Open Government Partnership**, a new multilateral initiative that aims to secure concrete commitments from governments to promote

transparency, empower citizens, fight corruption, and harness new technologies to strengthen governance. In the spirit of multi-stakeholder collaboration, OGP is overseen by a steering committee of eight governments and nine civil society organizations.

More information on OGP can be found at www.opengovpartnership.org.

expenditures and results. These efforts affected IT systems, business processes, and relationships across government levels and private recipients.

For state recipients with a large number of Recovery Act awards, the reporting requirements generated transformative information management and governance practices that have become institutionalized beyond the Recovery Act period. However, others with relatively few awards used unsustainable workarounds to respond to what they treated as a one-time federal mandate. Examining what happened during the Recovery Act reporting periods is necessary to ensure that efforts going forward will build on the innovations and capabilities created in the process of creating a new level of spending transparency.

A WARRANT FOR INNOVATIVE INFORMATION MANAGEMENT AND CROSS-BOUNDARY GOVERNANCE STRATEGIES

The level of reporting mandated by the Recovery Act was not unprecedented; in fact, the federal government has been requesting this type of information from state agencies who receive federal money for decades. The novel aspects of the Recovery Act reporting included:

- the collection of information from a variety of different programmatic areas
- creation of a single, central spending data repository between states and the federal government,
- data collected directly from sub-recipients,

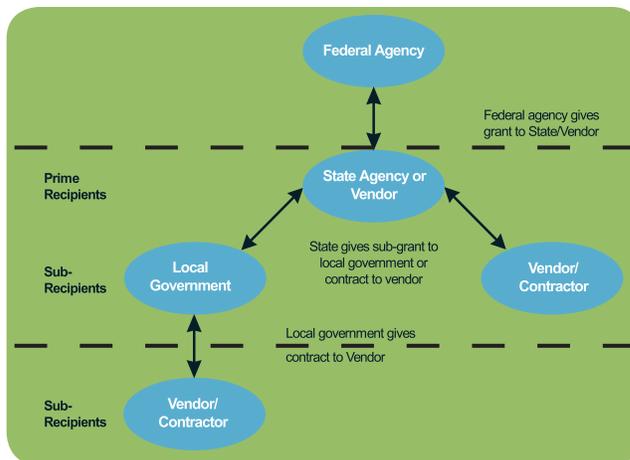
- the quick turn-around of data on a quarterly basis, and
- a mandate to make information more accessible and transparent.

While agencies with a small number of grants could mainly focus on minor business process changes and use excel spreadsheets to meet the novel aspects of the reporting requirements, for those receiving hundreds of grants with hundreds of subrecipients it was clear that new investments in IT and other capabilities had to be made to meet the challenges.

The NYS Department of Transportation (NYS DOT) recognized that a brute force strategy of manually reviewing hundreds of spreadsheets to collect, verify, and report data was not a workable reporting strategy. As one NYS DOT official noted, “Spreadsheets would have killed us; we would have been buried in that approach.” Alternatively, NYS DOT brought together a number of business units to make decisions around data and to establish new data governance capability to better understand the information they were collecting. NYS DOT turned to their IT department to build the necessary Web interfaces to gather the data into a data warehouse, allowing the agency to pull reliable data from existing systems (see side box).

Held just before the first reporting deadline, the first of three CTG Forums allowed NYS DOT and other agencies to share their stories. The pressure of quarterly deadlines prompted innovative transformations by state agencies who:

- developed new data reporting structures,
- established new communication channels,
- made business cases for enterprise technology solutions,



U.S. Spending Transparency's Multi-tier Players

- reinigorated an enterprise focus on data quality and governance capabilities, and
- gained a new appreciation for the value of integrated information and reporting from a business analytics perspective.

The insight of attendees provided a window into the complex relationships of IT and organizational innovation under pressure.

INFORMATION MANAGEMENT

Beyond its role as a trigger for renewed attention to data and transparency, the reporting requirements of the Recovery Act drove home the importance of information

management through a culture of information stewardship. Information stewardship can be defined as the practice of treating government data as a resource or asset that has organizational, jurisdictional, or societal value to a wide range of different 'consumers,' and therefore, treating it as such when collecting, sharing, and storing it. The new emphasis on transparency resulted in new users and uses of the information. Some agencies created spending barometers and geo-coded contracts, and displayed them using maps along with additional contextual information about spending through related data links.

Many of the new uses of data depended on having the appropriate information about the context of data collection. At the forums, both program and IT professionals spoke of

NEW YORK STATE DEPARTMENT OF TRANSPORTATION CASE STUDY

As a prime recipient of approximately \$1.57 billion in Recovery Act funding for several programs, including Highway Infrastructure Investment, High-speed Intercity Rail, Non-urban Transit, Ferry Boat, Youth Construction Initiative, and Clean Diesel, the New York State Department of Transportation (NYSDOT) must report Recovery Act spending information on a monthly basis to FederalReporting.gov and to its federal counterparts.

In early 2009, NYSDOT began using spreadsheet templates provided by FederalReporting.gov to track more than 440 projects being advanced for the Highway Infrastructure Investment Funds; NYSDOT soon realized that the requirement to provide one spreadsheet per award was not feasible. By May 2009, the department made a strategic move in collaboration with its federal counterparts to transition from spreadsheets and, instead, developed a data warehouse that utilized XML for reporting purposes and business intelligence tools.

The time pressure of the first reporting period and the possible risk of losing award funds made a massive redesign of business processes difficult or impossible. NYSDOT focused its efforts on identifying and aggregating the data from existing operational systems and bringing it into its data warehouse to meet its reporting needs. To do this, NYSDOT staff mapped all critical reporting data with their business processes, pulling from eight operational systems from different functional areas within the department.

The communication channels between the IT staff and the program areas responsible for transportation projects were

greatly streamlined. While standard project management methodologies were followed, team members from multiple program areas engaged in informal communications as needed to get the work done collaboratively. In addition, finance, internal audit, construction, planning, and IT program areas learned more about each others' business processes; as a result, they were able to redesign how information flowed throughout the department.

The Director and the Recovery Act team, drawn from the program areas and Federal Highway Administration staff, met biweekly to discuss key issues and program status and to share information. A lead reporting manager and website manager were assigned to oversee dissemination of information to the public and to ensure an appropriate level of transparency required by the Recovery Act. Key performance indicators and metrics were established to help NYSDOT manage the Recovery Act program and to ensure successful results. NYSDOT's Recovery Act Program won the 2010 GTC East *Best of New York Award for Project Excellence*.

The benefits of collaboration, data governance, performance metrics and information management gained from the Recovery Act have been extensive. This knowledge is being applied to advance its '3R' key performance indicators and toward developing an enterprise data warehouse that will streamline data management capabilities further, providing even greater savings and value.

The NYSDOT Recovery Act website is www.nysdot.gov/recovery.



At CTG's first forum, Tom Johnston, Manager of the Business Solutions Bureau and IT Lead on NYSDOT's Recovery Act project team, shared information technology solutions developed by NYSDOT to manage Recovery Act reporting for the first reporting deadline, October 10, 2009.

the importance of understanding data use from the user's perspective. Taking seriously this charge, agencies began rethinking how existing and new information technologies could accommodate the requirement for real-time data consumption and spending transparency.

CROSS-BOUNDARY GOVERNANCE

Beyond the information management considerations, agencies shared with us how they had to find new ways to coordinate both internal work and new relationships with external organizations and agencies. Many responded by creating ad-hoc governance structures that allowed cross-organizational teams to share information needs and work practices among divisions that otherwise did not work in coordinated ways. Some agencies used virtual collaborative software to help organize internal efforts and facilitate the communication across functional teams. These techniques smoothed interactions among units that were all a part of the reporting, but had their own work practices, desired levels of information quality, and uses for the information, such as internal controls, auditing, and risk management process.

Agencies quickly realized the possibility of enormous data quality issues, if for no other reason than the volume of data being collected and the rapid turn around required by the reporting requirements. Governance became a critical issue once the collaborating organizations realized that concerns for data quality were no longer just an issue for the IT department, but a business issue that cut across all facets of spending reporting. The need for consistent, timely data required new real-time processes for review and approval, spurred in part by the added pressure to avoid

ESSENTIAL CONSIDERATIONS FOR IMPLEMENTATION

- Data standards are necessary, but data governance is just as important.
- Promote practices and a culture shift focused on information stewardship.
- New policies, procedures, and work processes across levels of government will need to be worked out.
- Technology's role is multi-dimensional, it serves to collect, disseminate, visualize, and coordinate implementation activities.

public exposure of mistakes in the data. The federal government created some of the necessary structure by instituting reporting schedules that enabled the correction of data after reporting deadlines had passed. Several of the agencies devised new data entry processes for sub-recipients to avoid many of the data entry issues that were inherent in past reporting methods. Others created new processes that allowed sub-recipients to enter data directly into a Web-enabled form.

BEYOND THE RECOVERY ACT

The requirements outlined in the U.S. Recovery Act for tracking spending and delivering spending information to the public are just the tip of the iceberg worldwide in terms of new requirements and expectations for government spending transparency and accountability. The lessons learned through the Recovery Act reporting experience provide a leg-up to governments around the world as they begin to lay out new strategies for achieving spending transparency. The challenge ahead is for federal, state and local agencies and private contractors to learn from the experiences of those involved in Recovery Act reporting and to use that knowledge to guide the creation of the capabilities necessary to meet citizen expectations regarding spending transparency.

Natalie Helbig, *Senior Program Associate*
 Theresa Pardo, *Director*
 Donna Canestraro, *Program Manager*



FOSTERING INNOVATION IN GOVERNMENT

The goal of every CTG partnership project is to share knowledge that improves the way government works. Government practitioners and academic researchers use the results of these projects to better understand the role of information, provide policy and practice guidance, and inform organizational decisions. CTG projects have helped state, local, and federal agencies increase productivity and coordination, reduce costs, enhance quality, and deliver better services to citizens and businesses.

Informing Social Media Policy Development

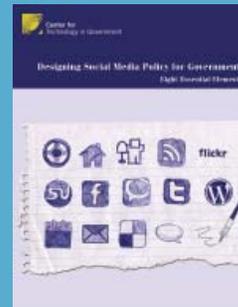
Government agencies are increasingly looking to leverage social media to improve the quality of government services and elicit greater citizen engagement. There are many high profile examples of government agencies using social media tools. However, for the vast majority of governments across the US, these tools are still fairly new and relatively unexplored. Adopting new tools, managing the related changes in work processes and policies and shifts in communication patterns are not easy for any type of organization.

After conducting exploratory workshops and interviews with government practitioners, CTG found that many are struggling with what types of new policies and guidelines are necessary to encourage proper use and mitigate the risks of social media tools. To address this need, CTG analyzed 26 social media policies and conducted further interviews at all levels as the basis for creating a guide that provides eight essential elements to consider in developing a government social media policy.



Jana Hrdinova (program associate) and Natalie Helbig (senior program associate), facilitating a discussion on strategies for content development for social media during CTG's *Managing Social Media: A Training Class for Government*. Class attendees represented a mixture of state and local NYS agencies interested in adopting social media tools.

EIGHT ESSENTIAL ELEMENTS FOR GOVERNMENT SOCIAL MEDIA POLICY



Developing a social media policy can be an important first step for government agencies and can ultimately serve as a key enabler for responsibly and effectively leveraging social media tools. Yet, many governments are struggling with what such a policy should encompass and are looking to their peers for examples and best practices.

CTG developed the first guide for government on designing social media policy. The guide identifies eight essential elements of a social media policy, which address many of the concerns surrounding government's use of social media. Along with detailed descriptions and numerous examples of the eight essential elements, it also includes an overview of the three types of social media use that fall within the domain of government social media policy and brief guidance on strategies for getting started.

The eight essential elements identified by CTG include: 1) employee access, 2) account management, 3) acceptable use, 4) employee conduct, 5) content, 6) security, 7) legal issues, and 8) citizen conduct.

The guide is available for download at www.ctg.albany.edu/publications/guides/social_media_policy.

In addition, CTG developed a social media training class for government practitioners. The class introduces some of the challenges associated with adopting social media tools in government, and delineates the differences between three types of social media uses in the government workspace. Participants who took the class in 2010 learned about the key components of developing a strategy for social media adoption in their agencies, the essential elements that need to be considered for successful social media adoption, and how to design a social media initiative.

Advancing New York State's Broadband Goals

Broadband is increasingly seen throughout the world as a key enabler to economic development and expanded opportunities for communities of all sizes. CTG is supporting NYS in its efforts to collect information on the existing broadband landscape to help inform policy that will expand



broadband access and adoption throughout the state.

CTG is partnering with the New York State Office of Cyber Security (OCS) on a five-year initiative to collect actual broadband speeds as experienced by residents in their homes. The project is supported by a grant to OCS from the National Telecommunications and Information Administration (NTIA) to develop a comprehensive map of broadband internet availability throughout the state.

CTG developed the state's speed test website, which was launched on September 1st along with an outreach campaign to recruit residents to run the speed test from their home computers. By the end of 2010, close to 5,000 speed test results were submitted with representation from every county in the state. CTG is analyzing the results, which OCS will use to validate the data on the state's interactive broadband map and to guide policy decisions and direct future investments in broadband infrastructure.

In addition, CTG developed and conducted a survey of NYS residents to discover the extent of broadband adoption and how broadband services are used. In early 2011, CTG will analyze the data and submit a report with recommendations to the state for future broadband planning, policy, and programming.

American Recovery and Reinvestment Act: A Best Practices Knowledge Sharing Network

In 2010, CTG completed the last in a series of forums with New York State agencies, which supported the sharing of current and best practices in the use of technology resources to capture, manage, and deliver the data required

for Recovery Act reporting. At this last forum, Theresa Pardo, CTG director, gave a presentation on the new demands for transparency required by the Obama administration. She discussed the key challenges public managers face trying to make real-time, comprehensive information about government activities more available.

In addition, staff from several state agencies with different roles in the Recovery Act reporting process participated in a panel discussion. They shared insights into how these new demands for transparency impact current practices, specifically focusing on the effect of Recovery Act reporting on agencies. They answered these two questions: 1) How do you define transparency from where you sit? and 2) How has the Recovery Act changed the way agencies think about data and information? The forum concluded with a group discussion of the lessons learned over the last year through the forums.

CTG published preliminary findings from these forums in the December 2010 issue of *PA Times*, the newsletter for the American Society for Public Administration.

Developing an Open Government Framework

In response to President Obama's 2009 *Open Government Directive*, federal agencies are experimenting with new initiatives related to citizen services and open government. One of the critical challenges for agencies is to successfully



Donna Canestraro, program manager, introducing a panel of NYS agency representatives at CTG's Recovery Act Forum (from left to right): Charles (Chuck) Szuberla – Director of School Operations & Management Services, NYSED; Jon Brown – Director of Internal Audit, Division of Housing and Community Renewal; Tom Johnston – Director of Business Solutions Bureau, NYS Department of Transportation; Mark Mitchell – Director of Internal Audit, NYS Energy Research and Development Authority.

link agency missions, affected business processes, and stakeholder interests to the open government principles.

To assist with these challenges, CTG received an exploratory grant from the National Science Foundation to work with the U.S. General Services Administration's Office of Citizen Services and Innovative Technologies (GSA OCSIT) on expanding the knowledge base related to supporting citizen services. The goal of this work is to produce two deliverables: 1) a practical tool to assist federal agencies and 2) a full research proposal that lays out the research questions surrounding emerging technologies, open government, and citizen services.

CTG developed and tested the concept of a portfolio public value assessment tool, designed to provide a structured way for governments to assess the public value of their open government initiatives and to consider the relative public value of each. The tool, *Open Government Portfolio Public Value Assessment Tool (PVAT)*, is based on a value driven approach to thinking about and acting on the principles of open government: transparency, collaboration, and participation.

CTG tested the conceptual design with over a dozen state and federal agencies and incorporated an assessment approach that has a range of social and political returns beyond the usual financial metrics. The information generated from the tool can then support decisions about the mix of initiatives in a portfolio and how to adjust the mix of open government initiatives to enhance public value.

CTG will release a final public version of the tool in 2011.

Learning Critical Thinking in Context: Using Problems and Cases in Financial Market Regulation (CPATH)

Financial markets are among the most important and dynamic systems in the world. The need to track, monitor, and analyze large numbers of transactions in modern financial markets is driving the use of cutting-edge computer science and information technology to improve financial market regulation. Many American undergraduate students major or minor in fields related to business, public policy, and finance, providing a large potential audience that would benefit from understanding the value and importance of computational thinking in these disciplines.

In order to reach these students, CTG collaborated with partners at UAlbany and Albany Law School to receive a \$800,000 grant from the National Science Foundation to develop a new curriculum that integrates computational thinking as an essential theme in teaching about financial market regulation.



CTG Director Theresa Pardo (far right) working with a team from the U.S. Environmental Protection Agency.

TESTING THE OPEN GOVERNMENT TOOL WITH FEDERAL AGENCIES

In partnership with the U.S. General Services Administration (GSA), CTG tested its *Open Government Portfolio Public Value Assessment Tool* with teams from seven federal agencies in a workshop held at the National Academy of Public Administration in Washington, DC. The teams consisted of leading federal practitioners from the U.S. Office of Personnel Management, U.S. Department of Transportation, U.S. Department of Housing and Urban Development, U.S. Merit Systems Protection Board, U.S. Environmental Protection Agency, U.S. General Services Administration, and the White House Office of Science and Technology Policy.

Over a two-year period, the team of researchers are engaging government and industry regulators in developing a set of learning objectives that will drive the creation of problem-based undergraduate curricula. The end result will be cases, modules, and courses that provide an attractive interdisciplinary learning environment in which students become interested and proficient in computational thinking and understand its importance to the societal issues and challenges inherent in financial market regulation.

The CPATH curriculum is key to the core objectives of the *Institute for Financial Market Regulation (IFMR)*, a joint initiative of the University at Albany, Albany Law School, and regulatory and market professionals. IFMR focuses on the delivery of educational programs at both the undergraduate and graduate levels and on research in the financial market regulation arena.



The Institute for Financial Market Regulation launched in the spring of 2010 at the James Madison Memorial Hall at the U.S. Library of Congress. Pictured left to right: David McCaffrey (IFMR co-director), Grace B. Vogel (Executive Vice President, Financial Industry Regulatory Authority), Nancy Zimpher (Chancellor, SUNY), Don Boyce (Examiner, Financial Industry Regulatory Authority), and Theresa Pardo (CTG director and IFMR faculty member).

Information, Technology, and Governance: A Grand Challenges Research Agenda

The public sector faces vast technology challenges such as network interoperability, information integration, and the preservation of government records in electronic form. New knowledge is necessary to understand the practices of government and governance in contemporary society. New attention must also be given to questions about how communities can talk to one another more effectively, taking lessons learned from research and bringing them to bear in public sector environments, and conversely, using knowledge and expertise about practice to guide research agendas.

To explore these grand challenge questions and inform a next generation research agenda, CTG developed and facilitated a workshop in Arlington, VA, sponsored by the National Science Foundation. The workshop brought together leaders from social and information science research and government. Participants worked on a research agenda that addresses the interplay of complexity, value, and risk inherent in the emergence of new information technologies and their adoption by individuals, organizations, and governments.

In addition, at the IFIP eGovernment Conference 2010 in Lausanne, Switzerland, Theresa Pardo, along with Jochen Scholl, associate professor at the Information School, University of Washington, co-led a similar workshop of international researchers. In 2011, CTG will release a report with the findings from the two workshops.

Understanding Transnational Public Sector Knowledge Networks

Globalization brings problems and opportunities that demand sharing of knowledge, information, and practices across cultural and national boundaries. Environmental quality, international trade, and response to disasters are just a few of the areas where information and knowledge need to cross borders.

An international network of native research partners led by CTG is exploring these challenges by analyzing the context of two bilateral collaborations regarding air quality monitoring and reporting initiatives that involve the United States and Mexico, and the United States and China. The substantive focus of this applied research project, sponsored by the US National Science Foundation, is to analyze the actual experiences of government and partner organizations as the basis for developing both conceptual models and practical tools for effective transnational knowledge sharing.

Over the past two years, the researchers have been working together in teams conducting interviews and collecting data on two case studies:

- The North American case involves the Joint Advisory Committee (JAC) for the Improvement of Air Quality in the air basin shared by Ciudad Juárez, Mexico; El Paso, Texas, and Doña Ana County, New Mexico.
- In the second case study, the US Environmental Protection Agency and the Shanghai Environmental Monitoring Center are jointly developing AIRNow-



Leaders from the social and information science research communities and government came together for a workshop in Arlington, VA to develop a research agenda that addresses the interplay of complexity, value, and risk inherent in the emergence of new information technologies and their adoption by individuals, organizations, and governments.

International Shanghai, an international version of the AIRNow air quality monitoring and reporting system that has been used in the United States since the mid 1990s.

In December of 2010, the researchers came together for a two-day workshop at CTG to share their findings and to identify the key elements in the transnational networks to begin the process of developing a conceptual model and practical tools.

Building a Sustainable International Digital Government Research Community

This project is in the last phase of a five-year effort to create a framework for a sustainable global community of digital government researchers and research sponsors. Funded by the US National Science Foundation Digital Government Research Program, the project included an international reconnaissance study describing the current status of digital government research, an annual research institute for doctoral students, and three international working groups.

The field venue for the 2010 iGov Research Institute was The Hague, The Netherlands, with Delft University of Technology serving as the academic site. Students came from a variety of academic programs and 19 different universities in Bulgaria, Greece, India, Israel, Italy, Lithuania, The Netherlands, Nigeria, Norway, Pakistan, Poland, Sweden, Switzerland, and the United States.

As an international hub, The Hague provided a unique backdrop for field visits to the Dutch Ministry of Interior and Kingdom Relations, The Hague municipal government, the International Criminal Court, and the Dutch Immigration and Naturalization Service. In addition, the Port of Rotterdam, one of the largest shipping centers in the world, offered a look at an international commercial operation with worldwide importance. Discussions with leaders at these organizations complemented faculty-led seminars on engaging government organizations in mutually valuable research projects, comparisons of the philosophies, questions, and methods used in the disciplines that make up digital government research, and ways to design and participate in international or cross-cultural investigations.

The international working groups concluded their work funded under this initiative in 2010. The initial evaluation data indicate that the working group strategy of modest funding, a few structural requirements, and enough time to engage in a series of face-to-face meetings was very successful in terms of academic productivity, professional effects (especially for young scholars), and international



Transnational team members Sharon Dawes, Principal Investigator and CTG senior fellow; Brian Burke, CTG senior program associate; Anthony Cresswell, CTG deputy director; Celene Navarrete, lecturer, School of Business Administration and Public Policy, California State University Dominguez Hills; Lei Zheng (UAlbany '10), assistant professor, Department of Public Administration, Fudan University, Shanghai, China; Manabu Nakashima, doctoral student at Rockefeller College; Mohammed Ghawari, doctoral candidate at the College of Computing and Information; and Theresa Pardo, CTG director.

IDENTIFYING KEY ELEMENTS IN TRANSNATIONAL KNOWLEDGE SHARING NETWORKS

The project team of international researchers came together for a two-day workshop at CTG to share findings and identify key elements in transnational networks. Using the two transnational case studies, the researchers addressed the following questions:

- How do participants in different countries perceive the dimensions, stakeholders, benefits, and risks of engaging in systems for transnational knowledge and information sharing?
- What are the similarities and differences in these perceptions? What cultural, political, economic, and social factors account for them?
- How do the participants attempt to create shared understanding of technologies, context, terms, processes, and contingencies that generate capabilities for effective action?
- Which strategies, tools, and behaviors are more likely to lead to successful international knowledge networks that benefit individuals, organizations, and communities?
- What preparation, methods, and tools are best suited for research and action on these questions?

OUTCOMES | BUILDING A SUSTAINABLE DIGITAL GOVERNMENT RESEARCH COMMUNITY

iGov Research Institute

The *iGov Research Institute* was designed as an immersive career-shaping experience in international engagement. At iGov, PhD students from around the world lived and worked together with distinguished international faculty in a “living laboratory” to explore how information needs, policies, and technologies impact critical issues within and across cultures and governments.

From 2007 through 2010, the program has engaged 74 students from 35 countries in the Americas, Europe, Asia, Africa, and Australia. Successive annual surveys indicate that the positive personal and professional impacts of the iGov experience tend to become even stronger over time. Today, iGov alumni are working in academic and government positions around the world where they contribute to global engagement through research, public service, and teaching.

“The opportunity to present my research before fellow participants helped me to get their evaluation of the utility of my research and drew my attention to a number of future applications of my research.”

-Aadya Shukla, iGov 2009

Predoctoral Research Fellow, Harvard University



iGov 2010 Junior Faculty (from left to right) Anne Fleur van Veenstra (Netherlands), Sherwin Ona (Phillipines), and Marc Hebert (US) came back as alumni to share their experiences from previous iGov Institutes.

International Working Groups

Online Consultation and Public Policy Making

The e-Consultation Working Group focused on ways to evaluate the policy and social impacts of online citizen consultation aimed at influencing actual government decision making. In addition to presenting papers, panels, and posters at international conferences, the group produced the forthcoming book, *Connecting Democracy: Online Consultation and the Future of Democratic Discourse*, a multi-authored volume. The book identifies and measures successful e-consultations and describes how the approach to process design and evaluation of a specific consultation should be tailored to legal, political, and cultural contexts.

North American Digital Government Working Group

NADGWG generated two ongoing research collaborations. One is addressing the information sharing and interoperability issues and challenges in the border regions of Canada, Mexico, and the United States. The second is focused on investigating the roles of government policy, trust, and information and communication technologies in the promotion of emerging North American distribution networks for goods such as organic and fair trade food.

Digital Governance and Hotspot Geoinformatics for Monitoring, Etiology, Early Warning, and Management

The Geoinformatics Hotspot Working Group focused on developing a prototype surveillance system that relies on advanced software and statistical techniques to detect emerging crises. It focused mainly on the practical challenges of watershed management in rural India, where it involved not only university faculty and students, but also public officials and civil society organizations. This group also leveraged other research projects already in progress to pull together findings, tools, and other re-usable resources. Final products include progress toward a set of software tools, a case book, and extensive and replicable practical impacts on watershed management in India.

awareness and engagement. Case studies of the three groups are in progress to identify specific strategies that can be replicated in other international engagements.

North American Digital Government Working Group

The North American Digital Government Working Group (NADGWG) was formed in early 2007 by researchers and practitioners from a variety of institutions and disciplines in Canada, the United States, and Mexico to advance electronic government research across geographic and political boundaries in the region. This group was formed with the support of the National Science Foundation Digital Government Research Program and the home institutions of the members.

The NADGWG co-chairs are Theresa Pardo, CTG director, and Luis F. Luna-Reyes (UAlbany '04), associate professor at the Universidad de las Americas, Mexico. Eleven institutions are represented by the group, which has been working to develop a comparative and transnational research agenda targeted at questions about intergovernmental digital government initiatives in North America.

In 2010, the group secured funding for two new initiatives that will launch in the next year (see below).



CTG hosted a two-day meeting of researchers involved in the iChoose network (see side box below). Pictured in front row left to right: Luis Felipe Luna-Reyes, Associate Professor, School of Business and Economics, Universidad de las Américas Puebla; Donna Canestraro, program manager, CTG; Holly Jarman (co-principal investigator), Rockefeller College, UAlbany; and Jing Zhang (co-principal investigator), Graduate School of Management, Clark University. Pictured in back row left to right: Samara Anderson; Djoko Sigit Sayogo, CTG graduate assistant and doctoral candidate at Rockefeller College; David Andersen, Distinguished Service Professor, Rockefeller College; Rejean Roy, Senior Advisor, CEFRIIO; and Theresa Pardo (principal investigator), CTG and Rockefeller College, UAlbany.

NORTH AMERICAN DIGITAL GOVERNMENT WORKING GROUP | 2011 INITIATIVES

Smart Cities Service Integration

The Smart Cities Service Integration Project is funded by the Social Sciences and Humanities Research Council (SSHRC), a Canadian federal agency that promotes and supports university-based research and training in the humanities and social sciences. The aim of the project is to create a framework for service integration for Smart Cities. The international research team includes researchers and graduate students from the US, Canada, Mexico, and Macao, China. The project will produce a series of comparative case studies of Quebec City, Canada; New York City and Seattle, US; Mexico City, Mexico; Macao and Shanghai, China.

Building Information Sharing Networks to Support Consumer Choice Project

The Building Information Sharing Networks to Support Consumer Choice (I-Choose) project is a three-year research activity funded by the National Science Foundation. The research team consists of a network of researchers and practitioners from Canada, Mexico, and the United States. The project aims to develop a data interoperability framework to provide consumers with a wide range of information about how, where, and by whom products are manufactured and brought to market. The project will focus first on development of interoperability among stakeholder communities for the single case of coffee grown in Mexico and distributed and consumed in Canada and the United States. The lessons learned from this specific case will then be generalized across other product domains.



Providing Thought Leadership

CTG continues to take a leading role in building a community of practice for researchers and managers to advance knowledge about information technology innovation in government. We are actively involved in advisory boards and committees at all levels of government and around the world to explore and advise on key issues related to digital government. We are regularly invited to participate in local, national, and international academic and practitioner conferences and workshops.

CONFERENCES

International

International Conference on eGovernment & eGovernance (ICEGEG)
Antalya, Turkey

43rd Hawaii International Conference on System Sciences (HICSS-43)
Kauai, Koloa, HI

11th Annual International Conference on Digital Government Research (dg.o)
Puebla, Mexico

IFIP e-Government Conference 2010
Lausanne, Switzerland

Academy of Management Annual Meeting
Montréal, Canada

International Open Government Data Conference
United States General Services Administration Washington, DC

44th ICA Conference | Open Government: Making it Work
International Council for Information Technology in Government Administration Washington, DC

10th IFIP Conference on e-Business, e-Services, and e-Society
Buenos Aires, Argentina

4th International Conference on Theory and Practice of Electronic Governance (ICEGOV2010)
Beijing, China

National

Annual Management of Change Conference
American Council for Technology Philadelphia, PA

Best Practices Exchange 2010: Libraries and Archives in the Digital Era
Library of Congress, Arizona State Library and Archives, Minnesota Historical Society, North Carolina Center for Geographic Information and Analysis, Washington State Archives Phoenix, AZ

2010 Annual Fall Conference
National Association of State Chief Information Officers (NASCIO) Miami, FL



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OECD WORKSHOP ON E-GOVERNMENT INDICATORS

Paris, France

The Organisation for Economic Co-Operation and Development (OECD) held a *Workshop on e-Government Indicators* to discuss and approve a new framework and methodology for the development of complementary OECD e-government indicators that support policy-making in the areas of back-office indicators, performance (outcomes and outputs) indicators and, economically-oriented indicators. Theresa Pardo was invited to give a summary response to the OECD E-Government Project: *E-Government Indicators Strengths and Ongoing Questions*. At the conclusion of the workshop, a roadmap was proposed that foresees various steps and related deliverables, for which contributions from member countries will be essential.

New York State

GTC East: New York Digital Government Summit
Government Technology Albany, NY

Benefits of XML Databases Seminar
MicroKnowledge Albany, NY

New Trends in Informatics Research Conference
University at Albany, SUNY Albany, NY

NYS Forum Webmasters' Guild
Albany, NY

Annual Meeting
Digital Towpath Utica, NY

Spring and Fall Conferences
New York State Local Government IT Directors Association Saratoga Springs and Syracuse, NY

**WORKSHOPS,
SEMINARS, FORUMS**

Innovation Update Seminar
2010

*National University of
Singapore, Institute for
System Sciences
Singapore, Republic of
Singapore*

OECD Workshop on
e-Government Indicators
*Organisation for Economic
Co-Operation and
Development (OECD)
Paris, France*

Summit on Open Government
in the Digital Age
*New York State Chief
Information Officer/Office for
Technology and the New York
State Archives
Albany, NY*

Social Media in Government
Decision and Policy Sciences
Brown Bag Lunch Series
*Rockefeller College of Public
Affairs and Policy
Albany, NY*

ESOP1-21 Symposium 2010:
Preparing Stewards of Public
Information in a Digital World
*University of North Carolina
Chapel Hill, NC*

Web 2.0 - Answering Your
Questions
*The NYS Forum
Albany, NY*

Executive Session on Citizen
Engagement and
Empowerment
*Ash Center for Democratic
Governance and Innovation
John F. Kennedy School of
Government, Harvard
Cambridge, MA*

eGovernment Interoperability
Workshop
*Microsoft Corp.
London, England*

Editorial Roundtable
*Government Technology
Albany, NY*

Symposium on Governance
in the Digital Era
*Digital and Mobile
Governance Lab, School of
International Relations and
Public Affairs, Fudan
University
Shanghai, China*

**STUDY PANELS,
ADVISORY
COMMITTEES,
WORKING GROUPS**

Jury Panel
*Sultan Qaboos Award for
Excellence in eGovernment*

Advisory Board
*Centro de Investigacion y
Docencia Economicas (CIDE)*

Senior Overseas Advisors
*China State Information
Center*

Board
*Digital Government Society of
North America*

Advisory Board
*Educating Stewards of Public
Information in the Twenty-First
Century (ESOP1-21)*

Advisory Committee
*Government Technology
Conference (GTC East)*

Advisory Committee
*International Institute for
Software Technology, United
Nations University*



**NATIONAL UNIVERSITY OF SINGAPORE'S
INNOVATION UPDATE SEMINAR**

Sharon Dawes presented on *e-Government Innovation through Research-Practice Partnerships* at the National University of Singapore's Institute of System Sciences' Innovation Update Seminar 2010. A leading global university centered in Asia, the National University of Singapore offers a global approach to education and research, with a focus on Asian perspectives and expertise. Dawes, who is a courtesy visiting fellow at the ISS E-government Leadership Center, focused her talk on ways to conceptualize, operationalize, and capitalize on links between research and practice that help turn e-Government investments into better public management and enhanced public value.

Digital Preservation
Management Workshop
Advisory Board
*Inter-University Consortium for
Political and Social Research
(ICPSR)
University of Michigan*

*Advisory Board
Morrelly Homeland Security
Center*

Advisory Panel
*Your Voice Matters: A Dialog
on USA.gov
National Academy of Public
Administration*

DataONE Working Group on
Socio-Cultural Issues
National Science Foundation

Advisory Committee
*GPRA Performance
Assessment
National Science Foundation*

Advisory Committee on the
Electronic Records Archives
*National Archives and
Records Administration*

Open Government,
Collaboration and
Communication Committee
NYS CIO Council

Enterprise Architecture
Committee
NYS CIO Council

Task Force
*New York State Electronic
Records Committee*

PROVIDING THOUGHT LEADERSHIP



Theresa Pardo was one of 13 experts from countries around the world invited to participate on the selection committee for the inaugural Sultan Qaboos Award for Excellence in eGovernment in Oman. The award has five categories and honored national government institutions whose digital government projects have provided exceptional achievements in furthering the development of eGovernment services in Oman.

- Webmasters' Guild
NYS Forum
- IT Skills Development
NYS Forum
- Executive Council
NYS Forum
- Local Government
Committee
NYS Office of Cyber Security
- Advisor
*NYS Local Government IT
Directors Association*
- Advisory Group
*National Center for Security
and Preparedness
University of Albany, SUNY*
- University Outreach and
Community Engagement
Committee
University of Albany, SUNY
- Program for Career,
Leadership and University
Excellence (CLUE)
University at Albany, SUNY

- Executive Council for
Information Management and
Technology
*United States Government
Accountability Office (GAO)*
- Open Government Advisory
Working Group
*United States Office of
Personnel Management*

EDITORIAL BOARDS

- Government Information
Quarterly*
- IGI Global*
- International Journal of
Electronic Governance*
- International Journal of Social
and Organizational Dynamics*
- Journal of Information
Technology and Politics*
- Transforming Government:
People, Process and Policy*

CONFERENCE LEADERSHIP

Hawaii International
Conference on System
Sciences (HICCS)
-Minitrack Co-Chair,
Emerging Trends in
E-Government
-Co-Organizer, Global
Electronic Government
Research and Practice
Symposium

11th Annual International
Conference on Digital
Government Research
-Program Committee
-Chair, Doctoral Consortium

4th International Conference
on Theory and Practice of
Electronic Governance
(ICEGOV2010)
-Program Committee
-Awards Committee
-Chair, PhD Colloquium

IFIP e-Government
Conference 2010
-Co-Sponsor
-Co-Organizer, PhD
Colloquium

DigiGirlz Day at UAlbany
-Co-Sponsor
-Organizing Committee



4TH INTERNATIONAL CONFERENCE ON THEORY AND PRACTICE OF ELECTRONIC GOVERNANCE (ICEGOV2010)

Beijing, China

CTG was co-organizer of ICEGOV2010, an international forum for practitioners, developers, and researchers from government, academia, industry, and non-governmental organizations. At this year's conference, Director Theresa Pardo and Senior Fellow Sharon Dawes co-led two sessions: a tutorial on information policy and a thematic session on open government. Dawes also co-organized a PhD Colloquium for students and Anna Raup-Kounovsky, program staff assistant, and UAlbany graduate assistants Taewoo Nam and Mohammed Gharawi presented papers.



International Visitors

CTG was host to a diverse group of international visitors who sought to engage in active discussions about mutual research interests, our research and practice methods, and IT innovations in the United States. CTG welcomes these visits as it gives our staff the opportunity to gain a greater global perspective and deepen our international partnerships.

Norwegian eGovernment Delegation



An eGovernment Delegation from Norway visited CTG to discuss initiatives and research approaches to eGovernment. As part of their visit, CTG invited a panel of New York State CIOs to share their experiences on *Public-Private Partnerships in eGovernment and Innovation*. The delegation represented administrative leaders of several Norwegian ministries, directorates, and institutions, involved in implementing the Norwegian ICT-policy, eGovernment and public services, or innovative research in this field.

Parliament of the Republic of Ghana Delegation



A delegation from the Parliament of the Republic of Ghana attended a week-long strategic planning course at the Center for International Development (CID) at Rockefeller College. As part of the course, the delegation spent a day at

CTG learning how the use of information and communication technology (ICT) is helping improve the internal processes of legislatures around the world.

Parliamentary Delegation from Tatarstan Republic

A parliamentary delegation from the Tatarstan Republic (Russian Federation) headed by Dr. Farid Mukhametshin, Chairman of the State Council (Parliament), spent a day visiting CTG. Dr. Theresa Pardo led a discussion devoted to public private partnerships and innovation mechanisms in e-government. Throughout the day there was much exchange on relations between federal and regional governance levels in public sector technology adoption process.



Peter Haddawy

International Institute for Software Technology, United Nations University
Newly appointed as director of IIST-UNU, Peter Haddawy visited CTG to explore future areas for partnership. In the past, CTG has worked with IIST-

UNU's Center for Electronic Governance on several initiatives, most recently on their conference series, *International Conference on Theory and Practice of Electronic Governance (ICEGOV)*.



Antonio Cordella

London School of Economics
Antonio Cordella, a lecturer in the Information Systems and Innovation Group at the Department of Management at the London School of Economics, spent two days meeting

with staff at CTG and presented a research discussion about an e-Government enactment framework.



Lorenzo Madrid

Microsoft
Lorenzo Madrid, director, Technology Strategy, WW Public Sector spent a week at CTG working with staff and graduate students on shared research interests. As part of his visit, he gave a

presentation on *The Economic Impact of Interoperability in Delivering Electronic Citizen Services* and was a guest lecturer at Theresa Pardo's Department of Public Administration and Policy class, *Information Technology Innovation in the Public Sector*.



Digital Government Scholarship

CTG provides graduate students with both scholarly and practical opportunities that provide a strong foundation for future careers in teaching and research in the public and private sectors. Students are actively engaged in all aspects of CTG projects and have the unique opportunity to participate as part of a global community of digital government researchers. CTG's international work and network of partnerships provide a rich environment for graduate students to focus on digital government research topics that cross the jurisdictions, cultures, and customs of different countries.

Building the Capacity of Graduate Students as International Researchers

For Taewoo Nam and Mohammed Gharawi, one of the most rewarding experiences of working at CTG has been the opportunity to work in an international context. Both students have been integral team members on collaborative research studies that are building their capacity as international researchers and establishing them as part of a growing international network of digital government researchers.

Taewoo is part of a team of international researchers conducting a joint study of service integration related to "smart city" initiatives in five locations: New York City, Seattle, Quebec City, Mexico City, Shanghai, and Macao. Throughout the project, Taewoo will have the opportunity to travel and meet with graduate students and professors from diverse universities to learn from their different theoretical perspectives and to collaborate on research design, data analysis, framework development, and writing.



Mohammed Gharawi (left) and Taewoo Nam (right) at the poster session of the 4th International Conference on Theory and Practice of Electronic Governance (ICEGOV2010) in Beijing, China.



VISITING SCHOLAR PROGRAM

Evgeny Styrin, Russia

CTG has built a strong network of international scholars who have had the opportunity to visit, share their research, and interact with CTG staff and other University at Albany faculty on shared interests.

Evgeny Styrin, at the time a senior lecturer at the School of Public Administration of Lomonosov Moscow State University in Russia, came to CTG for the 2009-10 academic year as a Fulbright visiting scholar. During his time at CTG, he was an integral member of the project team gathering information on how New York State agencies used technology resources to capture, manage, and deliver the data required for Recovery Act reporting.

Since returning to Russia, Evgeny is now senior research analyst at the Institute for Public and Municipal Administration at the Higher School of Economics.

Mohammed has been part of an international team of researchers working to identify key elements in transnational knowledge sharing networks. The project involved conducting interviews and collecting data on two case studies in the area of binational air quality initiatives, involving the United States, Mexico, and China.

Taewoo and Mohammed's dissertations in progress are closely aligned with their work on CTG's projects. Their work at CTG has also strengthened their scholarly writing and encouraged their participation in international conferences. In 2010, they both traveled to ICEGOV2010 in Beijing, China where they presented conference papers and posters and were invited to speak on panels.

Mohammed Gharawi is a doctoral candidate in information science at the College of Computing and Information.

Taewoo Nam is a doctoral candidate in public policy and administration at Rockefeller College.



Scholarly Publications

BOOK CHAPTERS

Collaborative and Cross-Boundary Information Sharing: Envisioning a Networked and IT-Enabled Public Administration

T.A. Pardo, J.R. Gil-Garcia, & L.F. Luna-Reyes. In Rosemary O'Leary, David M. Van Slyke, and Soonhee Kim (Eds.). *The Future of Public Administration Around the World: The Minnowbrook Perspective*. Washington, DC: Georgetown University Press.

Conceptualizing Inter-Organizational Information Integration in Government

J.R. Gil-Garcia, T.A. Pardo, & G.B. Burke. In H. Jochen Scholl (Ed). *Electronic Government: Information, Technology, and Transformation*. Armonk, NY: ME Sharpe.

Digital Government in North America: A Comparative Analysis of Policy and Program Priorities in Canada, Mexico, and the United States

L.F. Luna-Reyes, T.A. Pardo, J.R. Gil-Garcia, C. Navarrete, J. Zhang, & S. Mellouli. In Christopher G. Reddick (Ed.). *Comparative E-government*. Integrated Series in Information Systems, Vol. 25. New York: Springer.

Moving Beyond Hierarchies: Creating Effective Collaboration Networks for West Nile Virus

Biosurveillance in Oregon
G.B. Burke, C.M. Wirth, T.A. Pardo, A.D. Sullivan, H. Kwon, & J.R. Gil-Garcia. In Dorothy Norris-Tirrell and Joy A. Clay (Eds). *Strategic Collaboration in Public and Nonprofit Administration: A Practice-Based Approach to Solving Shared Problems*. Taylor & Francis Group.

Benefits and Barriers of Using XML in Government Web Sites

J.R. Gil-Garcia, J. Costello, D. Canestraro, & D. Werthmuller. In E. Downey, C. Ekstrom & M.A. Jones (Eds). *E-Government Website Development: Future Trends and Strategic Models*. Hershey, PA: IGI Global.

JOURNAL ARTICLES

Stewardship and Usefulness: Policy Principles for Information-based Transparency

S.S. Dawes. *Government Information Quarterly*, Volume 27, Issue 4, Pages 377-383.

CONFERENCE PROCEEDINGS

The Boundaries of Information Sharing and Integration: A Case Study in Taiwan e-Government

T. Yang, L. Zheng, & T.A. Pardo. *Proceedings of the 4th International Conference on Theory and Practice of Electronic Governance (ICEGOV2010)*.

Comparing digital government agendas in Canada, Mexico, and the United States

L.F. Luna-Reyes, S. Mellouli, J.R. Gil-Garcia, T.A. Pardo, J. Zhang, & C. Navarrete. *Proceedings of the 11th Annual International Digital Government Research Conference on Public Administration Online: Challenges and Opportunities*.

Conceptualizing Knowledge and Information Sharing in Transnational Knowledge Networks

S.S. Dawes & M. Ghawari. *Proceedings of the 4th International Conference on Theory and Practice of Electronic Governance (ICEGOV2010)*.

Data-centric Workflows in Government: A New Avenue of Research?

H.J. Scholl & T.A. Pardo. *Proceedings of the 11th Annual International Digital Government Research Conference on Public Administration Online: Challenges and Opportunities*.

The Emergence of IT Governance as a Communicative Process of Organizing

S. Güney & A.M. Cresswell. *Proceedings of the Annual Meeting of the Academy of Management*.

Information and Transparency: Learning from Recovery Act Reporting Experiences

N. Helbig, E. Styrin, D. Canestraro, &

T.A. Pardo. *Proceedings of the 11th Annual International Digital Government Research Conference on Public Administration Online: Challenges and Opportunities*.

Information Policy Meta-Principles: Stewardship and Usefulness

S.S. Dawes. *Proceedings of the 43rd Hawaii International Conference on System Sciences – 2010*.

Information Strategies for Open Government: Challenges and Prospects for Deriving Public Value from Government Transparency

S.S. Dawes & N. Helbig. *Electronic Government: Lecture Notes in Computer Science*, M.A. Wimmer et al. (Eds.): EGOV 2010, LNCS 6228.

Integration and Interoperability at the Border in North America: A Status Report

S. Mellouli, J.R. Gil-Garcia, C. Navarrete, T.A. Pardo, A.M. Cresswell, L. Zheng & H.J. Scholl. *Proceedings of the 11th Annual International Digital Government Research Conference on Public Administration Online: Challenges and Opportunities*.

International Digital Government Research: Purpose, Value, Prospects

S.S. Dawes & N. Helbig. *Proceedings of the 11th Annual International Digital Government Research Conference on Public Administration Online: Challenges and Opportunities*.

IT Governance As Organizing: Playing the Game

S. Güney and A.M. Cresswell. *Proceedings of the 43rd Hawaii International Conference on System Sciences – 2010*.

IT Governance to Fit Your Context: Two U.S. Case Studies

A.N. Raup-Kounovsky, D.S. Canestraro, T.A. Pardo, & J. Hrdinová. *Proceedings of the 4th International Conference on Theory and Practice of Electronic Governance*.

Multinational E-Government Collaboration, Information Sharing, and Interoperability: An Integrative Model

C. Navarrete, J.R. Gil-Garcia, S. Mellouli, T.A. Pardo, and H.J. Scholl. *Proceedings of the 43rd Hawaii International Conference on System Sciences – 2010*.

Trust in Government Cross-Boundary Information Sharing Initiatives: Identifying the Determinants

J.R. Gil-Garcia, A. Guler, T.A. Pardo, and G.B. Burke. *Proceedings of the 43rd Hawaii International Conference on System Sciences – 2010*.

WHITE PAPERS | SBE 2020

In 2010, the Directorate for the Social, Behavioral, and Economic Sciences of the National Science Foundation (NSF/SBE) invited individuals and groups to contribute white papers to help frame innovative research for the year 2020 and beyond that enhances fundamental knowledge and benefits society in many ways. The call was part of an initiative called SBE 2020: *Future Research in the Social, Behavioral & Economic Sciences*. CTG submitted three papers:

Information and Technology: Improving Public Sector Capability to Address Societal Challenges

T. Pardo, A.M. Cresswell, M. Cook

Information Technology: The Connective Tissue of Organizing

A.M. Cresswell & S. Güney
A Grand Challenge: Shaping the Government of the Information Age
H.J. Scholl (U.of Washington), E. Hovy (U. of Southern California), A. Kavanaugh (Virginia Tech), T.A. Pardo (UAlbany), C. Williams (Bentley U.), & J. Kesan (U. of Illinois at Urbana-Champaign) - Representing the Digital Government Society of North America.

Full versions of the SBE papers can be found at:

www.nsf.gov/sbe/sbe_2020



Partners

CTG projects depend on active and ongoing partnerships with government agencies, technology companies, nonprofits, and members of the academic community. We are grateful to the many organizations who supported our work in 2010.

Government

- City of Seattle, Washington
- Mexico City, Mexico
- Networking and Information Technology Research and Development Program
- NYS Chief Information Officer's Council
- NYS Office for Cyber Security
- NYS Department of Transportation
- NYS Division of Housing and Community Renewal
- NYS Economic Recovery and Reinvestment Cabinet
- NYS Education Department
- NYS Energy Research and Development Authority
- NYS Governor's Office of Employee Relations
- NYS Office of Children and Family Services
- NYS Chief Information Officer and NYS Office for Technology
- NYS Office of Temporary and Disability Assistance
- The NYS Forum
- Shanghai Environmental Monitoring Center
- State of Colorado
- State of Minnesota
- State of Utah
- U.S. Department of Commerce
- U.S. Department of Health and Human Services
- U.S. Department of Homeland Security
- U.S. Department of Housing and Urban Development
- U.S. Department of Transportation
- U.S. Environmental Protection Agency
- U.S. Federal Web Managers Council
- U.S. General Services Administration
- U.S. Merit Systems Protection Board
- U.S. National Science Foundation
- U.S. Office of Management and Budget
- U.S. Office of Personnel Management
- U.S. Office of Science and Technology Policy

Universities, Centers, and Institutes

- California State University, Dominguez Hills
- Center for Electronic Governance, International Institute for Software Technology, United Nations University, Macao
- Center for Survey Research, Stony Brook University
- Centro de Investigacion y Docencia Economicas (CIDE), Mexico
- Centre Francophone d'Informatisation des Organisations, Canada
- China National School of Administration, China
- Claremont Graduate University
- Clark University
- Dalhousie University, Canada
- Delft University of Technology, Netherlands
- Fudan University, Shanghai, China
- George Mason University
- George Washington University
- Information Sciences Institute, University of Southern California



Gopal Khanna, Past President, National Association of State Chief Information Officers (NASCIO), and former Chief Information Officer, State of Minnesota was on the organizing team for CTG's Grand Challenges workshop, sponsored by the National Science Foundation.

- Instituto Tecnológico y de Estudios Superiores de Monterrey, Mexico
- National Chengchi University, Taiwan
- The Nelson A. Rockefeller Institute of Government
- Northwestern University
- Simmons College
- Stanford University
- Syracuse University
- Taiwan Governance and Technology Center, Taiwan
- Universidad de las Americas, Mexico
- Université de Laval, Canada
- Université de Sherbrooke, Canada
- University of Bremen, Germany
- University of Florida
- University of Maryland
- University of Massachusetts Amherst
- University of Michigan
- University of Salford, United Kingdom
- University of Illinois at Urbana-Champaign
- University of Washington
- Virginia Tech

Nonprofit

- IBM Center for the Business of Government
- National Academy of Public Administration
- National Association of State Chief Information Officers (NASCIO)

Corporate

- Cisco Systems
- IBM Research
- MicroKnowledge, Inc.
- Microsoft Corporation
- Sonoma Technology

A full list of all the partners CTG has worked with over the past 17 years can be found on our website at www.ctg.albany.edu/about.



Financial Portfolio

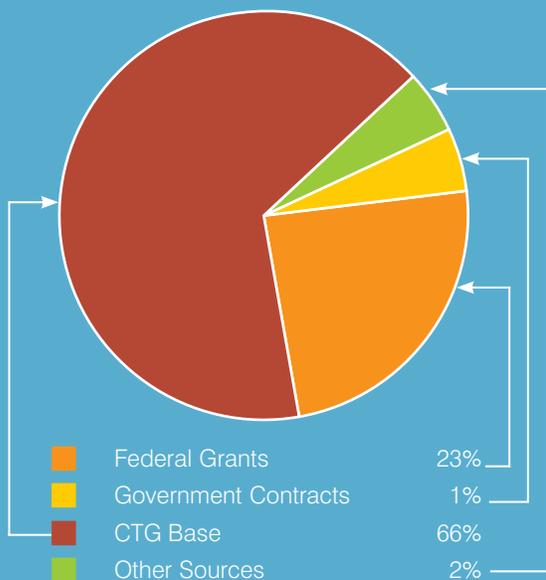
In 2010, CTG maintained its strong record of attracting a diverse mix of funding and other resources. Our funding portfolio continues to provide opportunities to bring together researchers, practitioners, and students from New York State, the US, and around the world.

A solid history of support from the National Science Foundation was evident through CTG's continued work on multi-year projects, including building a sustainable international digital government research community. In addition, CTG received NSF EAGER funding to work on three new projects 1) understanding transnational public sector knowledge networks, 2) working with leading researchers and practitioners to lay out a grand challenges research agenda on information, technology, and governance, and 3) working with the US General Services Administration to develop an open government tool.

Significant in 2010 was CTG's leadership in the North American Digital Government Working Group, securing additional grants to sustain two related initiatives: 1) Building Information Sharing Networks to Support Consumer Choice and 2) Smart Cities Service Integration.

CTG continued work with a number of NYS agencies. We received funding from the NYS Office of Children and Family Services to continue a multi-phase, multi-year project to assess the use of mobile technologies in child protective service. We also began new work with the NYS Office of Cyber Security on a broadband project. CTG used its base funding to work on two additional projects: 1) developing a guide and training class to inform the use of social media tools in government and 2) hosting a series of knowledge sharing workshops for state agencies on reporting requirements for the American Reinvestment and Recovery Act.

Overall, CTG's financial portfolio consisted of 24% federal grants, 5% government contracts, 66% base funding, and 5% other resources.



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