

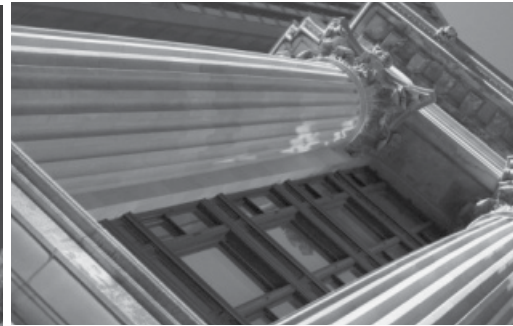


A STRATEGY PAPER FROM:

CENTER FOR
DIGITAL
GOVERNMENT

FROM 'TO WORK' TO TELEWORK

SMALL AND SMART MOBILE SOLUTIONS FOR PUBLIC SERVANTS



INTRODUCTION: SMALL AND SMART

Smartphones have already changed the world of work once, allowing users to make and receive calls, send e-mail, check calendars and tasks and use the Internet at a time and place of their choosing. That's only the beginning of the story. For individual users, these small and smart devices are putting the personal back into personal computing. Just as the PC revolution began at the desktop and moved to the laptop, laptops are now giving way to smartphones as the mobile device of choice for generations of workers more accustomed to the possibilities of telework with the flexibility to choose how and where they do their work.

The use of smartphones for conducting business is at a tipping point due to several advancements, including network speed and increased connectivity; device horsepower and better screen resolution; the addition of global positioning software; more multimedia capabilities; availability of more robust applications on the device; Department of Defense-approved encryption; and increased access to the organization's enterprise applications. End users, especially Millennials, are quickly gaining expertise by using smartphones as their mobile interface to work.

Institutionally, smartphones bring unprecedented flexibility to contingency planning and business continuity when physical work places become inaccessible or unavailable. When employees are already familiar with working remotely, they are not sidelined when disaster strikes. Snow days and minor floods no longer mean sitting at home idle, waiting to get into the office. Today's smartphone applications allow users to collaborate. They can access, edit and file documents and presentations; access enterprise systems; manage IT systems; and support public protection and continuity of operations. Through new mobile applications, they also extend the value of enterprise systems by making mission critical data — public safety, health and human services case management, citizen interaction management and regulatory inspections — available in real time.

"There are a number of agencies that now use telework in their COOP programs and planning," said Eric Kretz, deputy division director for the Federal Emergency Management Agency's National Continuity of Operations Programs (COOP). "Many of the smaller agencies are relying on telework 100 percent for their COOP program, and some of them are well positioned to accomplish it."

Predictions about the impact of smartphones over the next five years are being proven true as smartphones have overtaken laptops in their use as mobile devices for managers and are gaining in use among non-managers. A recent survey found that while access to personal information management (PIM) applications — voice and electronic mail and instant messaging — remains in the lead at 66 percent among federal teleworkers, use of pocket-sized devices to access backend systems (25 percent), desktop applications (41 percent) and support of continuity of operations (43 percent) is expanding.¹

Moreover, these changes coincide with political and public attention to environmental sustainability. This new emphasis on technology that supports going green positions smartphones as more than a device for taking calls and checking messages. They are quickly becoming an integral infrastructure supporting mobility that realizes three complementary goals: optimizing productivity by making information available when and where it is needed; equipping employees for mobile working without the extensive infrastructure costs of providing separate and secure network connectivity; and reducing the number and distance of trips for public employees doing their jobs.

BENEFITS: WHY TELEWORK

As mobility increases in popularity, it is transforming government by making it leaner and greener. The drivers for going mobile with smartphone technology are compelling and include cost and time savings, decreasing the government's impact on the environment and a variety of organizational benefits. For example, Arizona embraced the concept so thoroughly that 4,328 employees actively participate in its telework program. Officials estimate that the state's teleworkers annually drive 5.25 million fewer miles, generate 175,000 fewer pounds of air pollution and endure 181,000 fewer hours of stressful driving time.² Research finds that by teleworking full time, the average commuter can save more than \$2,000 a year on gas.

Government agencies are becoming greener by reducing their office space needs through telework programs. These organizations are implementing hoteling (see page 3's 'Virtual Vocabulary') instead of allocating individual workspaces for mobile workers. The Treasury Department estimates that it saves \$1 million annually on rent through its telework program.³ This trend also includes the assignment of cell phones only, eliminating landlines for employees who work in the field or from home.

"The greenest building is the one that is never built," said Paul Taylor, chief strategy officer for the Center for Digital Government. "By increasing mobile access to systems and implementing telework programs, government can significantly reduce its office space needs."

Cost savings are also realized through remote access to systems and information by reducing or eliminating trips to government facilities for public servants and citizens. This approach reduces pollution, saves time and lowers gas consumption. Organizations that are going mobile with smartphones are also reducing costs since these devices are less expensive than laptops. Smartphones have other advantages over laptops as well since they serve multiple purposes — connectivity, voice mail and e-mail — and employees are able to carry fewer devices and be productive in places where laptops are impractical, such as on foot.⁴

Less obvious, but equally important, are the positive benefits that telework and mobile access bring to organizations. These benefits include increasing employee productivity, boosting job satisfaction, attracting and retaining talent and increasing employee retention. Arizona found that employees involved in its telework program are more productive on non-commute days.⁵ This increase is due to the elimination of stress that accompanies most employees' commutes — negative impacts to blood pressure, mood, tolerance and increases in the frequency of illness to name a few. Additionally, employees who telework are able to take advantage of their personal peak time. Telework and mobile access also allow governments to attract employees who are not located nearby but can work just as effectively from a remote location. It has the net effect of expanding their options for finding top talent — especially for hard-to-fill positions.

CULTURE: A CHANGING WORKFORCE

As the population adopts and adapts to emerging technologies, so does the public sector workforce. Recent statistics show that more than 71 percent of adults in the United States use the Internet, with nearly 50 percent of their households gaining access via a high-speed broadband connection.⁶ This level of usage is transforming government employees into a workforce that demands connectivity and access to information and digital resources, regardless of place or time. While some baby boomers and Gen Xers complain that today's communication technologies are a leash that does not allow them to get far from the office, when surveyed, 91 percent of federal employees give smartphones high marks for helping them stay organized and remain connected to their job. In fact, they believe it has a positive impact on their professional productivity.⁷

The government workforce is aging, and baby boomers — a significant percentage of the current workforce — are quickly heading toward retirement. According to NASCIO, 27 percent of state IT workers are eligible to retire in the next five years.⁸ The significant number of government employees heading toward retirement combined with the next generation of government workers who expect technology to be mobile, intuitive

and always on will accelerate the demand for connectivity and access in the near future. For Millennials, multitasking comes naturally, staying connected is not optional and being tied down to one place is unacceptable. These personal habits drive their workplace expectations.

The trend toward flexible work location is growing with government leading the way. Recent statistics show that the federal sector has an average of about 17 percent of their employees working offsite while the private sector averages around 14 percent.⁹ States are embracing teleworking too, with Arizona and Virginia leading the way.

VIRTUAL VOCABULARY

Hoteling — Use of a single work space in the central office that is shared by several employees who typically work offsite instead of each employee having a separate workspace.

Millennials or Generation Y — Those born from 1982 to the mid-1990s. They have a reputation for being peer-oriented and for seeking instant gratification.

Personal peak time — The time of day or night when an individual is most effective or achieves maximum work productivity.

Smartphone — A mobile phone offering advanced capabilities beyond a typical cell phone, often with PC-like functionality. It typically runs operating system software providing a standardized interface and platform for application developers and advanced features such as e-mail and Internet capabilities.

Telework — A work arrangement in which employees enjoy flexibility in working location and hours, with the daily commute to a central place of work replaced by telecommunication links. Many work from home, while others utilize mobile telecommunications technology to work from coffee shops or myriad other locations.

Virtual Office — A fully functional worksite that is not bound to a specific location but is portable and scalable, connecting employees to the work process in the most advantageous setting, rather than employees having to come to a central office to connect to the work process.

Virtual Worker — Employees who consistently work at home or at a remote location with no designated work space or computer equipment provided at a central office.

In Maricopa County, Ariz., the number of government virtual workers has reached more than 20 percent,¹⁰ which is higher than the averages for the federal government and the private sector. The shift toward a more mobile workforce did not occur by accident. It is the result of a 15-year effort that includes a well-documented process, which embraces the concept of mobility as a business strategy, not another trend to try and then abandon when challenges arise.

In Virginia, Gov. Timothy Kaine recently announced an initiative to encourage gubernatorial appointees to telework. The state also released an improved telework policy “directing all state agencies to consider ways to improve and expand agency telework.”¹¹ The Virginia Information Technologies Agency (VITA) is ahead of the curve in implementing their state’s policy, with more than 40 percent of their IT workforce teleworking at least one time per week, according to Aneesh Chopra, VITA’s secretary of technology.¹²

“The commonwealth is not unlike any other business that implements telework,” said Karen Jackson, director of Virginia’s Office of Telework Promotion and Broadband Assistance. “We want to maximize cost savings, increase operational efficiencies, recruit and retain the best employees without regard to geographic boundaries and provide a quality of life for our employees all while maintaining only the highest level of constituent customer service.”

Changes in the government workforce go beyond the worker and include the need for supervisors to adjust their management style. Virtual supervisors understand that the best way to judge employee performance is by measuring results, not appearances or the amount of face time they have with an employee. Arizona leaders recommend their supervisors apply this approach to employees whether they are working at or away from the official worksite. Virtual supervisors also understand the need to schedule feedback since spontaneous praise may be less likely to occur when employees are out of sight.¹³

CHALLENGES: ATTITUDES, POLICIES, FUNDING AND SECURITY

The adoption of smartphones as the mobile device of choice for public servants requires addressing issues of security, funding and support. It also means overcoming organizational barriers and traditions while matching technology to the culture of public agencies. Early adopters agree that attitudes and ignorance are the biggest barriers when moving forward with a more mobile workforce. Often, organizations are unsure of how to get started, select the right positions and people, manage employees that they cannot see and what success looks like.

Traditional supervisors who focus on adherence to strict work hours and face time with employees must learn new management styles that focus on productivity and outcomes to successfully supervise remote employees. Additionally, govern-

ment agencies that believe they must treat every employee the same in order to be fair must get past the idea that their telework program has to be for everyone or no one at all.

According to Arizona’s Telework Supervisors’ Web site, “Offering the opportunity to telework is a management option, not a universal employee benefit.”

Sometimes change of this magnitude must come from the top to be embraced. When Virginia CIO Lem Stewart faced challenges implementing a telework program for Virginia’s IT agency, he first required his executive staff to telework at least one day a week. He even included himself in this policy, working from home a few days a week. He then expanded the program to middle management, requiring them to do some of their work from home. Stewart said this approach helped his management team become more supportive of the telework program.¹⁴

The multi-disciplinary nature of telework poses another implementation challenge for agencies desiring to establish a program. Representatives from IT, human resources, security and management are needed to support it. The number of functional areas participating in the program can quickly expand depending on the nature and scope of the desired mobile workforce. Additionally, a recent study found that about half of the organizations with telework programs lack formal policies to address security and privacy concerns,¹⁵ and comprehensive training programs are needed to ensure smooth operations. To address these issues, Arizona created a Virtual Office Steering Committee consisting of human resources, IT and training experts who address policies and oversight. They also have a well-documented, thorough assessment and training program for everyone involved in the program — employees, supervisors and decision makers.

Another issue government agencies face in the transition to mobile devices is funding. Early adopters encourage organizations to transition to mobile devices as part of their standard equipment refresh program, moving away from traditional desktop computers and landlines to smartphones and other mobile devices. Governments should avoid the temptation to use obsolete devices or cascade older equipment in their telework programs as mobility actually requires a refresh toward modern computing features.

While keeping mobile data secure is a top priority for a majority of federal chief information security officers (CISOs), according to a 2007 Report from Telework Exchange, 94 percent believe teleworkers in an official program are not a data security concern. Instead, federal CISOs are concerned when employees work from home outside of a formal program — on their own initiative, at night or on weekends. In that scenario, employees are often working in an environment that lacks appropriate data security education, tools and technologies.¹⁶

In government telework programs such as those in Virginia, Arizona and Portland, Ore., teleworkers use their own equipment and pay for their own broadband when they work at home. These employees often work remotely one or two days per week. While this approach works when it is part of a sanctioned program with strong education, technologically savvy teleworkers and systems with data that is not highly sensitive, the use of personally owned technology to perform government work can be a serious security breach when it is not part of sanctioned program. Often, government employees use personal devices to meet service requirements when access to mobile devices, such as smartphones, are restricted to upper management. This approach is perilous for several reasons, especially when:

- information stored on personal devices is not backed up or stored securely;
- personal devices do not have adequate and/or up-to-date malware fighting software to prevent the introduction of viruses, Trojan horses, etc., into the government environment;
- the agency's security software is not installed on personal devices, secure configuration is not in place and standard security practices are not followed;
- the ability to push out upgrades and up-to-date versions of malware prevention and security software, as well as remotely kill destructive programs are not available;
- commingling personal and work-related communication on or through a single device may put users and their agencies at risk of violating their respective ethics rules; and
- the ability to respond appropriately to Freedom of Information Act requests is compromised when government information is stored on personal devices.

PUBLIC PURPOSE: WHERE TELEWORK IS WORKING

Federal, state and local government agencies are increasingly moving workers out of the office. These successful telework programs share common factors including executive-level support; formal legislation; a well-documented, multi-disciplinary program with education and assessment; written policies; and investments in infrastructure to support telework and drivers, such as the need to reduce congestion and pollution or additional ways to attract and retain talent.

In addition to Arizona and Virginia, the states of California, Georgia and Washington have strong telework programs. Since the early 1990s, California has encouraged every state agency to "review their work operations and establish telework programs in work areas where they have identified telework as both practical and beneficial."¹⁷ Its comprehensive program, outlined on the CA.gov Web site, includes information for scheduling, equipment, software, security, setting up a telework environment and health and safety measures.

Like California, Washington has a well-documented telework program that was established in 2001.¹⁸ Georgia embraced telework in 2002 by launching the "Work Away" telework program to realize the benefits of teleworking and to encourage the state's employers to do the same. This successful program led to passage of a telework tax credit, making Georgia the first state in the nation to offer tax credits for employers with telework programs.

Telework is working at the local level as well, with the Metro Denver area, in Colorado, leading the way. In 2006, it was named one of the best regions for teleworking by Sperling's BestPlaces for its emphasis on sustainability, percentage of high-tech companies and advanced telecommunications infrastructure. The Denver Regional Council of Governments offers a free telework consulting service for employers in the Denver area. Using a Telework Toolkit, it provides information, materials, expert advice and hands-on assistance to area employers to help them create a customized telework program.¹⁹ The telework program in Portland, Ore., requires a signed agreement and includes home office visits by supervisors and outlines requirements for personal equipment used by teleworkers to perform city work.²⁰ The City of Austin, Texas, revitalized its telework program in response to declining air quality in the region. Through FAQs, the program addresses managers' concerns regarding monitoring work and how the program works.²¹

From agriculture to veteran's affairs, federal workers are teleworking. According to recent surveys of federal employees, 70 agencies reported having a telework program.²² Mobile federal employees report that they save an average of 54 minutes per day using smartphones. Understanding and supporting the benefits of telework, more than half of these federal agencies consider telework requirements when making IT infrastructure investments. In addition to driving procurement decisions, several federal agencies, such as the Department of Defense, Department of Health and Human Services and General Services Administration (GSA) report tracking return on investments in telework.²³ Through its Web site, www.telework.gov, GSA and the U.S. Office of Personnel Management share policies and program details and encourage collaboration among federal telework coordinators.

TOMORROW: WHAT'S ON THE HORIZON

Imagine a citizen using their smartphone to report a pothole, complete with a photo and GPS location information, via a mobile-friendly government Web site. The information is then transparently routed as a service request to the appropriate field worker's smartphone device. Once the work is done, the service request is marked complete and the citizen is automatically notified and thanked for reporting the problem. Imagine a citizen calling 3-1-1 to report graffiti on public property and assisted by a government employee working from home who has real-time access to systems to enter the service request, which is automatically routed to the right person where its progress can be tracked. Advances in technology and communication infrastructure are bringing these visions closer to reality. In fact, New York is already soliciting photos in mobile reports from residents who serve as an informal network of eyes and ears in all corners of America's largest city.

Former Arizona Gov. Janet Napolitano imagines a future where services provided in traditional brick and mortar facilities are transitioned to a virtual office environment. State call centers topped her list of functions that will operate virtually in the near future. Given the success of Arizona's current telework program, her vision will soon become a reality.

"Over the next five years, more and more state employees will transition from traditional work spaces to home offices," she said. "Virtual offices save money in office space, shrink the state's carbon footprint, increase employee morale and reduce turnover."

Walls are being torn down between enterprise computing and mobile connectivity that will merge the power of applications such as customer relationship management (CRM) with smartphone applications such as e-mail, an address book and a calendar to support teleworkers and employees in the field, ensuring that they have the most up-to-date information. By taking this approach, government agencies that already use smartphones and enterprise applications will only need basic training and incremental IT infrastructure changes.²⁴ Mobile access can increase into other applications, including enterprise resource planning and public security systems. Of course, mobile capabilities will continue to be dependent upon available bandwidth and device requirements such as screen size.

In the area of unified communications, desk phone features will be built into smartphones, with mobile calls routed through the private branch exchange (PBX), which will extend organizations' voice policies to mobile calls. This approach helps ensure compliance with legal requirements such as maintaining call records and least-cost routing and allows organizations to own mobile phone numbers. Other emerging unified communication features on smartphones include advanced conferencing features such as "get-me" functions that ring all phones at a scheduled conference time and group voice message distribution with polling features to register responses.

ASSESSMENT: ARE WE READY YET?

Mobile workforce programs require a holistic approach that considers people, process and technology requirements. Addressing the people aspect of a mobile workforce begins with determining the right work and the right worker. Once identified, supervisors need tools and techniques to manage remote employees and metrics to measure productivity. Initial and on-going background checks help protect sensitive information. Finally, on-going oversight from a policy office or steering committee helps keep the program on track.

Early adopters agree that positions that work well in a mobile work arrangement share these characteristics:

- low face-to-face communication requirements;
- communication most often achieved by phone, e-mail or text;
- large amounts of time spent handling information with work activities such as processing, analyzing, reading, programming and telephoning;
- a minimal need for special equipment; and
- well-defined tasks and measurable work products.

When selecting the right workers for a mobile workforce program, early adopters agree that employees who will be the most successful share these characteristics:

- self motivation and self discipline;
- strong organizational and time management skills;
- comfort working alone;
- ability to work independently with minimal supervision and feedback;
- success in current position;
- familiarity with the organization's procedures and policies;
- understanding of the effect of their participation in the program on other employees;
- effective communication skills and ability to be a team player;
- access to a safe, comfortable remote worksite where its easy to concentrate;
- establishment of the required level of security;
- ownership of the necessary office equipment if it is not provided by the organization;
- access to separate office telephone line and voice mail, if required; and
- a household that supports working from home or remotely.²⁵

Addressing process aspects of a remote workforce include encouraging participation and overcoming fear of change. Many organizations initially pilot mobile working position-by-position so efforts are closely monitored and adjusted before made widely available. Security and privacy issues must be addressed. Establishing guidelines to protect confidential information and implementing controls to monitor and protect the transfer of sensitive information are good practices for both on-and-offsite operations. Restricting downloads and the use of peer-to-peer and unapproved applications is essential. Carefully managing the use of personal devices for work purposes is a necessity when organizations require employees to use their own equipment for telework.

An up-front assessment of the key aspects of a mobile workforce — people, process and technology — increases the program's potential for success.²⁶

Management readiness — Do supervisors and managers understand the benefits, requirements and challenges of managing employees in a virtual environment? Are they ready to use innovative tools and techniques to measure productivity and outcomes instead of traditional line-of-sight management? Do they understand the effort necessary to encourage collaboration and team work?

Virtual worker readiness — Does the potential employee have the characteristics of a successful mobile worker? Will he/she make the effort to stay connected to the work place? Does the position have well-defined tasks and measurable work products? Can their work be interrupted if glitches occur, especially during initial implementation?

Operational readiness — Have we assessed work processes to ensure they fit well into the mobile work program? Have we established metrics for each position that allow us to measure productivity, quality and retention? Do we have a mandatory training program for employees and supervisors? Should we first test it as a pilot, assessing and adjusting after a fixed period of time?

Technology readiness — Do the systems provide virtual workers the level of access necessary to perform their work and communicate with their customers remotely? Have we addressed bandwidth and availability of network services, performance and reliability of systems to be accessed, security and protection of information and systems, equipment needs at the remote site and IT support issues?

CONCLUSION

Needs and capabilities are converging to propel smart-phones into the forefront of mobile work devices. Preferences of the next generation of mobile and connected workforce, the need to reduce trips due to traffic congestion and environmental concerns, continuous improvements in capabilities and access, and proven security and connectivity ensure smart-phones their place as a preferred mobile platform for public sector agencies, turning today's mobile vision into tomorrow's virtual reality.

ENDNOTES

- ¹ What's in Your Portfolio? Federal Telework Investment Roadmap, Telework Exchange, April 22, 2008
- ² <http://www.teleworkarizona.com/mainfiles/visitor/voverview.htm>
- ³ http://www.gcn.com/cgi-bin/udt/im.display.printable?client.id=gcn_daily&story.id=46064
- ⁴ Using Mobility to Expand the Reach of Government, BlackBerry
- ⁵ http://www.teleworkarizona.com/mainfiles/visitor/vbusiness_strategy.htm
- ⁶ http://www.pewinternet.org/pdfs/PIP_Broadband%202007.pdf
- ⁷ Out of Office: Federal Mobile Workforce Trends, October 15, 2008, Telework Exchange
- ⁸ <http://www.govtech.com/pcio/articles/265781>
- ⁹ http://www.gcn.com/cgi-bin/udt/im.display.printable?client.id=gcn_daily&story.id=46064
- ¹⁰ <http://www.teleworkarizona.com/mainfiles/visitor/voverview.htm>
- ¹¹ http://www.govtech.com/gt/print_article.php?id=377821
- ¹² http://www.govtech.com/gt/print_article.php?id=312695
- ¹³ http://www.teleworkarizona.com/training/Telework_Training_Workbook2.pdf
- ¹⁴ <http://www.govtech.com/pcio/articles/265781>
- ¹⁵ http://www.govtech.com/gt/print_article.php?id=381669
- ¹⁶ Remote Control – Federal CISOs Dish on Mobility, Telework, and Data Security, August 27, 2007, Telework Exchange
- ¹⁷ <http://www.dgs.ca.gov/Telework/default.htm>
- ¹⁸ <http://ga.wa.gov/CTR/GUIDE08.PDF>
- ¹⁹ <http://www.metrodenver.org/working-here/telework>
- ²⁰ <http://www.portlandonline.com/omf/index.cfm?a=10134&c=27729>
- ²¹ http://www.ci.austin.tx.us/telework/faq_mgr.htm
- ²² What's in Your Portfolio? Federal Telework Investment Roadmap, April 22, 2008, Telework Exchange
- ²³ What's in Your Portfolio? Federal Telework Investment Roadmap, April 22, 2008, Telework Exchange
- ²⁴ <http://www.sap.com/about/press/press.epx?pressid=9419>
- ²⁵ <http://www.teleworkarizona.com/mainfiles/employee/eselfassessment.asp>
- ²⁶ <http://www.teleworkarizona.com/vo/implementation.htm>

© 2009 e.Republic, Inc. All rights reserved.
100 Blue Ravine Road
Folsom, CA 95630
916.932.1300 phone
916.932.1470 fax
www.centerdigitalgov.com



About Research In Motion (RIM)

Research In Motion is a leading designer, manufacturer and marketer of innovative wireless solutions for the worldwide mobile communications market. Through the development of integrated hardware, software and services that support multiple wireless network standards, RIM provides platforms and solutions for seamless access to time-sensitive information including email, phone, SMS messaging, Internet and intranet-based applications. RIM technology also enables a broad array of third party developers and manufacturers to enhance their products and services with wireless connectivity to data. RIM's portfolio of award-winning products, services and embedded technologies are used by thousands of organizations around the world and include the BlackBerry(r) wireless platform, the RIM Wireless Handheld(tm) product line, software development tools, radio-modems and software/hardware licensing agreements. Founded in 1984 and based in Waterloo, Ontario, RIM operates offices in North America, Europe and Asia Pacific. RIM is listed on the Nasdaq Stock Market (Nasdaq: RIMM) and the Toronto Stock Exchange (TSX: RIM). For more information, visit www.rim.com or www.blackberry.com.



Acknowledgements:

Liza Lowery Massey, Senior Fellow for the Center for Digital Government; former CIO, City of Los Angeles; former CIO, City and County of San Francisco.

The Center for Digital Government, a division of e.Republic, Inc., is a national research and advisory institute on information technology policies and best practices in state and local government. Through its diverse and dynamic programs and services, the Center provides public and private sector leaders with decision support, knowledge and opportunities to help them effectively incorporate new technologies in the 21st century.