

**QUARTERLY REPORT**

DIGITAL COMMUNITIES

# Between a Rock and a Hard Place

**CIOs struggle to make ends meet in the Great Recession**

September 2010

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## About This Report

The e.Republic Digital Communities CIO Leadership Task Force is a 40-member group of government IT executives and private-sector professionals who meet twice per year to discuss trends, share concerns and exchange lessons learned. The group communicates throughout the year on its Web forum found on the *Digital Communities* website. Not surprisingly, task force members are focused this year on sharing tactics for surviving budget cuts running from 5 to 25 percent. This report examines how task force members — who represent local governments across the nation — are coping with this difficult issue.

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## Introduction: Budget Tightrope

**H**IGH-MINDED RHETORIC ABOUT POSITIVE CHANGE that can come from economic crises doesn't alleviate a fundamental truth: Life right now is miserable for seemingly countless local government IT departments across America.

Budget cuts range from 5 to 25 percent among members of the Digital Communities CIO Leadership Task Force, and times don't appear to be changing for at least a few more years. Task force members warn that many local government IT leaders are making survival decisions as though things will return to normal in a year or two. For example, some are halting technology maintenance services and other necessary functions, figuring they'll catch up down the road. However, that's unlikely to happen. As such, the Digital Communities CIO Leadership Task Force's focus is to discern the "new normal" for local government IT. Members have started by sharing the depth of their challenges and the tactics they're employing to recalibrate how they manage IT.

A variety of approaches can be found among task force members for reducing staff. Agency consolidation and simplified ways of managing equipment are also playing significant roles. Task force members say they're more open than ever to cloud computing, and insist on more exploration into how it might be workable. Finally, a debate is raging among local IT officials about the degree to which vendors should sacrifice maintenance fees to help government clients survive the next few years. A view of how local governments on the task force are confronting these issues can help others make similarly difficult decisions. 📌

**BY ANDY OPSAHL | FEATURES EDITOR**

# Tactics for Tough Times

Local CIOs cope with unprecedented budget pressure.

**T**HE EFFECTS OF ECONOMIC RECESSION are taking their toll on local governments, resulting in a significant decrease in revenue from sales and property taxes, licenses, fees, permits and state shared revenue. As these critical components of a local government's financial foundation have shrunk, so too has government's ability to deliver the services communities rely upon daily. There's no longer any "business as usual" in the nation's cities and counties.





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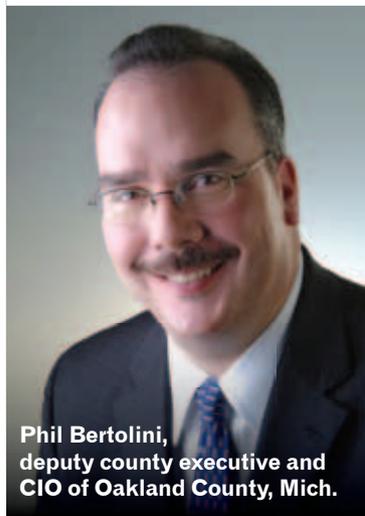
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Members of the Digital Communities CIO Leadership Task Force report budget cuts that span a wide range. Phil Bertolini, deputy county executive and CIO of Oakland County, Mich., said his county is struggling to compensate for unemployment rates significantly higher than the national average. One in 56 properties in the county is in foreclosure due largely to the ripple effects

of the auto industry's decline. The county relies on property taxes for approximately 60 percent of its revenue. Oakland County already has made significant budget cuts and is planning for an additional 20 percent reduction in revenue over the next three years.

Seattle faces a budget shortfall of approximately 5 percent. Like many of his peers, Seattle CTO Bill Schrier believes that budget deficits are a long-term issue. "It will possibly be several years before local government revenue returns to its former levels," Schrier said. In response, he believes government needs to shrink — and as it does, it unfortunately may become less efficient and responsive.



Phil Bertolini, deputy county executive and CIO of Oakland County, Mich.

### Severing Staff

Every person interviewed for this article reported being asked to reduce their departmental budgets. Needless to say, staff eliminations are a reality for nearly all agencies. However, the specifics of how those are being implemented vary by community.

Los Angeles and other cities are offering early retirement plans. Elimination of vacant positions is a unanimous strategy, and requiring employees to take unpaid furlough days is common. The number of furlough days varies from four per year in Milwaukee to a proposal

**“It will possibly be several years before local government revenue returns to its former levels.”**

— Bill Schrier, CTO, Seattle

from Los Angeles Mayor Antonio Villaraigosa for nonessential services like libraries, parks and senior centers to shut down two days a week. In Chicago, as an expression of solidarity, information and communication technology support contractors have agreed to take an equal number of nonpaid days as the city employees with whom they work.

Approximately half of the jurisdictions interviewed have been forced to initiate employee layoffs. No place has unequivocally ruled them out, but Palm Beach County, Fla., has placed a high priority on maintaining current employment levels except for positions lost through normal attrition. The degree to which employees are unionized — and the political and legal strength of those unions — is a factor



PHOTO BY LYLE KRANNICHFELD

## Seattle Cuts Budget Using Forced Ranking Process

**Seattle CTO Bill Schrier must submit a list ranking IT projects for the mayor to decide what to cut.**

Local CIOs nationwide are struggling over what projects to eliminate in response to sharp drops in tax revenue. But some say it's tough to predict the ultimate impact of IT cutbacks.

That's the challenge currently facing Seattle CTO Bill Schrier. Mayor Mike McGinn asked all city departments to submit Excel spreadsheets ranking their various projects and the employees connected to them. Using this data, the mayor will decide which projects and employees to keep or eliminate.

Schrier's job is to create the spreadsheet for Seattle's Department of Information Technology, describing each of the agency's functions, the employees involved in these activities and their strain on the city budget. Doing this for IT is especially difficult, contends Schrier, because it's unclear what unintended consequences IT cuts could trigger in other agencies.

As a sample scenario, Schrier pointed to reductions in help-desk services. "Let's suppose [agencies] implement Microsoft Office 2010, a new version of Office," he said. "There is a learning curve for employees. If you have a help desk that is up to speed, it can rapidly answer the questions and employees can get back to productivity."

Without this help, Schrier said, employees might waste time searching for answers online or asking co-workers for help, causing productivity to drop. There could be other implications too.

"Is it going to cause a department to make an investment on its own, like to start its own help desk, and therefore increase the overall cost to the city?" he said.

Cuts elsewhere in the city often are clearer in terms of their impact on citizens and employees, according to Schrier. "For example, if the police department decides to cut out the horse patrol, [the mayor] has a feeling for how popular that is among citizens or how useful the horse patrol is in controlling crowds."

He added that the health of IT department budgets around the nation would pivot on each of their leaders' savvy with technology.

"There are leaders who see information technology as a cost to be controlled or minimized. Then there is the kind of leader who says, 'Hey, if I make more technology investments strategically, it's going to make my folks more productive and allow me to reduce in other areas,'" Schrier said.

— By Andy Opsahl

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**“We are trying to figure out how we can best maintain a high-level support capability when government is facing difficult decisions about how much maintenance it can afford.”**

— Paul Christman, vice president of sales, Quest Software

for some when looking to implement layoffs. Seven of the 10 jurisdictions interviewed have seen cuts in direct public services. Building and development services, parks and recreation, and administrative positions in many departments were the commonest first cuts made. But several jurisdictions are now contemplating cuts to public safety; long considered a measure of last resort in most communities.

Seattle Mayor Mike McGinn took Schrier and the rest of his executive team through a forced ranking process for departments and the services they offer. The idea is that once a prioritized list of services is identified and agreed to by the team, services will be funded from highest priority to lowest until the city runs out of funds.

**Getting Closer to the Cloud**

Staff cuts are forcing more interest in cloud computing, according to many on the leadership task force. Cloud computing is a fee-for-service method for using shared or pooled resources to provide computing and communication infrastructure, software applications and end-user or customer services. Cloud computing users avoid buying or maintaining the underlying hardware or software layers. Los Angeles CIO Randi Levin’s hard-fought switch of city e-mail to Google is the most dramatic example of that. Nevertheless, even as task force members speak more enthusiastically about cloud computing, certain obstacles remain. For instance, Phoenix CIO Charles Thompson is a vocal proponent of cloud computing, but he insists agencies still need a well defined and understood exit strategy for service agreements.

Bertolini doesn’t believe the public cloud is ready to accommodate government, citing security and privacy issues and the uncertain viability of potential cloud service providers. Schrier, too, is concerned about the ultimate responsibility for data in an uncertain and still-developing legal and regulatory environment. Most task force members believe it will be quite some time before local government is ready to move critical systems and data like law enforcement and utility Supervisory Control and Data Acquisition systems into a public cloud.

Governments coming together to share a resource pool is seen as a way for participants to benefit from the efficiencies of a cloud-type infrastructure and alleviate some of the concerns about data security,

privacy protection, and provider viability and stability since in most examples the cloud would be hosted and managed by one of the public-sector participants.

**Consolidating and Eliminating Agencies**

Agency and department consolidations, mergers or outright eliminations are enterprise strategies that most CIO task force members are pursuing. For instance, Thompson participates in an Innovation and Efficiency Task Force (IETF) composed of business executives



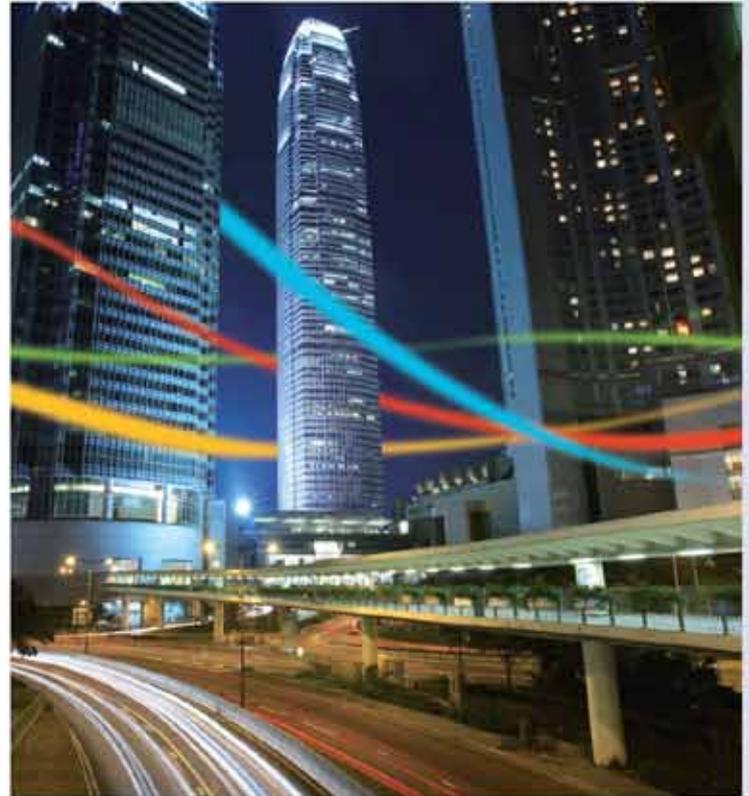
Bill Schrier, CTO, Seattle

from Phoenix departments. The IETF charter aims to identify opportunities for enterprise efficiencies in IT, enhancements to business processes, opportunities for service consolidation, and improvements to the contracting and procurement process. Thompson won’t predict a specific outcome of the IETF process, but sees the new number of city departments in Phoenix falling somewhere between the original seven and current 26. Chicago, Orange County, Fla., and Seattle already have accomplished numerous consolidations while Los Angeles and Palm Beach County are still viewing it as an option.

PHOTO BY DAVID KIDD

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**“If you bought a good product and are any good at using and managing it, you shouldn’t need a lot of help.”**

— Michael Armstrong, CIO, Corpus Christi, Texas

### Managing Equipment More Cheaply

Eagerness to find ways of saving that don’t involve layoffs is driving local governments to wring any costs possible from existing equipment. That typically involves changes in purchasing strategy.

Corpus Christi, Texas, saved money by changing the way it manages cell phone usage. Historically the city provided employees cell phones for official use and then required employees to reimburse the city for any private use of the phone. Now the city simply reimburses employees when they use their private phones for official city business.

Palm Beach County recently adopted a stipend approach for business use of personal phones rather than issuing county-owned cell phones as it previously did. This saves Palm Beach approximately \$120,000 annually.

Other common strategies among CIOs include extending technology refresh cycles. Desktop computer replacement schedules that previously called for replacement every three or four years are now being extended to five years or even longer. In some jurisdictions, desktop transition plans allow “superusers” to receive regular upgrades and employees who primarily use e-mail and word processing now receive 2- or 3-year-old

retired superuser machines. Equipment leasing also has become more common because it serves as a way to operationalize hardware expense and effectively spread payments over a number of years.

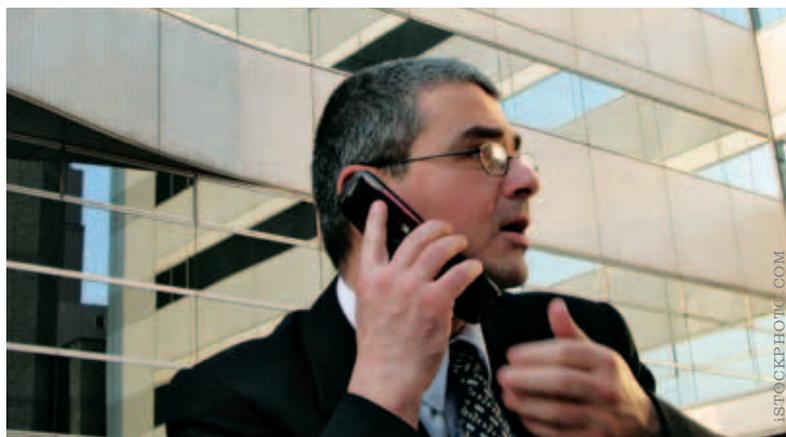
### Pushing Sacrifice to Vendors

The most controversial issue confronting the CIO Leadership Task Force is the degree to which vendors should sacrifice to help governments survive their economic crises. Several governments are seeking maintenance fee reductions and in some cases, complete eliminations of these services. This alarms vendors, partially because doing so can increase expenses for governments down the road, they say.

Software maintenance is a common target for maintenance reductions among local government IT departments. The spectrum of approaches varies by the degree of financial difficulty. Some want to downgrade support from the common, all-inclusive “platinum” 24/7 package that’s currently standard in government. Agencies are veering toward service plans they think better reflect a calculated acceptable level of risk.



Michael Armstrong,  
CIO, Corpus Christi, Texas



## Corpus Christi Stops Offering Government Cell Phones

**Employees no longer receive government-issued cell phones, reducing cost and workload for the city.**

Michael Armstrong, CIO of Corpus Christi, Texas, found a relatively simple way to cut costs and workload for his staff: The city stopped issuing cell phones to employees. Instead, Corpus Christi began reimbursing employees for using their personal phones on the job. The change eliminated pages of paperwork — in fact, one city employee’s full-time job was managing Corpus Christi’s 500-page phone bill. City officials believe they could save roughly \$100,000 annually with the new approach.

The rule changed how employees reconcile their phone bills each month. In the past, workers scanned their city phone bill for any personal calls and reimbursed the city for those costs. Now they scan their personal bills for work-related calls and submit those for reimbursement.

“You go through your call detail that comes with your bill and indicate which of those calls were city-related and which were personal,” Armstrong explained. “Then you do the mathematics to get the cost per minute for your plan, and you can request reimbursement for the city use for those particular calls.”

Part of the city’s savings, Armstrong said, comes from the fact that many employees don’t bother requesting reimbursements.

“Either it’s too much of a pain, or they simply want to keep their phones private,” Armstrong said. Proving an accurate per-minute price means submitting the whole bill so the city’s phone administrator can verify the calculation. One might wonder, however, if Corpus Christi has opened itself to potential privacy lawsuits. Armstrong said officials discussed that concern, but weren’t especially worried about it. Employees sign a waiver agreeing to reveal their personal phone bills to city staff in exchange for reimbursement.

Armstrong said employees didn’t like the policy at first because they viewed it as a personal financial hit. However, many quickly warmed to the idea. “They’ve enjoyed having the freedom to choose the device they want to use,” he said. “Frankly at this point, we don’t hear much about it.”

Corpus Christi implemented the policy in May and hasn’t yet been able to quantify the exact savings.

— By Andy Opsahl



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# Fit and Focused

Active Directory consolidation and improved management capabilities help a large county agency streamline its processes and prepare its IT systems for the future.

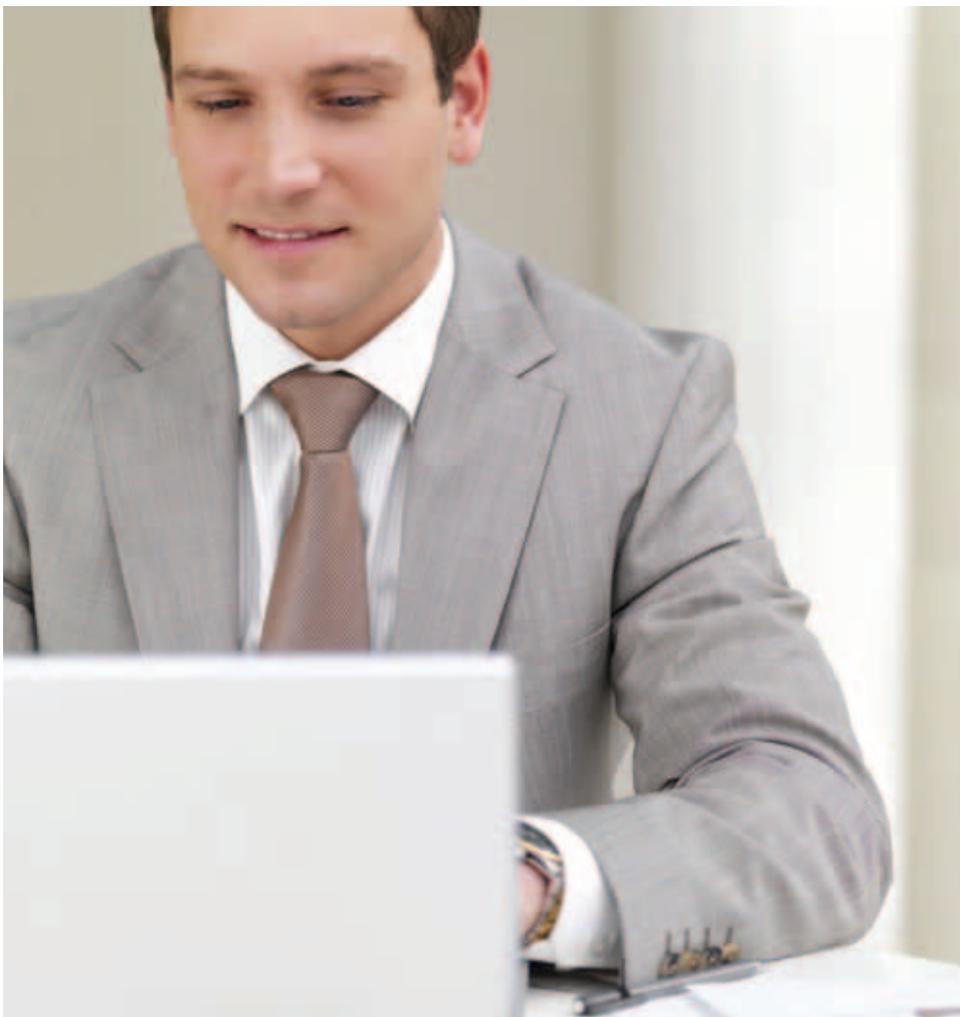
**T**he Los Angeles County Department of Public Health (DPH) protects and promotes the health and well-being of all persons in the county. The health of the department's IT systems is an important key to that mission. As part of a large transformation effort to improve its IT systems and processes, the department recently condensed seven Microsoft Active Directory (AD) environments into one primary AD. With only one AD, the department can manage it for optimum efficiency — and create more efficiencies in the future.

DPH needed to get its many users on to one AD platform. "We've had an infrastructure with a number of different, independently managed Active Directories — all with varying levels of clients and security practices, quality of design and levels of service," said Jim Green, Chief Information Officer for DPH. "We also had a mishmash of patch management tools and configurations. It was impeding our business operations. We needed to get to a unified Active Directory for the department. And we were looking for a way to get there quickly and cost effectively."

## An Optimum Migration

When moving everything onto one AD platform, the department considered several possible ways of doing the migration. "We evaluated a number of different options, including just having our staff do it, creating new accounts and populating those new accounts," said Green. "We also looked at bringing in professional services to do these migrations by hand. But after some study and review with Quest and with Microsoft, we felt that the use of the Quest tools was going to get us there quickly and with high quality, and that it was the safest way to go."

DPH used Quest Migration Manager for Active Directory to make the process of



moving to one AD easier. The tool simplifies migration processes and integrates workflow — from pre-migration analysis through setup, object migration, resource updating and post-migration cleanup. It also let DPH closely manage the migrations with less administrative effort than other migration methods, and allowed users to continue their work without being aware of any changes.

Since the migration, the department has greater capability for reporting, delegating,

patching and other activities. "We were looking at how to bridge from an environment that was very decentralized and disorganized, to one that was federated to some degree," Green said. "We needed to move from chaos to a more consolidated and better managed environment."

As of today, DPH has migrated all of its 3,950 users, all of its 3,670 PCs, and most of its 185 servers (the remainder will be migrated within the next few weeks). Having

the unified AD platform in place greatly simplifies administration for the department. Glen Solomon, Chief Technology Officer of DPH, said the consolidation has paid off for the department in several ways. "Consolidating all of these tools and domains has helped us control costs, provide better administration, and more easily share information and resources," he observed.

**"Consolidating all of these tools and domains has helped us control costs, provide better administration, and more easily share information and resources."**

**Glen Solomon**, Chief Technology Officer, Los Angeles County Department of Public Health

### Privileges and Access

The migration into one AD has also made it easier for DPH to provision and deprovision new users, as well as track user activities. To simplify these processes even further, DPH deployed Quest ActiveRoles Server (ARS), which makes it easier to manage user privileges and access. The software affords the department streamlined provisioning, strictly enforced role-based security, automated group management, improved workflow and easy-to-use self-service Web interfaces. Using ARS, DPH implemented a streamlined process for delegating authority; for example, granting a non-administrative user certain administrative-level privileges and access. Delegating administrative privileges can be a challenge: IT administrators can't afford to delegate too much authority, but efficiencies can be gained by allowing users to do some things on their own. Now the department can easily achieve the right balance. "We wanted to have the flexibility to decide which things we were going to delegate, and to whom, and still be able to retain control over access," Green said.

### Robust Reporting

DPH now has better control of the overall AD environment, and can audit and generate reports quickly and easily. "ARS gives us the ability to report on anything that's happening in our environment," said Guadalupe Rico, the department's Director of Systems Administration. DPH now has better visibility into user activities, such as who is creating or deleting accounts, or trying to perform unauthorized actions. "AD does some of that, but it doesn't do it as extensively as ActiveRoles Server," Rico said. "That was the main driver for deploying ARS."

Solomon said the reporting capabilities have saved the department a significant amount of time. "Being able to easily gather system activity information out of the network has been a huge help," he said. "Before, when someone asked us for a report like that, the hairs on the back of your neck would stand up. You knew you had to spend a lot of time digging for what they wanted, and then putting it in the right format. Now we don't have to worry about that."

DPH can now use ARS to pull all kinds of reports, including activity reviews that help

the department comply with security guidelines from funding agencies, or reports that help the department apply for grants. The reports can show users' access to specific environments or folders, people attempting to log in and failing, those who have successfully logged in and when, and numerous other activities. DPH can also create standardized reports that can be used by more than one group within the department. It can also put reports on the Web much more easily than before. These tasks were once very time-consuming.

### A Consolidated and Efficient Environment

Consolidation is a key part of the department's IT transformation initiative, with the objective of establishing more mature and consistent service delivery processes. DPH is now consolidating servers and applications, utilizing virtualization and focusing on improving its data centers. The AD consolidation, when combined with the simplified migration with Migration Manager and the efficiencies from ARS, aligns perfectly with the department's goals for improved service, security and performance.

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# 4G Transforms 4CI

The next revolution in situational awareness.

In public safety, situational awareness is everything. Decisions must be made quickly — and they should be based on real-time information from a variety of sources. Communications must flow instantly, in all directions, for commanders and responders to truly have the complete picture. Information must be there at the right time — not six seconds later — because that can be the difference between life and death.

Fourth-generation (4G) communication networks and devices will transform situational awareness. Responders will have a common operating picture like never before. With 4G, everyone will be on the same page immediately because 4G is vastly superior to 3G in three key areas: upload and download speeds, bandwidth and latency.

That means faster sharing of information in any direction, on any number of devices — from firefighter to command, from dispatcher to squad car, from officer to officer. The lower latency and higher bandwidth will make video more useful than ever before. With 4G, streaming real-time video will be



much higher quality. Delay, jitter and low-resolution images will be replaced by stable, sharp, high-definition video that arrives almost instantly. And it can be easily sent to one or many, so everyone who needs to know what's happening can actually see it.

## 4CI and Public Safety

4CI is a well known military doctrine, used by public safety agencies in emergency response and other activities. It's often equated with situational awareness. 4CI consists of:

### NUMEROUS FUNDING SOURCES FOR PUBLIC SAFETY COMMUNICATIONS

Public safety agencies can find funding in a number of places for end-user devices, communications vehicles and other equipment that will help agencies make the most of 4G technologies. Michael Paddock is CEO of Grants Office, a Rochester, N.Y.-based company that helps grant seekers with fundability analysis, research, grant writing and more.

He cited three key sources of funds: 1) Security grants for specific sectors such as critical infrastructure, educational institutions or agriculture. Funds can come from the U.S. Department of Homeland Security,

but also from sources like the Department of Education, the Department of Agriculture and others. Some of these funds can be used for communications. 2) General types of security funding, which could support things like training, preparedness exercises and communications. 3) Funds meant specifically for public safety communications.

"My recommendation to any public safety agency is to take a balanced approach," said Paddock. "Look at all three types of funding rather than focusing just on those grants that are specifically for public safety communications, because that's only a small piece

of the overall landscape." When applying for grants, public safety agencies should omit terms such as LTE and WiMAX to allow for a more competitive environment.

While grants specifically for communications aren't increasing in number, there is still reason for optimism. "There has been growth in the number of funding sources that will support communications as part of a larger project," Paddock said. "The most important thing is that people apply for grant opportunities wherever they find them."

For more information, visit [www.grantsoffice.com](http://www.grantsoffice.com).

**Command:** The authority and responsibility for effectively using available resources, and for organizing, directing, coordinating and controlling personnel and equipment to fulfill a mission.

**Control:** The ability to issue orders or directions, with the result that those directions are carried out.

**Communications:** The most essential element. Communications between responders on the ground and command staff are critical to ensure that both groups have a common operating picture of the situation.

**Computers:** They process, display and transport information needed by commanders, analysts and responders. Today this increasingly includes mobile devices, such as laptops and smartphones.

**Intelligence:** The product of the collection, processing, integration, analysis, evaluation and interpretation of all available relevant information.

#### 4G Makes a Big Difference

Until now, 4CI depended on 2G or 3G technology. The inherent limitations prevented optimum situational awareness. Command and control weren't as effective, as there was often a disconnect between what was seen in the field and the information received at the command center. Communications weren't as strong because although radios are good for voice, they're not as effective as everyone seeing the same images and data simultaneously. Computers are more mobile now, and 4G optimizes their usefulness with rich-media applications such as video.

“We'll have lots of speed, and the bandwidth needed to run some of the most critical applications, such as real-time video for situational awareness. It will make people safer, officers included.”

**Danny Bowman**, president, Sprint Integrated Solutions Group

Intelligence gathering, too, is simply better now with 4G. Information flows much faster. Sending high-resolution mug shots or other large files, or sharing real-time surveillance video, is now

#### PARTNER PROFILE: FEENEY WIRELESS

*Wireless company sees strong future for 4G.*

Much is happening in the world of 4G communications. Sprint partner Feeney Wireless, provider of wireless/mobile broadband solutions, has witnessed firsthand the evolution from 2G to 3G, and is now working with 4G as it delivers solutions to a wide variety of governments and industries.

Feeney Wireless works exclusively with Sprint for wireless telecommunications. Bob Ralston, president of Feeney, sees 4G bringing great opportunities for public safety. Whether it's more robust sharing of video, better remote control of security cameras or more effective digital signage, Feeney Wireless knows 4G delivers superior performance.

Ralston praised 4G's ability to bring real-time video to numerous types of devices. “Streaming video can now be sent down into that small form factor, the handheld device — and simultaneously to a larger computer display inside a police cruiser or fire engine,” Ralston said.

The higher bandwidth and lower latency of 4G improve public safety in several

ways. For example, operators can control surveillance cameras much more effectively with 4G. “One of the things end-users really need is the ability to control these devices fluently,” said Ralston. “4G will provide that experience, where we couldn't do that before. It's a huge shift in the user experience.” 3G often brought delays, so a suspect moving through the frame might never be seen by the time the camera was panned, tilted or zoomed. With 4G, an officer in a squad car can control a camera remotely, in real time, while others watch the video at headquarters. It gives officers a better sense of being on the scene.

That's just one of many ways 4G improves communications. 4G even enhances digital signage, making it practical now for digital signs to carry more rich media and high-definition content.

Feeney has seen a strong contrast between user acceptance for 4G and 3G. With 4G, users are much more enthusiastic and are driving the development of new applications, and companies such as Feeney

much more practical. In addition to more speed, 4G also brings more reliability and better security.

“4G has great bandwidth, and we have a tremendous amount of spectrum,” said Danny Bowman, president of Sprint's Integrated

And it will mean better efficiency in any type of investigation.”

With 4G, a firefighter can download detailed maps using a mobile device. A dispatcher can send high-resolution photos or streaming video to an officer in a patrol car. Police officers on surveillance can see everything a suspect is doing, without gaps in the signal that would commonly occur with 3G video. Even services requiring lower bandwidth — such as voice or data from license-plate recognition systems — will be higher quality with 4G.

4G will bring unprecedented accuracy to situational awareness, making 4CI much more effective. It will allow commanders to make better use of resources, and it will help save lives. And it's an affordable solution, leveraging systems and devices already in use.

“You're now going to be able to create a convergence around all device types,”

Solutions Group. “That means we'll have lots of speed, and the bandwidth needed to run some of the most critical applications, such as real-time video for situational awareness. It will make people safer, officers included.

Bowman said. "You create a much more efficient capability with multiple types of devices, whether it's the device in the vehicle, the one you're carrying with you or potentially a device that is wearable. All of those pieces are going to come together in a very collaborative, converged way with 4G."

In fact, the ability to share information quickly across various devices with a large number of users could revolutionize the current concept of situational awareness, adding "collaboration" to the traditional 4 Cs of 4CI. That's because 4G allows for much greater information sharing than 3G. 4G's greater bandwidth lets more people look at the same surveillance video, for example, greatly enhancing the common operating picture. It will enable greater collaboration and interoperability among different agencies as well.

Sprint was the first commercial provider to offer 4G, thanks to years of research and development. As the industry leader in 4G, Sprint is able to offer its network to public safety agencies as a cost-effective alternative to building their own systems. With Sprint responsible for creation and maintenance of the network, public safety agencies can stay focused on their core missions.



### Bright Future

4G is already here in many markets, and its availability continues to increase. 4G is the future, along with more mobile devices. Smartphones have already become vital mobile computers. 4G will enable more of that.

Sprint is working on many improvements for the future of public safety, including smarter vehicles with more embedded technologies. "I like to call it the connected vehicle," Bowman said. "Think of the police car, fire engine or ambulance. We're spending a lot of time on making that vehicle, and the people in the vehicle, much more effective. So bringing the multiple technologies

together to convert the vehicle into a mobile hot spot, making sure the data is secure, collecting information about the vehicle for fleet management — we want to put all that together. We believe the connected vehicle will be a big part of the future."

Bowman said it's also about what people can take away from the vehicle — the different types of mobile devices responders can carry with them. With 4G, a lot of new methods will become possible. It points toward an expansive future. "It's going to create lots of innovation and creativity for situational awareness," said Bowman. "4G will really improve the safety of citizens."

### PARTNER PROFILE: CRIME POINT

*Former police officer creates mobile video surveillance technologies for 4G.*

Dan McLeod, founder and CEO of Crime Point, is a former police officer. His insight into the real workings of police departments helped him create his company, which offers surveillance equipment and vehicles.

"Crime Point grew out of my frustration for law enforcement with the equipment that was available," said McLeod, who started the company 10 years ago. Today better technologies are available, including 4G. "We're migrating to 4G, which amplifies the opportunity significantly over what 3G offered. With 4G, you can process a lot more information," he said.

Crime Point works closely with police agencies to provide equipment and customer support to fit their specific needs. That can include mobile and fixed surveillance cameras,

surveillance vehicles and other tools.

McLeod said Sprint 4G combined with Crime Point surveillance solutions provides better situational awareness. An officer watching an undercover operation on camera in a van, for example, can quickly disseminate images to officers waiting nearby to make an arrest so they can see the situation before they approach, rather than entering a potentially dangerous situation with only a verbal description of the scene. Before going in, officers simply access the Internet from a smartphone to see real-time images of a location or suspect — images they never could have seen before.

With 4G, security cameras can send better quality video that's much closer to real time. Five second delays that were common

with 3G are reduced to one second with 4G so security cameras can follow moving suspects more effectively. "The huge advantage though, is that multiple people can watch simultaneously with 4G," McLeod said. "There is just not enough bandwidth available to have multiple users on 3G." Now more officers, commanders and others can follow a scene visually, rather than having to wait for an e-mail or hear about it over the radio.

And because the network is built by Sprint, 4G capabilities are available wherever Sprint's 4G networks are available — not just within the local jurisdiction — which can be beneficial in a wide range of public safety situations. "When there's a fire, you go to where the fire is," McLeod said. "The

## CASE STUDY

## Fast Forward

4G helps a major county improve situational awareness.

DeKalb County is the third largest county in Georgia. It includes a portion of Atlanta and several other communities, for a total of more than 700,000 residents. The DeKalb County Police Department's narcotics unit has been using a video surveillance system provided by Crime Point with 4G capabilities, while the county CIO has been using the solution for other county business. Both parties have been extremely impressed with 4G.

"The improved ability to multi task, I think, is the No. 1 differentiator," said Darrell T. Black, CIO of DeKalb County. "And of course the speed of the video — that is truly outstanding."

Tim Donahue, a narcotics detective with the county police, also likes 4G. "The amount of bandwidth that these 4G systems have is just incredible," he said. "With 4G video, you see greater detail. You can see what kind of necklace the suspect is wearing, what kind of shoes, what the type on his shirt says. You get all that detail with the 4G versus the 3G. And you can allow multiple users because you've got so much bandwidth."

Donahue gave an example of how 4G can really improve situational awareness. "I observed on our camera system some suspicious activity. I was a good 10 miles away, but I was able to call a sergeant I know working in the area, and relay to him in real time where the vehicle was, the description, the tag. And because of the high image quality and high frame rate with 4G, you're getting 15 to 20 frames per second of good, quality video. So I was able to call out exactly what the suspect was doing, where he was, and constantly update the sergeant before he got there." Donahue also used the camera system to keep an eye on the sergeant once the sergeant arrived on scene,

making sure his fellow officer was safe until backup arrived.

"That gives you a whole new level of safety," Black said. "There's a huge difference from 3G to 4G, and I'm glad we're in the 4G world now." Black also appreciates the day-to-day business applications of 4G. He uses the video-conferencing feature from his cell phone to have face-to-face meetings with his network manager when they're in different locations.

### Making a Difference

But public safety is where 4G really makes a difference. "A picture is worth a thousand words, and I guess a video is worth about 10,000," said Black. "It gives you an abundance of information to analyze a situation."

The county created a partnership with Sprint in 2008 and began testing various wireless products. Initial testing was done with the Department of Watershed Management and included routing of telemetry traffic (meter, water and sewer-level reading) through a previous generation Sprint wireless network. Then the county put wireless 4G cards in the Public Safety division, along with a mobile virtual private network client, giving Public Safety access to real-time data from the county.

Prior to that, it took officers about 30 seconds to run a tag query and receive the data back from the Georgia Crime Information Center. Now, with the 4G broadband cards, it often takes around five seconds.

The technology also creates opportunities for more solutions to help Public Safety become more efficient and effective. It's also helping to create a mobile work force — which will allow Public Safety officers to remain in the field for longer periods, increas-



ing their presence in communities.

With 3G, Detective Donahue had been getting two or three frames per second with the video surveillance system, compared to the 15 to 20 he now gets with 4G. The result is a more stable picture with much more detail. "It's a more accurate view of what's going on in real time," said Donahue. The low frame rate with 3G brought "stuttering" images and gaps in the action. "With 3G you have to wonder, what are you missing in those gaps in coverage? Did he shove a gun down his pants? Did he hide drugs? Did he just throw drugs on the ground before you got there? With 4G you're not getting those gaps in coverage," noted Donahue.

It's just one of many benefits. "4G brings not only much faster speed, but also more reliability, improved security and improved cost-effectiveness," said Black.

4G also helps because it's wireless. Officers no longer need to work with service providers to set up an Internet connection for a surveillance camera — a process that consumes valuable time. With the Sprint 4G system, Donahue can set up a camera just about anywhere — the side of a building, for example — and be up and running with it very quickly.

And once it's up, it sends that crystal-clear, highly detailed video Donahue needs to do his job. "The image quality that you're getting is just phenomenal," he said. "It's almost like you're watching the evening news

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## Phoenix CIO Encourages Exit Strategy for Cloud

**Even a vocal cloud computing advocate warns of need to prepare for the worst.**

Severe drops in tax revenue are driving more local governments to seriously consider cloud computing for major IT functions. One of the most vocal cloud computing proponents in local government is Phoenix CIO Charles Thompson. He's considering moving e-mail to cloud computing, and also would like to find a cloud-based document collaboration tool.

However, Thompson cautions that local governments need a well defined exit strategy before implementing cloud computing on a large scale. Phoenix is still working out the details of its exit strategy.

Thompson wants to ensure that Phoenix can revert functions to on-site physical servers if cloud services don't perform as well as expected. To make such a potential move affordable, Phoenix will consolidate its existing servers through virtualization, which creates the effect of several servers functioning independently on one piece of hardware, simplifying maintenance and reducing cost. A virtual server farm's ability to take on additional servers without much

extra hardware would make returning to on-site servers easier and less costly, according to Thompson.

He said local governments should incorporate terms and conditions into cloud computing contracts that protect them in case of severe problems with the agreement. "With services that move off your premises, if you have a strong 'prenuptial agreement,' it protects both parties in case of non-success on the other side," Thompson said.

He encourages local IT agencies to sign cloud computing contracts that hold 10 percent of the total cost in abeyance until the end of the contract's life span. This is standard for traditional provider contracts and should be maintained for cloud computing vendors, in Thompson's view. This way if the provider fails to deliver, forcing a government in a different direction, that government has a "rainy-day fund" to enable the change.

— By Andy Opsahl

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Charles Thompson,  
CIO, Phoenix

PHOTO BY DAVID KIDD

“If you bought a good product and are any good at using and managing it, you shouldn’t need a lot of help,” said Michael Armstrong, CIO of Corpus Christi.

However, calculating an acceptable level of risk can be difficult and complicated, and renegotiating contracts already in effect can have ramifications that go beyond the balancing of an annual or even biennial budget. Several jurisdictions are considering dropping some software maintenance and support agreements altogether, leaving themselves without vendor support.

**“With services that move off your premises, if you have a strong ‘prenuptial agreement,’ it protects both parties in case of non-success on the other side.”**

— Charles Thompson, CIO, Phoenix

“Vendors are being pressured for concessions after the fact,” said Paul Christman, vice president of sales at Quest Software. While this may look like a good business strategy to government, Christman and other software executives point out that granting such concessions after a contract has been signed is essentially impossible for them because of the legal requirements their corporate accounting practices are subject to under the Financial Accounting Standards Board and Sarbanes-Oxley Act.

Sometimes it’s tempting for government to think that private companies are somehow immune to economic challenges and better able to weather the current storm. Private industry, however, is suffering along with its customers.

“Maintenance payments are closely tied to the production readiness of the software. Today’s maintenance payments fund tomorrow’s new releases and increased functionality,” said Mike Bilardo, director of government solutions for Hyland Software.

When government moves toward consuming just what it needs today in an unbundled, pay-as-you-go approach, it makes it very hard for vendors to budget and plan customer support. Christman contends that when governments stop making regular maintenance payments, vendors have a harder time sustaining their usual quality of service.

“Bugs will take longer to get fixed. Expansion to new platforms will be delayed,” Christman said. “We are just like our government customers. We are trying to figure out how we can best maintain a high-level support capability when government is facing difficult decisions about how much maintenance it can afford. Government and industry are in it together. Our success is closely linked.”

Rusty Rhodes, regional vice president of AT&T, cautions against the “just-do-it-ourselves” approach to critical infrastructure support. “That doesn’t look to maintenance or upgrade or long-term total cost of ownership,” Rhodes said. “You have to go in with your eyes open and make sure you understand the total opportunity cost.”

Eliminating maintenance and support may seem like an opportunity now, but there likely will be some cost associated with that decision when it is time to re-establish the service.

“Letting contracts lapse is very dangerous and if you want to go month-to-month, prices will go up,” Christman said. “Customers that stop paying now will have to negotiate and work with their vendors in the future to re-establish support.” Each company will establish their own policies for dealing with such things, but some vendors may require past due maintenance payments or even charge additional reinstatement penalties as a disincentive to leaving in the first place.

Ultimately it’s a priority for governments and vendors to maintain strong partnerships and good relationships. Bertolini captured the

view of government when he said, “The relationship with the private sector has changed in the past few years. It used to just be vendor and customer. Now I need someone who understands our problems and comes with solutions.”

Bilardo summed up the private-sector view when he said, “Everyone just needs to be completely open and honest and focused on making it work during these difficult times. The best solutions come when both parties make their needs known and take the approach of working together.”

Local governments will continue to face difficult choices and significant challenges for some time yet. A commitment by all to openness and honesty is vital as government and industry work together to identify and establish a “new normal” that provides transparency into the public process, furthers trust in government, improves efficiency and affordability, and provides the vital services upon which communities depend. 📌



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RUSSELL NICHOLS | STAFF WRITER

# Mail Merge

Fort Collins, Colo., pays local school district to manage e-mail services.

**W**ITH BUDGETS TIGHT AND IT staffing thin, Fort Collins, Colo., has officially surrendered hosting duties of the city's e-mail services to a local school district.

In an intergovernmental agreement, the city will pay the Poudre School District (PSD) \$20 per user annually to maintain e-mail and upgrade to a Microsoft Exchange system for more than 1,800 city employees, said Fort Collins CIO Tom Vosburg. The city also paid the school district a one-time transition fee of about \$170,000.

From a financial standpoint, local officials said, the move makes sense. The annual fees include the city's contribution toward equipment replacement, Vosburg added, and the city expects to save \$55,000 annually. Fort Collins can choose to renew or end its agreement with the PSD each October.

Fort Collins had already planned to upgrade its e-mail system to Microsoft Exchange, and officials were exploring cloud solutions and outsourcing options. As city officials started looking closer to home, they realized that the PSD already used Exchange for e-mail accounts serving some 30,000 students, faculty and staff.

The city and PSD conducted a feasibility study and found that the district's e-mail system had plenty of space to host the city's three domains: fcgov.com, ci.fort-collins.co.us and poudrelibraries.org. Because the PSD works with a local Microsoft Gold Certified Partner to augment its in-house staff, Vosburg said, the school district had "a professionally maintained cloud solution." As part of the one-time transition cost, the city must pay for Microsoft Client Access Licenses and also plans to purchase a physical and a virtual server.

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## Educated Approach

“We recognized that the PSD had built a robust and scalable e-mail infrastructure, which we hoped to leverage,” he said. “We found we could add our own separate post office into that mix and do it in a way that helps optimize management of the public’s resources. We’ve basically turned toward a private cloud strategy for e-mail.”

But security concerns came up. The city has its own set of policies and local officials didn’t want the school district’s setup to interfere. For example, city policy is to destroy e-mails that have been on the server for more than

90 days. Fort Collins wouldn’t have agreed to the partnership if the school district couldn’t comply with records retention and other city policies. But the PSD was able to accommodate the city through a multitenant platform design that kept electronic mailboxes separate.

“Our taxpaying citizens are expecting us to be more efficient with resources and work together,” said City Manager Darin Atteberry. “This e-mail collaboration is just one example of how we’re looking to be more efficient.”

### Sharing Equals Savings

In the last few years, financial hardship has turned some local government agencies into fast friends. These groups may have lived the siloed life in the past, but budget restrictions are promoting the idea of shared services as a smart cost-saving strategy, according to speakers at a July conference on government shared services at Harvard University.

A generic government-run shared service can cut costs roughly 20 percent, according to Jerry Mechling, faculty chairman of the university’s Leadership for a Networked World Program, which hosted the meeting. But governments can’t afford to wait, said David Wilson, managing director of Accenture’s state and local government practice for the U.S. and Canada. With decreased government revenue expected to cripple budgets for the next 10 years, departments must start restructuring now to face the tough terrain ahead, Wilson said during the event.

A future predicated on financial restraint could mean that shared services become the next big wave for bread-and-butter applications like human resources and financials, added Michigan CIO Ken Theis. Technology consolidation may be today’s No. 1 priority, Theis said, but it’s merely the platform for delivering shared services. For example, after completing an enterprisewide IT

**\$20**

The annual per-user cost Fort Collins will pay the Poudre School District for e-mail hosting.

**\$170K**

The one-time amount Fort Collins paid to transfer e-mail users to the district’s upgraded system.

**1,800**

The approximate number of city employees who’ll use the hosted e-mail service.

**\$55K**

The amount of savings that Fort Collins expects the deal to produce annually.

**30K**

The number of e-mail accounts already supported by the school district.

consolidation in Michigan a few years ago, Theis has championed shared cyber-security, GIS and other services.

A recent survey of state CIOs affirms those sentiments. Along with the consolidation of applications and data centers, more state CIOs have been rolling out shared services and managed services models in light of tighter budgets, according to a report released in late July by the National Association of State Chief Information Officers, TechAmerica and Grant Thornton.

“In the next three years, most CIOs plan to expand IT shared services and managed services,” the study said. “New customers most likely to participate in IT shared services include state executive branch agencies and public educational institutions at all levels.”

### First Phase

Fort Collins officials said the shared e-mail project is just the beginning. In recent months, the PSD, Fort Collins and Larimer County, Colo., have explored other potential areas to share services. Possibilities include cyber-security, code enforcement, fleet services, IT, purchasing, risk management, parks maintenance and consolidated dispatch.

“We looked for internal services and said, ‘There have to be other ways to save money by collaborating,’” Vosburg said. “But we need to prioritize where we put energy.”

Vosburg also emphasized how good governance drives success — that means communication, response times, incident management and change management procedures need to be exceptional. With that said, he recommends sharing services internally as a viable option to at least examine, if not pursue.

“Local governments are nonprofits; so we’re just looking for ways to cover costs, keep the lights on and provide service to citizens,” he said. “Doing it by partnering with existing partners comes in way below retail. Given that cost model, it’s really something that I think it would be irresponsible for other public CIOs not to pay attention to.” 📌



Ken Theis, CIO, Michigan



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## Viewpoint

# The Need for Speed

*Redefining the pace at which government responds to requests for information.*

BY TODD SANDER | DIRECTOR OF DIGITAL COMMUNITIES

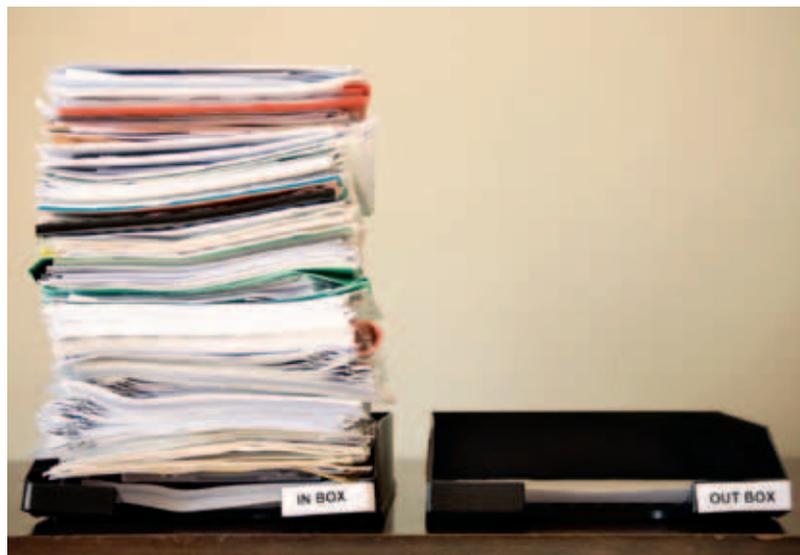
**W**HO CAN FORGET MAVERICK, the bad boy Navy pilot in the 1986 movie *Top Gun*, walking to his F-14A Tomcat and saying to his back-seat radar intercept officer, “I feel the need for speed!” In a few words, it seemed to capture the brash arrogance at the center of Maverick’s character. While most of us will never experience the adrenaline rush of supersonic flight, the need for speed is something we need to think more about.

The modern world is awash in information. And the flow of information is getting faster all the time. This has been developing for some time, thanks to wireless, optical and satellite networks. Now the speed standard and the public’s expectation are being set by search engines that can return hundreds of millions of results in a fraction of a second. In everyday life, where it seems that any conceivable question can be answered with pages of data in less than a second, how do we justify government taking days, weeks or months to respond?

## The self-serve nature of the Internet-based world we live in has created an expectation of almost instant results.

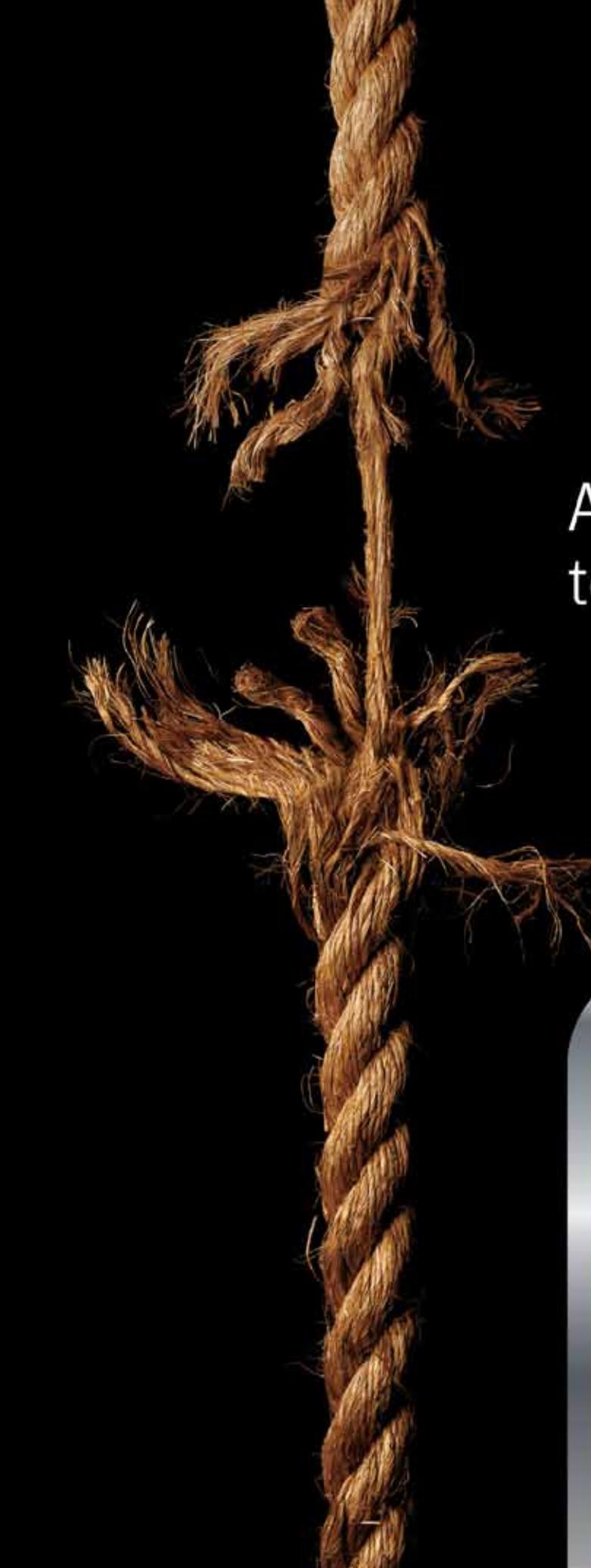
I know that much of what gets returned by search engines is of dubious value, and organizational bureaucracies, both public and private, have a responsibility to not just be fast but also accurate. Nevertheless, the current generation of Internet users armed with iPhones, iPads, BlackBerrys and Androids aren’t likely to grow more patient and understanding over time.

We live in an always-on, always-connected world where the lines between work and personal time are beginning to disappear. SAP Co-founder Hasso Plattner was recently quoted saying, “How long will someone with an iPhone wait for an answer? And the answer is that 15 seconds is the absolute maximum amount of time people will wait before they start doing something else: check voicemail, send text messages, check e-mail. ... This is the new reality!”



If he’s right, it means the old way of doing things is under more pressure than ever. The self-serve nature of the Internet-based world we live in has created an expectation of almost instant results. How long do you have under your statutes to comply with a public records request? Three days? Ten? Fifteen? And how long does it take to respond to a request for financial or personnel information from senior executives or elected officials? A week? A month? Forever? Public processes aren’t the only slow ones. Recently I needed information from a company I regularly do business with and I was told it would be mailed to me in four to six weeks. I couldn’t believe it! I felt disrespected.

Changing historical bureaucratic and legal processes won’t be easy, but it’s past time for the definition of response time to be extended beyond technical system transaction processing to include the full exchange of useful information. To put it another way, government must be able to answer questions faster. Getting there will take a change in mentality and the tools we use. It’s a change that should be initiated from inside government, not forced upon it from the outside. We don’t have long. It’s time for government to start feeling “the need for speed.” 🙌



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