# **GOVERNMENT TECHNOLOGY**



MASSIVE Wi-Fi
NETWORK HELPS
PROTECT OREGON
COMMUNITIES FROM
DEADLY CHEMICAL

DEADLY CHEMICAL WEAPONS

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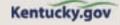






















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**CHAD VANDER VEEN** 



### Taking a PASS on REAL ID

he REAL ID Act of 2005, written in response to the 9/11 Commission's findings that 18 of the 19 hijackers had obtained fraudulent state drivers' licenses, requires states to issue drivers' licenses that conform to federally mandated security standards — with no federal money to do so. The act has been decried by organizations at all points on the political spectrum as a gross invasion of privacy as well as a national identification card in disguise.

Signed into law May 11, 2005, the act was supposed to take effect in May 2008. But an unprecedented revolt — as of May 2009, 23 states had passed legislation partially or completely prohibiting participation — has made REAL ID's future uncertain. In fact, U.S. Department of Homeland Security (DHS) Secretary Janet Napolitano recently declared REAL ID "DOA" — dead on arrival.

Napolitano is the former governor of Arizona and former chairwoman for the National Governors Association, an organization that has fought hard against REAL ID. She's also a steadfast REAL ID opponent. But Napolitano has recently been advocating a new bill called PASS ID.

In June, S. 1261, the Providing for Additional Security in States' Identification Act of 2009 (PASS ID) was introduced in the Senate. PASS ID is supposed to streamline REAL ID by removing the most contentious components, such as the requirement that states build interoperable databases for storing sensitive citizen data. REAL ID also was criticized for making no concessions for protecting the data of police officers, judges or victims of domestic abuse. PASS ID does away with this element but keeps in place other REAL ID cornerstones.

Under PASS ID, states would still need to implement drivers' licenses that feature digital photographs, digital signatures and a common machine-readable technology, such as a bar code. PASS ID also still mandates the retention of digital source documents, such as birth certificates, that prove an individual's identity.

Five years after becoming law, a PASS ID would also still be required for any citizen who wishes to board an airplane or enter a federal facility.

PASS ID has won some support. The National Governors Association, example, now backs PASS ID, calling it "a more feasible, cost-effective solution that will make everyone more secure while maintaining state flexibility." And there's bipartisan support in the Senate, including Sens. Daniel Akaka, D-Hawaii, and George Voinovich, R-Ohio — the two legislators who introduced the PASS ID bill.

PASS ID faces a long slog through the legislative grindhouse, and there are fundamental questions that remain: Is a strippeddown version of the REAL ID Act the right way to ensure better security? Or is REAL ID so inherently flawed that it would be better to scrap it entirely and start over?

Only one thing is certain: Total security is an illusion, and no amount of legislation can change that.

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### More Than Maps

GIS technology provides government with unprecedented opportunities for increased efficiency and higher productivity across the enterprise.



n a weakened economy, government needs all the help it can get. Agencies everywhere are looking for new tools, better processes, more productivity, and increased efficiency. Fortunately geographic information system (GIS) technology can help—now more than ever.

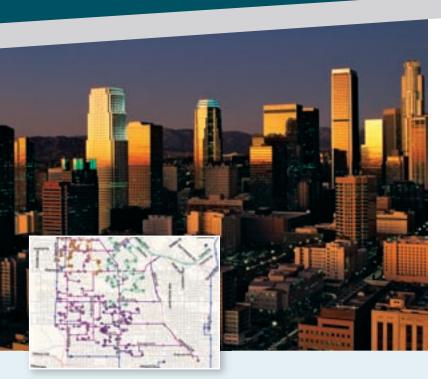
More and more public-sector departments are discovering the value of GIS as it improves operations and reduces costs in an expanding number of disciplines, such as health care, firefighting, police, public works, sanitation, permitting, land assessment, and finance.

To reduce the burden on agency staffs, public-sector agencies are being forced to take a hard look at their workflows, analyzing what they do and how they accomplish

their work. In many cases, GIS can help them do it better. GIS has led to a strong return on investment for numerous government agencies in a wide variety of activities.

ESRI, a world leader in the creation of GIS technology, has studied both business and government for years and has identified four key patterns where enterprises have successfully used GIS to improve operations. These are in the areas of data management, planning and analysis, field mobility, and operational awareness. By looking at their own workflows and applying GIS to them, agencies can increase productivity and efficiency.

1. Data Management—With today's tools, it's easier than ever to have fluid, seamless integration between GIS



#### A Big Job Made Simpler

Los Angeles trash collection goes more smoothly thanks to GIS.

The Los Angeles Bureau of Sanitation provides trash collection service for about 1.4 million residents. With GIS technology from ESRI, the bureau is up to the challenge. GIS helps the agency create the best possible routes for its hundreds of trucks. It also enables the bureau to analyze data and assign work in a way that gets maximum efficiency from its workforce.

"GIS allows us to see things that are not very obvious with tabular data or reports," said Sal Aguilar, environmental engineering associate with the bureau's Solid Resources Support Services Division. "When you see a map and you see the center route that's always overloaded with tonnage, it always has overtime, and when you see right around it all the other routes that are very light, it really puts it in perspective." Having that spatial perspective lets supervisors look harder at a problem area and arrive at a solution.

#### **Huge Difference**

GIS helps the bureau do a lot of analysis. "We look at the operational parameters and display them spatially to see where there are relationships and where improvements can be made," said Aguilar.

When it came to replacing old trash containers, GIS made a huge difference in analyzing the workload and improving daily productivity. It allowed the city to avoid \$400,000 per year in salaries for additional workers. Using GIS, the bureau was able to increase productivity of staff.

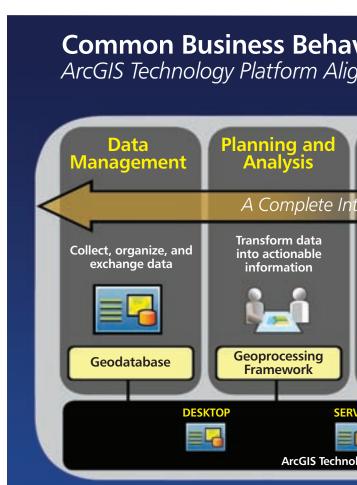
GIS has paid off in several ways. "It allows us to systematically approach how we assign work," said Aquilar. "A lot of our operations are more efficient now."

data and your day-to-day processes. It's no longer just about converting existing data into GIS and placing it on maps. Today, organizations can create and maintain data in real time. They can constantly feed new data into their systems and get more out of them.

Getting a handle on their data permits agencies to greatly increase the amount of collaboration they can do with other agencies and jurisdictions. GIS should be part of the enterprise. Organizing information into one dataset for all to share instantly makes numerous processes more efficient.

Establishing a strong GIS dataset also gives government more authority. Many entities today take data from the Internet, mash it up however they want, and proclaim their data to be valid. The public sector, however, needs to be the authoritative source of data in many areas. GIS enables that.

**2. Planning and Analysis**—Every government agency collects data. To the extent an agency can organize, analyze, and share its data, it will have success. GIS is an easy-to-understand way to view data. A solid geodatabase enables agencies to speed up processes, make faster decisions, and plan for the future.



**3. Field Mobility**—The use of mobile devices by field-workers has risen exponentially in recent years. Laptops, PDAs, smartphones, and other devices have quickly become part of the typical workday. Police officers, firefighters, social workers, site inspectors, and many others, are now connected to the organization's data no matter where they are.

# "All this has improved the accuracy of the information. We're able to better manage our operations and make better decisions at the very front level."

— Ken Schmidt, GIS Administrator, Honolulu

Field-workers are no longer limited to merely collecting data in the field. Now they can share it immediately. They can put data directly into the organization's GIS. Information flows bidirectionally now, allowing much faster dissemination and much greater efficiency.

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Honolulu leverages GIS for better services citywide.

The City and County of Honolulu has been using GIS to support services and decision making since 1988 and has seen GIS's benefits across all its departments in the form of time and money saved and revenue increased.

"Basically, every agency within the city is applying GIS," said Ken Schmidt, GIS administrator for Honolulu. "We have an enterprise GIS. Since its inception, the GIS development was intended to support all the basic services of local government." The city-county uses GIS for police, fire, emergency medical services (EMS), tax assessment, sewer maintenance, building permitting, zoning, long-range planning, and much more.

Like many governments successfully using GIS, Honolulu's looked at its workflows and fit GIS into those. "We evaluate the business processes to determine the information content flow," said Schmidt. "One of the key things we try to determine is, what is the informational product that has to be produced? We're very focused on knowing what the business process is and what output product is needed."

Honolulu can't imagine providing services to its citizens without GIS. "Once you start building GIS into the mission-critical functionality of your programs, you start realizing the necessity of having that information content provided to you in a geospatial context," Schmidt said.

The city-county's GIS is powered by ESRI and has automated numerous processes in the Department of Planning and Permitting, for example. Building permits and other citizen needs are handled more quickly every day thanks to GIS. "All this has improved the accuracy of the information," Schmidt said. "We're able to better manage our operations and make better decisions at the very front level."

That front level is where staff members work directly with the public. "The first level of decision making is with the people at the front counter

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An aspect of field mobility that's growing particularly fast is the use of logistics data. GIS aids logistics by helping agencies plot optimized routing for fleets and helping balance workloads for maximum efficiency. Collecting real-world data and analyzing it saves time and money. Better routing yields more efficiency, lower fuel costs, less maintenance on vehicles, and fewer carbon emissions. Improved workload balance helps agencies use resources more efficiently. Those are numerous benefits from one tool: GIS.

**4. Operational Awareness**—Knowledge is vital. Whether responding to an emergency, preparing for a public health issue, or analyzing neighborhoods, government leaders need comprehensive data to make the best decisions. Executive dashboards containing GIS data provide a valuable means for leaders to absorb information quickly so they can make data-driven decisions. Situational awareness is critical during public safety incidents. In all kinds of situations, GIS displays the information leaders need to know. It takes real-time data from numerous sources and lets leaders share data with other jurisdictions and the public.

#### **Moving Ahead**

Most governments are already using GIS; the next step is to leverage that investment for even greater productivity. Now more than ever, government needs to look at every single department and determine how GIS can help. continued from page 3

—whether that's the permit clerks, tax assessors, or even the building inspectors," said Schmidt.

#### **Critical Content**

GIS provides the core information that's critical when it comes to helping staff make decisions on permit applications. What's the zoning? Are there other permits on this property? Who's the owner? Are there regulatory issues? These and numerous other questions can be answered quickly with GIS.

With permitting, faster speed means more dollars for the city. "We believe the GIS increases revenues through increasing the productivity of municipal operations," said Schmidt. "It reduces the amount of time we spend with customer services."

As directed by Mayor Mufi Hannemann and his administration, the city leveraged GIS to set up online services for several types of permits. The program is called HONLine, and the results have been impressive. More than 25 percent of the city's building permits are now issued online. That brought in revenues of around \$425,000 in 2008. The process also saved 32,000 man-hours in city staff time. It saved permit applicants time too—17,000 hours, the city estimates. "All this couldn't be done without GIS and the ability to do overlay analysis to determine zoning and other regulatory codes," Schmidt said.

GIS has worked so well for Honolulu, Schmidt believes it's something every government agency could benefit from. "Once they start understanding the geospatial relationship of information, and how it affects their decision-making process, they'll begin to understand," he said. "They'll realize the benefits that are associated with it."



Visit the ESRI Resource Center to learn how to optimize your ArcGIS user experience at www.esri.com/govtech.

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#### **ESRI's Main Event**

**SAN DIEGO** — If you're at all interested in GIS, there was no better place to be than the San Diego Convention Center during July 13-17. The ESRI International User Conference was like an amusement park for GIS professionals. Dozens of sessions and speakers, hundreds of exhibitors and hands-on demos provided so many GIS-related activities that attendees were well advised to budget their time prior to arrival.

Memories of the 2007 San Diego wild-fires were still fresh for many exhibitors and attendees, as evidenced by the abundance of emergency management GIS technology on display. Of particular interest was a joint Microsoft-ESRI offering called the **Fusion Core Solution**, which combines ESRI's ArcGIS and Microsoft Sharepoint to deliver a comprehensive view of data and intelligence to public safety officials.



Government Technology also got a demo of the Virginia Interoperability
Picture for Emergency Response (VIPER), an application built using ArcGIS to deliver real-time visual data and situational awareness to emergency operations centers.
VIPER, which can analyze and display everything from hurricane path projections to terrorist threats, provided officials with geospatial intelligence during President Barack Obama's inauguration.

A video interview with Microsoft's Fusion Core Solution project lead David Stampfli, as well as video of the VIPER demo, can be seen on **www.govtech.com**.

— CHAD VANDER VEEN, ASSOCIATE EDITOR

#### **Panel: Cloud Computing Is for Real**

**WASHINGTON, D.C.** — Experts gave their views on one of this year's most talked-about technology trends during a Cloud Computing Symposium at the National Defense University in July.

Cloud computing has three focal points, according to **David Cearley**, vice president and fellow at Gartner. First, it's about consuming external cloud services; second, the cloud is about applications; and third, it can morph into private cloud computing, which involves internal customers only. The bottom line, however, is that cloud computing is immature due to a lack of standards.

**Richard Soley**, chairman and CEO of the Object Management Group, said as exciting as cloud IT has become, "we need to develop user cases to help drive standards, as well as support from vendors." One avenue to make that happen can be found at **www.cloud-standards.org**.

**Erich Clementi**, vice president of enterprise initiatives at IBM, took the long view of cloud computing, predicting that its true value will be economic. "You will be able to take lots of costs out [of government computing] by using this new model. It's a very promising journey," he said.

**Russ Daniels**, vice president and chief technology officer of EDS, pointed out that cloud computing provides government with new choices in terms of services and data sharing. "It's important to make the right choices and to understand the tradeoffs," he said. For that reason, CIOs and their business partners need to decide what information is relevant for sharing in a cloud environment.

Cearley cautioned that cloud computing is currently at the peak of its hype cycle. Eventually cloud computing will find its plateau, he said. —TOD NEWCOMBE, EDITOR, PUBLIC CIO

#### Govtech.com Hot List

Here are the 10 most popular stories on Govtech.com from July 27, 2009 to Aug. 27, 2009

> The Great California Garage Sale: This Weekend Only Thousands of items of every sort must go! www.govtech.com/715462

California County Uses Medication-Dispensing Machine in Correctional Facilities San Bernardino cuts waste and increases accuracy by automatically dispensing prescriptions for inmates. www.govtech.com/714985

Enterprise Architecture Demystified What is enterprise architecture and who is it intended to benefit? www.govtech.com/418008

Gov. Martin O'Malley Uses StateStat to Transform Maryland GIS technology measures Maryland's performance for citizens.

www.govtech.com/707317

Site Reveals Salaries of New York State Employees Conservative think tank launches Web site with comprehensive state financial data. www.govtech.com/383701

Twitter Outage Raises Concerns for Government Some call for further study of government use of Twitter; others say outages are expected. www.govtech.com/708250

2009 Digital Counties Winners Announced Big problems and smaller budgets drive innovation. www.govtech.com/704923

ARRA Reporting Requirements
Prompt New Software for Government
Vendors roll out products as budget
officials brace for Oct. 10 deadline.
www.govtech.com/707334

Is PASS Better Than REAL ID? (Analysis)
The proposed PASS ID could be a
suitable stand-in for the controversial
bill, or it might be REAL ID-lite.
www.govtech.com/711325

Crowdsourcing helps Chicago Chamber of Commerce Find More Bus Riders Web 2.0 helps Chicago get ideas to increase public transit ridership. www.govtech.com/707337





# 10W WORKS

Turning technology inside out

#### Wi-Fi:

According to the mayor's office, the first shelter at the intersection of Geary and Arguello boulevards is testing Wi-Fi connectivity for tech-sawy riders.

# The Bus Stops

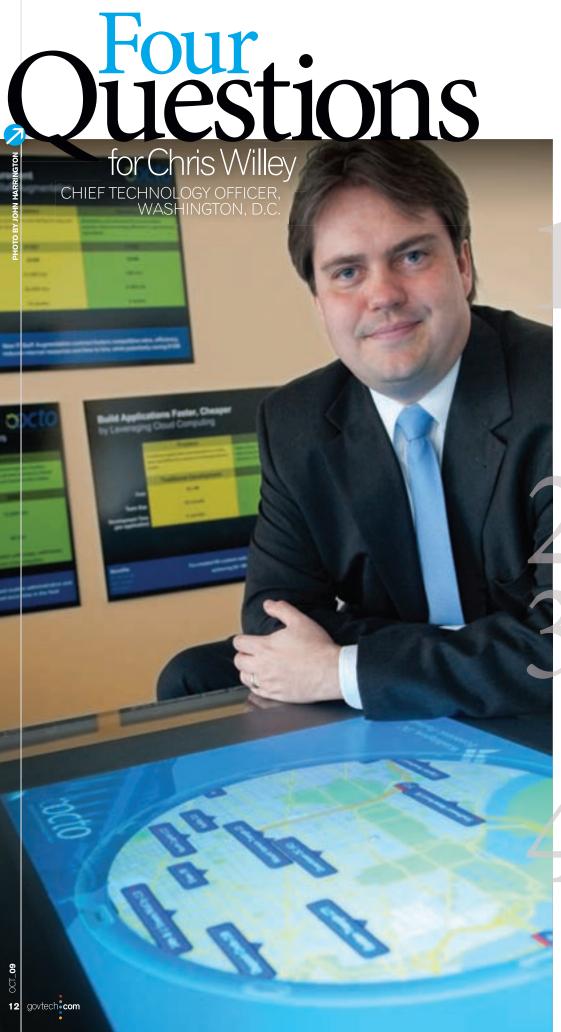
an Francisco has proven to be a role model for other cities when it comes to environmentally friendly measures. The city sets the green bar high by mandating recycling and composting ordinances, encouraging investment in rooftop solar power and installing electric car charging stations on city streets, among many other projects.

As part of a 20-year contract with Clear Channel Outdoor, the San Francisco Municipal Transportation Authority's bus stop shelters are being replaced with energy-efficient, technologically advanced structures. The new shelters not only feed the power grid, but also provide Wi-Fi and real-time bus information. As of press time, five of the new bus shelters were installed and all 1,100 will be finished by 2013. Here's a look at how they work.

#### **General:**

The new bus shelters are made from 70 percent reclaimed steel. Lundberg Design, the firm that devised the shelters, said metal from the old bus shelters will be recycled, as will approximately 4,000 glass panels. Olle Lundberg, CEO of Lundberg Design, said that the old glass panels have a lot of potential in their current form — he proposed using them in a public art project, which is currently on hold due to the economic recession.





CHRIS WILLEY BECAME WASHINGTON, D.C.'S INTERIM CHIEF TECHNOLOGY OFFICER IN MARCH, FILLING THE VACANCY LEFT BY VIVEK KUNDRA'S APPOINTMENT AS FEDERAL CIO. GOVERNMENT TECHNOLOGY SPOKE TO WILLEY AS THE DISTRICT WRAPPED UP ITS SECOND ANNUAL APPS FOR DEMOCRACY CONTEST, WHICH CHALLENGES LOCAL SOFTWARE DEVELOPERS TO CREATE USEFUL APPLICATIONS FOR GOVERNMENT AND PAYS CASH PRIZES FOR THE BEST ONES. WILLEY DISCUSSED THE POSSIBILITY OF ROUTINELY USING THE APPS FOR DEMOCRACY MODEL TO ACQUIRE APPLICATIONS NEEDED BY THE DISTRICT GOVERNMENT.

#### Why is it important for Washington, D.C., to continue Apps for Democracy?

We're starting to create a groundswell of interest around social government, around people who want to help with issues that the government faces in the development sphere. Now we suddenly have this community of developers who have done both contests and are kind of looking for the next thing. We're looking to tap into that as a resource. The idea — and this is very new — so I can't talk much about it, but we're saying, "What is a way that we can create a marketplace where that community can respond to the needs of government in ways that are inexpensive to us, but are fruitful for citizens and government agencies?"

#### So you're looking for ways to formalize that process?

Exactly. Rather than it being a once-a-year thing, now it can be an ongoing thing, and we can leverage the [developer] community to help make the government better.

#### How did this year's Apps for Democracy differ from the first?

We called this one Apps for Democracy Community Edition. The first 30 days we sent out field teams to ask residents two questions: What problems do you think technology can help solve? And what would be the perfect platform to get citizen requests to government? We gave those insights to the developers and said, "Based on this, go and build applications using our open 311 API [application programming interface]," which is a way for applications to directly access our call center database.

#### How were the results?

We got fewer but much richer submissions. Some of the applications that we got were very interesting — leveraging Facebook; iPhone usage; the ability to take a picture of a problem, like an abandoned house or a pothole. You can take a picture of it, fill out a short form, send it to our 311 call center and track it. We think this is a very powerful way for citizens to interact with government.

WATCH GTtv's INTERVIEW WITH CHRIS WILLEY AT WWW.GOVTECH.COM/APPS.



The new Motorola MC9500-K is our most rugged mobile computer, designed to meet or exceed applicable MIL-STD and IEC specifications and stand up to the stress of any emergency situation. With integrated GPS, it gets your force to the scene quickly and keeps them securely connected via 3.5G WAN or 802.11 a/b/g LAN. Whether tagging the injured or photographing the scene, the MC9500-K delivers critical data capture technology with a 2D imager or laser scanner and a 3 megapixel camera. Responders can take charge of the unexpected, quickly searching databases, processing reports, running identity checks and sharing vital information wherever it's needed. It's another way Motorola enables first responders to focus on their mission and not on their technology.

Visit motorola.com/MC9500GT1 to learn more about the MC9500-K rugged mobile computer for public safety.

BY JIM McKAY

# MASSIVE Wi-Fi NETWORK HELPS PROTECT OREGON COMMUNITIES FROM DEADLY CHEMICAL WEAPONS.

# ULTIMATE EVACUATION

**HOW DO YOU PROTECT** more than 80,000 people from an odorless, colorless threat that could kill them within minutes? That was the challenge facing the Oregon communities neighboring the U.S. Army's Umatilla Chemical Depot, one of eight national chemical weapons depots stockpiling mustard gas and other deadly munitions.

Their response to this threat may be one of the most comprehensive and technically innovative evacuation control systems in the nation. By 2004, local officials had created a massive wireless network, a series of "overpressurized" shelters, a software modeling program that tracks airborne chemicals and a tone-alert radio system that sounds voice messages during a hazard.

From perches in any of three command centers, officials can override the lights and signs on local highways, activate drop-arm barricades, and update message signs in Spanish and English. With the flip of a switch, emergency management officials can direct residents out of the local area if there's a chemical leak, and monitor roadways via remote-controlled cameras. The evacuation system also includes a video-conferencing setup that enables officials to converse in real time with officials from other parts of Oregon and with first responders working in the field.



"We didn't have the time like you would during a conventional evacuation, like a hurricane, to spend two days getting people ready and setting up roads they would take," said Casey Beard, director of the Morrow County Emergency Management Agency, which operates one of the region's three command centers. "We had to be able to instantly reconfigure our transportation network to move people away from the threat area."

The International Association of Chiefs of Police gave the system an Innovations and Technology award in 2006, and it was a final-





ist in 2007 for the Innovation in American Government Award by Harvard University's Ash Institute.

"What we have here that's unique is an elaborate evacuation control system that is activated by Wi-Fi," said Chris Brown, program manager of Oregon's Chemical Stockpile Emergency Preparedness Program. "We've established a series of portable message boards, we have fixed message boards, and swing-arm barricades that can be dropped — all [deployed] through a Wi-Fi signal. It can activate messages to inform the public about either moving within the response zone or evacuating."

#### Largest Wi-Fi Hot Spot

Approximately 1,000 square miles of north-central Oregon, specifically Morrow and Umatilla counties, is protected by the Wi-Fi network. That coverage zone includes the Umatilla Chemical Depot, as well as nearby cities Umatilla and Hermiston. The depot is part of the Chemical Stockpile Emergency Preparedness Program, which is a partnership between the Army and the Federal Emergency Management Agency to safely store chemical weapons.

The Umatilla Depot is slated for closure per the 2005 Base Realignment and Closure act, so all of the chemicals and chemical weapons stored there must be destroyed by 2012. A good portion of the munitions — including sarin-filled bulk containers; 500-pound and 750-pound bombs; rockets; warheads; and land mines — already have been destroyed. But a supply of mustard gas remains onsite and will take a few years to incinerate. Therefore, drills and tests of the evacuation system continue, some done twice a day.

Local officials, including Morrow County's Beard and Hermiston, Ore., Police Chief

The chemicals stored at the Umatilla depot are odorless, colorless, tasteless and deadly.

Daniel Coulombe, enlisted a local innovator, Fred Ziari, for help. As founder and CEO of ezWireless, Ziari developed irrigation technology to save water and electricity for Columbia River basin farmers.

"[Ziari] already had a very innovative group of people who were willing to take a look at new technologies and new ways to do things," Beard said. Ziari had access to facilities and had developed technologies that monitor a soil's moisture level and temperature, which helps farmers know when to fertilize. Consequently developing a wireless evacuation system and a chemical monitoring system wasn't a stretch for him.

Ziari had already established a Wi-Fi cloud in Oregon before the network was built. It now extends 700 square miles and is considered one of the largest Wi-Fi hot spots in the world. Ziari spent \$5 million of his own money to build the wireless network. He recovers his investment through contracts with more than 30 city and county agencies and the area's big farms — including one that supplies more than two-thirds of the red onions used by the Subway sandwich chain.

#### A Complicated Endeavor

Beard said he was warned of the security issues surrounding Wi-Fi deployments and their range problems. But he went forward with the project and made it work. "We had some real advantages. Nobody else was using that part of the spectrum, and the terrain is



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flat. Sometimes people in government are afraid to take chances," he said.

But there were challenges. With two freeways adjacent to the chemical depot and two major state highways nearby, the motoring public's safety needed to be addressed. "At any given time there could be up to 2,000 vehicles passing through the danger area, plus there are people out there driving around," Beard said. "There are always going to be some who, even if you ask them to 'shelter in place,' are going to jump in their cars and take off."

Beard said that given the urgency — they might have no more than 10 minutes to shelter in place or evacuate the area — officials needed the capability to instantly reconfigure the transportation network to move people away from the danger zone. "We elected to put variable message signs at strategic points in the transportation system — intersections where you could turn people around.

More than 100 mobile message signs are available to direct traffic during an evacuation.



A couple hundred of those were scattered around," Beard said. "We also have fixed signs that designate evacuation routes. The idea is to funnel all the people into those designated evacuation routes."

Fortunately the evacuation system hasn't been used for a chemical leak, but the scenario could fall along these lines if it were to occur:

There's a chemical leak at the plant. A Morrow County employee stationed within the chemical depot is alerted by the software, which simulates a chemical plume to track the leak and predict where it will go based on wind direction and weather reports.



Fixed message signs designate evacuation routes to funnel traffic in the desired direction.

The modeling software is called D2-Puff. It knows what kinds of chemicals are stored at the depot and what the significance is, depending on what chemical is leaked. It takes into account wind direction, topography and air temperature, and then presents on a computer screen a new visual image of the plume every 15 minutes, up to 24 hours. It rates the leak, choosing among three ranges of severity.

"What this does is give us a very educated source of information about, 'If this happens, this is where it's going to go," Coulombe said. "We can use the information to determine if we can safely deploy in an area, if we have to evacuate, and where we would shelter in place. It's a critical component of the whole process."

The command centers are alerted within three minutes of a leak. The commander on duty reacts based on the severity of the leak by choosing one of four scenarios on a chart. For instance, if the wind direction is from the north, he chooses scenario No.3 and pushes the corresponding buttons, which activate the predetermined drop-arm barricades, highway message signs and the appropriate traffic lights.

"We took all the traffic signals in the area and linked them automatically to scenarios. When the button is pushed, they are retimed," Beard said. "You get some with longer red times, some with longer green times and some go to flashing yellow to expedite movement of traffic on the routes you want traffic to go on."

All the while, officials in the three command centers monitor the network's 30 video cameras that are placed strategically along highways and roadways. The cameras to make sure traffic is flowing smoothly and in the correct direction. The information is shared via video conferencing with Gov. Ted Kulongoski in his Salem, Ore., office and with other officials, including those in Benton County, Wash., to the north.

#### Continued Threats

Another scenario activates sirens that instruct residents to "shelter in place." The signal is sounded by specially designed tone radios placed in homes. The sirens also notify police officers' laptops and those in



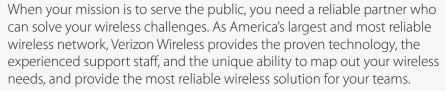
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charge of shelter-in-place facilities: Forty buildings (e.g., medical clinics, schools, hospitals, nursing homes and county buildings) in the two counties have been rendered virtually leakproof and can safely shelter residents for days.

The buildings are nearly airtight and are equipped with alarms that go off if anyone tries to open a window or door. The buildings are equipped with giant filters that utilize activated charcoal, the same material used in

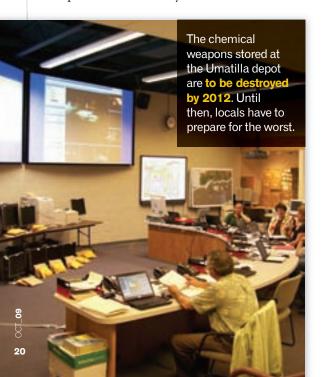
The Umatilla Chemical Depot covers nearly 20,000 acres. It houses deadly chemical weapons like mustard gas, which was used in World War I.

gas masks. "We worked with the Honeywell Corp. to develop a specialized, circulating air filter that's designed specifically for this," Beard said. "We issued a commercial-grade circulating air filter to all citizens in the vicinity of the depot."

Air is pumped into the buildings at higher ambient pressure than the outdoor air;

if there is leakage it will travel outside the building. The buildings are tested weekly to make sure they maintain their overpressurization.

"We conducted studies that determined with enhancements [including duct tape] a room in a person's house could keep them safe for a prolonged period of time, even if exposed to chemical weapons," Beard said. "We took it to a higher level with overpressurization of schools, hospitals and other key public facilities. All you have to do is throw





"We took it to a higher level with overpressurization of schools, hospitals and other key public facilities. All you have to do is throw a switch and you can keep people safe for an indefinite period of time."

Casey Beard, director, Morrow County Emergency Management Agency

a switch and you can keep people safe for an indefinite period of time."

Of course, practice is a key component of the evacuation system. A large number of students are "experts" at moving into the facilities and quickly establishing the shelter, Beard said. "In our drills, we routinely have students in place and [they're] reporting that their facility is up and running within two minutes or less."

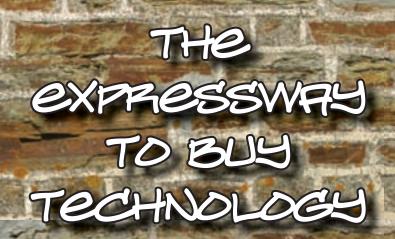
And although the deadly chemicals stored at the depot will be going away, the evacuation system will still be useful after the threat is gone.

For the Hermiston Police Department, the wireless laptops in squad cars means cops can file crime reports from the field and save on overtime. They can track resources. "When first responders, firemen and EMTs show up at the fire hall or hospital," Beard said, "they're automatically logged in with our Wi-Fi system using a thing we call the operations console. You can tell how many people are there and how many teams are available."

Meanwhile, some coastal Oregon communities are vulnerable to a tsunami, and the system would help in the event of an evacuation. The 30 cameras that run on the Wi-Fi system also would provide information on traffic counts and bottlenecks in everyday use.

There is also a large railroad switching yard just south of the area, and the railcars often carry deadly chemicals. "There's always a potential for hazard there," Coulombe said. There are also the two highways and a natural gas pipeline that spans from Washington down through Oregon and into California.

"We have a complex plan that governs two counties, a tribal nation and several state agencies, and is coordinated across the Columbia River with Washington state," Beard said. "It's a complex plan, but it's one plan. That's probably the biggest thing we accomplished in this."



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### **EASY ROUTE**



The Cooperative Purchasing Network

See for yourself WWW.TCPN.ORG Gov. Dave Heineman explains his plan for moving Nebraska to the cutting edge of public-sector IT.

When thinking about Nebraska,
"technology pioneer" probably isn't the first thing
that comes to mind. But in an interview inside the

"technology pioneer" probably isn't the first thing that comes to mind. But in an interview inside the magnificent Nebraska state Capitol, Gov. Dave Heineman told *Government Technology* he's looking to change that. Heineman leads a number of ambitious initiatives. One such project, statewide electronic health records (EHRs), already is being piloted and has delivered promising results. He is also aiming for truly interoperable public safety communications and a unified statewide e-mail system. Defying the notion of Nebraska as flyover country between the coasts, Heineman is intent on showcasing the Cornhusker State's transformation into an IT powerhouse.



#### What exactly is the Nebraska Health Information Initiative?

That's our initiative for a Web-based system that's primarily focused on the idea of electronic medical records — where patient information could be shared if you're in any location in Nebraska. It means the opportunity for prescriptions to be done electronically and to reduce errors. I think we've all heard, but it's really true, that we could reduce significantly the costs in the medical system if we had an electronic-based system.

#### I'd imagine one of the other challenges would be to integrate private healthcare providers that already have an internal EHR built-in.

You just identified one of the biggest challenges. Everybody looks at it from a proprietary basis. The pilot project has been a private-public partnership. The private sector is leading the charge on this issue, so that's been very helpful. And everybody understands. Do we have the will to get this done? I think we do. That overrides the technology concerns, and I believe we can get there. But having the private sector put up the money and be significantly involved has made all the difference in the world.

#### What lessons have you learned from the EHR pilot?

First of all, involve people. Make it a collaborative process. Make sure their input is listened to. We may not agree on every decision, but if you've had the opportunity to have input it makes a difference. Second, create a private-public partnership. Third, be

Lincoln, Neb.





consumer focused. The consumer is going to have a large say in this, and if they want to opt out, they can. I think we have several hundreds of thousands of patients involved right now, and fewer than 2 percent chose to opt out because it's in their interest. They know that when they're traveling within the state to another location, they need that medical information. Imagine if you travel somewhere and you have a problem. That doctor in the ER in Chicago, New York, Denver or L.A. has immediate access to your

The Nebraska Health Information

Initiative (NeHII) 90-day pilot project was completed July 7, 2009. During the pilot, nearly 645,000 Nebraskans in the greater Omaha metropolitan area participated, Hospitals, pharmacies, clinics and labs were able to freely exchange patient data through an IT framework built by the San Jose, Calif.-based Axolotl Corp. Axolotl's Elysium Exchange software suite is a Web-based system that lets medical professionals instantly share health-critical data. The NeHII pilot was designed to prove an EHR system could work in Nebraska. The system will eventually be rolled out across the state and might at some point be accessible coast to coast to physicians, according to Gov. Dave Heineman.

record — they won't have to repeat tests, and they'll know what medications you're taking. It's a big plus for the system.

#### Given the economy, how is this being funded? Does it end up paying for itself?

Right now, the private sector has taken the lead in funding. There is some state and local funding involved, but everybody is so convinced that, in the long run, this reduces cost and will provide better health care that they are all willing to [put] money up front. Ultimately we will have to have a system paying for it, but we believe we can get there.

#### Let's shift gears to interoperable public safety operations. You have an initiative on that as well.

We're trying to develop a statewide communication system so every law enforcement agency, fire department, emergency management agency and health-care agency can communicate in an emergency. It is very difficult to do. We started out by setting up regional networks — with the ultimate idea that we would connect the regional networks and have a statewide system. We're well on the way to getting that done. But I will tell you — with this one, there is no question we had to have everybody in the room at the same time; everybody had to understand the objective. We've had too many situations where a life has been at stake because a county sheriff

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couldn't talk to a police chief in the same jurisdiction, let alone the state patrol. We're overcoming that now.

#### The proprietary or territorial nature of the individual agencies must be the biggest challenge here. What did you say to them to get them all on board?

We brought them all together. We outlined our goals. Everyone is in agreement with the goals; it's the details. Then we said, "We'll put up the money. We'll take our homeland security money that is coming from the federal government, and put it into a statewide interoperable communications system." All of a sudden they saw money.

Here was the other key: We had a very successful regional project, and we brought everybody eventually out to the central part of the state and we showed them. Twenty-five counties got together. They're talking to each other and demonstrating that it could work. All of a sudden, a lot of barriers dropped by the wayside. They saw a successful pilot project and that made a tremendous amount of difference.

### Nebraska CIO Brenda Decker also said a statewide e-mail system is being created. Can you tell me about that project?

That's another project where you must have a strong will to get this done. When I took over as governor, we had numerous e-mail systems throughout our statewide agencies. In fact, we even had two or three within a given agency. There is not a private-sector company in the world that basically doesn't do firstname.lastname@company.com. I said that's where we want to get to. We want to get to Dave.Heineman@Nebraska.gov

Nebraska's interoperable communications system, once

complete, will connect the state's seven regional public safety networks to a communications backbone developed by the state and the Nebraska Public Power District. First responders at all government levels across 93 counties will be able to communicate seamlessly. In addition to medical, fire and law enforcement personnel, the system will also connect the Nebraska Emergency Management Agency, the Nebraska Game and Parks Commission, and the departments of Agriculture, Roads and Correctional Services. Gov. Dave Heineman said the system is being funded by a large portion of Nebraska's share of the federal homeland security grant that was issued to states following 9/11.

and everybody is going to be part of it. We want to think as a team. We're not really the Department of Revenue, the Department of Administrative Services or the Department of Agriculture — we're the state of Nebraska. It's a lot simpler in terms of cost, maintenance and the ability for the outside world to send you an e-mail.

We got a little bit of pushback, but with the governor leading the charge I think they understood that one way or another, we were going to get it done.

### That's one of those projects that prompts "Why haven't people done that already?" What is the resistance based on?

Change. It's [people saying] Why are you forcing us to change? We don't want to be integrated between the departments of Economic Development and Revenue. That's not how you do it in the private sector or how you win an athletic contest. We have to get people thinking as one team: offense and defense. You have to know what each other is doing. What's the game plan? We've been able to share that with them; our CIO and I are on the same wavelength, and we're moving in a direction. I basically told people, "You want to be part of the solution? If you don't, move out of the way. We're moving forward.

"Look at where customers are headed" — I say this all the time. Our kids — my

son — is never going to City Hall, the county courthouse or a state office building. They want to do it using technology. So we have to get in the 21st century. We'll have a more efficient, more cost-effective government.

# When you look at the different projects we've talked about — the EHR, interoperable communication and the e-mail system — are citizens aware that their governor and state are leading the charge for government IT, and is maybe ahead of most states?

I think they're aware, but we need to make them more aware. I think if you're involved in technology in our state, you know the state is trying to take a quantum leap forward. We want to be prepared for the next generation of consumers who are going to use technology at all hours of the day.

We need to make more of the public aware of it, but they also know we're trying to lead and create a better economic base in the state. We're trying to recruit businesses of all sizes, from all backgrounds and technology-based companies. We've been able to recruit companies from California because we're offering incentives, and they understand we're moving forward in these arenas.

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#### Too Few Cooks in the Kitchen

No local official wants to tell citizens that available grant money wasn't pursued. But deciding which employee to pull off a project to seek that money is a dilemma, said Contra Costa County, Calif., Chief Information Security Officer Kevin Dickey. "We really don't have the resources to go out and do the research," he said.

San Jose, Calif., CIO Steve Ferguson made a similar complaint.

"We're rewiring the whole police campus right now, which is a \$2 million project. I can't stop that project to chase after some stimulus money when I'm not sure how much of a chance we even have to get it," Ferguson said.

Magnifying the problem of limited staff is how difficult it is to understand the process for finding stimulus grants, Dickey said.

"It seems to me there is no real communications structure in place from the feds to the state to the counties and cities that says, 'Here is your opportunity. Here are the instructions. Here is what you need to do, and this is the date you need to get it done,'" Dickey said. "I'm not saying it doesn't exist.

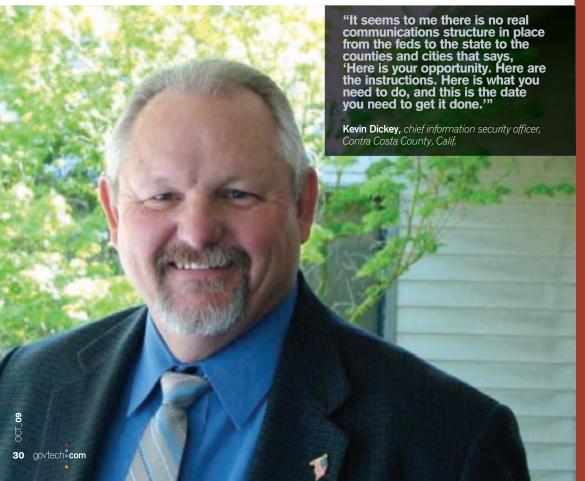
I just haven't seen anything. A lot of local governments and state departments across the nation are going to miss opportunities because they didn't know somebody was at their door knocking."

But not everyone says identifying stimulus money is difficult. Ferguson said he thinks the Obama administration's Recovery.gov Web site is a useful tool. He added that the Public Technology Institute, a peer organization serving government IT departments, provides valuable stimulus-related alerts too.

#### To the Rescue?

A few CIOs who spoke with *Government Technology* suggested that private industry could play a bigger role in helping shorthanded local governments find grant opportunities. "The knights on white horses are going to have to be the vendors that typically want to do business with us or are doing business with us," Dickey said.

Ferguson agreed the idea was viable. Language in ARRA is lenient about the roles vendors can play in that process, he said. For



#### **Dueling Definitions**

Finding staff to administrate stimulus grant applications is hard for municipal governments, but complicating that challenge are the restrictive eligibility requirements established by the federal agencies distributing the money. For example, ARRA requirements for broadband money will exclude urban areas if language in the broadband stimulus notice of funds available (NOFA) released in July goes unchanged, according to Steve Ferguson, CIO of San Jose, Calif. He contends that the requirements exclude urban cities and counties by requiring them to be either "unserved" or "underserved" by broadband coverage.

The NOFA defines an area as "underserved" if it meets at least one of the following requirements:

- » No more than 50 percent of the households in the proposed area already can access "facilities-based, terrestrial broadband service" at speeds greater than 768 Kbps downstream and 200 Kbps upstream.
- » No fixed or mobile broadband service provider advertises broadband transmission speeds of at least 3 megabits per second (Mbps) downstream.
- » The rate of broadband subscribership equals 40 percent or less of an area's total households.

An area meets the NOFA's definition of "unserved" if at least 90 percent of its households lack access to "facilities-based, terrestrial broadband service," either fixed or mobile, at the aforementioned minimum speed. The federal Rural Utilities Service and the National Telecommunications and Information Administration — the two agencies responsible for managing billions of dollars for broadband stimulus grants — say a household has access to broadband if it can readily subscribe to that service upon request.

Ferguson said virtually no urban area can qualify for grant funds based on those definitions. "I have a fire station that I could use fiber to, but it's in the middle of downtown San Jose. I don't have an 'unserved' or 'underserved' component there," Ferguson said.

He said language in ARRA passed by Congress in February listed "unserved" and "underserved" as acceptable eligibility qualifications, but didn't rule the other areas out. "If that inconsistency isn't cleared up, it makes any attempt for stimulus money in an urban city a virtual impossibility," Ferguson said. "We felt like we had a number of very good candidate projects that fit."

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example, governments and vendors are both permitted to apply for broadband stimulus money, according to Ferguson.

He said a government agency could conceivably release a document specifying what it wanted in a broadband network. Vendors competing for the job could then incorporate those specifications into stimulus applications and submit them to the federal govern-

**Stimulus** 

Calif., CIO Steve

complained that

stimulus grants

agencies often

had restrictions

from combining

the money with

funds from other

stimulus awards.

that kept him

from various

Snags Nevada County,

Monaghan

ment. The vendor chosen by the federal government for stimulus funding would then get to



partner with the local government. Vendors would shoulder the burden of applying for stim-

ulus grants and governments could retain an element of competition in the process, Ferguson explained.

Dickey said governments could use the RFI process to seek help from vendors on locating appropriate grants. Some worry that strategy could appear to give an unfair advantage to the vendor doing the research. Dickey disagrees.

"The bureaucratic restrictions basically say, 'We'll fund [the network], but you've got to leave it 90 percent underutilized because we won't let you use it for any other purpose.'"

Steve Monaghan, CIO, Nevada County, Calif

"That's a lot of work too. You don't just slap together an RFI and send it out. You have to read all of the responses. You're going to get multiple inquiries from each vendor who responds with questions. Then you have to publish those," he said.

Monaghan said he's already fielding calls from vendors who are proposing stimulusfunded projects.

"Just trying to respond to the telemarketers is a dilemma. A vendor calls in and says, 'I can save you so much money, and you can apply for grant money to pay for the project.' It could take an hour and a couple phone calls just to decide whether or not I'm interested," Monaghan said.

Although he's frustrated by tracking down and applying for stimulus grants with a staff thinned by layoffs, Monaghan continues to seek the money.

"If you have an opportunity to get a few million dollars, that's a lot of money for an organization our size," he said. Having his staff work overtime has been the only option for making it happen. "It's an endless stream of e-mails coming from the state and WebEx seminars or driving down to Sacramento

is developing a county broadband network project and would like to combine several broadband-related grants. But each grant contains rigid stipulations linked to the interests of the agency that's offering the grant. Monaghan said he can't build a single broadband network that would satisfy all of the requirements from the separate grants. Instead, each grant demands its own standalone network, which the city couldn't afford to sustain.

"We don't have the economy of scale to have six different networks. But the funding sources are tied to the six different needs, and none of those funding sources is really concerned with any of the other special interests," he said. "For example, telemedicine doesn't really care about what's going on in public safety radios. We're trying to build a larger project that will meet the needs of all of those different areas."

Agency-specific broadband grants often restrict applications that can be run on the network. For example, Nevada County's courthouse received a federal grant for a small broadband network. But the local police department couldn't use the network for video surveillance — even though the cameras wouldn't disrupt the court's use of the network — because it wasn't a court-related project.

"The bureaucratic restrictions basically say, 'We'll fund [the network], but you've got to leave it 90 percent underutilized because we won't let you use it for any other purpose," Monaghan said.

The county has left grant money on the table, due to those restrictions, according to Monaghan. "I see them come across my desk and they're so tightly written that we look at them and say, 'We can't even apply for that. It would be a waste of time," he said. ⑤

"The **knights on white horses** are going to have to be the vendors that typically want to do business with us or are doing business with us."

Kevin Dickey, chief information security officer, Contra Costa County, Calif.

"Many times governments will bring in companies and have them demo their products and work with them toward potential solutions. Then we still go out and hold a bid and that company may or may not get it," he said.

Nevada County, Calif., CIO Steve Monaghan doubts the RFI approach would be a time-saver, however.

[Calif.] for one-day workshops on how they think the process is going to be."

#### Stimulus Straitjackets

Many stimulus grants come with stipulations that make the money nearly impossible to integrate with other stimulus-funded projects, Monaghan contended. For example, he



## e-government

Cloud computing fascinates the IT world, but concerns persist.

t's official: Cloud computing has arrived — and it appears to be the hit of the party. The Pew Internet & American Life Project released survey results in September 2008 reporting that 69 percent of Americans who are online use Web-based e-mail, store data or use software applications over the Internet. In October 2008, the market research firm IDC forecast that spending on IT cloud services would reach \$42 billion by 2012.

Government agencies are starting to use cloud computing for storage, applications or development; these services are hosted on a remote server in order to save money on implementation and management. Cloud services are increasingly pervasive and may forever transform how government employees access and manage digital information.

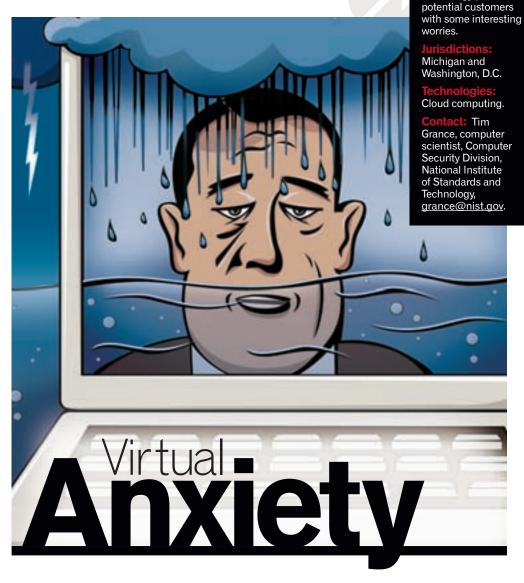
#### Cloudiness Ahead

But with so many clouds on the horizon for IT, some people worry about potential storms ahead.

"What tends to worry people [about cloud computing] are issues like security and privacy of data — that's definitely what we often hear from our customers," said Chris Willey, interim chief technology officer of Washington, D.C.

Willey's office provides an internal, government-held, private cloud service to other city agencies, which allows them to rent processing, storage and other computing resources. The city government also uses applications hosted by Google in an external, public cloud model for e-mail and document creation capabilities.

Cloud computing is delivered to users via three main delivery models: software as a



service, platform as a service and infrastructure as a service (known as SaaS, PaaS and IaaS, respectively). With SaaS, customers use applications stored on a provider's server. In a PaaS environment, the provider gives customers tools to create their own applications that are stored on the provider's server. IaaS allows customers to rent networking, storage or other IT resources from providers to support in-house infrastructure.

In all arrangements, the clients' data wind up in someone else's hands somewhere along the way. For government, citizens' data is sacred, as is data involving internal business processes. Even when a third-party provider is reputable, it's understandable to experience a tinge of anxiety. You can't control another company's activities the way you can your own.

"For the last 15 years, people have been used to the client-server model," said Kevin Paschuck, vice president of public sector for RightNow Technologies, a company that delivers SaaS. "They've been used to hugging their servers. They walk out the door, and they can see their data and their hardware. They control their own destiny."

though cloud computing is here to stay, the technology presents

But remote hosting can inhibit that feeling of control.

"I don't know exactly where my data is," said Tim Grance, a computer scientist in the Computer Security Division of the National Institute of Standards and Technology. "It could be cut into tiny little pieces and dispersed across a large geographical area, and that inherently makes people nervous."

These qualms, however, don't just come from apprehension about the activities of

third-party partners. They may stem from external threats too. If an agency's server is hacked, the agency's employees know how they'll handle it, but they don't know how someone else might. It's a given that Salesforce .com, Amazon and other big companies aren't slouches in the security department, but their size makes them attractive targets for cyber-attacks.

"Google has had to spend more money and time on security than D.C. government will ever be able to do," Willey said. "They have such a robust infrastructure, and they're one of the biggest targets on the Internet in terms of hacks and denial-of-service attacks."

The fear of major corporations' inability to safeguard data may be more imagined than real. After all, if theoretically a company the size of Google couldn't protect its data, its customers likely would leave in droves.

"We're all in the business of security. If you have a breach in security, you're out of business," Paschuck said.

#### Journeys Through the Mist

The security infrastructure in most environments isn't always aligned with the cloud infrastructure. One reason is because the cloud is evolving to meet changing customer expectations, but the technology that safeguards it isn't evolving fast enough to keep up. Another reason is because the mindset of people focused on security is different from those who are concerned primarily with technological simplicity and innovation.

According to Gregory Ness, senior director of network services company Infoblox, sometimes one group of people is eager to switch to cloud technologies so their organizations can pool resources, simplify service delivery and save money. This doesn't always jibe with what security-minded officials are thinking. They don't want to pool data. They want to segregate it for compliance and regulatory reasons.

"There are two competing mindsets here," Ness said.

In the middle of this push-pull environment is an IT network that must be configured to simultaneously meet the demands of those who want to simplify data in order to share it and those who want to protect it.

Network performance and security are prime reasons why some might avoid the cloud for certain functions — although these concerns haven't stopped legions of publicand private-sector customers from trying it. Those who are uneasy will likely wait for cloud technology to grow before giving it the go-ahead in the workplace.

"If I have personally identifiable information — credit cards, Social Security numbers — I wouldn't use cloud computing," said Dan Lohrmann, Michigan's chief technology officer. "But if it's publicly available data anyway — [like] pictures of buildings in downtown Lansing we're storing — I might feel like the risk is less to use cloud computing for storage."

#### Keeping Things In-House

Instead of a public cloud, a government can build a private cloud and deliver services to agencies in-house. A custom-built private cloud might be worth considering for those with privacy and data ownership issues, and may be an ideal option for tasks that the public model can't deliver yet.

But once you put your information in the hands of any hosted provider, can you ever take it back?

"One that I hear from other IT leaders within D.C. government is, 'What's going to be the migration plan?" Willey said. "Let's say Google decides to stop delivering Google Docs, for example. What's the solution? What's going to happen to all my documents?"

He's confident in his office's migration plan and its arrangement with Google, but he's aware that the fear is out there. For example, let's say a cloud provider suddenly goes out of business. What then?

"The cloud disappears," Lohrmann said. "They're gone. They're bankrupt. What happened to my data? What happens to that? Those are fundamental questions."

In March 2009, InfoWorld published an interview with Brad Templeton, chairman of the Electronic Frontier Foundation, in which he argued that the Fourth Amendment — unreasonable searches and seizures — might not apply to cloud computing.

"The courts have ruled that if you put information in the hands of third parties, even if only for a very specific purpose, you can lose that expectation. So the [U.S. Department of Justice] regularly acts to seize data in third-party hands without warrants — for

example, from webmail providers — and this will surely expand to all sorts of cloud data," he said in the interview.

Is a spreadsheet made online as protected as a written piece of paper sitting on a bedside desk? Templeton isn't so sure.

"I'm not saying your cloud files are totally unprotected today, but the standard is much less than the protection given the files on your own computer," he told InfoWorld. "It's also important to understand that even when they do need a warrant to get at your data, the warrant will be served on the hosting company, not you. Many hosting companies will fight for your rights, but nobody is as interested in challenging the warrant as you are."

#### A Federal Forecast

Does this question of ownership mean people will start canceling their contracts for cloud services? Likely not. But it may play into the development of standards and technology as cloud computing matures. In fact, the federal government may be working on them.

Grance co-authored a working definition of cloud computing with Peter Mell, another computer scientist who works for the National Institute of Standards and Technology. The definition was released by the federal government and included a lengthy description of the technology's characteristics, delivery models and deployment models.

Since cloud computing is still new as an umbrella term for various hosted Web services, however, the debate continues about what it is and how it should be implemented. Consequently the federal government plans to release more drafts of the definition, followed by recommendations on how it should be implemented. Perhaps these might allay some consumer anxiety when they're finalized — if they ultimately recommend a road map to safe, optimum deployment.

"We plan to write a publication that outlines what we see cloud computing is, its challenges, benefits, things people should consider when deploying applications to the cloud, what the general challenges and issues are, and what might be some things that you can do to enhance the powerful parts of it and mitigate the challenges that come with it," Grance said.

#### CT 09

### social services

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# Personal Choice

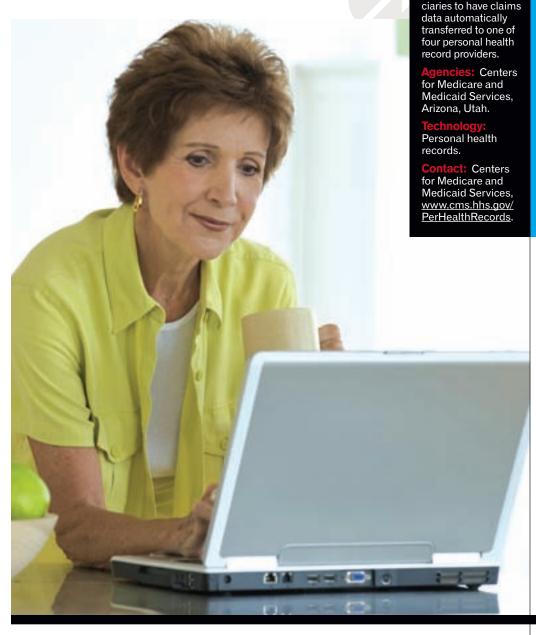
s the nation continues debating how to transform health care, many ideas for improving patient care have surfaced. One solution is letting patients access their medical history via personal health records (PHRs), which are repositories of individual health information culled from multiple sources.

Most PHRs and electronic medical records (EMRs) are managed and controlled by medical personnel, rather than the patient, and are based on industry standards. So data can be transferred easily from one system to another. While EMRs are just beginning to permeate doctors' offices, PHRs are picking up steam with insurers and other health providers, which offer PHRs to the populations they serve. Anyone can sign up with a provider for a PHR — some insurers offer them, as do Google and Microsoft. The federal government's Centers for Medicare and Medicaid Services (CMS) has launched several pilots involving PHRs. The programs are aimed at tech-savvy baby boomers who are rapidly approaching retirement age, and many of whom will enroll in Medicare. PHRs may prove useful for boomers trying to stay healthy through their golden years.

"CMS is interested in people getting the best health care they can get," said Elizabeth Holland, a health insurance specialist with CMS, "and this is really a step toward empowering people and helping them make the best decisions about their own health care."

#### Years in the Making

According to Holland, CMS began exploring the use of PHRs in 2005 when it released a request for information. "The overwhelming



Arizona and Utah give Medicare beneficiaries the option of accessing their personal health records.

response was that CMS should provide data to PHRs, but we should not build our own PHR," Holland said. "So we proceeded with that in mind."

That led to a pilot in which the agency worked with its claims processor for South Carolina to populate PHRs provided by HealthTrio with Medicare data. The pilot showed it was feasible to transfer Medicare claims data to a PHR.

Now, CMS' newest pilot is geared toward giving patients a choice of PHR providers.

"We knew that we wanted to be able to share Medicare data with multiple PHRs," Holland said. "What we didn't know is how beneficiaries would make that choice."

Medicare

pilot allows benefi-

Working with Noridian Administrative Services — the Medicare claims administrator for the U.S. region that contains Arizona, Utah and several other states — the agency launched its PHR Choice pilot in January. Through this pilot, Original Medicare (fee-for-service) beneficiaries in Utah and Arizona can have Part A and B claims data



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transferred automatically to a PHR provided by PassportMD, Google Health, HealthTrio or NoMoreClipboard.com.

Noridian handled the solicitation, while Medicare laid out the basic criteria that the PHR providers had to meet. CMS pays Noridian to transfer the data to the PHR providers, but the providers aren't paid for their involvement. The basic PHR is free for beneficiaries too, although some of the providers offer add-on services for a fee.

The providers offer different ways of viewing data and various tools to help users manage their health data. "All of them have different bells and whistles," said Holland, who is the pilot's director.

#### A Little Overwhelmed

Holland said the agency is still experimenting with how best to reach and inform beneficiaries about the different PHRs. "Honestly we're finding that they are a little overwhelmed by the choice," she said.

Some beneficiaries aren't sure what to make of the program, she said, based on feedback the agency receives from its regional offices and the state senior health insurance assistance programs (SHIPs), which use volunteers to help beneficiaries understand and sign up for programs.

"The SHIPs are getting a lot of questions: 'Is this really Medicare? Can I trust these vendors? How do I make a choice?'" Holland said.



Citizens have asked fewer questions in recent months, Hotton said, most likely because those who wanted to sign up already have done so. "I think most people who were interested went online and were up and running, and set themselves up and moved on," he said. "People who were not computer savvy read the letter and promptly threw it away."

Online programs aren't always as helpful for older Medicare beneficiaries, Hotton said.

"It's still a face-to-face or phone conversation to help them with their needs and provide services to them," he said. "But Medicare and state and local governments are preparing for baby boomers, and these baby boomers who are coming into Medicare are ready for this."

Even if the pilot isn't getting the amount of people signed up that CMS hoped for — Hotton said he hasn't seen the numbers — he thinks it's valuable anyway.

"Even though Medicare might not be getting the best results from this particular program, it doesn't mean it's not going to be **NolloreClipboard.com** has a how-it-works tool that lets users garner more information about acquiring personal health records.

is working with providers to see how to get more people on board, possibly by building an outreach program that would approach people in a different way.

#### Reaching Out

Medicare sent out letters informing beneficiaries of the pilot and advertised it on its Web site. Holland said the solicitation required the PHR providers to perform their own outreach.

PassportMD CEO Steven Hacker said representatives from his company will travel the states in an RV to demonstrate the PHRs at venues like senior communities, senior centers and hospitals.

NoMoreClipboard.com will also do a second round of outreach, said Jeff Donnell, the company's chief marketing officer. He said the company plans to increase its public relations efforts with the media. "The other thing that we're planning is to do more physician outreach, because we've found that to the extent that a physician recommends this to a patient, you have much greater adoption," he said.

Donnell asserts that doctors who encourage patients to build a PHR benefit from more accurate information and no longer have to rely on data from forms that are filled out by patients and entered by hand into an EMR system — if the doctor's office even has one.

"While the holy grail is every doctor will have an electronic medical record, today 85 percent or so of doctors are still using paper charts," he said.

In the meantime, Donnell said PHRs give doctors a more accurate method of collecting patient data while the EMR deployments catch up.

PassportMD's Hacker suggested that it's also in the interest of governments to encourage PHR adoption because it's a good way to ensure patients' data are accessible in the event of disaster — when paper charts could be destroyed.

Hacker, who is a physician, said PHRs are a more realistic way to quickly put health records online. "I think it will be a lot quicker than waiting for the physicians to all adopt EMRs," he said. ⑤

"Medicare and state and local governments are **preparing for baby boomers**, and these baby boomers who are coming into Medicare are ready for this."

, Darren Hotton, program manager, Utah Senior Health Insurance Information Program

Utah Senior Health Insurance Information Program Manager Darren Hotton said when letters announcing the program first were mailed, the most common concerns among beneficiaries were the potential for fraud and whether it was a legitimate program. "They didn't want to start putting personal health information into a place that they weren't sure was going to be a secured place and that was truly from CMS," he said. Others wondered where they could find information and how to set up a PHR.

a success, because it shows that Medicare is preparing for these groups of people who are coming in who might possibly overload the system," he said. As more tech-savvy baby boomers start using Medicare, Hotton said their in-person interactions with government representatives will likely be reserved for more complicated problems because simple queries will be handled online.

According to CMS' Holland, the agency needs more enrollees in the program to gain meaningful data from the pilot. She said CMS



### Who's Talking?

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Paul W. Taylor
Chief Strategy Officer
Center for Digital Government

blogs on the continuing campaign for government modernization.

→ Securing GovSpace:

Mark Weatherford Chief Information Security Officer CA Office of Information Security and Privacy Protection

blogs on the latest rumors and news in the government cybersecurity arena





Notes from a City CIO:

> Bill Schrier Chief Technology Officer City of Seattle

blogs on making technology work for city government.

Lohrmann on Infrastructure:

> Dan Lohrmann Chief Technology Officer Michigan

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## e-government

# Aloha to the **Future**

lectronic voting has a bad rap it can't seem to shake. Across the country e-voting machines are regarded skeptically at best. Many citizen activists and some elections officials have re-embraced paper as the best and most accurate way to vote.

In May 2009, the city and county of Honolulu tried a different approach for electing members of its Neighborhood Boards. Instead of e-voting machines, residents voted either online or by phone. No paper ballots were available. The all-digital election — which may be the first of its type in the United States — didn't come about because the government sought to advance technology. The move was driven by a more pedestrian reason: budget cuts.

Although participation was low, city officials said eliminating paper ballots slashed typical election costs by half.

#### Digital Pilot

In Oahu, 33 Neighborhood Boards form the Neighborhood Commission. Those elected to the commission serve their constituents by advising other government entities about what is going on in Oahu's neighborhoods.

Bryan Mick, community relations specialist for the Neighborhood Commission Office, said the agency had to come up with a more efficient way to hold its elections.

"We did this at the direction of the City Council," Mick said. "They cut our budget to encourage us to go this route."

But Mick had been toying with the idea since he was brought onboard five years ago. A vendor called Kids Voting USA had caught Mick's attention. For eight years, Kids Voting USA has organized digital mock elections



Honolulu becomes the first municipality to hold an all-digital election.

for local schools. The mock election results happen to mirror closely the actual election results, so Mick approached the company about crafting a pilot project for the Neighborhood Commission Office.

"They said it would be pretty simple to adapt software [for the Neighborhood Commission elections]," Mick said, "so we did a pilot project with them where we still did the paper ballots, but you also got an online code that you could use. They were integrated so if you did one, it negated the other. We scanned everything that came back in, and if you'd already voted online a red light would flash and we'd put that one aside."

Satisfied with the pilot project, the Neighborhood Commission Office revisited it when the City Council's budget ruling came down. But the office needed to partner with an organization that could quickly roll out a Web and telephone interface that was secure enough to put voters and local officials at ease.

The office found a San Diego-based company called Everyone Counts, which for the last decade, helped conduct digital elections in the UK and for military personnel and expatriates. The office hired Everyone

Counts and began planning for a ground-breaking election.

"It's the first [election] in the U.S. that was all-digital," said Lori Steele, head of Everyone Counts. "That means they offered our computer solution and our telephone voting solution, and there was not a paper channel provided."

#### Securing the Vote

Much of what has held back e-voting — and by association, digital elections — is the issue of security. E-voting machines and their lack of paper trail, as well as proprietary code, have earned the reputation — justly or not — of being easy targets for hackers. Steele said her company's security protocol is like the two-key system required to launch a nuclear missile. In fact, Steele describes the security as "military grade."

"When we open our election, [password] keys are provided to a group of election officials," she said. "That can be, depending on the government and what their election rules are, people from different parties or people in the election office, or a combination thereof. The election begins, the voters

vote, and each of the ballots is encrypted and stored securely. At the end of the election, the encrypted ballots are removed from the Internet and put on a clean PC. But they still aren't accessible by any one individual until each of the election officials comes together in a quorum and provides their unique passwords to the system. That allows for the decryption and counting of the votes. At the end of the election, the voter can verify that their vote was received and counted by going to a special Web site."

Everyone Counts also offers what it calls its Open Code Advantage. Steele said anyone who requests to do so can audit the software's code.

Three individuals had an encryption key in the Honolulu election, according to Mick. One representative was from the Neighborhood Commission Office, another was from the city clerk's office and the third was from the League of Women Voters.

Each voter received a mailer containing a unique nine-digit password. This password, combined with the voter's last four Social Security number digits, provided access to either a visual Web ballot or an audio touchtone phone ballot.

#### The Results Are In

The Neighborhood Commission Office's solution sounds simple and would seemingly have encouraged large numbers of people to vote. However, according to Oahu news station KITV, voter turnout was down 83 percent from 2007.

Reception to the digital election was "lukewarm," Mick admitted. "Participation rates were low," he said, citing the 10 percent voter turnout. "We don't have a particularly high participation rate even with paper ballots. I would suspect our demographic voter is probably older. I think this kind of bore out that conclusion."

Though turnout was low, there was a bright spot. The all-digital election cost half of the conventional election in 2007 — about \$90,000, according to Mick.

That savings was due partly to the fact that only about a third of the areas had contested races. Had more races been contested, the costs would have escalated, Mick said. "So theoretically it could have been much more expensive," he said. However, Mick pointed

#### **States Offer Online Voter Registration**

While digital elections remain out of reach for most jurisdictions, several states have taken steps to digitize some of the voting process. In July, Kansas joined a few states, including Washington and Arizona, permitting residents with a valid driver's license to register to vote online. The system works by uniting the secretary of state's voter registration system with the Department of Revenue's driver's license database using software from Election Systems & Software.

"An online voter registration application is the next step in making the traditional elections process easier, faster and cheaper," said Kansas Secretary of State Ron Thornburgh in a news release. out that digital ballots are less expensive to scale up than paper ballots because postage costs "skyrocket" when the number of candidates and voters increases.

So are digital elections ready for a statewide or federal arena?

"When you ask if this is ready for primetime — federal elections — the answer is yes," Steele said. But small steps should be taken first, she cautioned. "The main focus should initially be overseas and military voters," she said.

Mick was a bit more conservative in his assessment. "I think it was a step forward technology-wise," he said, adding, "I think the general population is getting more comfortable doing things online."

Whether that includes voting on a larger stage remains to be seen. 

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#### Texas Awards Portal Contract to NIC

Seven-year TexasOnline deal is expected to produce \$183 million in revenue for state.

-government provider NIC inked its biggest deal yet in July, signing a seven-year pact to operate TexasOnline, the multibillion-dollar Texas state portal. Texas awarded the contract to NIC on July 31, capping a nine-month procurement process.

NIC already had operated TexasOnline since May, when it acquired management of the portal from original contractor Bearing-Point, which filed for bankruptcy protection in February. Texas officials said the new contract will generate millions of dollars in new revenue and allow the state to focus on transformational Web initiatives.

deliver about \$61 million by the time it expires on Dec. 31. The contracts will overlap until the old one expires, allowing NIC time to transition from the old to new contract provisions, Holt said.

Besides generating more revenue, the new agreement shifts the focus of TexasOn-line from revenue-producing transactions to broader services.

Under the old contract, Texas split revenue with BearingPoint on new electronic services, once the cost of development was recouped. Texas also received 20 percent of the total revenue generated by the portal. Therefore,

more transformational relationship with government."

The new contract also gives Texas a bigger slice of overall revenue. Holt said the old agreement ultimately provided the state with between 29 to 31 percent of total portal revenue. "In the end, the new model is simpler and it yields greater benefit to the state of Texas," he said.

#### "The new business model lends itself to getting away from focusing on revenue-generating projects as individual decisions."

**Doug Holt,** division director of e-government and IT policy, Texas Department of Information Resource.

"We're very excited about what this does for the state of Texas and the citizens of Texas," said Doug Holt, division director of e-government and IT policy for the Texas Department of Information Resources.

#### More Revenue

The new contract is expected to generate more than \$183 million in revenue to the state's general fund over its seven-year term, Holt said. By comparison, the contract NIC assumed from BearingPoint is projected to

decisions about launching new services often hinged on the amount of revenue they could produce, Holt said.

The new contract gives Texas approximately 40 percent of the total revenue generated by the portal. "The new business model lends itself to getting away from focusing on revenue-generating projects as individual decisions," Holt said. "It allows more focus on the program as a whole — the ability to look at both revenue-generating and nonrevenue-generating applications that will allow citizens to move from a transactional relationship to a

#### Perpetual Rights

Like the old TexasOnline contract, the new deal with NIC gives Texas the right to retain all portal assets after the contract expires. "We will have perpetual right of usage for all the applications and infrastructure that we have now and develop moving forward," Holt said. "So in the event that we want to part with NIC in the future, we get to keep everything we have."

He added that TexasOnline expects to unveil a number of new services, including a "software development kit" that will allow public agencies to build Internet and intranet applications and share them with other public entities. TexasOnline also would host these applications at low or no cost for Texas state and local government agencies and schools.

Kansas-based NIC runs government portals for 23 other states. The Texas portal will be operated by Texas NICUSA, an Austin-based subsidiary of NIC Inc.



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BY ANDY OPSAHL | FEATURES EDITOR

he annual Best of the Web awards rank state, county and city portals based on innovation, functionality and efficiency. Given that the year's economic downswing forced some state and local governments to shorten workweeks and reduce staff, a repackaging of online government services was especially important to governments that competed in 2009.

Best of the Web is a joint project of *Government Technology* and the Center for Digital Government.

A commonality among finalists was prominent links on the home page to e-government services and high placement in search engines. Enabling citizens to pay a department of motor vehicles or water bill without sleuthing for the individual agency's Web page was also a key this year. Home page links to social networking sites, like Facebook and Twitter, also was a high priority. Culture-savvy Web design teams also showcased podcasts, YouTube videos and RSS feeds.

Nearly all portal changes were based on citizen preferences derived from systematically collected data. Here's a look at the 2009

winners and what propelled them to honors at a Hollywood award ceremony in September.

#### **Utah Tops States**

Utah.gov clinched the No.1 spot in the state category. Though many portals aimed to make it easier for citizens to find relevant information, Utah gave the strategy a twist. Utah.gov uses GeoIP technology, which identifies users' physical locations by their IP address. This information triggers a display of services located nearby. GIS supplies the data for each IP address that accesses the

portal. Usable online services are particularly important because Utah switched to a four-day workweek in summer 2008. Citizens indicated approval of this schedule, but only with strong online services, said state CIO Steve Fletcher.

"It was all trying to get as many services online as we could because we were not accessible so much on Friday anymore," Fletcher explained. He said the portal facilitates nearly 900 agency applications. It's hard to miss the icon links for these services at the top of the page. Fletcher's team reprioritized the



ranking of the various forms that citizens can access on the Web. Fletcher also considered the portal's multimedia section a major achievement.

#### Virginia Beach Leads Cities

Virginia Beach, Va.'s portal snagged first place in the city category. Crowd-pleasing applications, like webcams showing marine

#### Best of the Web Winners

#### STATE PORTAL CATEGORY:

#### 1st Place: Utah

2nd: California

3rd: Arkansas

4th: Maine

5th: Colorado

#### CITY PORTAL CATEGORY:

#### 1st Place: Virginia Beach, Va.

2nd: Riverside, Calif.

3rd: Louisville, Ky.

4th: Rocklin, Calif.

5th: Corpus Christi, Texas and Tampa, Fla.

#### COUNTY PORTAL CATEGORY:

#### 1st Place: Fairfax County, Va.

2nd: Miami-Dade County, Fla.

3rd: King County, Wash.

4th: Monroe County, N.Y.

5th: Collin County, Texas

life at the Virginia Aquarium and Marine Science Center, helped **Vbgov.com** stand out. The aquarium has its own URL for marketing purposes, but the Virginia Beach Communications and Information Technology Department develops and maintains the

#### Fairfax County Prevails

Fairfax County, Va., won the top county portal award. One might assume the county didn't spend much time on the site's appearance because it's simple, but the county put considerable resources into redesigning its appearance, said Gregory Scott, director of e-government for the Fairfax County Department of Information Technology.

"The new look and feel of our site was based on public input. It's not like developers and engineers sat up here and said, 'This is the way the site should look,'" Scott said.

His agency demonstrated various prototypes by posting PDF documents on the portal. Users could click on links to different pages, creating a true user experience within the PDF. The county used moderated discussion software to glean feedback from citizens, which involved focus groups with various interest groups.

"We didn't want to go out with the new site and have it be a total shock to our constituents. That could create a lot of chaos," Scott said. Prominent access to the county's social networking activity also was a priority. Scott said time spent on Twitter yielded far more interest from citizens than MySpace. For



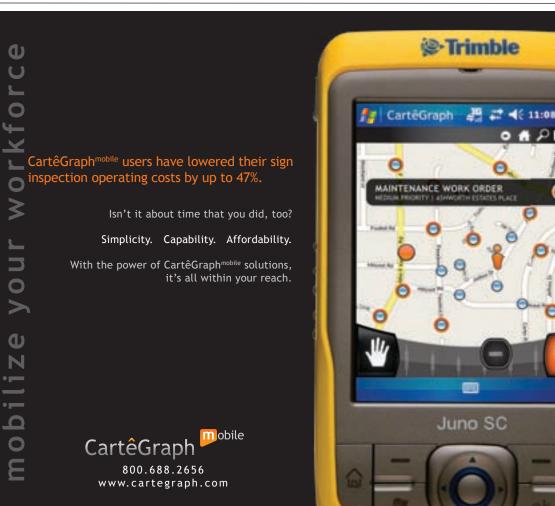
example, an employee tweeted an Amber Alert that went to 300 Twitter followers. Within an hour, the tweet spread to roughly 3,000 users and the girl was found shortly after. "We don't know if it was due to what we were doing on Twitter," he said, "but it was amazing to see how that tweet grew from 300 to more than 3,000."

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site along with the overall city portal. They share the same content management system with "partner site" **Yesvirginiabeach.com**, which provides information to businesses wanting to move to the area.

Six other partner sites connect to the city's portal, which links to all of them so users can navigate to each site. Kevin Fairley, multimedia services coordinator for Virginia Beach, partially credits the municipality's win to the site's statistically prioritized home page links. The site's upper left corner has links for reporting potholes, applying for building permits and paying for dog and cat licenses. Fairley's team used popular search analytics and citizen feedback to rank placement of items in the search engine.



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— LiveScience



#### High-Tech Cities

The Milken Institute, an independent economic think thank, recently updated its study of North America's pre-eminent, high-tech metropolitan areas in America's High-Tech Economy: Growth, Development and Risks for Metropolitan Areas. The top 10 rankings:

- San Jose-Sunnyvale-Santa Clara, Calif.
- 2. Seattle-Bellevue-Everett, Wash.
- 4. Washington, D.C.-Arlington, Va.-Alexandria, Va.
- 6. Dallas-Plano-Irving, Texas
- 8. Santa Ana-Anaheim-Irvine, Calif.
- 10. San Francisco-San Mateo-Redwood City, Calif.



Saudi Arabia and some Asian countries have begun using infrared thermal scanners in airports to spot travelers who may have a fever, according to The Independent and National Public Radio. The move is among the latest responses to the swine flu outbreak — a.k.a. the **H1N1 virus** — which was declared a pandemic by the World Health Organization. Air travelers who have flu-like symptoms could be questioned or quarantined by security officials.

#### **Green Machine**

Rumors of a flesh-eating military robot recently swept the Internet. But the makers of the device — known as the

**Energetically Autonomous Tactical Robot**, or EATR — say it's strictly vegetarian. EATR is designed to perform longrange and long-endurance missions without the need for manual refueling or using conventional energy sources. The robot converts biomass sources, such as vegetation and paper, into electrical energy to power itself, according to Cyclone Power Technologies Inc. and Robotic Technology Inc. The project is sponsored by the Defense Advanced Research Projects Agency.



Send spectrum to managing editor Karen Stewartson

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The Dell Vostro All In One's clutter-free design minimizes the amount of space the computer takes up on the desk. Users can combine the Vostro's integrated Wi-Fi with a wireless keyboard and mouse for an uncluttered desktop. It has an integrated 19-inch widescreen flat panel display and is available with a 160 GB or 250 GB hard drive. It runs on either an Intel Pentium Dual-Core or Intel Core 2 Duo processor. www.dell.com









Magellan's Maestro GPS device 4700 boasts a 4.7-inch display, voice command, Bluetooth and highway lane assist. The unit lets users make or receive calls using a compatible Bluetooth cell phone, and provides direct access to 1,000 of their cell phone numbers. Highway lane assist guides users to the proper lane when approaching exits or interchanges. The Maestro analyzes past traffic patterns so users can choose to stay on a current route or use suggested, less congested routes. The pedestrian mode automatically guides users back to a parked car.

www.magellangps.com

Phoenix Audio Technologies Quattro2 conference phone's audio pickup and audio broadcasting range make it ideal for large conference rooms. The phone is equipped with a USB interface that's designed for connectivity with Internet phones, VoIP networks and desktop video conferencing. The optional public-switched telephone network interface module supports connections to analog networks. The Quattro2 provides 20 to 8,000 Hz frequency response for better sound quality while eliminating stray noises. www.phnxaudio.com

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Roger Merrill, MD Corporate Medical Director Perdue Farms, Inc.



Steve Burd Chairman, President and Chief Executive Officer Safeway, Inc.



Benjamin Hoffman, MD Vice President and Chief Medical Officer Waste Management, Inc.

#### **New Models for Health Plan, Hospital and Health System Collaboration**



Glenn Steele, Jr., MD
President and Chief Executive Officer
Geisinger Health System



Chester Burrell
President and Chief Executive Officer
CareFirst BlueCross BlueShield



Mary Brainerd
President and Chief Executive Officer
HealthPartners, Inc.



Vicky Gregg
President and Chief Executive Officer
Blue Cross Blue Shield of Tennessee

#### Implications of Health Reform on All Sectors in Health Care



Jonathan Blum

Director, Center for Medicare Management, Centers for Medicare and Medicaid Services



lohn Berry

Director, U.S. Office of Personnel Management, DHHS



Jon Kingsdale Executive Director

**Helen Darling** 

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tain Healthcare

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## signal: noise

PAUL W. TAYLOR



# The Means of Modernization

his is it. Report card month. States must begin explaining how they used stimulus funds this month and every quarter thereafter until the money is gone. As the reports roll up, there's promise that the bickering over the effectiveness of the first portion of the American Recovery and Reinvestment Act will move from anecdote to data. Speaking of data, this inaugural, reporting period albeit delayed, will be a very public test of the federal government's much touted technology of transparency.

All the analysis and commentary about the stimulus won't likely get better than the conclusion reached early on by legendary investor Warren Buffett: "Our first stimulus bill was sort of like taking half a tablet of Viagra and having also a bunch of candy mixed in." Then and now, there are plenty of arguments for and against more stimulus. None of them really matter when seen through the prism of the state and local governments that are downstream from the federal funding spigot. Stimulus is to the Obama administration what homeland security was to the George W. Bush administration — an expression of their respective priorities and the channels through which those priorities are funded.

The conundrum: As the economy remains retrenched, there have been calls for another stimulus package — even though there are few visible signs that the last injection of funds has had an effect.

Conservative economists contend that, by definition, government cannot stimulate the economy. Liberal economists counter that government is the spender of last resort during a recession, and fault the \$787 billion stimulus for being too small. "The difficulty here

that it is not quite big enough and not quite soon enough," concluded James Galbraith, an economist at the University of Texas. For his part, New York Times op-ed columnist Paul Krugman cautioned, "Faced with a sharp drop in revenue, most states are preparing savage budget cuts, many of them at the expense of the most vulnerable. Aside from directly creating a great deal of misery, these cuts will depress the economy even further."

After months on the new money chase, it's worth remembering that funding is always a means to an end, not an end in itself. "The top goal, of course, is about good public policy — to deliver the services that the public needs in the most effective manner possible," said John Miri, senior fellow with the Center for Digital Government.

Enter digital modernization, and the center's model for modernizing during difficult financial times. It's a strategy paper called Renovation Nation, contending that everything we need to know about modernization we can learn from home improvement TV. "I loved the analogy," said Steve Jennings, former CIO of Harris County, Texas. "... That's where our future lies."

Colorado CIO Mike Locatis agrees and keeps a dog-eared copy close at hand. "Renovation Nation hits on, really, all of the salient themes," he said. "You didn't take the easy way out with the paper. You weren't just talking about the art of the possible without the bridge to get from our current legacy environments and the modernization needs for new applications."

You can hear much more from Jennings, Locatis and others on special-edition podcasts at www.govtech.com/renovationnation. Join the conversation online.



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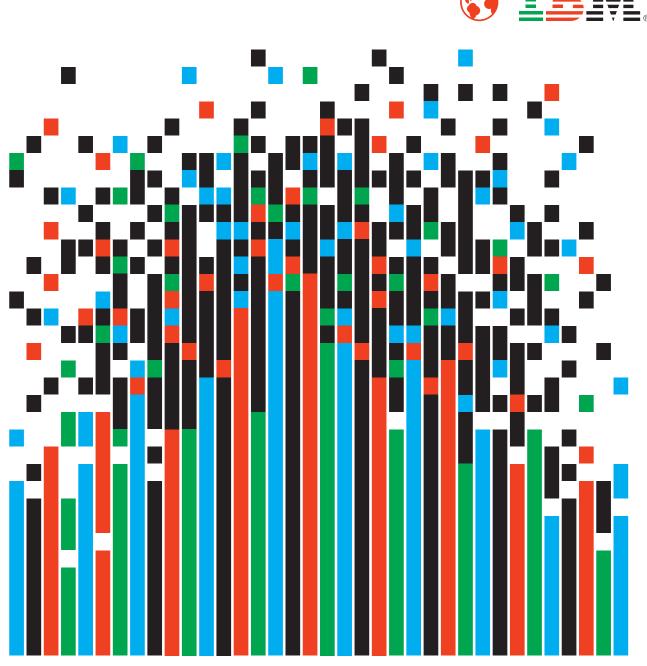
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