GOVERNMENT TECHNOLOGY®
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INSIDE:

Broadband Nation:
FCC overhauls Universal Service Fund

Winter Warriors:
Alaska's army of high-tech snowplows

Hands Free:
Driverless cars head for Nevada highways

CHATTANOOGA MAYOR
RON LITTLEFIELD

BUILDING THE GIG CITY

CHATTANOOGA, TENN., MAKES THE MOST OF ITS CLAIM TO AMERICA'S FASTEST BROADBAND SERVICE

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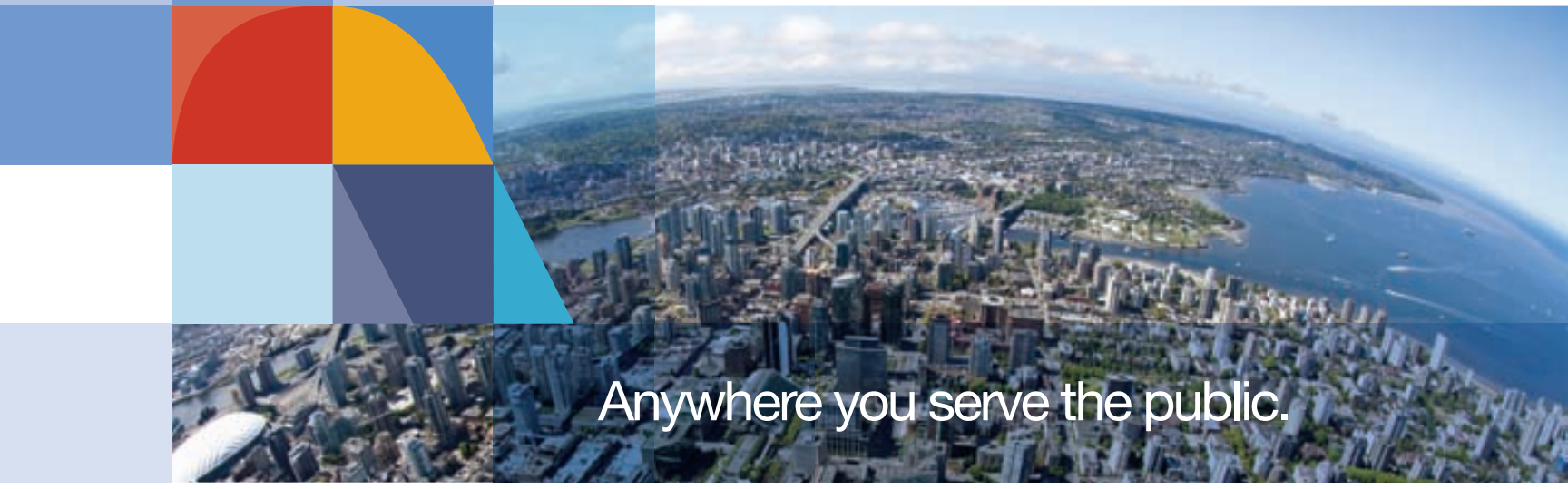

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CONTENTS

COVER STORY

12 / King of the Hill

Chattanooga, Tenn., makes the most of its claim to America's fastest broadband service.

By Matt Williams

COVER PHOTO BY STAN KAADY

18 / A New Direction

The FCC says Universal Service Fund reforms will boost rural broadband. Critics worry about the impact on small telecom providers.

By Emily Montandon

STAN KAADY

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DEPARTMENTS

24 / The Matchmakers
Oakland County, Mich., and other large counties are building a cloud that will benefit small and underfunded local governments.

26 / Idea Factory
Maricopa County, Ariz., uses crowdsourcing and social networking to engage employees.

28 / Mobile, Social and Relevant
Nevada County, Calif., overhauls its website to engage citizens in the ways they want.

30 / No More Turf Wars
Multiple agencies in Washington, D.C., hammer out agreements to build a law enforcement and justice information network.

32 / Guiding iPad Use
A look at Utah's iPad user's manual for state employees.

34 / Super Shovel
High-tech snowplows keep the highway to Valdez, Alaska, clear even in zero-visibility conditions.

36 / Take the Wheel
Nevada approves rules for testing driverless vehicles on state roadways.

38 / Cyber Symphony
Better technology and faster connections allow musicians to collaborate remotely.

COLUMNS

6 **Point of View**
U.S. needs broadband investment to remain competitive.

10 **Four Questions**
Pat Shier, director of Enterprise Technology Services, Alaska

42 **Gov2020**
Five ways IT professionals can get their wings and soar.

NEWS

7 **govtech.com/extra**
Updates from *Government Technology's* daily online news service.

8 **Big Picture**
NASA scientists try to discover what makes auroras tick.

40 **Spectrum**
More research, more science, more technology.

41 **Product News**
Trimble, Toshiba, Canon U.S.A.

FOLLOW US ON

IN OUR NEXT ISSUE:

Killer App?
Find out why more state and federal agencies are using Drupal to manage Web content.

Under the Hood
Everybody's going mobile. Here's a look at how to do it right.

Digital Democracy
Oregon tests iPad ballots to improve access for voters with disabilities.

Group Publisher: **Don Pearson,** dpearson@govtech.com

EDITORIAL
Editor: **Steve Towns,** stowns@govtech.com
Assoc. Editors: **Matt Williams,** mwilliams@govtech.com
Elaine Pittman, epittman@govtech.com
Jessica Mulholland, jmulholland@govtech.com
Managing Editor: **Karen Stewartson,** kstewartson@govtech.com
Chief Copy Editor: **Miriam Jones,** mjones@govtech.com
Staff Writers: **Hilton Collins,** hcollins@govtech.com
Brian Heaton, bheaton@govtech.com
Sarah Rich, srich@govtech.com
DC Editorial Dir.: **Wayne Hanson,** whanson@govtech.com
Editorial Assistant: **Natalie August,** naugust@govtech.com
Contributing Writers: **Emily Montandon,** emilymontandon@gmail.com
Lauren Katims, lmkatims@gmail.com
Adam Stone, adam.stone@newsroom42.com

DESIGN
Creative Director: **Kelly Martinelli,** kmartinelli@govtech.com
Art Director: **Michelle Hamm,** mhamm@govtech.com
Senior Designer: **Crystal Hopson,** chopson@govtech.com
Illustrator: **Tom McKeith,** tmckeith@govtech.com
Production Director: **Stephan Widmaier,** swidm@govtech.com
Production Manager: production@govtech.com

PUBLISHING
VPs OF STRATEGIC ACCOUNTS:
Jon Fyffe, jfyffe@govtech.com
Stacy Ward-Probst, sward@govtech.com
Chul Yim, cyim@govtech.com
Leilani Cauthen, lcauthen@govtech.com
Arlene Boeger, aboeger@govtech.com
SALES DIRECTORS:
Leslie Hunter, lhunter@govtech.com
Shelley Ballard, sballard@govtech.com
Liza Mendoza, lmendoza@govtech.com
Kenny Hanson, khanson@govtech.com
Tracy Meisler, tmeisler@govtech.com
Kim Frame, kframe@govtech.com
ACCOUNT EXECUTIVES:
John Enright, jenright@govtech.com
Kevin May, kmay@govtech.com
Gloria Leacox, gleacox@govtech.com
Paul Dangberg, pauld@govtech.com
Lara Roebbelen, lroebbelen@govtech.com
David Rogers, drogers@govtech.com
ACCOUNT MANAGERS:
Melissa Cano, mcano@govtech.com
Erin Gross, egross@govtech.com
Noel Hollis, nhollis@govtech.com
Stephanie George, sgeorge@govtech.com
BUS. DEV. MANAGERS:
Glenn Swenson, gswenson@govtech.com
Son Strachan, sstrachan@govtech.com
Maggie Ransier, mransier@govtech.com
SALES ADMINISTRATORS:
Christine Childs, cchilds@govtech.com
Heather Woodhouse, hwoodhouse@govtech.com
Carmen Mendoza, cmendoza@govtech.com
Jessica Stefani, jstefani@govtech.com
Alexis Hart, ahart@govtech.com

Director of Marketing: **Andrea Kleinbardt,** akleinbardt@govtech.com
Sr. Dir. of Cust. Events: **Whitney Sweet,** wsweet@govtech.com
Dir. Custom Media: **Jeana Bruce,** jbruce@govtech.com
Dir. of Web Marketing: **Zach Presnall,** zpresnall@govtech.com
Web Advertising Mgr: **Julie Dedeaux,** jdedeaux@govtech.com
Subscription Coord.: **Eenie Yang,** subscriptions@govtech.com

CORPORATE
CEO: **Dennis McKenna,** dmckenna@govtech.com
Executive VP: **Don Pearson,** dpearson@govtech.com
Executive VP: **Cathilea Robinett,** crobinett@govtech.com
CAO: **Lisa Bernard,** lbernard@govtech.com
CFO: **Paul Harney,** pharney@govtech.com
VP of Events: **Alan Cox,** acox@govtech.com
Chief Marketing Officer: **Margaret Mohr,** mmohr@govtech.com
Chief Content Officer: **Paul Taylor,** ptaylor@govtech.com

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By Matt Williams / Associate Editor

The Records That Matter

Americans love being the fastest, tallest and biggest at almost anything. What else would explain our fascination with the Guinness World Records? According to this expanding repository of strange, inane accomplishments, we've produced the world's heaviest pumpkin (1,810 pounds), the tallest dog (Giant George, a 43-inch Great Dane) and the fastest person to zip herself inside a suitcase (5.43 seconds).

National pride, indeed.

Sadly average Americans don't seem to be as aware about records that really matter. In another Guinness entry — fastest Internet connectivity — the U.S. doesn't come close to No. 1. South Korea leads the world with average broadband speeds above 33 megabits per second (Mbps). The U.S. is lethargic by comparison, at only 5 to 6 Mbps. That's middle of the pack among industrialized countries.

I concede that we're disadvantaged by having so much land area. It won't be easy or cheap to lay fiber-optic cable across the Nevada deserts and Kansas plains. The FCC and other industry analysts have speculated a cost of $300 billion or more for universal coverage that would blanket the U.S. with superfast broadband.

It's little wonder, then, that some smaller countries are ahead of us. For them, deploying broadband nationwide has been cheaper. (South Korea is slightly smaller than Tennessee.)

Coincidentally a broadband deployment in Tennessee is providing early evidence that such investment can pay off. On my recent visit to Chattanooga, I spoke with civic leaders about the city's 1 gigabit per second network available to all homes and businesses. What I learned is the topic of this issue's cover story.

I left feeling that there's nothing remarkable about Chattanooga's circumstance that would prevent others from following its lead. What was required was coordinated teamwork and significant upfront investment — a philosophy the rest of the nation finally might be heeding.

This year, Congress and the White House agreed to pump $7 billion into planning and building a nationwide high-speed wireless network for public safety — a system that law enforcement has wanted for years. Also, the FCC is trying to reform the Universal Service Fund (USF), created to ensure basic, affordable phone service for all citizens, so that it would support the buildout of broadband in rural and underserved communities. In this issue, Contributing Writer Emily Montandon details the controversy the FCC's plan is stirring as the federal government tries to repurpose those USF surcharges that appear on consumers' phone bills.

All these broadband initiatives are expensive, but they're necessary if the U.S. wants to maintain standing as a superpower in the world economy, which is being driven more by online commerce. I want to see the U.S. set a world record for most money spent on broadband. It wouldn't be the sexiest accolade, but it might be the most consequential for our future.

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Your opinions matter to us. Send comments about this issue to the editors at **editorial@govtech.com**. Publication is solely at the discretion of the editors. *Government Technology* reserves the right to edit submissions for length.

AN AWARD-WINNING PUBLICATION

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Boston Launches Smart Pothole App

Street Bump, a new mobile app developed by Boston, uses sensors embedded in mobile devices to identify vibrations that could indicate potholes or other road hazards. Vibration and location data is fed into an algorithm that decides if a pothole is present. The Boston Public Works Department gets an automatic alert if repairs are needed.

533,000

The number of tablets that will be added to the federal government over the next two years to satisfy demand, according to a recent study.

TOP-TWEETED STORIES

***Government Technology's* Top 25 Doers, Dreamers & Drivers** — 120 tweets

When Do Social Networks Become a Burden? — 95 tweets

Satellite-Based Air Traffic Control System Taking Off — 36 tweets

OREGON EXPANDS OPEN DATA SITE: **Oregon's government data website — data.oregon.gov — may be the first state site to incorporate federal information. The Oregon site offers 578 state data sets and 5,249 data sets from the feds. The integration was helped by the fact that Oregon's portal and Data.gov are hosted by Seattle-based Socrata.**

WHO SAYS?

"I'm disappointed in the vendor community in their reluctance to engineer and put R&D efforts into solutions that governments can actually use."

www.govtech.com/e-government/State-CIOs-Discuss-Next-IT-Priorities.html

200k

The number of miles Google's driverless cars have already traveled on California roadways.

HOT OR NOT?

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White House Honors Broadband Stimulus Project Innovators
391 VIEWS

reader/**comments:**

"There are plenty of people who sell or have sold IT services and products. These people tend to be very successful at what they do, and their marketing experience is excellent. If you can't find someone to market and sell your IT products and services, you haven't looked very hard. However, if you're trying to find a technician to do this, you probably won't be very successful.

***Mary in response to* Marketing the IT Department**

"Sounds like criminal mischief on the part of Anonymous. If they don't like Alabama's "racist" immigration policy, why don't they move there and run for office on a platform of changing it?

***Dave in response to* Anonymous Targets Alabama's Computer Systems**

"Congrats to Murrieta, Calif.! Sounds like a much better plan than what we have here in Arizona, where we sold our state capitol to and lease it back from a private investor. I hope Murrieta is able to find and keep some quality startups.

***Scotty in response to* Report: Town to Lease Old City Hall for $1 to Startups**

"Another Apple trick. Loan them their iPads and Oregon flips $75,000 for software and Apple gets free publicity. We don't need any Apple iPads. Touchscreens have been used for years and years! People have voted using touchscreens in various places long before Apple knew what an iPad was.

***Bruce in response to* iPads in Oregon Election a Success, Official Says**

"This is a great opportunity to move emergency response forward, but it will fail miserably as other efforts have if there is not engagement and participation with the vast numbers of county-level and metropolitan-area 911 agencies and related offices. Our history shows that a movement such as this will simply not happen if it is conducted at the federal and state level.

***Joseph Treglia in response to* Public Safety Broadband Network Wins in Tax Cut Deal**

UNITED STATES AIR FORCE/SENIOR AIRMAN JOSHUA STRANG

TERRY E. ZAPERACH/NASA

Assessing Auroras

On Feb. 18, a team of scientists launched a small rocket into a northern lights display in an attempt to discover what makes auroras tick, Space.com reported.

The two-stage suborbital rocket blasted off from the Poker Flat Research Range just north of Fairbanks, Alaska, according to the report, and reached a height of about 217 miles as part of a NASA-funded study into how the northern lights can affect signals from GPS satellites and other spacecraft.

Pat Shier,

Director of Enterprise Technology Services, Alaska

Pat Shier became Alaska's director of Enterprise Technology Services in April 2011. Prior to that, the Alaska native spent four years as director of the Alaska Division of Retirement and Benefits, where he led a turnaround that made the troubled agency one of the more sought-after employment destinations in Alaska state government.

1 Based on your previous work, you were asked to take over Enterprise Technology Services. What did you find when you arrived? The division was struggling with its own identity. It was struggling with how to have conversations that weren't limited to discussing failures and shortcomings of not only the individuals in the division, but also of customers and their defects.

2 How did you address that problem? I tried to bring to the division a new sense of purpose that aligned with our customers. We asked the business owners instead of the technical leads of the departments to come to the table and tell us their priorities. We came back with a comprehensive plan for meeting those goals. So far, the honeymoon has extended a bit beyond what I expected, largely because of our willingness to listen and be reminded both internally and externally when we begin to stray.

3 How does your experience in managing on the business side help you as state CIO? The mantra that I carry around in my pocket and rehearse in staff meetings is that everyone wants value for their money. We have to view ourselves as just another vendor to the state agencies we serve.

4 On the other hand, you didn't come from the IT world. What challenges does that create? Somebody could run into my office with an old modem that they charred at the edges with a blow torch and tell me that our microwave system will come to its knees unless we buy 20 new "fratastats." If I weren't cautious, I could fall into that trap. The solution for me is that we have long-term partnerships with a number of vendors. I depend on them for truth-telling, and there are IT managers in other departments with whom I have formed relationships. GT

— Steve Towns, Editor

JESSICA MULHOLLAND

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KING OF THE HILL

CHATTANOOGA, TENN., MAKES THE MOST OF ITS CLAIM TO **AMERICA'S FASTEST BROADBAND SERVICE.** BY MATT WILLIAMS

WATCH A VIDEO
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HAVING MOVED TO CHATTANOOGA IN THE '60S, MAYOR **RON LITTLEFIELD** HAS WITNESSED THE CITY'S GRADUAL TRANSFORMATION.

During an evening telecast in 1969, newsman Walter Cronkite made a startling announcement: Chattanooga, Tenn., had the worst air pollution in America. It proved to be an alarming call to action for civic leaders, who have been working to distance their region from a bygone era of industrialism ever since.

In many ways, the city has succeeded. Chattanooga's well-kept downtown and waterfront have been revitalized. The Tennessee Aquarium, billed the "largest freshwater aquarium in the world," opened in 1992. The city's minor-league baseball team christened a new stadium in 2000. And the University of Tennessee at Chattanooga campus continues to grow. Music festivals, art museums and rib joints have come to town — the trappings of a cosmopolitan community rather than a blue-collar dumping ground.

PHOTOS BY STAN KAADY

But Mayor Ron Littlefield remembers how things once were. Since moving to Chattanooga in the '60s, he has been witness to the city's gradual transformation. And now, Littlefield is watching over another metamorphosis — this one centered on amazingly fast broadband connectivity.

Chattanooga now calls itself The Gig City — in reference to the fiber-to-the-home network built across 600 square miles of Chattanooga and surrounding Hamilton County. Up to 1 gigabit per second service now is available to all businesses, residences, and public and private institutions. The network has the business community dreaming big, with aspirations of becoming a Silicon Valley of the South. Meanwhile, the city and county are banking on the high-speed connectivity to help improve public safety and educate the region's workforce.

"Here is a community with a Southern quality of life, has a pretty good university, has a lot of amenities, and once was the dirtiest city in America," Littlefield said. "And now [it has] this great technological tool that we can use to build a future."

LITTEFIELD HOPES CHATTANOOGA CAN ATTRACT MORE BUSINESS VENTURES LIKE **THE LAMP POST GROUP**.

How did Chattanooga land on the leading edge? A little bit of good fortune, a lot of persistence and — excuse the cliché — public-private collaboration.

The roots of Chattanooga's superfast network begin at the downtown headquarters of the Electric Power Board (EPB). As its name implies, the municipally owned utility company delivers electricity to the community. In 2007, the EPB began planning for a fiber network, seeing it as a way to improve the electric grid's reliability.

EPB officials concluded that the fiber-optic network would allow the utility to detect and fix outages almost instantaneously. This, in turn, would save money by automating the switches that control and route power across the grid. The old way of doing business requires a technician to drive a truck to an outage location to turn switches on and off. The EPB calculated that automating the process would save millions of dollars annually, enough to eventually pay for the infrastructure upgrade.

"We made the decision to use fiber to every user rather than just piggybacking on the old copper wires, because we just felt like fiber is where things are going," Littlefield said. As mayor, he works closely with the EPB's board and

THE CHATTANOOGA MUNICIPAL BUILDING (LOWER RIGHT); THE DOME BUILDING, A LOCAL LANDMARK (LEFT)

IS CHATTANOOGA REALLY FIRST?

It depends on the definition. The Gig Tank's website proclaims that "Chattanooga is the first city in the Western Hemisphere to offer 1 gigabit-per-second fiber Internet service to all of its residents and businesses." Although this appears to be a true statement, it doesn't necessarily tell the whole story, said Craig Settles, an analyst who covers the wireless and community broadband market. There were 1 Gbps community networks before Chattanooga's, but none that have matched its 600-square-mile coverage area. Santa Monica, Calif., built a fiber network initially to replace its legacy voice and communications systems. The money that Santa Monica saved with the new technology was reinvested to expand the network beyond just government use. Connection speeds now exceed 1 gig, but the network covers about 25 square miles, Settles said. Another difference is that the network originated from Santa Monica's IT department and not the public utility, as in Chattanooga's case. And Wilson, N.C., followed a path similar to Santa Monica, he said.

What makes Chattanooga stand out, Settles says, is the coordinated and singular focus exhibited by everyone — the business community and government leaders — on the messaging about Chattanooga's network. Economic development consulting firm Kinsey Probasco Hays, along with business incubator Lamp Post Group and accelerator The Company Lab, are three of the key drivers.

According to Settles, "Kinsey Probasco Hays is a driving force behind the local and national awareness campaign. The chamber [of commerce] provides much of the hands-on national joint marketing of the city and the network, while the EPB's team markets the service locally. The chamber, EPB, River City Co. — which some call the 'Department of Downtown'— and the Enterprise Council (a promoter of high-tech economic development) team up to recruit new companies to move or expand to Chattanooga."

So although 1-gig networks have preceded Chattanooga, Settles said by marketing effectively, the city did what others haven't.

appoints its members. "So if we were going to invest, we might as well invest in the future instead of old technology."

Then, amid the nation's economic upheaval a few years ago, Chattanooga got some good news: $111 million in federal stimulus funding that sped up construction. The infusion of cash let the city complete the project in two years instead of five as originally planned. The 1-gig network was unveiled officially in September 2010 and is now available to 170,000 homes and businesses.

What started as an initiative to improve the resiliency of the EPB's communications pushed the public utility into a wider business — selling telecom, television and Internet services. With the addition of the fiber network, the EPB now offers Internet protocol television and tiered service levels for broadband. A basic 30 Mbps connection to the home costs around $50 monthly — the same price that many commercial carriers charge for much slower speeds. The EPB charges about $350 for the 1-gigabit package.

The network already is paying dividends for customers, said David Wade, the EPB's chief operating officer. Though many homes prefer the basic 30 MB service, that's still about five times faster than what the average American household is accustomed to. The upload and download speeds are symmetrical — equally fast both ways — unlike most service providers, which typically offer slower uploading speeds.

In addition to the convenience of crisp high-definition television and nearly instant downloading, the network also is delivering other tangible improvements.

Public safety is a big one. The EPB allows a wireless mesh network for public safety to "piggyback" on the infrastructure. Law enforcement uses this private local-area network to watch security cameras and adjust the intensity of LED lighting in public spaces. The fire department can use the fast connectivity to remotely download floor plans of buildings. "If, God forbid, we should have something like a Columbine situation in Chattanooga, we will be able to assess the situation much better," Littlefield said, referring to the high school shooting in Colorado that killed 13 in 1999. The city also is wiring stoplights into the network to optimize traffic patterns according to the time of day, and will be able to send out real-time alerts if drinking water is contaminated.

Wade said the best is yet to come. Features that haven't been dreamed up yet

HOW FAST IS 1 GBPS?

The broadband speeds available in Chattanooga far exceed what's available on average in the U.S. According to reporting from Akamai, the average connection speed in the U.S. for the third quarter of 2011 was 6.1 Mbps — 164 times slower than a 1 Gbps network. Other studies have tabbed America's average speed in the neighborhood of 5 Mbps. To put a speed of 1 Gbps in perspective, a half-hour TV sitcom's 23-episode season can be downloaded in less than two minutes. For American households that enjoy only average connectivity, this task would take several hours. And via dial-up service, downloading such large amounts of video is simply a fool's errand.

A word of caution: 1 Gbps is not the same as 1 gigabyte (GB). The important distinction is gigabit versus gigabyte. A gigabit is eight times less than a gigabyte, which means a 1 Gbps connection can download approximately 125 MB of data per second.

SOURCES: GIGAOM; PANDO NETWORKS; AKAMAI 2011 Q3 REPORT

will someday become routine. "We have had economic drivers throughout the years, whether it was the interstate [highway] or airline travel," Wade said. "But now if, you have the ability to virtually do anything, the opportunities are really unlimited."

As predicted, the network also made the power grid more reliable. When in April 2011 a swarm of tornadoes touched down in the area, three of the EPB's seven existing radio communications sites went down. Within the area that was upgraded to fiber optic, however, only 5 percent of the communications network was lost, Wade said.

Seeing the project come to fruition has been exciting, Wade said. "You see opportunities coming to our community that wouldn't be possible. It is really a privilege to be part of something that is good for the entire community."

The EPB believes the network is good for business. So does the Chattanooga Area Chamber of Commerce, which quickly mobilized when word came down that the 1-gig service was in the planning stage. One of the first things everyone realized at the time, said J.Ed. Marston, the chamber's vice president of marketing, was that Chattanooga had a reputation problem. "Chattanooga is not at the top of mind when you say 'world-class technology,'" Marston said.

So the mayor, the chamber of commerce and other leaders started selling the city to the rest of the world. One of the first steps Marston and his colleagues took was to apply to the Intelligent Community Forum, a New York City-based think tank that operates an annual contest identifying cities around the world that are utilizing technology to grow their economy. The forum named Chattanooga a Top 7 intelligent community in 2011, and the positive headlines snowballed from there. Marston believes millions of people have now heard about the city's broadband one way or another — within the U.S. and abroad. The news traveled as far as Brisbane, Australia, where Littlefield was shocked that a technology company he was visiting knew all about Chattanooga's new claim to fame.

City officials and several private partners are trying to keep the momentum rolling with a new program slated for summer 2012 called The Gig Tank. Teams of entrepreneurs and students will be given temporary office space in Chattanooga as they work on viable business plans that use the city's unique network. "You can't do that anywhere else in the United States, because we are the only place where you can launch the thing and test it with a real-life market," Marston said. A $300,000 prize pool will be at stake for the best ideas.

The ultimate goal is to convert the network into new jobs, and there are already examples of economic activity, Marston said. A local radiologist's business requires hospitals and other medical facilities to send in large files, and the network's fast uploading has saved the doctor lots of time. Another company recently opened a call center in Chattanooga partly because of the high-speed connectivity. A for-profit business incubator called the Lamp Post Group

ALL ROADS LEAD TO THE TENNESSEE AQUARIUM, ONE OF CHATTANOOGA'S DESTINATION SPOTS.

has several startups under its roof, some of which are tech-focused, including social media data company Retickr and a logistics company called Access America Transport. "We are still very early in the game, and we have had some tremendous results — a lot of interest and activity," Marston said. Fully assessing the network's impact on job creation will take several years.

Chattanooga's story seems almost too good to be true. After all, only a few years have passed since a string of big municipal broadband projects imploded — from flawed business plans or lack of customers. Marston said other cities would be wise to take pointers from Chattanooga's decisions. One key ingredient for success is building the project around the public utility if a community has one. The EPB built its entire business plan around the smart grid and the savings that would be achieved by reducing power outages, Marston said. "Everything else — the data capabilities, TV, telephone and all that other stuff — ends up being gravy."

Littlefield, a city planner by trade, said having a solid plan in place is an obvious must. "It's easy for them to say that you had the good fortune of just falling into a pot of gold with the stimulus funds. And that is true," he said. "But we had already planned it out that it would pay for itself." And stubbornness is another necessity. Littlefield said Chattanooga was sued on four separate occasions by incumbent Internet service providers as the city and EPB moved ahead with their plan. But they didn't give up.

The mayor also cautions that a community hoping to become home to a 1-gig network shouldn't expect to be unique for long. In February, Google began installing cable for a similar network in Kansas City, Kan. Like in Chattanooga, IP-based television will be one of the services available. A coalition of 30 U.S. research universities called Gig.U also is ramping up its broadband ambitions. Chattanooga is trying to take advantage of its short window of opportunity — in other words, its uniqueness — before the rest of the world catches up.

Nobody knows for sure where Chattanooga will go from here — and that's the exciting part. The EPB's Wade said that when the public utility was founded, the industry was replacing kerosene with light bulbs. Who could imagine that an electricity provider would be in the TV business? He's excited to see how it continues to evolve in the next 10 years. "I think Chattanooga has a vision for its community for being something greater than it is," Wade said.

Littlefield is also embracing the unknown. Digital technology is a tool that cities are only beginning to explore, he said. "The most exciting thing that I can say is, I cannot predict — I have some idea about what it's going to do in the short run, but long term, I can't even begin to imagine what it is going to lead to." GT

mwilliams@govtech.com
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A New Direction

THE FCC SAYS UNIVERSAL SERVICE FUND REFORMS WILL BOOST RURAL BROADBAND. CRITICS WORRY ABOUT THE IMPACT ON SMALL TELECOM PROVIDERS.

MILLIONS OF AMERICANS rely on cellphones and broadband networks to conduct daily business, make purchases and keep in touch with friends. Public safety, health-care, business and educational institutions also depend on broadband and mobile applications, yet some U.S. communities lack the network to use these applications. The FCC estimates that 18 million Americans do not have high-speed broadband. And in an age when a growing number of vital services demand high-speed Internet connections, it's widely recognized that broadband and mobile access is essential for the well-being of communities and the nation as a whole.

BY EMILY MONTANDON / CONTRIBUTING WRITER

TOM McKEITH/SHUTTERSTOCK.COM

"IT'S NOT JUST A THEORY. IT'S A FACT.

Broadband has gone from being a luxury to a necessity for full participation in our economy and society," said FCC Chairman Julius Genachowski in October 2011, when he announced plans for long-awaited changes to the Universal Service Fund (USF) and Intercarrier Compensation (ICC) systems.

Many have argued that the USF, which has supported affordable telephone services in high-cost areas since the mid-1990s, should be updated to drive the expansion of broadband and mobile communications. Furthermore, the ICC system, the mechanism that compensates carriers when they use one another's networks, has been called inefficient in today's market. Why? Because it was developed for a competitive landscape that was based on traditional telephony, presenting greater incentive for providers to offer voice service in rural and insulated communities than mobile and broadband.

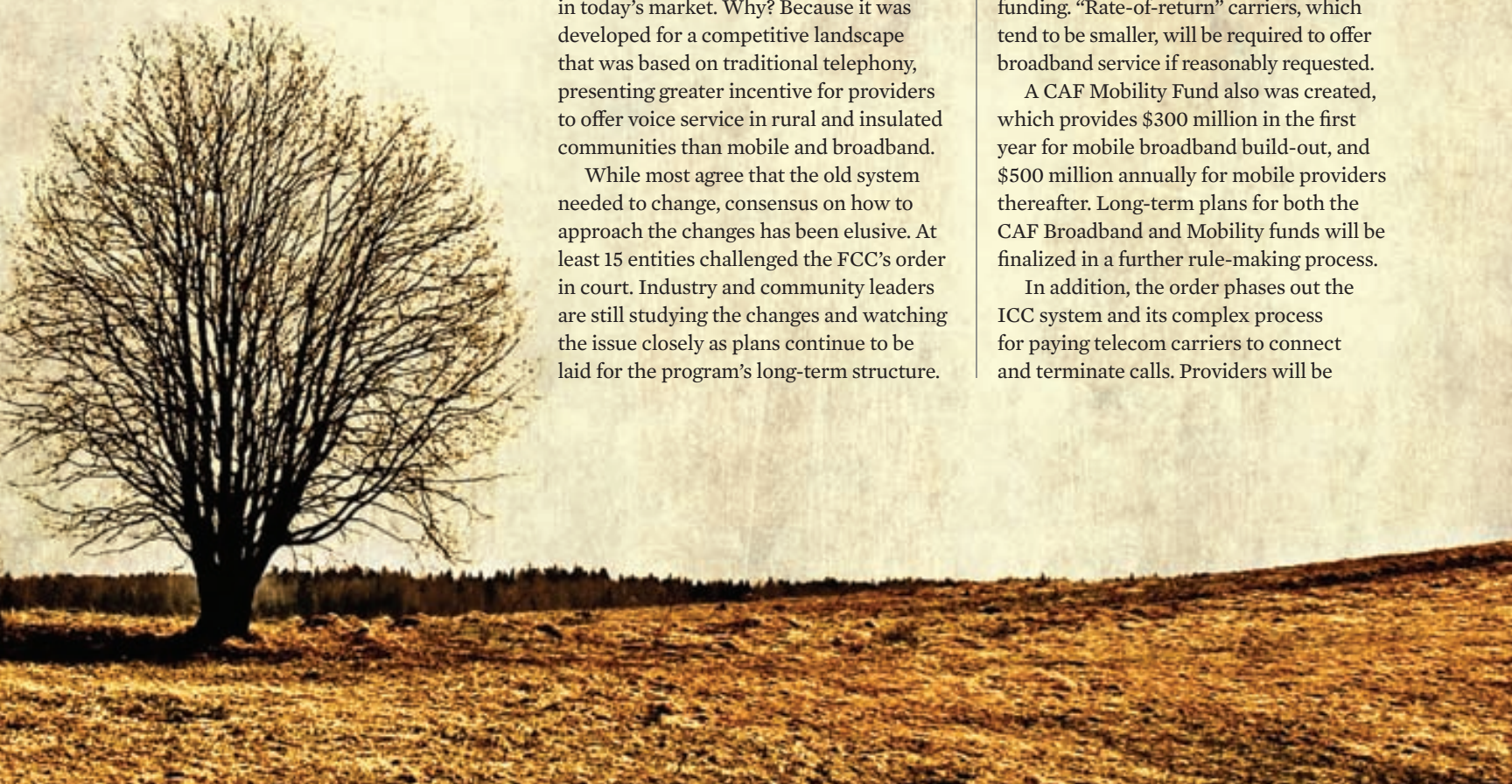
> "A LOT OF STATE REGULATORS ARE CONCERNED ABOUT LOSING OUR ABILITY TO INVESTIGATE AND SOLVE CONSUMER COMPLAINTS. MY VIEW IS, IF YOU WANT TO TAKE IT, TAKE IT ALL.

While most agree that the old system needed to change, consensus on how to approach the changes has been elusive. At least 15 entities challenged the FCC's order in court. Industry and community leaders are still studying the changes and watching the issue closely as plans continue to be laid for the program's long-term structure.

The report and order, released by the FCC in November, represents a massive overhaul of the USF's High Cost support system, one of four programs of the USF that support communications in underserved communities. The High Cost portion of the USF traditionally has subsidized telecom providers that serve areas where market forces alone wouldn't drive the provision of services at reasonable rates. Under the new order, the High Cost program ultimately will be replaced with the Connect America Fund (CAF), which requires providers that receive subsidies to offer both voice and broadband service. Carriers that fall under "price cap" regulation, which tend to be larger providers, will be required to build out into certain areas in order to receive funding. "Rate-of-return" carriers, which tend to be smaller, will be required to offer broadband service if reasonably requested.

A CAF Mobility Fund also was created, which provides $300 million in the first year for mobile broadband build-out, and $500 million annually for mobile providers thereafter. Long-term plans for both the CAF Broadband and Mobility funds will be finalized in a further rule-making process.

In addition, the order phases out the ICC system and its complex process for paying telecom carriers to connect and terminate calls. Providers will be



expected to move to a "bill-and-keep" system, connecting and terminating calls without charging one another.

The old compensation system has been called ineffective for many reasons — one being that it only applies to traffic carried over telephone networks, giving traditional telecoms an advantage over other technology providers and reducing incentive to invest in new service offerings.

Following the breakup of the AT&T monopoly in the 1980s, the ICC system made sense, said Harold Feld, legal director of Public Knowledge, an organization that advocates for technology and communications access. It ensured that rural telecom providers, which tend to handle smaller call volumes and receive lower ROI, were compensated at higher rates than providers serving more populated areas.

"The theory behind that is it costs more to operate the rural system, which is true; it's also a subsidy," he said. Now, Feld said, the FCC is shifting from the implicit subsidies of the old ICC system, and toward a more explicit system, like the High Cost subsidies of the past, but aimed at expanding new technologies in these hard-to-reach areas.

Some, however, are concerned that eliminating the ICC will severely impact smaller, rural providers. Absent ICC income, small providers will struggle to remain viable, critics say. The order allows for limited access recovery charges to make up for lost intercarrier compensation, but smaller providers can't spread out the charges across a large subscriber base.

Mike Skrivan, vice president of regulatory for FairPoint Communications, a telecommunications company with both price-cap and rate-of-return operations across 18 states, said carriers that can't recover what they need through the recovery charge would be eligible to recover some funds through the USF. Eventually, however, the loss of income will erode their revenue.

"So the question for them," Skrivan said, "is can they get that through increased sale of broadband services? Can they operate more efficiently, etc.? And that's true for price cap carriers as well."

Several states, including Pennsylvania, have filed lawsuits challenging the order. While the FCC has always had authority over interstate compensation rates, intrastate calling has been the purview of state utility commissions, and some state regulators are uncertain about their ability to address consumers' needs going forward.

Robert Powelson, chairman of the Pennsylvania Public Utility Commission (PUC), said his state has achieved 96 percent broadband coverage under the old policies and worries that the new policies could result in less USF money for the state, higher rates for consumers and, ultimately, more complaints coming in to the PUC.

Powelson, who also serves on the Board of Directors for the National Association of Regulatory Utility Commissioners, fears that state regulators' hands will be tied by federal regulations and they'll be unable to respond to consumers' issues, especially if rates increase for consumers.

"A lot of state regulators are concerned about losing our ability to investigate and resolve consumer complaints," said Powelson, adding that if the FCC is going to pre-empt part of the state's authority to regulate, it should also be responsible for resolving issues that arise. "My view is, if you want it, take it all," he said.

An FCC spokesman said that the ICC reforms are intended to improve networks for consumers and will eliminate billions of dollars in hidden fees. The FCC is confident that the legal authority it asserts in the order will hold up in court. In addition, the spokesman said, the order preserves the states' role as partner in regulation. States will continue to oversee fund recipients, arbitrate interconnection disputes, enforce carrier-of-last-resort obligations, and oversee intrastate rate reductions during the ICC phase-down, among other things.

The FCC adds that ICC reforms actually will benefit telecom providers by

FCC CHAIRMAN **JULIUS GENACHOWSKI** ANNOUNCED LONG-AWAITED USF CHANGES IN OCTOBER 2011.

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giving them more predictable revenue. And while the order does allow limited cost increases for consumers, the commission estimates that the cost benefits of eliminating intercarrier compensation will outweigh the costs for consumers by 3 to 1.

Pennsylvania may reconsider its lawsuit, Powelson said, when and if the repercussions of the changes become clearer. For the time being, however, he says it's prudent for the state to reserve its right to appeal.

Skrivan said there may be an opportunity for states to take over where the FCC's order leaves off by working with providers, possibly by offering incentives, to serve high-cost areas in their states. Because the order caps funding at the current level of $4.5 billion, he said, there will continue to be areas in need.

Edyael Casaperalta, program and research associate for the Center for Rural Strategies, said the Rural Broadband Policy Group, which she coordinates, wanted to see more support for smaller providers in the order. The order gives incentives to large providers that already receive subsidies to build out into rural and hard-to-reach areas, she said, instead of helping small providers, including nonprofits and community broadband networks, already in those communities.

Casaperalta says giving incentives to large corporations rather than supporting smaller providers that are already committed to serving high-cost communities is a flawed approach — one that overlooks the consumers that the program is meant to serve.

"If your main motive is profit," she said, "I can see how providing service in a remote area for 100 families is not a priority and will never be a priority." Casaperalta added that policymakers need to recognize alternatives for communities that lie outside the market incentive.

"If we continue creating structures that are focused on markets and creating profits for corporations, then we're by default going to leave out and continue to leave out these communities," she said.

According to the FCC spokesman, the statute requires that the money go to telecom carriers — but he contends that the new CAF does "expand the universe of providers" who are eligible for support. He added that the program also must adhere to its current budget, and often, the most economical way to expand coverage is to build on existing networks.

FairPoint's Skrivan said a focus on larger providers was necessary to ensure broadband access to the largest number of consumers. The High Cost system, he said, gave more funding per capita to rural providers than nonrural providers — a distinction that has been abandoned under the new order. According to Skrivan, the majority of rural customers are served by nonrural providers, which resulted in a rural-rural divide.

"Rural customers served by large companies aren't getting broadband services nearly as quickly as rural customers served by rural companies, because of the difference in the funding mechanism," he said.

Since funding is capped at $4.5 billion, Skrivan said, any additional support to nonrural companies means there is less to go around for rural providers. Nevertheless, rate-of-return carriers will under the new program, get approximately the same amount of money that they currently receive.

Obviously local leaders have a keen interest in the outcome of Universal Service reform, even if they don't play a direct role in regulating. Andy Huckaba, a city councilman from Lenexa, Kan., and chairman of the National League of Cities' Information Technology and Communications Policy Group, said the league has pushed for a world-class national broadband infrastructure. Although Huckaba sees the FCC's order as a step in the right direction, he hopes it's only a first step. Broadband speeds specified in the order — 4 Mbps downstream and 1 Mbps upstream initially and scalable to 6 Mbps and 1.5 Mbps respectively — aren't exactly top speed when compared to other countries. To remain globally competitive, he said, communities will want to keep pushing for better infrastructure.

The trend toward mobility also is an important one for policymakers to consider, said Huckaba. "More and more people are out there using their smartphones and mobile devices to access the Internet," he said. Huckaba said he was happy to see that mobility was included in the order and its importance recognized, but it's just a start. "There probably needs to be a lot more work there to make it stronger and to recognize the trends."

Scott Bergmann, assistant vice president of regulatory affairs for CTIA-The Wireless Association, said that mobility funding in the order could have been larger, but it's a significant step that the mobility fund was created. He said state regulators will have an important role in ensuring their communities have mobile services.

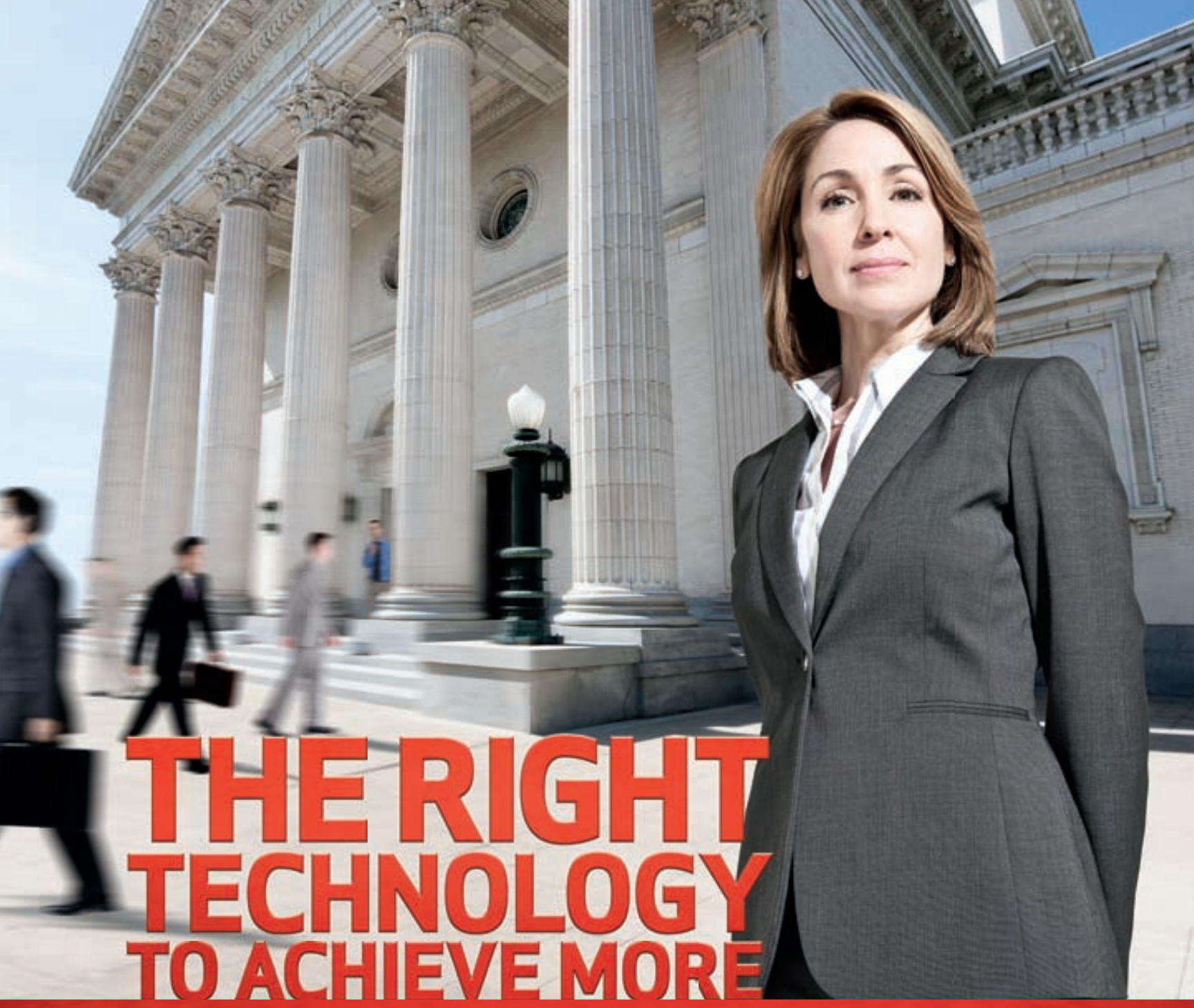
Under the new order, states will continue to determine which carriers are eligible for funding. Mobile providers that previously received funding as competitive providers under the legacy High Cost program will again need to be deemed eligible by state authorities under the new funding structure. The impact for wireless carriers, Bergmann said, will vary by provider and by area.

"It's important for policymakers in a given state or locality to reach out to those companies there to see what the impact will be and what their plans are for either continued buildout or maintenance of service," Bergmann said, "so they make sure that they continue to enjoy the benefits of mobile services in those high-cost areas."

Communities should keep an eye on the issue as the changes roll out, Huckaba said, including the effect of ICC changes on smaller, rural providers, appropriateness of broadband speeds and the availability of mobile services.

"I'm just hopeful that we can keep moving in a really strong and positive direction," he said, "and increase our competitiveness." GT

Emily Montandon is a writer based in Sacramento, Calif. She has written for *Government Technology* and *Emergency Management* magazines, as well as the *Digital Communities* website. emilymontandon@gmail.com.



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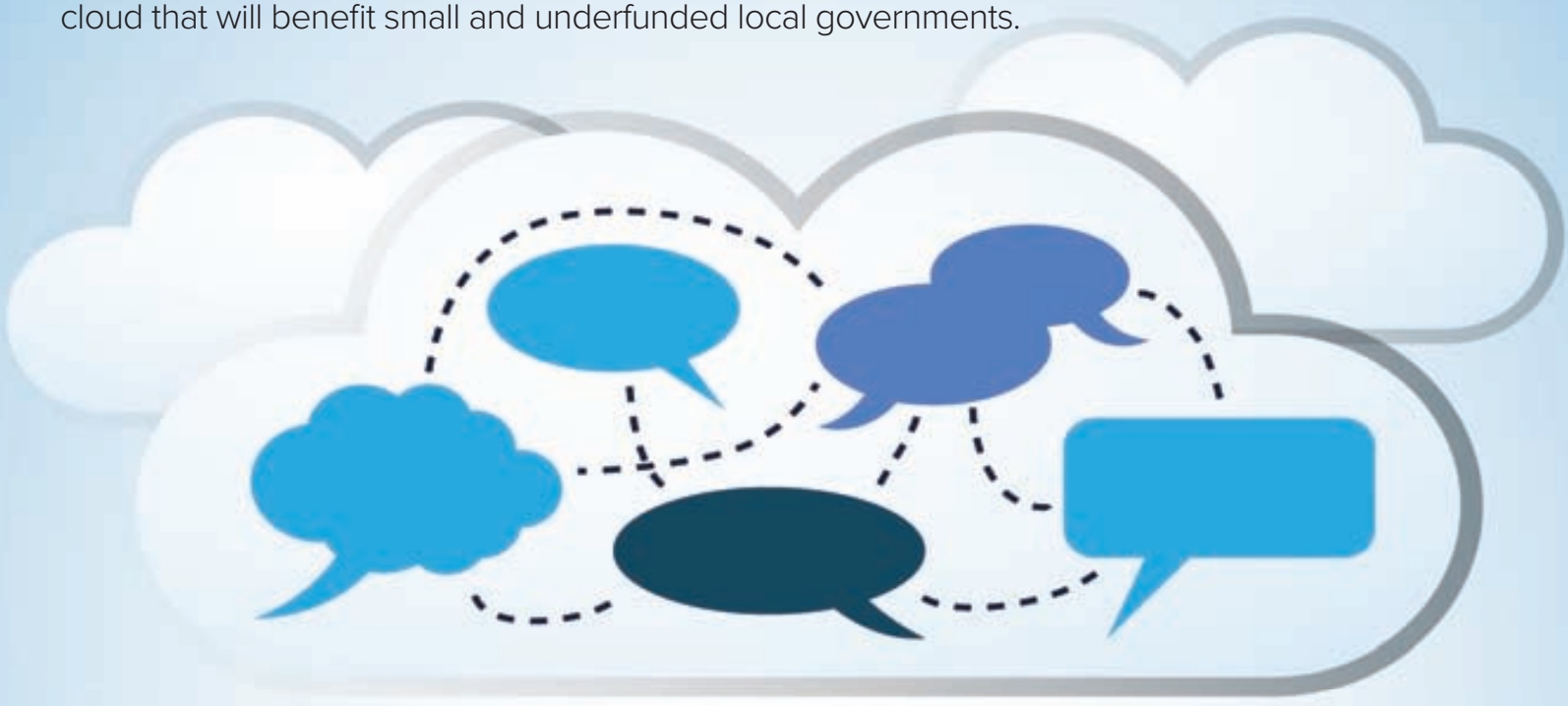
The Matchmakers

Oakland County, Mich., and other large counties are building a cloud that will benefit small and underfunded local governments.



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By Wayne Hanson / Editorial Director, Digital Communities

In February, Oakland County, Mich., Executive L. Brooks Patterson broke the news of a national shared services computing initiative — among Oakland County, the Southeast Michigan Council of Governments and the National Association of Counties (NACo).

Over the years, Oakland County has provided shared computing services to 62 local jurisdictions. Now with blessings from Patterson and NACo Executive Director Larry Naake, that initiative will greatly expand — NACo will provide funding and governance to leverage this shared services model into a national system available to America's more than 3,000 counties, boroughs and parishes.

Online Relationship

The idea is a bit like online dating. Today many relationships start and develop online, and NACo's Application Store aims to draw counties into mutually beneficial relationships around IT systems. G2G Cloud Solutions — Oakland County's initiative — is a "government-to-government cloud" that, with the help of private-sector partners, will provide computing services to other counties and municipalities using an upgraded cloud platform. It also will offer a number of local government applications developed in-house.

Oakland County already is accepting subscribers for a menu of services, such as online payments and Web hosting. The online payments application began as an e-commerce portal in 2000 called Access Oakland. After a slow start, Access Oakland included 50 products and services and generated $17 million in gross revenue as of last year, with $750,000 in net revenue reinvested into the technology, according to Oakland County CIO and Deputy County Executive Phil Bertolini. The application has been updated for the cloud and rolled out to six different communities, including Auburn Hills, Mich.

Auburn Hills Deputy Treasurer Dawn Keiser said that city residents can now use the payment system to pay local taxes, parking tickets, special assessments and utilities. Until Auburn Hills began using the cloud service, she said, the city didn't accept credit or debit cards because of security requirements and credit card fees. Keiser said that with G2G Cloud Solutions, there were no fees to the city. Users pay $2.50 for an e-check, and credit card fees are based on the payment amount, ranging from $2.50 up to 2.75 percent of larger payments.

"All they have to do is go to our website, click on it and it takes them right over to Oakland County's payment site," she

said. The property tax payment feature loads directly into the city's system, she said. The installation went smoothly, and once the contract was signed, it took less than a week to be up and running.

"I would highly recommend it," said Keiser. "It's beneficial for residents and customers who want to pay for something. It makes it convenient and easy; they can get a confirmation number and a receipt right then. The money typically comes in 24 to 48 hours later, and it's very easy to see on our bank statement what it is for."

G2G Cloud Solutions also will offer a Web suite, which was piloted in Wolverine Lake, Mich., after the former provider pulled out. Treasurer Michael Kondek said he thinks the commercial website providers left because revenues from the 4,300-member community did not meet their expectations.

Bertolini said Oakland County will provide a Health and Human Services Communication Portal to all Michigan counties for free, which will help those counties and give them a chance to try out the cloud platform. Other Oakland County applications that will be provided to the cloud will be a services registration application for things like flu shots, a restaurant inspection application and animal licensing.

Big County Contributions

According to NACo CIO Bert Jarreau, most large counties help local governments in their regions that don't have the resources to roll out systems themselves. Orange County, Fla.; Cook County, Ill.; and the Houston public safety community are a few examples of big counties sharing systems. "If you could take what they are doing at a regional level and make it easy to do at a national level, then you're providing a real service," Jarreau said.

Another heavyweight contributor to the Application Store's national rollout is Orange County, Calif. Assessor Webster Guillory — head of NACo's Essential County Technology Subcommittee — will help create a governance structure for the national initiative and look at submitted applications to see which can be rolled out nationally. Guillory has been lobbying NACo for more than a decade to launch such an initiative, said Jarreau.

Guillory has a reputation for big shared services projects: He launched a California county assessor's shared services project to standardize records, centralize management and reduce costs. The Standard Data Record project currently enrolls 40 of California's 58 counties and reduced annual costs for members by up to $60,000 each.

Maricopa County, Ariz., which deployed kiosks for recorders after three years of development, could be another system worth borrowing. "We should be able to learn from what other people did so that we can replicate it and get it done faster," Guillory said. "The county has a great kiosk, and I say, 'Don't start from ground zero. Why don't you start on the shoulders of Maricopa County? Why don't you start on the shoulders of the California assessors? Start above ground zero.'"

EASY FILER: California's Standard Data Record project, launched by Orange County Assessor Webster Guillory, simplifies the process of filing annual property statements for businesses with multiple locations in the state. The service is used by 40 California counties and will be available nationally through NACo's Application Store.

First Date

Many counties, however, aren't yet ready to offer services or subscribe to them, so NACo is urging them to do what online dating sites do: Fill out a form about themselves, say what they are seeking in a partner and start getting acquainted. Information on applications, contacts and other resources will be available through ad hoc searches.

Launching in July, the Application Store will be accessible with a single sign-on from NACo and will be available to any county — NACo membership isn't required. Vendors won't be allowed to access the store, so jurisdictions looking for a particular application shouldn't be inundated by sales calls. Private-sector partners may be included, however, as the store is piloted and expands.

The Application Store may initially look like a catalog on one end and a government cloud on the other. But attendees at a recent NACo conference were buzzing about the possibilities. The store, for example, will offer a menu of best practices, RFPs, interlocal agreements and other legal documents that have successfully created and maintained long-term relationships. Why spend months developing an agreement when another county may have one that would work?

Licensing and Procurement

While many of Oakland County's applications — such as the Health and Human Services Communication Portal and Web suite — are homegrown, some do have licensing implications. Bertolini said the county has worked out how costs could be absorbed through an initial upfront fee or handled through ongoing revenue streams.

In addition, Bertolini told a large group of county officials and technology vendors at NACo's Legislative Conference that this was an opportunity for vendors to reinvent government procurement processes that companies have long complained about. He challenged the private sector to step up to the plate.

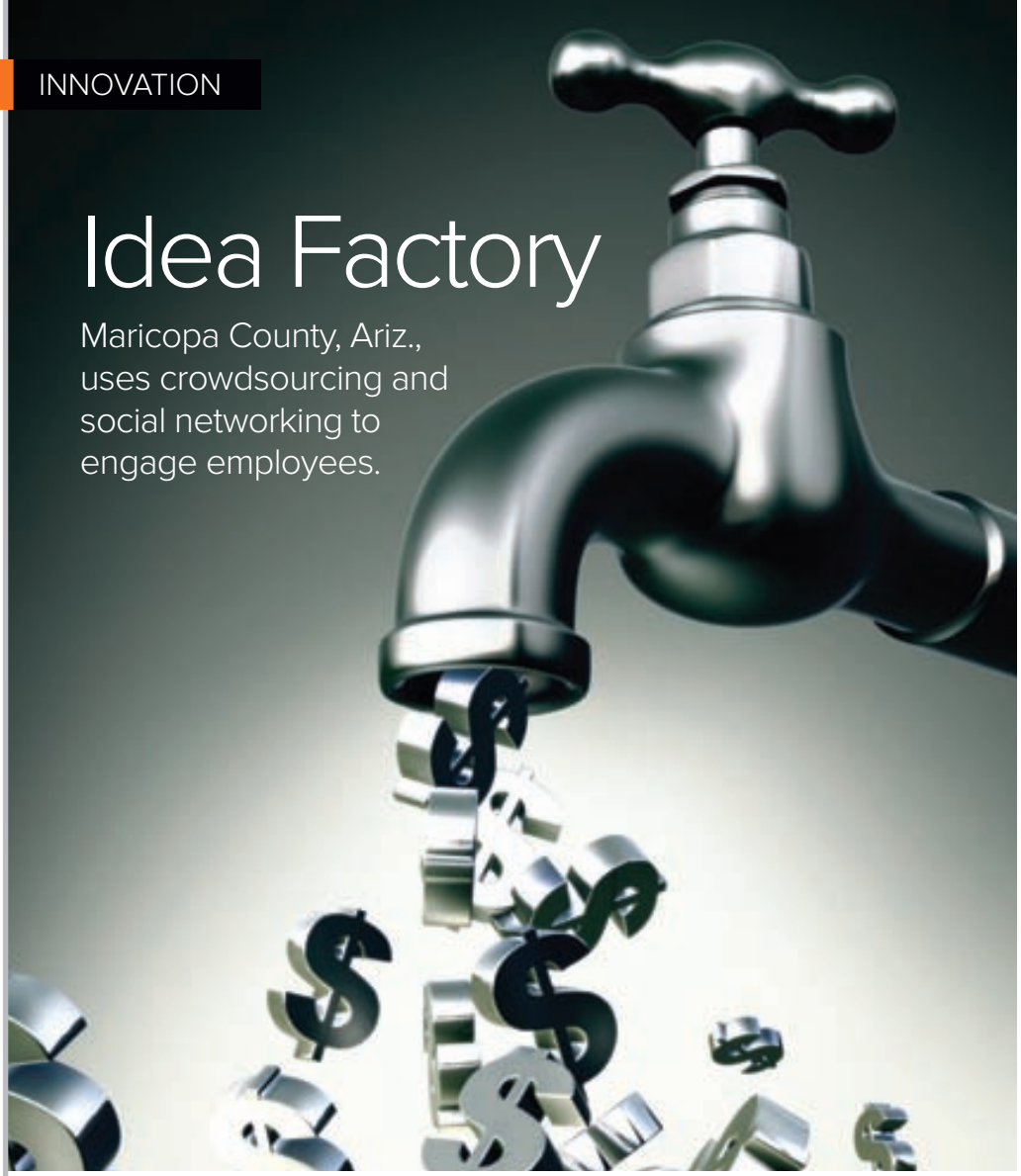
"When we're developing our cloud," said Bertolini, "there are proprietary licenses under the systems we're building. And if I want to use that with others, we have a licensing issue. Potentially there are going to be fees paid to us to use those technologies. It's time to reinvent the licensing. We need to be more agile in procurement."

Washtenaw County, Mich., for example, purchased the document management system OnBase in 2007. When the city of Ann Arbor wanted the software, it simply used Washtenaw County's RFP and just had to pay for additional seats. Ann Arbor CIO Dan Rainey said the city saved time and effort that would have been required to put out an RFP, evaluate the offers and take it to the City Council. Instead, Rainey was given a one-page agreement to become an additional user on Washtenaw County's license. GT

whanson@digitalcommunities.com
twitter@DCommunities

Idea Factory

Maricopa County, Ariz., uses crowdsourcing and social networking to engage employees.



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By Lauren Katims / Contributing Writer

Maricopa County, Ariz., is perpetually on the hunt for new ideas. Last year, county leaders implemented a technology that successfully engaged more than 11,000 employees across departments to share their thoughts on how to improve efficiency.

Through a Web-based platform called Spigit, Maricopa County, one of the largest counties in the country, uses crowdsourcing capabilities, social networking and a rewards program to encourage employee interaction in an online idea factory — a program they've given the tagline, "Your ideas at work."

"We haven't seen any other counties of our size using a similar type of platform," said Karen Stewart, the county's innovation manager.

Some of the more popular ideas county employees have come up with include swapping Columbus Day for the day after Thanksgiving as a paid holiday, allowing employees to purchase an annual parking pass through payroll and offering a shuttle for employees from the downtown office location to other branches around the county.

In early February, the 200th employee suggestion came through the system. "Feedback from employees is that they are so happy to have a say in the process," Stewart said. "They like to be collaborative."

Stewart and the innovation team were inspired by the success of Manor Labs, an innovation program in Manor, Texas, a city of 6,000 people near Austin. Former CIO Dustin Haisler used the Spigit platform to launch Manor Labs in 2009 to engage the city residents. Haisler now is listed as Spigit's director of government innovation.

But for a county the size of Maricopa, with almost 4 million residents in Phoenix and surrounding areas, officials wanted to make sure all the bugs are worked out and the appropriate infrastructure is in place before releasing this "ideation" platform to the public. Currently Stewart and her team are working on a plan for a public rollout that will occur in the near future.

The hope is that residents will see how successful the program has been internally for the county government and realize the potential benefits of participating.

"The engaged, collaborating employee understands that we are part of a good organization," said Richard de Uriarte, communications manager for Maricopa County. "They are the best ambassadors to the public; then the public starts to trust the government a little more."

Launch the Program

Twenty-two percent of Maricopa County's employees are currently participating in the idea factory program. Stewart attributes the healthy participation rate to the way the county handled the launch.

In spring 2011, officials hand-picked four departments to pilot the program — Finance, Transportation, Parks and Recreation, and the Library District. It was a good mix of the employee population, said Stewart of the professionals, engineers, certified public accountants and field staff testing the technology.

After opening up the system to all employees that summer, within three months the county had 13 cross-functional teams representing 26 different departments.

Officials altered the suggestion process to fit the county's needs.

The crowdsourcing occurs in the first collaboration stage. Employees get to vote, modify and comment on proposed ideas. Based on the number of page views, votes and the idea's overall approval rating, an idea then graduates from collaboration to assessment.

The idea is passed to a group of "innovation moderators," a voluntary team the county created in 2008 to improve the employee suggestion program and create more collaboration. A back-end system randomly selects five moderators to review the idea based on three criteria: feasi-

bility, ease of adoption and if it lines up with the county's goals and priorities.

If the idea scores a 3 out of 5 or higher, it graduates to the development stage. Another group, which includes the idea's author, subject-matter experts and stakeholders, does an independent analysis of the idea before making the final decision.

"They have buy-in, they know the history — this is why we do it this way," said Stewart. "If there are legal issues, we'll have a legal counsel."

"The first reward is the idea itself being implemented. The other reward is the collaboration.

Broadening Perspectives

Support from County Manager David Smith has been key in furthering the idea factory and making it a priority. "He's telling [the Innovation Collaboration Team] to use guerilla warfare tactics to get the ideas heard," Stewart said.

One strategy is to get employees to log on to the idea factory before they sign into their email by programming Spigit to launch as soon as they turn on their computers.

The program is divided into five categories: public impact, employee impact, impact on business processes, environmental sustainability — and the fifth category is open. If a road worker clicks on public impact, he will see ideas tied to reducing crime rates and repaving asphalt. "It gives employees a totally different perspective of their roles in government and helps them focus on the bigger picture," Stewart said.

Employees earn virtual funds, called MC FUND$, that they can cash in for real merchandise and other rewards in an online store. Rewards include lunch with an executive, T-shirts, baseball caps and business books. For an implemented idea, an employee gets 100,000 points in the virtual currency. So far, nobody has cashed in, which Stewart said is because county employees are enjoying using the system and not focusing on the material aspects.

"We really have two different types of rewards," she said. "The first reward is the idea itself being implemented. The other reward is the collaboration."

REWARDING INNOVATION:

Maricopa County's Idea Factory was inspired by Manor Labs, a groundbreaking project launched by the small town of Manor, Texas, in 2009. The Manor Labs portal allowed citizens to submit and rank ideas for improving the city. Maricopa County's innovation portal is only used by county employees, but will be open to the public in the future.

Lauren Katims is a regular contributor to *Government Technology* magazine. lmkatims@gmail.com

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Mobile, Social and Relevant

Nevada County, Calif., overhauls its website to engage citizens in the ways they want.

By Emily Montandon / Contributing Writer

FLICKR/RICK COOPER

Maintaining an online presence that meets the expectations of today's smartphone-carrying, Facebook-loving public isn't easy. But Nevada County, Calif., tackled this challenge head-on with a revamped website that lets users find content via guided navigation, content tabs and search — including public documents in the county's document management system. Users will also get information they're seeking via pop-ups, rather than journeying through the site.

"It's no longer a postcard on steroids. It is now behaving more like an application," said Bruce Gauthier, the county's information systems analyst.

The county, Gauthier said, hopes to deliver 80 percent of desired content to users from its home page, and is laying the groundwork for an online presence that will let users receive personalized information on the site, as well as via social networks and on mobile devices.

One Platform

The overhaul of Nevada County's near-decade-old website was driven by an overall strategy to consolidate multiple back-end management systems onto a single content management platform, said county CIO Stephen Monaghan. Previously, he said, the county's document, online content, business process and other management systems were different products, which led to a piecemeal approach in developing solutions for county departments and delivering content to the public.

"That's the way everybody used to do it," said Monaghan. But now more mature enterprise content management solutions are available that can help the county develop solutions more easily and cost-effectively. The county began moving its various back-end systems to Microsoft SharePoint two years ago, which he said saves around 20 percent annually on licensing and software alone.

The move allowed the county to automate and streamline processes, making it easier for departments to post content online.

"They don't have the work bandwidth to be doing things twice," Monaghan said, adding that with all of the content on the same platform, it will now be as simple as checking a box to make the content available and searchable to the public.

Targeting Content

The underlying tagging and organization of content is important because it will also help the county provide new modernized features, such as targeted content for individuals who set up profiles and a mobile site. For the most part, the transition was done with existing staff, but Gauthier said the county worked with a taxonomy expert for two days because there was no standard system of categorization that applied to Nevada County.

A mobile app platform, called Mobile Entrée, helped the county develop an interface that smartphone users are familiar with. "You could swear while you're using it that it's a mobile app, but it isn't — it's a Web connection," Gauthier said. "And it behaves like an application, which for all intents and purposes is what we're trying to do with our traditional website as well — let it behave more like an app. You click on things, you get your answers immediately, you're not drilling down in the traditional way."

In late summer, the county expects to let interested parties set up profiles to receive personalized content based on information they share on their profile.

"We can allow people to log onto the site, establish an account and have particular data that they want to subscribe to either be delivered to a miniature site or [sent] via email, Twitter or what have you," said Gauthier.

Site users will be able to subscribe to information that's relevant to their locale, for instance, or their relationship with the county. Affiliates, such as contractors or incorporated cities, might be presented

different information than a resident or a visitor. Departments also will be able to set up forums and wikis where citizens can give input on county projects, and notifications to participate in county activities can be targeted to interested subscribers.

"The next phase, phase two, is really about civic engagement," said Monaghan, "and doing that process automation out to the citizens where they can actually help solve community problems online and participate with county staff on things like that."

Future Functionality

The new platform provided the tools to develop a modern website, but to ensure that the site would meet county government and citizens' needs, Monaghan presented the idea to department heads at an annual workshop and kept them abreast of plans during monthly meetings, continually gathering feedback on what they wanted. He also got feedback from the county board of supervisors and county employees, eventually creating a document detailing the vision for the new site.

To get public input, the county prominently posted a link on its old website asking visitors for their opinions and directing them to a crowdsourcing page where people could see the vision document, propose ideas and vote on them.

80%
The percentage of information desired by residents that Nevada County hopes to provide on its revamped home page.

With the technology and a solid plan in place, Information Services began working with departments to migrate content to the new site. Information Services set up two training sessions for content creators who would be responsible for migrating the data and followed up with additional workshops.

Hettie Malech, senior office assistant in the Department of Social Services, said the training sessions and workshops were helpful and that the new platform is easy to use.

"The editing window looks very much like Word," Gauthier said. The content is at the bottom of the window, he said, and the tagging is done at the top. "You just fill it out."

He said the county didn't automate the content migration, instead taking the opportunity to clean house — and audits completed beforehand revealed thousands of pages of dead content on the old site.

"We want them to physically lay hands and eyes on their content from the old site," said Gauthier.

The new system offers tools to help the county monitor information and remove irrelevant or inaccurate content. "If you have an event that only lasts a week, you can flag it and take it away in a week," Malech said. "I think it's going to put a better picture out there in the long run."

Emily Montandon is a writer based in Sacramento, Calif. She has written for *Government Technology* and *Emergency Management* magazines, as well as the Digital Communities website.
emilymontandon@gmail.com, twitter@EmilyMontandon

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No More Turf Wars

Multiple arresting agencies in Washington, D.C., collaborate and hammer out agreements to build a law enforcement and justice information network.

By Wayne Hanson / Staff Writer

TOM McKEITH

Within the District of Columbia's 68 square miles are some 20 different federal and local agencies with authorization to make arrests — from the D.C. Metropolitan Police Department to the Park Police and U.S. Attorney's Office. With so many arresting agencies crammed into such a small space, one might expect that in addition to the increased complexities of arrest, booking, pretrial services, prosecution, defense, corrections, probation and parole, some legendary turf wars also would exist.

But that's not the case thanks to a two-year collaborative venture called the Case Initiation Project (CIP), in which eight different agencies created a near real-time electronic exchange of information to automate the process by which adult criminal cases are filed in court.

Collaboration Essentials

The project began when three agencies applied to the district's Justice Grants Administration for information-sharing seed money and received about $950,000.

"We had a ton of challenges," said Imran Chaudhry, CIO of the D.C. Criminal Justice Coordinating Council (CJCC), which was the lead agency for the project. "None of these agencies has jurisdictional control over the other. There was no single arbitration body, and the courts by their nature are independent. So it was a voluntary involvement based on a common understanding of the necessity of automating this."

The CJCC — both a council of agencies and an independent government agency that was created by two dual legislative acts, one by Congress and one by the Washington, D.C., City Council — was designed to tackle such difficult issues. "Our primary reason for being an agency is to facilitate coordination among district-based criminal justice, law enforcement and public safety agencies," said Chaudhry. "In light of the unique jurisdictional nature of D.C., one hand was not necessarily talking to the other. We have federal government partners, we have district government partners, and we have the judiciary as well. Our central role is to help facilitate coordination among all of these different levels of government."

With CIP, even mundane matters like how to identify defendants required coordination and cross-agency agreement.

"Whenever we are exchanging information," said Chaudhry, "we need to agree on certain common identifiers." The result was the universal person identification, known locally as the Police Department ID number, which lets the district track an individual more effectively across the entire criminal justice process within the nation's capital.

"We also implemented the universal case ID so we can tie the individual to the case and track the outcome of a case," Chaudhry said. "Because of the voluntary nature, we couldn't impose identifiers to be used internally within an agency, but we were able to come to an agreement on when we are exchanging information to use certain identifiers, and that was a key accomplishment."

> **"What was challenging, but also an opportunity, was for agencies to come together and map the business processes and the business rules of the road.**

Between Feb. 24, 2011, and Nov. 18, 2011, Chaudhry said daily conference calls were held to address all of the technical and business issues that arose. From February 2011 until the system went live in September, nine rounds of testing occurred, in which 92 cases were repeatedly triggered and analyzed for any deficiencies.

"What was challenging, but also an opportunity, was for agencies to come together and map the business processes and the business rules of the road, and from there, identify the technical fix," said CJCC Executive Director Mannone A. Butler. "Oftentimes you hear, 'The technical folks can do what needs to be done, just give us the business rules.'" Butler said the two-year process with more than eight agencies at the table was "a marathon, not a sprint," which wouldn't have succeeded without the willingness of participants to collaborate.

The collaboration was helpful in building a better understanding between agencies, said Anne Grant, director of the D.C. Metro Police Department's Crime Data Quality Branch. "You have a group of agencies that have history with one another, and we have our own agendas. What the police want is not what the courts want, and is not what the prosecutors want from the police officers, so there's been a lot of compromising and diplomacy, and luckily Imran's very good at that. It's been a process of education, so I've learned a lot about what the courts do, and a little bit about what the prosecutors do — and they've probably heard more than they want to on what the Police Department does."

According to Chaudhry, the overarching theme was the complexity of the jurisdiction itself. "I could simply say this [CIP] automated the process by which arrests are forwarded to prosecutors for action for the filing of an adult criminal case, but that belies the complexity," he said. "Depending on the nature of the charges ... you could have one case that's composed of charges exclusive to the federal prosecutor, which is the U.S. Attorney's Office, or you could have a case that's exclusively considered and filed by the D.C. prosecutor, which is the D.C. Office of the Attorney General. Or you could have a combination of both, so a single case is being co-prosecuted. There's a lot of back and forth, a lot of coordination, that goes amongst these two prosecutors before the case is actually filed with the D.C. Superior Court."

CIP participants took a magnifying glass to each step of the process, said Chaudhry, figuring out what information would go from where to where, how it would be routed, what the business rules were and what technical transactions would need to occur.

"All 20 arresting agencies are connected and related to the business process," he said. "There is a centralized booking facility, so wherever an arrest is made in the city, they bring the arrestee physically to the D.C. Metropolitan Police Department's booking facility. They feed the information into the Police Department's system, which feeds the 20 arresting agencies. And you will have an identifier as to who the arresting agency was."

One advantage to CIP participants is an increase in case-related feedback. According to Chaudhry, CIP developed an electronic dashboard within JUSTIS — D.C.'s Integrated Justice Information System — that lets agencies track the progress of cases from arrest through prosecution to case filing. This allows users to quickly determine what outcomes have been achieved at various stages of the process.

For example, Grant said the Police Department now receives information on why prosecutors may decide to not prosecute a case. "It's called 'papering' in the District of Columbia," she said. "It's the determination of whether the prosecutor will continue to prosecute the case or decline to prosecute — basically closing the case because they don't think there's enough evidence, the witness has backed out, or the complainant has recanted or something. Sometimes it's outside the Police Department's control, but sometimes there are things the Police Department could have done differently. So we're getting those sorts of reasons back now so we can do our own analysis."

Grant added that in the future, the Police Department will be able to get more court data. "We'll actually find out what's happening to the people we're arresting once they leave our custody," she said. "Now, we don't know if someone has been put in prison for 10 years or whatever. So that information could be very helpful, especially for violent offenders."

20

The number of federal and local agencies in Washington, D.C., that have the authorization to arrest people.

What's Next?

While Washington, D.C., is unique, Dennis Caravantes, director of IT Security and System Development for the Pretrial Services Agency, said he thinks CIP could translate to other jurisdictions. "We modeled the CIP after Pennsylvania's JNET," he said, so it is applicable to other jurisdictions. "It is a matter of having the willingness to cooperate, which has been the key to our project. Each one of us has internal systems to support and enhance, and it would have been easy to leave 'collaboration' projects on the sidelines. However, this group was willing to commit the time and resources to get the system working."

And now that the infrastructure and blueprint have been worked out for 11 different transactions, Caravantes said others will be easier. "We are talking about court case updates, supervised release updates, exchanges with the Sentencing Commission and data exchange with other nearby jurisdictions like Maryland and Virginia." GT

whanson@govtech.com
twitter@dcommunities

Guiding iPad Use

A look at Utah's iPad user's manual for state employees.

By Adam Stone / Contributing Writer

Thad Levar's iPad has become a lifeline. As deputy director of the Utah Department of Commerce, Levar relies on his device to keep him plugged into the office during long stretches of utter tedium.

A legislative budget hearing, for instance, can run as long as four hours, while Levar's turn to speak may fill just 30 minutes. That's a lot of down time during which Levar must monitor events back at the office and elsewhere. "I need to keep track of other legislative activity that is happening while I am there, things like new bills, new amendments to legislation, new budget documents," he said.

Levar isn't alone in turning to the iPad for support. A growing number of Utah government workers rely on the device, with the support of a proactive IT department. In fact, Utah's tech team took an early lead, producing a user's manual for state employees in August 2010. The document has become a go-to guide for iPad users in the state and was updated in February.

Bringing iPad on Board

Some 3,000 to 4,000 users have brought their own iPads into the system: It's a rough number based on how many sync to the state's email and calendaring applications. Other types of tablets are in play, but the state IT leadership has chosen not to support them.

IPad use cuts across all government agencies. Executives use the devices for mobility; homeland security officials use them to keep in touch with emergency responders; agriculture field workers use them to keep connected in a state where agricultural facilities may be separated by hundreds of miles.

Utah's Department of Technology Services started supporting iPads in an experiment involving an RFP for a hosted email system. "Normally every member of the committee would get a copy of these RFPs and print them," said CTO Dave Fletcher. "That's a couple hundred pages each with seven or so responses. Now with the iPad that's very easy to do and it eliminates a lot of paper."

Formal adoption began in June 2010 with the publication of *iPad Functionality: A User Experience*, a Department of Technology Services paper that outlines 20 user success stories.

The report gave high marks to the use of diverse iPhone apps on the iPad. It approved the synchronization of existing work documents so that the iPad always provides the most current version. It also gave the device got top marks as an e-book reader.

The report noted that minimal training was needed to get going on an iPad. The authors pointed out that third-party software could greatly enhance the user experience, usually for less than $100.

To further integrate iPads into the state's IT infrastructure, technology planners released a user guide in August 2010. "We want to have something in common in terms of the basic productivity applications that people are using," Fletcher said. "We would rather not have all our employees spend their time researching applications, and if they use common applications, it's easier for us to provide the kind of support we do provide."

A common base of understanding and a recommended core of apps helps IT managers ensure standardization across business units, and make it possible to share documents and data across the enterprise.

The 10-page user guide devotes itself almost entirely to a rundown of recommended apps in categories such as document editing, remote desktop, office applications and social media. Some apps like Google Earth and Facebook will be familiar. Other more business-specific tools will be new to many users: Quickoffice (connectivity and mobile editing); NewsRack (an RSS reader); and SugarSync (external storage). The

second edition of the user guide includes more apps that the state will support.

Users can deviate from the list, but Fletcher cannot guarantee support. His office gets calls for email connectivity, virtual private server setup and other needs, but beyond the recommended tools, "we are less likely to support that," he said. "If they have a problem with an app and it's one we are less familiar with, they usually are on their own."

200k

The number of apps that have been created for the iPad.

iPad In Action

Joe Dougherty is partial to the guide-approved Dropbox remote storage system.

"It's like an online hard drive accessible from any device. You can get those documents from wherever you are," said Dougherty, public information officer for the Utah Division of Emergency Management, which uses iPads to support seven employees who spend their time on the road, often in remote parts of the state. The department bought its iPads without 3G, but keeps up connectivity through a clever piece of engineering — forging a tethered Internet connection via iPhone, then broadcasting that iPhone as a Wi-Fi hotspot.

Utah is not the only government experimenting with iPad use. Manatee County, Fla., for instance, has purchased at least 27 iPads for county workers, especially department heads and IT professionals. In Clarksville, Tenn., City Council members routinely conduct business on the devices.

Despite the enthusiasm, the iPad's greatest strength can also be its greatest liability. While it's nice having hundreds of apps available to boost productivity, sorting through all of them can be cumbersome.

"There are usually 300 or 400 new apps a day. So we will scan through those apps while we're having lunch and there will be maybe half a dozen that are of interest on a given day," Fletcher said. "Then there will be maybe a couple a week that end up in our regular use patterns." GT

Adam Stone is a regular contributor to *Government Technology* and *Emergency Management* magazines. adam.stone@newsroom42.com, twitter@govtechnews

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UNIVERSITY OF MINNESOTA'S INTELLIGENT VEHICLES LABORATORY

Super Shovel

High-tech snowplows keep the highway to Valdez, Alaska, clear even in zero-visibility conditions.

By Elaine Pittman / Associate Editor

Alaska's harsh winter weather — an annual average of 40 feet of snow and winds exceeding 140 mph — makes it difficult to keep roads clear. But when the location is Valdez, home to a vital port and a terminal for the Trans-Alaska Pipeline, transportation officials were determined to keep the highway drivable.

"We needed something to try to keep that road open and available to truck traffic," said Mike Coffey, chief of statewide maintenance and operations for the Alaska Department of Transportation and Public Facilities (ADOT&PF).

The state implemented a GPS- and radar-based system and outfitted snow-removal vehicles with displays similar to those found in fighter planes — an all-electronic view of the highway and approaching vehicles. Based on technology developed at the University of Minnesota through the U.S. Department of Transportation's Intelligent Vehicle Initiative, the system originally was created to clear snow from Minnesota roadways.

"The problem was as soon as we put the equipment in snowplows here [in Minnesota], it quit snowing, which is slightly ironic," said Craig Shankwitz, director of the university's Intelligent Vehicles Laboratory.

Although the need didn't prove as great in Minnesota, Alaska has been benefiting from the technology since its first use in the winter of 2002-2003.

Keeping Up With the Storm

The ADOT&PF originally outfitted one snowblower and one snowplow with the high-tech equipment, which works to keep the driver in the highway lane while avoiding other vehicles and obstacles like guardrails. The setup is composed of three technologies:

First is differential GPS, which uses information from ground stations and satellites to pinpoint the vehicle's location with an accuracy of 3 to 5 centimeters, according to Ocie Adams, a project manager for the ADOT&PF.

Second is collision avoidance technology, which uses radar sensors and information from the vehicle positioning system to search for oncoming vehicles.

Last is the driver interface where all the information comes together; it enables drivers to plow snow from the highway in conditions as bad as zero visibility. Using a heads-up display that lets drivers keep their eyes on the road, the interface shows lines that represent the highway's center line and fog line (the white line painted on the right side of the road), as well as intersections and guardrails. The center and fog lines change color if the driver passes over them, and the seat vibrates and an audio alert can be used.

The display also depicts oncoming vehicles and the image flashes as they get closer to the snowplow. "It allows us to be on the road and stay ahead of things rather than having the guys speed up when the storm is over," Coffey said. "They're still going fairly slowly and cautiously when they're using this — it doesn't allow them to go out there and drive 50 miles per hour, but it does allow them to be out on the road driving 20 miles per hour."

Before deploying the technology, operators would grind their snowplows against the guardrail and use it as a guide to follow the road. But that was costly because it eventually flattened the guardrails, which then needed to be replaced. The ADOT&PF also tested a system in which magnets were put into the road and drivers received a warning if they went over the magnet. But, Adams said,

UNIVERSITY OF MINNESOTA'S INTELLIGENT VEHICLES LABORATORY

GPS and heads-up display technology keep Alaska sn

the lack of a visual reference made it difficult for drivers to stay in the lanes.

"They would overcorrect and go back over the other side," he said. "So it was a continuous battle going up and down the mountain."

Increasing Capabilities

Since the technology was first used in Alaska in 2002, it has been updated for increased accuracy and driver comfort, and more trucks were added to the fleet. The first vehicles that were outfitted allowed operators to clear snow from Thompson Pass, a 2,800-foot-high gap in the mountains northeast of Valdez, which is known as the snowiest place in the state. In 2011, three more vehicles were added to the operation. Now one truck focuses on clearing snow in Valdez and about halfway to Thompson Pass on Richardson Highway, and the other trucks cover the pass and remaining distance between it and Valdez.

The system's location capabilities were improved in October 2011 with the addition of a differential base station that receives information from U.S. and Russian satellites. "The more satellites giving you the position, the higher the resolution that your fix is and the more constant fix you can get in bad weather," Adams said. "And that's when we need it the most, when it's zero visibility and you can't see beyond the hood of the vehicle."

Another big upgrade last year included changes to the heads-up display in the vehicles. In the trucks that were outfitted in the first implementation, the display was 6 to 8 inches in front of the driver's face and it was surrounded by a metal frame. If the driver hit a bump, he might hit his head on the display, and there were complaints from crew members that the setup made them feel claustrophobic. Adams said the new display is mounted on a swivel arm and increases the comfort for the drivers.

owplow drivers on the road, even if they can't see it.

Moving Forward

Coffey said other states have contacted him about the technology's applicability to other types of weather — like fog. "If you have a need that justifies the expense, it's a fabulous technology," he said. The initial investment for Alaska was $136,000 for the rollout that included outfitting a snowblower and a snowplow, as well as the design, equipment, fabrication, training and installation. The 2011 upgrades — which included outfitting three snowplows, updating the two existing ones and adding another differential base station to increase accuracy — cost $553,000.

The state's contract with the University of Minnesota expired Dec. 31, 2011 — but that doesn't mean their partnership is over. Shankwitz said there has been talk about running a gas pipeline adjacent to the oil pipeline, and if that happens, they would like to incorporate GPS base stations along the length of the gas pipeline to support highway operations.

With the recent upgrades, the department of transportation crew is happy with the system and increased safety on the roads. But it may be Alaska truck drivers who benefit the most. "They're all ecstatic that we're able to get out there and keep the highway open," Adams said. "It costs them thousands of dollars every hour that they're unable to move loads in some cases." GT

epittman@govtech.com
twitter@elainerpittman

UNIVERSITY OF MINNESOTA'S INTELLIGENT VEHICLES LABORATORY

Bus 2.0: Alaska isn't the only place benefiting from the University of Minnesota's work with intelligent vehicles. The Minnesota Valley Transit Authority — which serves the communities of Apple Valley, Burnsville, Eagan, Rosemount and Savage — outfitted 10 buses with differential GPS to permit drivers to use shoulders during low visibility conditions and congested traffic. According to the university, "Bus-only shoulders allow a bus to use typically unused road right-of-way to bypass congestion during morning and afternoon rush hours."

The Bus 2.0 system is used to keep buses in the designated lane and avoid collisions. Craig Shankwitz, director of the university's Intelligent Vehicles Laboratory, said the buses use the same basic technology as the snowplows in Alaska.

"Now, regardless of weather conditions or congestion, bus drivers can use shoulders to bypass traffic," he said.

Take the Wheel

Nevada approves rules for testing driverless vehicles on state roadways.

FLICKR.COM/STEVE JURVETSON

By Sarah Rich / Staff Writer

Nevada claims to be the first state in the nation to approve rules for testing driverless vehicles on the state roadways. The Legislative Commission of the state's Department of Motor Vehicles (DMV) approved regulations in February that will pave the way for companies to test "autonomous vehicles" and set the stage for Nevada motorists to operate driverless cars and trucks.

DMV Director Bruce Breslow said Nevada is the first in the U.S. to adopt such legislation, and that an application package for companies that want to test their autonomous vehicles is available.

The announcement was made just months after Nevada passed a law requiring the DMV to adopt regulations that would authorize the use of autonomous vehicles on the state's highways. The law, passed in July 2011, defines an autonomous vehicle as "a motor vehicle that uses artificial intelligence, sensors and global positioning system coordinates to drive itself without the active intervention of a human operator."

The law also mandates that the DMV establish a driver's license endorsement requiring the autonomous vehicle's operator to comply with Nevada's traffic laws.

Breslow said the state is currently developing licensing procedures for companies that want to test their autonomous vehicle technology, and is requiring certification before an autonomous vehicle can be registered in the state.

"We require an autonomous vehicle that's sold in the state to have a certificate of compliance certifying that the vehicle meets certain minimum safety requirements and provide a driver's license endorsement for drivers to operate an autonomous vehicle in the state," Breslow said.

In the future, residents will be able to apply to operate a self-driving vehicle in Nevada, and those requirements were covered in the new regulations.

Breslow said drivers must prove to the DMV that they understand the capabilities of driverless vehicle technology. The DMV

is also requiring applicants to provide proof of 10,000 miles of prior autonomous vehicle operation, as well as show summary statistics and a report of all of the prior autonomous testing he or she would like the DMV to consider when processing an application.

Autonomously tested vehicles will be designated with a red license plate, but once the technology is ready for public use, a green license plate will be displayed on registered autonomous vehicles.

To create the new regulations in Nevada, the DMV partnered with Google, automobile manufacturers, testing professionals, insurance companies, universities and law enforcement agencies with the focus of testing driverless vehicles as a way to increase safety on roads.

> “I IMAGINE A LOT OF PEOPLE THINK OF A SELF-DRIVING CAR AS SCIENCE FICTION OR SOMETHING OUT OF *THE JETSONS.*

“We see autonomous technology as the future of the automobile,” Breslow said. “Certainly within two to five years, there will be autonomous, self-driving cars sold to people in our country. And we look at it as a safety system to avoid crashes, to avoid deaths.”

Companies like Google have tested driverless car technology in the past, but none has officially announced that it will apply to test driverless car technology under Nevada’s new regulations.

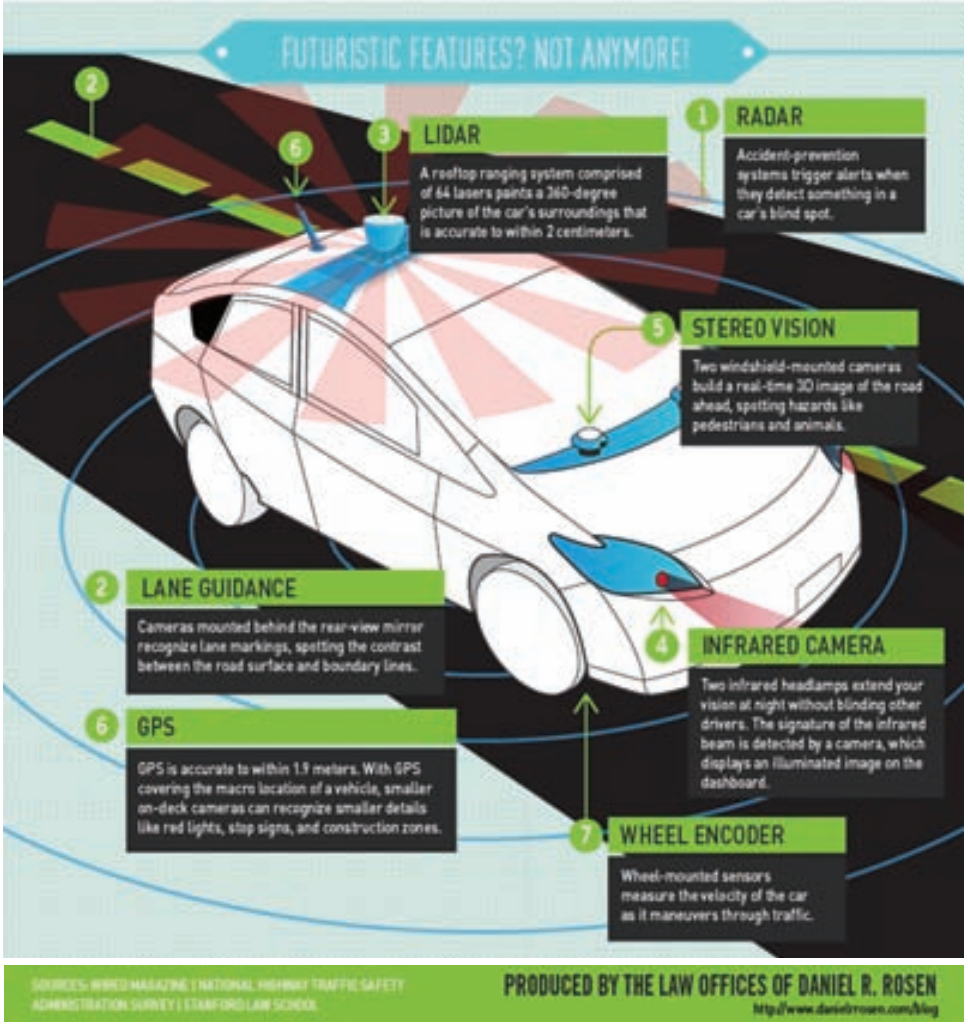
According to an October 2010 official Google blog post, the company tested driverless cars around California and at that time, had logged more than 140,000 miles with autonomous vehicles.

“Our automated cars use video cameras, radar sensors and a laser range finder to ‘see’ other traffic, as well as detailed maps (which we collect using manually driven vehicles) to navigate the road ahead,” according to the Google blog post. GT

srich@govtech.com
twitter@sarahrichforgt

CALIFORNIA CONSIDERS SIMILAR LAW:

California may soon follow in Nevada’s footsteps. In March, a state senator introduced legislation that would authorize the California Highway Patrol to develop regulations for safely testing and operating driverless vehicles in the state. Currently California neither prohibits nor regulates the use of autonomous vehicles on public roads. If passed, the legislation would fill in a regulatory gray area, as well as encourage development, testing and operation of autonomous vehicles. Google’s driverless vehicles already have logged more than 200,000 miles of roadway testing in California, according to company data, and other companies also are testing in the state. The Google vehicles have traveled from San Francisco south to Los Angeles, and over all the bridges in the San Francisco Bay Area, Google Product Manager Anthony Levandowski said at a press conference in March at the state capitol in Sacramento. “I imagine a lot of people think of a self-driving car as science fiction or something out of *The Jetsons,”* said Sen. Alex Padilla, author of the bill. “But we’re living in an era of Moore’s Law, where every two years we double our computer processing speeds. And it’s allowed us to demonstrate exponential improvements to the areas of advanced technology, including the ability to use technology to make self-driving cars a reality sooner rather than later.” Google isn’t the only company building autonomous technology — auto manufacturers like BMW, Audi and Volvo have invested in similar research, Padilla said. Padilla hopes vehicles like Google’s will be on the road soon, but some observers say they won’t be publicly available until 2020. But with interest and investment, Padilla says the vehicles could be rolled out sooner.



Cyber Symphony

Internet2 connections and low latency software let musicians collaborate remotely.

By Tanya Roscorla / Staff Writer

University music schools might be the last place one would expect Internet connectivity to make a difference. But these days, the network does matter.

By utilizing advanced research and education networks, musicians can now practice and perform simultaneously, even when they're miles apart — a capability that has broad implications for musicians everywhere.

Though universities have used broadband in music departments for the past decade, it wasn't until recently that a new technology solved some challenges music schools have faced: low-quality audio, low-quality video and high levels of latency (time delay), said Paul Bauer, director of the School of Music at Northern Illinois University.

When two people clap at the same time from different locations, for example, it doesn't sound or look like they're doing it together on Skype and similar tools.

To address these challenges, a group of physicists, engineers and an amateur pianist — all from Italy — created low latency audio/video (LOLA), software and equipment that minimize latency as light moves over a fiber network.

"This is the first time that a software and hardware combination have been designed expressly for the performing artists, emphasizing low latency so that they can perform together without tricks or gimmicks," Bauer said. "And it was also designed with the idea that this technology can be affordable."

For less than $5,000, Northern Illinois University built a LOLA node by following instructions from its creators. The university sends large streams of data to other locations through the bandwidth of Internet2, a nonprofit networking consortium that has a high-performance network. These two solutions combined give universities high-quality audio and video, as well as low latency levels.

At Internet2's meeting in October 2011, Northern Illinois University demonstrated the technology with the University of North Carolina at Greensboro's School of Music, Theatre and Dance. Cellist Cheng-Hou Lee played *Passacaglia for Violin and Cello* with violinist Marjorie Bagley.

Even though the data traveled 1,000 miles through the network, the time delay only was about 35 milliseconds. (One thousand milliseconds equals a second.) Through testing, the schools have learned that musicians perform comfortably together if they have less than 50 milliseconds of delay.

Distant Rehearsals

In early March, for a Performing Arts Production Workshop, Northern Illinois University connected to the New World Symphony in Miami to test LOLA again, this time spanning a distance of about 1,400 miles.

"This is what higher education is about — stretching the limits and finding new territory, and then finding new ways to apply it now and in the future," Bauer said.

He envisions musicians rehearsing well in advance of performances and playing alongside students from afar.

Students at the University of Southern California's (USC) Thornton School of Music and the University of Miami's Frost School of Music already have rehearsed together coast to coast. In the fall, four students in USC Thornton's Popular Music Program paired up with students from the Bruce Hornsby Creative American Music Program in the Frost School of Music to write songs.

On their own time, the graduate students participated in this extracurricular activity over Skype, iChat and other tools. They coped with a three-hour time difference, busy schedules and unfamiliar faces.

"You're basically thrown into a situation where you're being creative with a stranger," said Chris Sampson, associate dean and director of USC Thornton's Popular Music Program. "Songwriting requires a certain degree of vulnerability and trust to be able to try out ideas and bring to life possible ideas. And this is difficult under the best of circumstances."

But they soon immersed themselves in songwriting, with the goal of having the songs performed live in Miami. The Miami musicians would play to their live audience, and the USC students would join them for a song over the network.

Before Thanksgiving, they connected via Internet2 to rehearse. On Dec. 1, 2011, a dress rehearsal went well, but between the dress rehearsal and performance, the connectivity was blocked from Miami's end.

The University of Miami show was satisfactory, with the USC students watching from Southern California. But when it came time to start their integrated performance, the firewall blocked it.

Although the finale performance didn't happen, both music schools thought the collaboration was a great success, and they'll try it again this spring, Sampson said. "You have to take these chances to do something interesting," he said.

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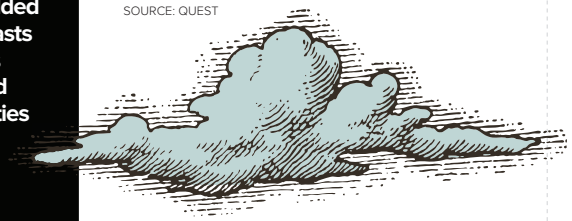
Shredder Decoder. **Is the information on shredded documents really gone? The Defense Advanced Research Projects Agency's (DARPA) Shredder Challenge held late last year attempted to answer that question by having contestants try to reconstruct five different shredded documents. Computer scientists and puzzle enthusiasts competed for up to $50,000. DARPA says the goal is to identify and assess potential capabilities that could be used by war fighters, as well as detect vulnerabilities in shredding practices.** SOURCE: DARPA

60% The number of state and local government respondents who said they **prefer a hybrid or private cloud rather than a public cloud**.

SOURCE: QUEST



46%

of Americans think tablets will replace laptop computers.

SOURCE: POLL POSITION

PRICE CHECK:

THINGS THAT WILL BE MORE EXPENSIVE THIS YEAR:

- HARD DRIVES
- CITY-ENFORCED FEES
- DESKTOP COMPUTERS
- WATER
- DIGITAL CAMERAS

THINGS THAT WILL BE LESS EXPENSIVE THIS YEAR:

- SOLID STATE DRIVES
- iPAD2
- STAND-ALONE GPS NAVIGATION UNITS
- MEDIA STREAMERS
- e-BOOK READERS

SOURCE: DEALNEWS.COM

Millennials Just Average

Millennials are just average at work, according to a 2011 survey of Southern small-business owners. Forty-eight percent of small-business owners ranked Millennials as being only average when it comes to their work ethics.

SOURCE: HISCOX RESEARCH

3/4 **of Americans said they use their phones when they're in the bathroom, according to *IT in the Toilet,* which also found that Android users are likelier to use their phones in the bathroom.**

83%

of smartphone users said they're addicted to apps, according to a 2011 survey by international research consultancy Latitude.

Send Spectrum ideas to Managing Editor Karen Stewartson, kstewartson@govtech.com, twitter/KarenStewartson

By Miriam Jones | Chief Copy Editor

Send product review ideas to Chief Copy Editor Miriam Jones: mjones@govtech.com, twitter@mjonesgovtech

Field Work

The Trimble Juno 3D handheld is a Global Navigation Satellite System device built for GIS field applications, such as asset management, data collection and inspections. It has an integrated GPS, a 5 megapixel autofocus camera and Windows Mobile software, plus 3G wireless technology that allows users to transfer data faster and stay connected to the office with an integrated mobile phone. The Juno has an IP54 rating, which means it's resistant to dust, water and shock. **www.trimble.com**

Eyes on You

Canon U.S.A. introduces the XU-80 remote control pan-tilt-zoom HD Camera, a compact, integrated camera system with fast pan-and-tilt action, and a waterproof and dust-proof design that makes it suited for outdoor or indoor use. The camera features a pan range of 180 degrees and a tilt range of 220 to -40 degrees. The system incorporates a CMOS HD 2.1 megapixel imaging sensor, a 20x HD zoom lens (with additional 12x digital zoom) for superb telephoto performance, and broadcast-grade features such as genlock input for synchronization and HD-SDI output in a small design. The XU-80 can be mounted upright or in an inverted ceiling mount. **www.usa.canon.com**

Tablet Thrills

Toshiba's Excite 10 LE 10.1-inch tablet measures 0.3 inches thick and weighs 1.18 pounds. It's powered by Android and is available in a 16 GB and 32 GB model. The Excite includes micro-USB and HDMI ports, a micro-SD slot to share content and files with other devices, and both Wi-Fi and Bluetooth connectivity. Front and back high-definition cameras provide convenient photo capture, as well as 1080p video recording and video chatting. The tablet features Android 3.2 (Honeycomb) and will be upgraded to Android 4.0 (Ice Cream Sandwich) later this spring. **us.toshiba.com**

For more product news, log on to explore *Government Technology's* Product Source. **govtech.com/products**

By Steve Ressler

Learning to Fly

Five ways IT professionals can get their wings and soar.

"I'm learning to fly, but I ain't got wings"
— Tom Petty

The last computer-programming course I took was in college. And while I've dabbled in CSS/HTML and basic WordPress sites, I'm a little lost when it comes to coding in Ruby on Rails, building scrapers and integrating APIs and XML feeds.

Many of you may be like me: As time elapses, you spend more time on the people, program and project management issues and less on hands-on technology implementation.

So when I heard about New York startup Codecademy last winter, I took advantage. The company raised more than $2.5 million to improve learning, and recently launched Code Year — free daily lessons to learn the basics of modern coding. Like me, more than 390,000 folks signed up. Another new form of learning is the Khan Academy, which materialized when Harvard MBA and hedge fund manager Salman Khan started teaching math to his niece over videos. The academy has transformed into a library of 2,800-plus videos, covering everything from physics to history with practice exercises. More than 120 million lessons have been delivered, and it's raised more than $8 million.

Government is also thinking about new forms of learning. The U.S. General Services Administration recently launched a 12-week pilot on the practical and theoretical understanding of social media in government. I was a guest lecturer for the class, and it was fascinating to watch as they engaged in learning in all factors — it was one part college with a reading list of long books (yes, people still read books), but also one part social (live tweeting and discussion threads on GovLoop).

Steve Ressler is the founder and president of GovLoop, a social networking site for government officials to connect and exchange information.

This got me thinking: In Gov2020, how will we train our state and local government employees?

Although budgets are tight, we must encourage staff to continue learning. The beauty is that there are so many options now, and the traditional approaches are still great for building capacity and learning.

Online courses, webinars and blended learning allow workers to connect across the globe, participate in one-on-one mentorship or ask questions.

So how do you ensure that you create an organizational culture of lifelong learning?

There are several ways to make this happen:

1 / Take a day — Encourage workers to attend online training or go to local events.

2 / Culture of sharing — If team members attend a training, make sure they write up their lessons and share them with the rest of the team.

3 / Teach yourself — You most likely have experts in your organization. Have staff teach one another — start a work book club, hold internal brown bags, have a monthly lunch and learn.

4 / Look at licenses — There are many learning vendors (Lynda, SkillSoft, TreeHouse, etc.) that can offer your employees thousands of lessons and topics to learn. I like this approach because you have access to tons of different subject areas, and it lets employees learn at their own pace.

5 / Implement learning — Have you ever gone to an awesome training and nobody in the office wanted to hear about it? To truly be a learning organization, you must listen when staff members return with new ideas. If they come back and are excited about a new technology or methodology, listen and try to find ways to test it in your organization.

As the Bob Dylan line goes: "He not busy being born is busy dying." This is even truer in technology, as the evolutions move so fast. So make sure that your tech team stays current and keeps learning.

Now let me get back to my homework — I just got a new assignment from Code Year! GT

Index

JURISDICTIONS/AGENCIES

Alaska 9, 10, 34, 35
Ann Arbor, Mich. 25
Boston 7
California 15, 25, 28, 29, 37
Center for Rural Strategies 22
Chattanooga, Tenn. 12, 13, 14, 15, 16, 17
Codecademy 42
CTIA 22
DARPA 40
FCC 6, 19, 20, 21, 22
Manor, Texas 26, 27
Maricopa County, Ariz. 26, 27
NASA 9
National Association of Counties 24
National Association of Regulatory Utility Commissioners 21
National League of Cities 22
Northern Illinois University 38
Oakland County, Michigan 24
Pennsylvania Public Utility 21
Seattle 7
The Law Offices of Daniel R. Rosen 37
University of Miami 38
University of Minnesota 34, 35
University of Southern California 38
University of Tennessee 13
Utah 32, 33
Washington, D.C. 30, 31

VENDORS

Apple 7, 32, 33
AT&T 21
Canon U.S.A. 41
Google 36, 37
Microsoft 28
Quest 40
Toshiba 41
Trimble 41

ADVERTISERS INDEX

NTT Data 2
AT&T 5
Verizon Wireless 23
RealAuction.com LLC 33
Panasonic 43
Motorola 44

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