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NOVEMBER 2009

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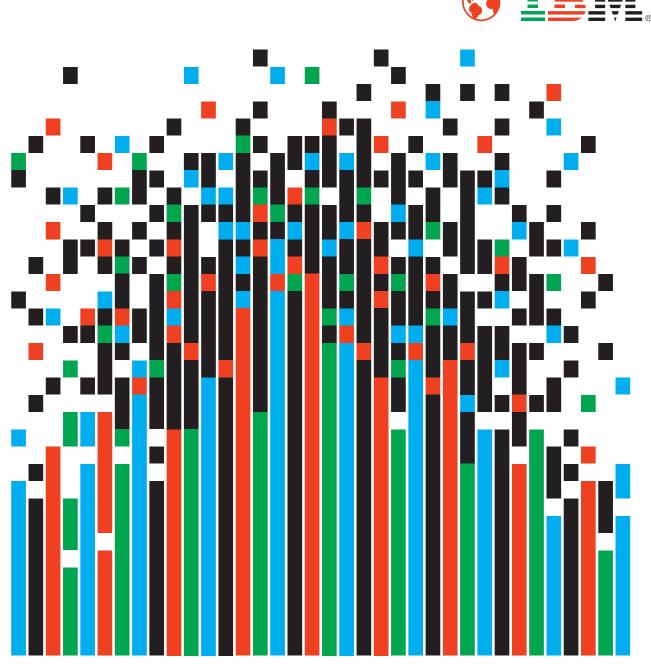
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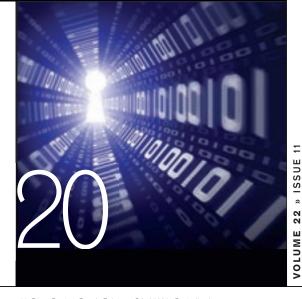


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20 Sharing Secrets

Governments looking to share resources or have them hosted by a third party can learn keys to success from those who've done it.

BY HILTON COLLINS





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Government Technology (ISSN# 1043-9668) is published monthly by Government Technology, 100 Blue Ravine Road, Folsom, CA 95630. Periodicals Postage Paid at Folsom, Calif., and additional offices. POSTMASTER: Send address changes to: Government Technology, 100 Blue Ravine Road, Folsom, CA 95630 Copyright 2009 by e.Republic, Inc. All Rights Reserved. SUBSCRIPTIONS: Subscription inquiries should be directed to Government Technology, Attn: Circulation Director. 100 Blue Ravine Road, Folsom, CA 95630, 916/932-1300. Canada Post Publication Agreement #41578525, undeliverables 27496 Bath Road, Mississauga, Ontario L4T 1L2 or e-mail subscriptions@erepublic.com.



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EMILY MONTANDON



Open for Discussion

try to speak up to my government representatives about things that are important to me. Even if little old me can't change the world, I like to think I can exert some influence as part of a larger group. I occasionally write my congressional representatives regarding issues I care about in hopes that others will do the same and possibly create some momentum. I dutifully sign my name (albeit virtually) every time.

But I recently took issue with a tweet from a public figure I follow on Twitter, so I decided to tell him what I think. This time, I didn't sign my name. I only had 140 characters to make my point. I felt a twinge of guilt about sending an unsigned message. I sent my comment anyway. After all, Twitter wasn't designed for detail. I still felt like the move was sort of similar to posting anonymous comments on online news stories. I always wrote these forums off as being only for chronic complainers who wouldn't air such outrageous opinions if they had to sign their names to them.

But in recent months, I've seen the value in being able to quickly and easily comment on a given topic. I often see my governor, Arnold Schwarzenegger, broadcasting reply tweets to followers making suggestions via Twitter. And it's clear these suggestions are being taken seriously, even if they are from joe7586. So I guess it doesn't really matter if people don't want to offer up their identity when they express their opinions. At least people are speaking up. I, like most, am guilty of skipping a discussion or two because I don't want to start an argument or show some ignorance. But if I'd spoken up, I might have learned something. Or maybe someone could have learned something from me. The Internet has enabled honest discussions on things people don't like to talk about for fear of making enemies of coworkers and neighbors, and social networks and Web 2.0 capabilities are creating even more venues for them.

One area where I've seen this in action is health-care reform. While town hall discussions across the country disintegrated into shouting matches and political spin, in my own experience, I learned a lot about the different angles on some of these issues by tracking some surprisingly well thought-out discussions online. Web 2.0 technologies are providing more and better ways for people to have unrestrained discussions on topics that government should be in on. It's exciting to see governments embracing technologies, like Twitter (and who knows what will come next), that let citizens interact easily and informally with their government.

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New York City to Consolidate IT

New York City launched an ambitious plan to consolidate its technology infrastructure and added iPhone apps and social media capabilities to its celebrated 311 hotline service, according to city CIO Paul Cosgrave.

In an October interview with Government Technology at the New York City Tech Forum, Cosgrave said the moves are part of Mayor Michael Bloomberg's effort to make the city more accessible, transparent and accountable.

Cosgrave called the consolidation — dubbed NYCitiServ — his No. 1 priority and said the effort should cut city IT costs by more than \$300 million. The initiative envisions reducing the number of city data centers from 55 to two.

"We're going to be able to do this much more efficiently because of virtualization technology," he said. "Already we're one of the largest VMware installations, with 1,500 virtual servers." NYCitiServ is expected to double or triple that number.

New York City also offers citizens new ways to interact with government. Residents with iPhones can download an app that lets them file complaints about broken streetlights or dirty vacant lots, for example, and have the locations automatically uploaded with a photo and message to the city's 311 Online service. The service will soon expand to other mobile platforms, such as BlackBerrys.

— TOD NEWCOMBE, EDITOR, PUBLIC CIO

Feds Will Add Cyber-Security Resources

SACRAMENTO, CALIF. — Responsibility for cyber-security falls on society at large, not just government, a senior DHS official told attendees at the National Cyber Security West conference in October.

"The real focus on how we address these problems can't be with the federal or state governments alone," said Greg Schaffer, assistant secretary for Cybersecurity and Communications at the U.S. DHS. "The focus and intention has to be spread across absolutely everyone who touches a computer and its use of the technology."

Schaffer said the federal government is seeking state and local input on standardizing security protocols. Federal agencies also will focus more resources on the problem. "We've been given special authority to hire up to 1,000 cyber-security professionals and continue to enhance our strengths in that space." he said.

New staff will be hired into various federal agencies, said Schaffer, but appointing so many employees could take years. — HITON COLLINS, STAFF WRITER



Software executive Bryan Sivak was named chief technology officer (CTO) of the District of Columbia in October by Mayor Adrian M. Fenty. Sivak replaces Chris Willey, who had served as interim CTO since Vivek Kundra was appointed federal CIO earlier this year.

Fenty looked beyond government for the district's new CTO. In 2002, Sivak founded InQuira Inc., a knowledge management software firm that has worked with the public sector, including several ministries in the UK. Before starting InQuira, he worked with several IT firms, including IBM.

As CTO, Sivak will oversee a \$175 million IT budget. — TOD NEWCOMBE, EDITOR, PUBLIC CIO

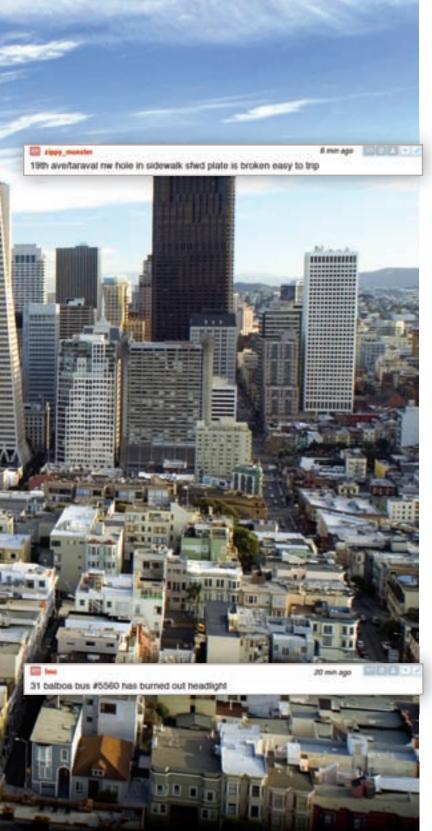


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San Franciso's **Twitter 311**

In June, San Francisco Mayor Gavin Newsom announced that residents could use Twitter to submit complaints and service requests to the city's 311 call center. Within days of the announcement, more than 1,500 people had signed up to follow the new SF311 Twitter account. Here's a look at the technology behind the service.

Citizens sign up to follow SF311 at http://sftwitter.sfgov .org/twitter. This lets SF311 automatically reciprocate so citizens can direct message the city and keep their requests private. Citizens also can send messages via @sf311, but this method is not private.

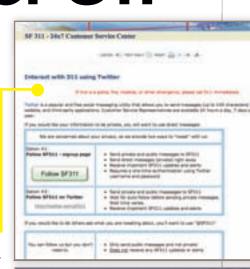
San Francisco uses CoTweet to manage Twitter requests. The program allows multiple 311 representatives to interact with citizens within the SF311 Twitter account and automatically assigns requests to 311 representatives who are on duty.

Once a request is received via Twitter, 311 staff enters the

request into the city's customer relationship management system, similar to how they would enter a voice request. A tracking number is generated.

City 311 staff replies via the CoTweet software and provides the tracking number. The city uses ClipMate to drag and drop premade 140-character responses to commonly asked questions.

Citizens who wish to check the status of their request can go to www.sfgov.org/311 and enter their tracking number to see if the case is open or closed. They also can call 311 to follow up on their request.





AS MANUFACTURING JOB LOSSES GUT MICHIGAN'S ECONOMY, LOCAL CIOS SEARCH FOR CREATIVE WAYS TO ELIMINATE COSTS. **PHIL BERTOLINI**, CIO OF OAKLAND COUNTY, MICH., ESTABLISHED A COST-REDUCTION/INVESTMENT BLOG IN SUMMER 2009 ON WHICH EMPLOYEES, REGARDLESS OF RANK, COULD PROPOSE COST-CUTTING IDEAS. SUGGESTIONS FROM THE BLOG HAVE SLASHED \$600,000 FROM THE COUNTY'S ANNUAL IT BUDGET SO FAR.

Why did you target the ideas of employees below the executive level?

Us at the top, we know a lot, but we don't know everything, so we've put together a cost-reduction blog where the employees could come in and bring ideas to the table. They would go out and do the research, provide the links and everything that was necessary to vet it properly. We've implemented more than \$600,000 of cost reductions annually, based on the employees' suggestions.

How often do you check the blog for suggestions?

As a steering committee, every week we meet over the blog, respond and begin the conversation over that tool to get to the end result, which is the savings.

How does the \$600,000 savings compare to the other cost reductions you've implemented?

We had a number of different areas in which we made reductions. We've cut our IT budget by about \$8 million, and \$4 million of capital funds. To make those kinds of numbers work — our budget hovers around \$35 million a year — we had to find different ways to make the reductions. We had done a number of central things to lower our cost of licensing and implementing certain technologies, but the employees are the ones in the trenches working with those technologies every day. They brought forward suggestions that saved us that additional \$600,000.

Do other Oakland County agencies plan to implement cost-reduction blogs of their own?

Because of the success in the IT department, we have now given all departments in county government an opportunity to use the blog, and they are now providing savings to the county as well. I am also in charge of facilities engineering, and they have found hundreds of thousands of dollars in savings from the employees' suggestions.

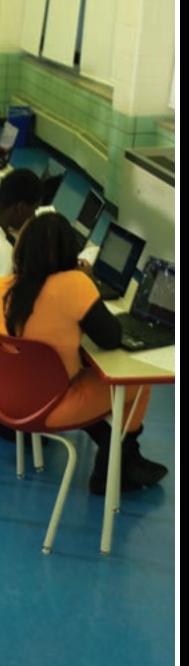
BY ANDY OPSAHL, FEATURES EDITOR

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BY HILTON COLLINS PHOTOS BY MATTHEW GILSON

THE UNITED STATES is often seen as the world's technology leader, but the 21st century could bring some challenges to the throne.

Consider this: The Rand Corp., a nonprofit research organization, reported in a 2008 document, U.S. Competitiveness in Science and Technology, that the European Union awarded 41,000 science and engineering doctorates in 2002 compared to America's 27,000. In the paper, Richard Freeman, a research associate with the National Bureau of Economic Research. forecast that by 2010 Europe will produce twice as many doctorates in the field as the United States, and China will produce about 25 percent more than the U.S.

But an innovative endeavor in Chicago could become an example of how to improve America's standing. On Sept. 8, 2009, the Chicago Academy of Advanced Technology (CAAT) opened its doors. The academy is the result of an effort — led by Mayor Richard M. Daley and CIO Hardik Bhatt — to fill the need for skilled IT workers and tech-savvy executives at Chicago companies and within city government.

Principal Teisha Jones and Matt Hancock, executive director of the Center for Polytechnical Education, show off a Chicago Academy of Advanced Technology classroom.

CAAT is operated by the Center for Polytechnical Education, a nonprofit focused on training young people to be shining technology stars in a changing economic universe. Matt Hancock, the center's executive director, hopes the subject matter will help build technical prowess and creativity within the next generation so they can strengthen the economy.

"We want to see our graduates getting great jobs, then going into management, going into ownership of companies, starting new companies and driving the creation of the new kinds of businesses that we'll see in our future," Hancock said.

The school will train students in multiple science and engineering subjects, including robotics, computer programming, biotech-

Chicago CIO

Hardik Bhatt

co-chairs the

of Technology

helped lead the

effort to create

CAAT.

Advisors and

mayor's Council

nology and Web development — along with the conventional subjects that are required by state law.

"We have to make sure we're offering the students the seed courses they need, so that means students will take English. Students will take math. They'll take science. They'll take subjects in social

sciences as well. They'll take P.E. — all those are sort of the baseline course offerings," said Teisha Jones, principal of the new academy.

As students progress in their studies, they'll gain work experience at companies and guidance from a mentor in the business world. CAAT graduates will leave the school with various IT certifications, industry experience and know-how before they ever step foot inside a university classroom.

"The most exciting thing is knowing that I will have an opportunity to potentially change the lives from the students entering the door, and understanding that it is definitely an opportunity of a lifetime to sort of build and mold these students to be leaders in the field of technology," Jones said.

Research and Planning

If all goes well, CAAT will be part of the solution for local companies that need to find the right talent for high-tech operations. The school came about because of



a series of events that began years ago. Bhatt co-chairs the mayor's Council of Technology Advisors, and said the city commissioned McKinsey, a management consulting company, in 2005 to conduct a pro bono study on the local technology sector to assess the region's IT strength.

"They basically looked at all the technology — information technology, biotechnology, nanotechnology — and they came to a conclusion that the Chicago area in general is moving ahead more slowly compared to the coasts of the United States," Bhatt said.

Chicago needs more talent to revitalize these areas. Between late 2006 and early 2007, Bhatt convened meetings with local businesses and postsecondary institutions on behalf of the council. The businesses discussed the report's findings and started brainstorming. They said their companies face a shortage of computer science graduates and people with enough business sense to know what industries need to turn things around.

And when the council met with local universities and technical schools to hear their perspectives, what they heard was enlightening.

"We posed the same question, 'Why is McKinsey saying that we are not focusing on talent?' and 'Why are businesses saying they are not getting the right graduates and enough graduates from your classrooms?" Bhatt said. "They said, 'Hey, we don't have a problem in changing our curriculum

and making sure that we produce the right graduates. Our problem is even filling the computer science classrooms."

The city and local businesses saw the need to cultivate more young people interested in IT careers, but there needed to be schools to train them in. Chicago was already committed to building more schools, but at least one of them needed to focus on technology.

These building efforts were rooted in city initiatives like Renaissance 2010, which Daley launched in 2004 to increase quality educational options across Chicago. The city also launched the Chicago LEADS initiative — or Leading Economic Advancement, Development and Sustainability — initiative in 2007 to open career-oriented schools. During this period, Chicago Public Schools solicited proposals to parties interested in opening new schools.

Bhatt said these new schools could either be tuition-free public schools supported by government funds; charter schools, publicly funded and free from some regulations that bind public schools; or contract schools, which are public schools run by companies, nonprofits or other third parties. By 2008, however, Illinois had maxed out the number of charters it could approve, which left the contract and public options for new schools.

City officials didn't think a traditional public school would work as a technology academy because of constraints on the public education system. Consequently the city solicited for organizations interested in cre-



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The Chicago Academy for Advanced Technology won't only be unique because of what it

only be unique because of what it teaches, but also how it teaches. School officials plan to arm students with innovative tools to conquer the complicated and ever-changing technology sector. And they'll be able to see how well they're doing as they learn.

According to Matt Hancock, executive director of the Center for Polytechnical Education, a nonprofit organization that operates the academy, some courses on the tech menu include: training on a robotics application developed at Carnegie Mellon based on the Lego Mindstorms platform of programmable blocks; Alice, educational software that teaches children computer programming in a 3-D environment; and Netiquette, a set of standards designed to facilitate proper interaction on blogs, forums and other Web 2.0 outlets. Students will learn this and more during their first two years of instruction in a junior academy, which lays the foundation for a more specialized focus for the following two years.

"The senior academy is going to be relatively unstructured, where the students are an active participant in determining what they're going to be learning with their teachers, faculty adviser and industry mentor. And a lot of the learning is going to be done outside, off campus," Hancock said. The off-campus work will include internships and working on projects with organizations, like businesses and city colleges.

There are plans for students to be able to regularly measure their own performance thanks to real-time data collection. As students meet objectives throughout the year, their progress will be notated and entered into a database. The data will be collected and updated in real time to reflect students' handling of different benchmarks.

"It's going to be unlike anything you've probably ever seen in any high school," Hancock said. "The whole basis of the program is that students will — as quickly or as slowly as they need to — master the same level of content. We're taking data on how the students are learning every single day."

ating a contract school, and the task went to the Center for Polytechnical Education. The center also operates another contract school in Chicago called the Austin Polytechnical Academy, which is focused on preparing students for four-year colleges and careers in high-tech manufacturing.

"You have to meet certain standards that the public school system would meet, but you're given a tremendous amount of autonomy. You're able to really develop your own curriculum, your own teaching and instruc-



tional methods, and your own standards for teachers and students," said Terry Howerton, chairman of the Illinois Technology Association, a trade association of approximately 500 technology organizations. More than 100 of the association's companies support CAAT by providing curriculum input, volunteers, equipment and funding. Their ranks include household names like IBM, Microsoft and Google.

The first fall freshman class had 150 enrollees, a number Hancock estimates will be the same for each successive freshman class for the next three to four years. The typical public school year is about 180 days, but academy students will attend a mandatory summer program of four to six weeks. And when they go to class, they'd better be prepared to put in some long hours.

"The day is going to be 8 a.m. to 4 p.m. for core academics. The typical school ends at around 2:30, 2:45 in Chicago, and then the students will move into an after-school program that starts at 4:00," Hancock said. "Their days will be longer than a typical public school day."

Freshmen will be met by seven instructors initially, in addition to one special education teacher, a director of instruction, Principal Teisha Jones and an industry liaison who

will be the school's link to private industry. More teachers will be added as successive grades come along.

Ways to Learn

Lessons will focus on the learning process itself and not just on mastering information. Students will engage in more hands-on learning experiences entailing group work, voicing thoughts out loud for other students to listen and comment on, and using resources outside of school to research information. They will be encouraged to provide vigorous input in teacher lectures and take a more active role in their own learning. Hancock refers to this method as inquiry-based or problem-based learning.

"You're teaching students how to problem solve and how to do analysis, and then they're applying those skills to specific objectives that reflect different levels of thinking, and that's how they move through the curriculum," he said. "And so the teacher is the facilitator in this kind of a setup as opposed to a lecture or someone who imparts knowledge."

Students' grades will be based on how well they master objectives in what's called a mastery-based learning system. The system has yet to be fine-tuned, but students will have to master at least 90 percent of the objectives to get a C or a B.

"We're going to have a very high ceiling in terms of expectations of the students, and the range of grades that you're going to see will be much tighter than in a typical school because we're giving kids as much or as little time as they need to master the specific objective," Hancock said.

Guiding Students

Students will be learning with the support of the vendor community, which comprises numerous private-sector groups with an IT presence. These companies have the money and personnel to help with funding and equipment donation, and help advise the academy on what IT coursework is relevant to today's technology.

"I think they get a tremendous value out of it, and their value comes from a readymade work force that they have personally worked on creating," Bhatt said.

These companies will be the source of internships that will introduce students to workplace culture. They will also supply mentors to students who will give one-on-one attention. A mentor will be a working professional who can help guide an assigned student as he or she develops a technology focus. The academy plans to have one

mentor per student with no mentor assigned to more than one student, but that could be challenging. Although there are 150 freshman enrollees, fewer than 150 mentors have been secured as of press time. When the first freshman class reaches senior year, the academy will have about 600 students total.

The school's recruitment effort involved academy representatives speaking to families and various middle schools about what the curriculum would entail. Interested students applied, and after receiv-

ing about 300 applications, the freshman class was selected by a lottery. There were no special requirements to get in because CAAT has an open-enrollment policy.

"We went out to different schools, got in touch with counselors, did presentations and attended any sort of fairs that would allow us to provide information about our school and the opportunities that we had available for families," said Jones.

She and colleagues had talked with the parents of potential enrollees to inform them about what the academy has in store for students.



"We had that conversation with parents explaining to them that this is a technology high school, and the goal is to make their son or daughter leaders in the field of technology," she said.

Howerton has high hopes for what CAAT can do for area youth and noted that students might enter the school at different levels of academic achievement.

"The public school education that they have received today has failed them, and so we've developed an instruction method and curriculum that

we think can accelerate the learning process for those kids who are several grade levels behind," Howerton said.

Even though the academy is a contract school, it still falls within the Chicago Public Schools jurisdiction, so it's automatically received about \$7,400 per student from public funding. More money was needed to finance programs like the mentorships and the acquisition of some instructional technology. Hancock said as of August 2009, the academy had raised hundreds of thousands of dollars in outside financing from various donors, including many of the sponsor organizations that belong to the Illinois Technology Association. This money has been enough to support instruction for the firstyear freshman class, but more fundraising will be needed to support successive school years, the summer program and mentor programs. The academy's Web site still lists requests for donations.

"What we think we're doing has an opportunity for real systemic change, not only in the instruction methods, which are, in and of themselves, unique not only in the way we organize and the curriculum we're presenting, but also in the general concept of increasing the number of stakeholders in public education," Howerton said. "Giving private-sector leaders an opportunity to give back and play a role in public school education is a fundamental opportunity for systemic change."







SHARING OR OUTSOURCING IT RESOURCES can be a tough job

— no matter how sensible or cost-effective the concepts may seem. These tasks often involve reorganizing staff members or perhaps eliminating some altogether; phasing out and developing new work processes, which everyone must adjust to; figuring out how shared operations and resources will be managed; and last, but certainly not least, discerning how much of a role private contractors will play in day-to-day operations. And of course, all this comes after you do a comprehensive assessment of your organization's current processes.

But with the nation mired in a recession, some governments are taking another look at shared services and outsourcing arrangements, despite the potential organizational hurdles. Officials in states like Pennsylvania, which has outsourced state government IT infrastructure since the late 1990s, say these strategies can cut operational costs and free up funds for public-policy priorities.

"You don't want to be spending millions of dollars on running payroll when you really need to be educating kids and helping people get jobs," said Naomi Wyatt, Pennsylvania's senior deputy chief of staff and former secretary of administration. "That's really the underlying impetus for all of this, which is getting things in a more cost-effective and efficient place so you can spend your money on the things the government should be spending money on."

For governments mulling shared or managed services, there's no better place to look for insight about potential challenges and rewards than from government IT executives who've already walked down that road. Those with firsthand experience shared their steps to success with Government Technology.

Assess the Need

Governments should take a good look at their current situation before deciding what to share or outsource, Wyatt said. Though it happened before her tenure, Pennsylvania likely did that examination before officials decided in 1999 to consolidate and share the state's IT resources. Since then, Pennsylvania has saved about \$317 million as a result. A shared data center was outsourced to Unisys during the consolidation, and the state's Shared Services Initiative ultimately centralized governance, procurement and management of IT hosting services.



"One of the biggest challenges in jumping into shared services is understanding the scope of what you want to share. Sometimes that's really hard because everything's spread out," Wyatt said. "It's in different places and under different people's authority, and spending time to really understand what it is you want to pull together — the volume of it, the scope, the complexity — is really, really important."

Pennsylvania is just one of many large governments that have grappled with what to share and outsource. Lynn Willenbring, CIO of



"One of the biggest challenges in jumping into shared services is understanding the scope of what you want to share." - Naomi Wyatt,

Minneapolis, renegotiated the city's existing outsourcing contract with Unisys to manage municipal IT infrastructure during the first six months of her appointment. The city has saved more than \$18 million and has also expanded service delivery to citizens since its public-private partnership with Unisys began in 2003, according to the vendor.

Based on that experience, Willenbring advises organizations to first examine their internal infrastructure. If it's insufficient, then look for alternative structuring and management options.

"Do you think you're doing it really well in-house today? Do you think you have industry best practices across all aspects of your IT organization? If you can't answer 'absolutely yes,' then you need to consider [management alternatives]." One option a CIO might choose is seeking outside help.

An IT leader should also ponder the agency's work force and staffing levels. Is the organization having trouble gaining or retaining qualified personnel because of a bad location or inadequate salaries? If so, maybe qualified workers only can be provided by a corporate partner. "Some organizations have a real challenge getting the talent that they need to do the jobs they need to do," said Willenbring. "The technology's the easy part. The people are the difficult part."

On the shared services side, a government should look at its business processes before deciding to consolidate, according to David Wilson, director of Accenture's Health and Public Service Finance and Administration industry group.

"If you have a small organization — let's say it's a small city or county, and it might

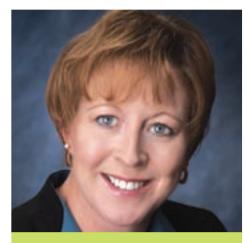
have lots of departments — if its transaction volume is quite low, it probably isn't going to get the benefits of moving to a shared services operating model. Typically the benefits come from high volume where you can leverage efficiencies and economies of scale," Wilson said. However, if an organization handles many back-office processes, perhaps sharing is more sensible.

Deciding to scrutinize the potential need for shared services is one thing, but it's another challenge altogether to carve out time and attention to do so. Sometimes technologists are busy managing the same systems and tasks that they'd like to streamline. Willenbring remembers Minneapolis had some serious issues before consolidating and outsourcing.

"We were so focused on the break-fix keeping the servers up, dealing with the deskside support. We just weren't able to help the city move forward from a technology perspective because 80 percent of our time was consumed with keeping the existing environment operational," she said. "We didn't have 24/7 support for anything — no service desk, no data center support. Essentially we were just drowning."

Measure Total Cost of Ownership While considering how well an IT organization handles technology functions in-house, measure the total cost of ownership for operating hardware, software and services. These costs sometimes aren't closely tracked by

government agencies, but they're critical to



"The technology's the easy part. The people are the difficult part." — Lynn Willenbring, CIO, Minneapolis



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"Most institutions really don't understand the cost of their technology and the cost of many services that they provide," said Bob Hanson, CIO of Sarasota County, Fla., and Sarasota County School District. This lack of clarity might also apply to overall personnel costs. "They don't understand what the hourly cost of an employee is when you add labor, overhead, benefits, office space and all the array of things," he said.

Five Steps for Successful **Sharing**

Assess your organization's IT need. **Measure** total cost of ownership. **Produce** a carefully crafted contract. Teamwork — get everyone onboard with the governance

Win approval from top executives.

If a government knows what it's spending on people and technology, it will see what it can gain from outsourcing or sharing. "Otherwise, you're never really going to get a valid comparison, and you're either going to be subject to being gamed by someone or an opinion winning out over fact," Hanson said.

Sarasota has a communitywide fiber network that's shared by the county, the school district and the cities of Sarasota and North Port. All users share the

costs of operating the infrastructure. Sarasota County also designed a Web-based application for public agencies called GovMax that integrates strategic and business planning, performance management and budgeting functions. Agencies use GovMax to get a firmer grip on the efficiency and performance of in-house processes and their results.

Carefully Craft the Contract

In most cases, the relationship between a service provider and the service user comes down to a service-level agreement (SLA). It's an all-important document that formally defines the service and how it will be delivered. If SLAs are not carefully crafted, problems could trip up an organization.

Minneapolis hit an SLA-related snag with Unisys after agreeing to the initial contract in 2002. As Willenbring saw it, the agreement didn't adequately define some service-desk protocols. The wording specified that the average answering time would be less than

Time and Money

Agencies often look for help when measuring their spending on IT resources and how much manpower it takes to manage them. Integrators can help jurisdictions understand on their IT costs — financial or otherwise.

One example is the Ohio Shared Services initiative, an endeavor that began in 2007, in which state IT will manage multiple financial processes for government customers from one central location. The plan is scheduled for completion in fall 2009. Agencies will move to the new model in phases.

Before this implementation began, the state partnered with The Hackett Group, a strategic advisory firm, to study internal processes before forging ahead.

"You have to benchmark. I can't imagine attempting this project without good data to support the decisions," said Aaron Erickson, program manager of Ohio Shared Services. The Hackett study included back-office procedures, like procurement and finance, among other things. "We started with a high-level benchmark that Hackett provides, which gives you FTE [full-time equivalent] estimates of how many hours a week people are performing certain functions in each of these areas."

45 seconds for service desk personnel, but that specification didn't guarantee timeliness. If numerous callers waited for several minutes but others waited only seconds, that could satisfy the 45-second average even though many people waited too long for assistance.

When the city's existing contract with Unisys came up for renewal in 2007, a new SLA was drafted with better specifications for answering help-desk calls. Now 95 percent of calls must be answered within 60 seconds.

An SLA should include statements detailing what technical and performance characteristics will meet an agency's requirements, and a quality assurance plan for meeting them. A good SLA establishes metrics to measure performance. But be careful when hammering out the technological specifications — avoid confusing those who'll read the contract.

It may help to bring in a contract expert from outside the IT department. Have that person examine the contract for potential ambiguities in diction.

Accenture's Wilson thinks the language in agreements shouldn't be too dense. "One problem we see a lot is that the service-level agreements are too complex to be understood or too voluminous to be really used on a dayto-day basis as a management tool," he said. "One key parameter for service-level agreements is that they need to be written clearly in plain language so that they're easy to understand and use."

Get Everyone Onboard

When governments decide to outsource or share resources, it can be tough to get departments to go along. "What I've found to be most helpful is to first understand what the real issue is," Willenbring said. The issue isn't always the technology. It's sometimes about ego. "It's about control. It's about ensuring that the people working on things know what needs to be a priority," she said.

Pennsylvania's Wyatt encourages departments to be open about their needs and participate in the governance process.

"If you have your customers all getting together, talking to each other and willing to help each other out when they're in need — I think that goes a long way to customers feeling



"Most institutions really don't understand the cost of their technology and the cost of many services that they provide.

— Bob Hanson, CIO, Sarasota County, Fla., and Sarasota



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like they've got some skin in the game, and they're not just getting billed for a service," Wyatt said. "If you dictate it, you just show up and tell people what the services are going to be — and if you don't let them participate — they get disillusioned, angry and don't participate. You end up having a lot more problems."

But sometimes, participation creates problems too. Collaborators may disagree on who

The gave and formal for

Ultimate Authority

Ohio Shared Services program manager Aaron Erickson had to work hard to sell Gov. Ted Strickland on the idea, and the approval didn't come quickly.

"The hardest thing was getting both the governor's office and all the agencies educated, onboard and supportive," he said. Some people were resistant. Erickson put in a mighty effort to get the needed support to proceed.

He began by meeting with various chief financial officers in early 2007, and this effort grew into a 15-agency chief financial officer advisory council that's now the primary governance board for Ohio Shared Services. Erickson also spoke with outside parties to build momentum, and eventually he had enough clout to speak with the governor's office, state senators and other policymakers.

The whole process took about a year. He secured about \$6 million in initial funding, and a later round brought in \$40 million more.

Many leaders back the project today, but Erickson admits that some still aren't sold on it. "There have been calls from senators to cancel the project," he said. controls the sharing process or how it should function. Wilson offers an example: "The friction comes not in that they're going to have to work together once shared services are rolled out. Quite frankly, once a shared service center takes over the accounts-payable business process, it doesn't mean that the Department of Transportation and the Department of Human Services have to be interacting with each other in a new way," he said. "They need to be interacting with the shared service center in a new way."

According to Wilson, one way to get parties onboard is to identify crucial business processes and then include everyone in working through the process so an agreement can be reached. He said Accenture handles these situations by involving different user groups in the decision-making when hashing out the parameters of businesses functions. If everyone's on the same page, there's little room for confusion.

"When we help a government client implement shared services, the first thing we do is benchmark to determine where the inefficient business processes are that would be good candidates to put into a shared services operating model," he said. "What happens in these shared services projects is, once a business process is defined as a candidate to go in shared services, we pull in all of the agencies or departments that are going to be the new customers for this shared services organization, and we jointly design how the new business process is going to be done."

Win Approval From the Top

In some cases, a CIO's or vendor's influence may not be enough to mediate a conflict or spur everyone's agreement on outsourcing or sharing. A governor, mayor, agency director or other powerful public official may have to step in as the ultimate peacemaker.

"You need somebody from the top saying, 'This is how we're going to do it,' because otherwise you have people slipping off the farm right and left," said Pennsylvania's Wyatt.

But convincing a governor or mayor to green-light these projects can be an uphill battle. Aaron Erickson, the program manager of Ohio Shared Services, knows



"Once I had enough people saying, 'I think **this is a good idea**. We should pursue it,' then we started the conversations about funding."

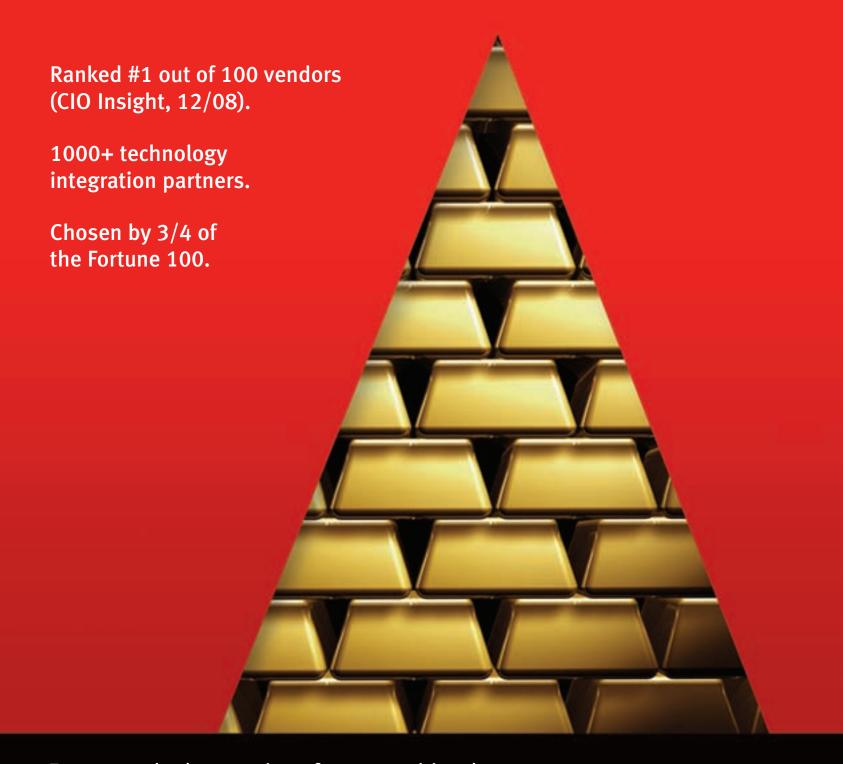
- Aaron Erickson, program manager, Ohio Shared Services

this well. He is one of the people who spearheaded the project's ambitious consolidation of many financial processes under the management of a central organization within the state's Office of Budget and Management. The Ohio Shared Services center executes financial processes for customers across state government, and there are plans to implement an enterprise resource planning system based on Oracle's PeopleSoft for customers. Erickson has spent years working to secure funding from the government and winning crucial support.

"It takes a lot of time, and you have to be committed to putting the time in. It started with one-on-one lunches, coffee with every CFO who would meet with me — and from there, starting to talk to outside advisers," Erickson said. "Once I had enough people saying, 'I think this is a good idea. We should pursue it,' then we started the conversations about funding."

After funding is secured, public-sector IT leaders, including Erickson, have found that shared and managed services usually pay off in the end — and in time, many citizens see the benefits too.

"It's how collaboration makes everything better for everybody," Sarasota's Hanson said. "It's better for the institutions at large. It's better for your career. The opportunities are greater. The service levels are greater. Your reputation is stronger." "



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CRM:

There's an App for That

arlier this year, San Francisco announced that citizens could use Twitter to inform the city about municipal service problems, such as graffiti, broken streetlights and potholes. By following San Francisco's SF311 Twitter account, users can submit "tweets" to the city and receive a tracking number that lets them follow the city's progress — or lack thereof — in addressing their issues.

The simple act of incorporating Twitter into its customer relationship management (CRM) process adds San Francisco to a growing list of cities using Web 2.0 applications to make the citizen-government relationship a little easier. These applications tend to be easy-to-use and easy-to-integrate, providing benefits to the city and the citizen at minimal or no expense. On the East Coast, New York and Boston aim to join San Francisco by adding their own 2.0 twist to CRM.

Apples for Bean Town

In winter 2008, as snowdrifts lined the streets of Boston, a few staffers at Mayor Thomas Menino's office came up with an idea. The city's CRM service had been receiving a lot of input regarding snow removal, said Nigel Jacob, the mayor's senior adviser for emerging technology. Jacob and his colleagues thought it would be great if Bostonians could let the city know, via their mobile devices, where snow was piling up.

Then, as now, Apple's iPhone was a consumer blockbuster, due largely to its evergrowing list of handy applications — or apps. To Jacob and his colleagues, the iPhone seemed like the perfect platform to experiment with a mobile CRM/311-type application. There was

only one problem: They needed to build the application.

For help, Jacob turned to Connected Bits, a Boston software development company that specializes in mobile software.

"Our thought in trying to make it interesting to Connected Bits was that if we could develop an application like this, then at some level integrate with our CRM back end, pre-

sumably other cities would be interested in something like that as well," Jacob said. "So isn't it in their best interest to do this work for us? It worked."

and New York incorporate Twitter and

Development work on the app began in mid-April. For about \$25,000 to cover technical support and server costs on Connected Bits' side — and thanks to some long hours put in by Jacob and his staff — the free app,



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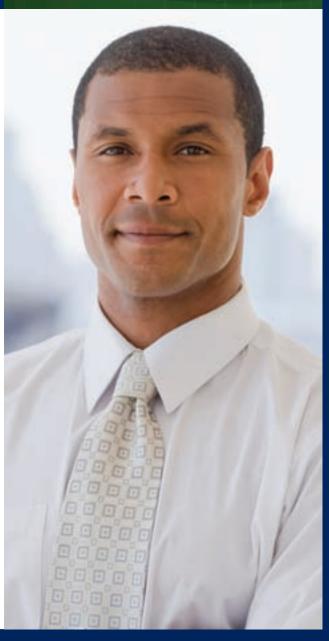
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wireless

called Citizen Connect, was ready in mid-August for iPhone users to download.

With Citizen Connect, Boston-area iPhone users report problems to the city in four categories: potholes, graffiti, streetlights and other. And it's the "other" category that could prove revolutionary. Jacob cited the example of a citizen who wants a tree planted in his community.

"By selecting 'other,' you could snap a photo of the location, the GPS will grab your coordinates and you can write in the field, 'Plant tree here.' So those are the kinds of things that this enables," he said.

Jacob also noted that if residents think a street needs more lighting, the Citizen Connect app will work in the same way. An iPhone user only needs to take a photo of the street, and the GPS details are uploaded with the picture to the city CRM. Like San Francisco's SF311, Citizen Connect generates a ticket for each issue submitted, allowing users to track what's being done.

"I think this is just a chance for us to build some excitement and interest in this as an approach and then we'll do a lot of other things as well," Jacob said.

Tweets of New York

A few hundred miles southwest of Boston, New York City also is upping the ante in the Web 2.0-enabled CRM game. And like San Francisco, New York's first foray involves Twitter. Unlike San Francisco, however, it's not New Yorkers who will be tweeting the city, it's the city that will be tweeting New Yorkers.

With budget cuts impacting the Department of Information Technology and Telecommunications, CIO Paul Cosgrave wanted to find a way to drive people to the city's Web site to conduct civic transactions. That desire led to the development of the city's online version of 311.

"A large part of our whole movement started with 311 Online, which gave us the ability to do everything we've been doing with 311 in an online capacity," Cosgrave said. "The cost-reduction aspect of what's happened and this entire growth has hit us very rapidly around the Web 2.0 expansion with people wanting accessibility in every conceivable way possible."

Since 311 Online launched, Cosgrave and his staff have looked for more ways to optimize the system. The sudden rise of Twitter gave them an idea. The 311 system routinely received large amounts of consumer input concerning parking regulations. It's common for motorists in the city to find parking prohibited on one side of a street for regularly scheduled street cleaning. And with parking at a premium, citizens are continually asking for information about where and when they can park.

"There's something in the city called 'alternate side parking," said Joe Morrisroe, executive director of 311/NYC.gov Operations. "It's basically street cleaning rules and regulations. But many New Yorkers call every day to find out whether it is or is not in effect."

Cosgrave and Morrisroe saw an opportunity to incorporate Twitter into 311 Online. But instead of responding to tweets about alternate side parking being in effect or not, they decided to invite people to follow the city on Twitter so they could be updated automatically.



"The cost-reduction aspect of what's happened, and this **entire growth has hit us very rapidly** around the Web 2.0 expansion with people wanting accessibility in every conceivable way possible."

"So rather than a one-to-one relationship where a customer has to call and deal with one representative to get the information, we will have one source, push it out and potentially hit many customers, be it our followers on Twitter or potentially our followers when

Ready, Set, Go

New York City is not resting on its Twitter laurels. In October, the city launched its NYC BigApps contest, a citizen application development initiative not unlike the successful Apps for Democracy program in Washington, D.C. Anyone who wishes to participate may access raw city data and use it to create innovative, Web-based applications. Entries are due by Dec. 8, 2009. The public will vote on entries beginning Dec. 15. A \$20,000 cash prize will be divided among winners in various categories. Visit www.nycbigapps .com for more information.

they retweet, which then has the exponential factor," Morrisroe said.

Cosgrave said that the city will launch additional mass awareness campaigns on Twitter. Whether telling New Yorkers where to obtain marriage certificates or how to enroll kids in meal programs, the Twitter service is a simple and free way to dispense information to a large audience.

Besides Twitter, the city is also rolling out Skype for 311. Skype, the free Web-based phone system, will allow New Yorkers to get 311 updates anywhere in the world at no cost.

"It was just one of those logical steps," said Nicholas Sbordone, director of external affairs for the New York City Department of Information Technology and Telecommunications. "We already have people able to call in from their cell or landline, and they can log in now to 311 online from their smartphone or desktop. It only makes sense for people who are traveling either within or outside the country to be able to Skype them if they have accounts and then access the same services." @



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e-government

Oakland County, Mich., provides a unique digital communication platform to reach citizens.

hen the H1N1 flu epidemic broke loose in late April 2009, Americans clamored for information about the disease and its potential impact in their communities. Many local governments turned to their Web sites and other means of digital communication to disseminate information.

But simply placing a notice on a Web page or sending an e-mail isn't always sufficient. How can local governments be sure to provide the information citizens want and need in a timely fashion? And more importantly, as there may be overlap among different government departments and agencies, how can local governments ensure that their citizenry can find the information they seek without difficulty?

Oakland County, Mich., a community of 1.2 million residents in the state's southeastern corner, confronted these challenges by implementing a new digital communication platform. The county is going even further by letting its municipalities use the service for free.

The Digital Platform

The county uses a digital subscription service provided by GovDelivery. It plugs directly into an existing Web site and lets citizens sign up to receive notification via e-mail, RSS feed or text message when Web pages in specific categories are updated.

For example, if a citizen were interested in being notified about swine flu, he could go to a general subscription sign-up page on a county's or municipality's Web site. There he can select from more than 40 categories, including a high-level category called Health



Division or underlying categories like Flu Information, Flu Shots or Pandemic Flu Preparedness. Whenever a Web page tagged with that category is updated — no matter what department, agency or level of government is providing that revised information — the citizen is immediately notified with a link to the updated page.

"Before, one might have to sign up for a general or marketing e-mail alert that may not provide information they are really interested in seeing," said Zach Stabenow, executive vice president and co-founder of GovDelivery. "But GovDelivery allows a county or city to be very specific. As a citizen, maybe I just want to sign up and receive an e-mail alert when the county commissioner's meeting minutes are posted. And now I can do that — get real-time information

from my local government straight to my e-mail box and choose what that information is."

County, Mich., allows its municipalities to use its citizen com-

Phil Bertolini, deputy county executive and CIO of Oakland County, said allowing citizens to choose the information they want to follow is critical when dealing with a large government Web site.

"We have 25,000 pages of content on our site with 170 different content managers managing data on a daily basis," Bertolini said. "We work hard to remain up-to-date and dynamic." Because of those active, often daily content updates, the county appreciates an automatic process that doesn't burden its information managers with more work.

The new technology also helps save taxpayers some money. "The communication benefit is invaluable. But the other benefit of using this kind of communication platform is that it reduces costs for the local governments," Stabenow said. "The printing and postage involved with delivering information through traditional channels can really add up."

Including Municipalities

Oakland County started using the platform in June 2008. The county decided to offer GovDelivery to its municipalities this year. In his state of the county address in February, Oakland County Executive L. Brooks Patterson discussed the benefits of GovDelivery and offered the service to all municipalities free of charge. Although some might find the announcement surprising, Bertolini said the county's leadership is committed to helping its communities obtain the right technologies.

"We've often provided new technologies to our communities at no extra cost," Bertolini said. "After all, why build something for our treasurer that only he can use? All of our local governments have treasurers that could benefit. Our taxpayers may live in a particular city, but they also pay county taxes. Why not use GovDelivery to satisfy the information needs of all of our citizens while working cooperatively with our local governments? It helps cement our relationship with our local communities even more."

Oakland County's agreement with GovDelivery lets the county share the platform with its 62 local governments. At the cost of approximately \$8,000 per month, Oakland County lets its communities use the GovDelivery subscription service, and the municipalities aren't responsible for a dime.

When Dave Ax, treasurer of Groveland Township, heard Patterson's speech, he jumped at the opportunity to pilot the system in the small, rural community of about 6,000 residents.

"We're not techno-geeks in this office, so we rely on experts to do most of our technical stuff," Ax said. "But when I heard about GovDelivery, I thought, in this day and age, it would be very beneficial for our township residents to be reminded by e-mail that something new is happening."

Working closely with the vendor and a part-time contract webmaster, Groveland

Township got the platform running with minimal glitches in just under four weeks. Ax already considers it a success — not only because residents can pick and choose information they want to be notified about, but also because the notifications occur automatically at both the township and county levels. It creates greater efficiencies for all parties.

"The word 'transparency' gets overused," Ax said. "But GovDelivery is helping us to be more transparent to our residents so they can see right away what we're doing as officials to better the community and make their lives easier. It not only helps the local municipalities in this time of tough cutbacks, but it allows

around different Web sites. "If it wasn't so easy, I wouldn't use it," he said. "I just don't have the patience."

Jim Taylor, Oakland County's chief of e-government, said the ability to share subscription lists is a huge benefit.

"I live in a city and in the county. With shared lists, I can go to one Web site and sign up for the information I'm interested in instead of having to visit several different Web sites and poke around," he said. "After all, the official government boundaries and limits don't necessarily mean anything to the citizen. That person has an issue, needs a service or wants information and just wants to go do that."

"I was driving to lunch one afternoon and got a message on my cell phone that some swine flu information had been updated. I was able to go to the mobile site on my phone and **read the new content right away**."

Jim Taylor, chief of e-government, Oakland County, Mich.

us the opportunity to help our citizens stay current on the latest happenings across the township and county, and do it in a really easy way. And most importantly, it does not cost us a penny."

Measure of Success

George Graunke, a 72-year-old retired resident who is a regular at Groveland Township board meetings, uses the service and is very pleased with the results. An active community member, as well as a new member of the Oakland County Senior Advisory Council, Graunke subscribed to receive notifications when the agendas and minutes of board meetings are posted on the Groveland Township Web site, as well as for updated county information.

"I like to stay informed and be involved in the community," he said, "and the subscription service is very easy to use and gets me the information I need as soon as it's available."

Graunke is actively involved with the township and county, so he appreciates that the service lets him get the information he needs from both governments without having to spend too much time digging

The county is getting positive feedback about the service from citizens. Taylor said subscriptions increased during the H1N1 scare — and because of the interest, the county quickly and easily added a new subscription category specifically for information about the outbreak.

"I was driving to lunch one afternoon and got a message on my cell phone that some swine flu information had been updated," Taylor said. "I was able to go to the mobile site on my phone and read the new content right away. That's very valuable to citizens who want to get that new information right away."

The point that Bertolini, Taylor, Stabenow and Ax return to is that this kind of service can help the different levels of government work together more easily.

"Oakland County's leadership has said, 'Let's look forward and work with our municipalities — we can collaborate together," Stabenow said. "Within local government, it's not always easy to get separate groups of government, at different levels, working together. But Oakland County is doing it and doing it well."

KAYT SUKEL IS BASED NEAR FRANKFURT, GERMANY. HER WORK HAS APPEARED IN THE WASHINGTON POST, GOVERNMENT HEALTH IT AND HEALTHCARE INFORMATICS.

document management

Electronic document management saves a court system hundreds of hours in manpower and thousands of sheets of paper.

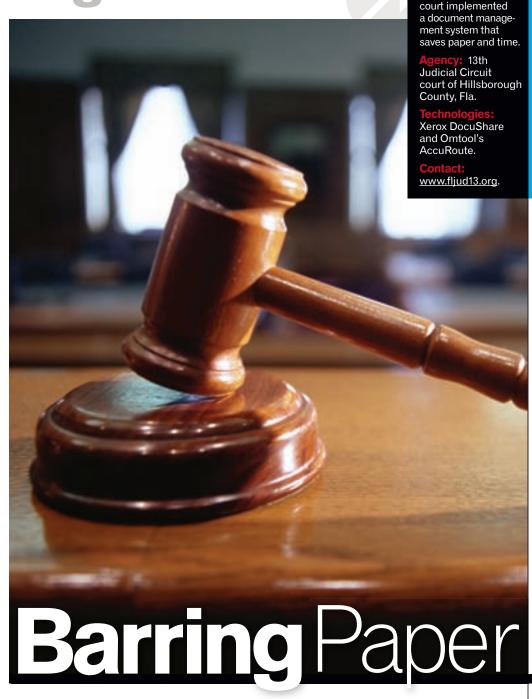
he United States annually uses about 4 million tons of copy paper — the type used in fax machines and computer printers — and spends \$4 billion yearly on it, according to Cutting Paper, a Lawrence Berkeley National Laboratory Web site that's sponsored by the U.S. Department of Energy. Some businesses use more paper than others. Courts, for example, are notorious consumers. Records are created for each court case and must be accessible to all parties involved, which means generating multiple copies.

So wouldn't it be nice to reduce paper consumption — and streamline work processes?

The 13th Judicial Circuit court in Hills-borough County, Fla., is doing just that after enlisting a document management system to digitize records. By using the system, the court has drastically cut the amount of paper used and enabled information to be distributed electronically.

"Printing presents a challenge for us because, No. 1, it introduces a lot of time into the whole workflow process because of the handling of the paper," said Abdiel Ortiz, the court's chief technology officer. "So it makes sense for us to streamline things by either having access to that information online or being able to look online at the files and documents. And that, in essence, is what is driving us to go ahead and do this initiative."

The 13th Judicial Circuit court implemented the Xerox DocuShare ECM (enterprise content management) system to digitize documents, thus eliminating the need to make multiple copies of each record. The judicial court also added a storage area network to ensure adequate room to electronically store all the documents.



One court division is saving 8,000 to 10,000 pages of paper per day by using the content management system, Ortiz said. The department completes approximately 1,500 orders daily — they are created in Word, printed, sent to a judge to sign, reprinted if the judge makes any changes, and then filed with the clerk. "It was introducing, on average, about 260 hours a month that they were spending just on the process," Ortiz said. "Then we have to archive our paper documents, and that was another 120 hours a month — for a total of 380 hours."

The system reduced the amount of time the department spends on the order process to fewer than 3.8 hours each month, Ortiz said. The DocuShare system, storage area network and servers cost \$180,000 to \$200,000, he said. Because of the time savings the court is realizing, he expected to reach the return on investment in six months.

Florida's

13th Judicial Circuit

Streamlined Processes

Lila Stello, a hearing officer of the 13th Judicial Circuit court, attends approximately 40 hearings each workday and is responsible for writing a seven-page order for each one. Moving to digitized documents has reformed the work processes in Stello's office.

Before implementing the document management system in her office, the process for each court case was laborious: Stello would handwrite her recommended order in court and then make a copy of it. The original document would go to the judge to sign off on if he or she agreed with Stello's order. The signed order would be returned to Stello's office, where her secretary would make three copies to be distributed to others in the system, like the state Attorney General. Finally the original document would be filed with the clerk.

Stello said her secretary spent about two and a half hours every day making copies of the orders, which used about 1,120 sheets of paper daily. "We no longer do any copying. Not one copy is made of the original order with DocuShare," she said.

Now the original order is scanned into the DocuShare system. After the judge signs off on it, the order is ready for electronic distribution, which is set up through Omtool's AccuRoute, a Web-based document distribution platform. James Demel, systems operator for Xerox Services, works in the courthouse as part of the company's contract to run a copy center and provide support for DocuShare and Xerox equipment. Stello said Demel created a cover sheet in AccuRoute that allows the documents to be automatically distributed to different parties.

"We no longer do any copying. **Not one copy is** made of the original order with DocuShare."

Lila Stello, hearing officer, Florida's 13th Judicial Circuit court

document management system and four more divisions planned to add the technology.

Public Improvements

The content management system has made the court's documents more accessible for the public. Before documents were scanned into the system, physical records were kept, but old records were moved out of the courthouse to a storage location due to limited space. Stello said if a citizen needed a court record, he or she would have to order the court file. If the file had been moved to storage, it could take two to three days for it to be picked up.

Now the court staff can find documents by searching for the hearing date and person's name. "[A woman] walked in and said, 'I never got it. Where do I go? How much do I pay?" Stello said. "Because that's what it would be — they would have to pay the clerk for a copy and get it certified, which is more expensive. My secretary was able to hand her a copy immediately."

Another improvement the court implemented was a disaster-recovery site at a remote location. Ortiz said this project was important because information used to be backed up on tapes that could be shipped to an offsite location to preserve records. "It would take several

of the Office of the State Courts Administrator to get permission to use electronic signatures, Demel said.

"We want to be able to do the order originally online, and then get a signature block," Stello said, later adding, "Once that's done, this is really going to be fast because as I do the orders in court, while the parties are sitting here, they're going to go to the judge, get signed and sent right back to me automatically. I'll be handing out their orders right in the courtroom without mailing costs."



Along with digitizing documents, Florida's 13th Judicial Circuit court uses technology to remove stenographers from its courtrooms. Abdiel Ortiz, the court's chief technology officer, said audio recordings are made of each hearing that are transcribed later by a court reporter who is either in-house or working from a remote location. The project began in September 2008 and the court was preparing to fully deploy it as of press time.

Ortiz said the audio files are saved in DocuShare and the court grants access to external transcribers to use the database to listen to the files. The process saves time and streamlines the transcribing process. "This will basically eliminate the need for us to take that audio file and burn it to a DVD or CD and then provide them to a [transcriber], who in turn will have to listen to it and provide a transcript to the court," he said.

"Printing presents a challenge for us because, No. 1, it introduces a lot of time into the whole workflow process because of the handling of the paper."

Abdiel Ortiz, chief technology officer, Florida's 13th Judicial Circuit court

"They can scan to DocuShare and then to the AccuRoute server, and automatically send out that one document to multiple locations, including e-mail addresses, fax machines and printers," Demel said. The server permits encoded routing be added to the cover sheets, which eliminates redundant work by letting Stello and her secretary select the appropriate cover sheet; the document is automatically sent to the corresponding parties.

Ortiz said five of the 15 court divisions within the 13th Circuit court were using the

weeks, if not months, to get back to a state where we could do business," he said. "This way — assuming that a disaster didn't cover a huge region — we should be able to return to business as usual within minutes."

Digital Signature

The court hopes to find even more savings in the future by letting judges sign off on electronic documents. The court has submitted paperwork to the electronic forms committee



Indiana Cancels Huge Outsourcing Plan

Governor calls \$1.6 billion plan flawed; IBM says modernization was working.

alling the idea unworkable, Indiana Gov. Mitch Daniels halted the state's plan to modernize and privatize its welfare system. On Oct. 15, Indiana terminated its 10-year, \$1.6 billion contract with IBM to streamline state welfare eligibility.

Launched in 2007, the system lets citizens apply for welfare benefits online, in person or by phone. The system was to speed up and standardize eligibility determinations, but drew criticism for high error rates and slow request processing. In 2008, the federal government recommended halting the system rollout due to welfare recipients waiting too long for benefits.

Daniels said the new process — though well intentioned — was fatally flawed. It was intentioned to save applicants the burden of physically meeting with caseworkers. "This led to incomplete applications and confusion about what documents were necessary, and just didn't work in practice," he said. "There was an attempt to break the [eligibility] determination process into discrete tasks done by specialists and then assemble it again. But didn't work in practice."

Working as Intended

IBM denies that the new system didn't work. "IBM has been committed to the success of the modernization project and deeply regrets the state's decision," said John Buscemi, IBM's North America media relations director. "We've worked diligently and invested significant money and resources in the partnership with the FSSA [Indiana Family and Social Services Administration] to turn around a welfare system described by the governor as one of the worst in the nation."

Buscemi said the move to the new system was complicated by the recession and last winter's floods. Such factors triggered a 33 percent increase in social service applications since the upgrade began, he said. Buscemi said the initiative had still made major progress, and more than 231,000 welfare applications were filed online since 2007.

"We developed a Web portal through which two-thirds of applications for benefits are filed. This helps digitize applications and files to make the system more responsive," he said. "More than 25 percent of citizens request access and applications to benefits from home, [improving] the process for applicants with mobility issues. They aren't required to spend a lot of hours at a state assistance office."

A Hybrid System

Indiana will become prime contractor for the welfare system, Daniels said. State officials plan to create a hybrid of the best parts of IBM's new process, and practices the state used before the outsourcing.

Indiana will revert to in-person meetings between applicants and caseworkers, and return to a "case-based" eligibility, where a single caseworker or team of caseworkers handles all aspects of an applicant's case.

Under the modernization, the FSSA and IBM deployed a "task-based" approach to deciding eligibility that eliminated individually assigned caseworkers — a change officials expected would speed up eligibility decisions, but resulted in too many hands on each case.

Daniels said Indiana will keep e-document technology, fraud prevention measures and other improvements IBM made. "The fraud rampant in the Indiana welfare

system has apparently stopped," Daniels said. "There hasn't been a single allegation — let alone conviction — whereas there were dozens before. Official reports say more than \$100 million was stolen in the year before we began this change."

Still Expecting Savings

Despite the scaled-back upgrade, Daniels still expects Indiana to save about \$40 million in the next 10 years — \$10 million less than was estimated under the IBM outsourcing deal.

Daniels, who has advocated privatizing state services, denied that the initiative's problems stemmed from outsourcing. "This has nothing to do with a private or public agency doing the work. It has to do with the concept," he said. "If we brought in that same concept that IBM used and had state workers do all the work, we would've had the same result, or worse." He also disagreed that Indiana lost too many experienced eligibility workers during the outsourcing. "A lot of them needed to be gone; they were giving money to their cronies and friends," he said. "They [ran] the worst welfare system in America, ranked No. 50 in Welfare to Work. The federal government sanctioned Indiana for the failures of its system, so doing nothing wasn't an option."

Of the FSSA's 2,200 employees, 1,500 were transferred to IBM, which had to offer them jobs for at least two years. Daniels said he didn't know how many former state workers remained with IBM or its subcontractors. Daniels and Buscemi said FSSA staff still determine all final eligibility under the new system. Private workers aid citizens with the applications until they reach a state employee for authorization



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local government

Winning Web Apps



Top-ranked digital counties show a knack for straightforward and popular Web offerings.

ach year, hundreds of counties participate in the Digital Counties Survey, a program that identifies best practices and innovative digital services for citizens. The top finishers for 2009 gathered for an awards ceremony in Nashville, Tenn., during the annual meeting of the National Association of Counties (NACo) in July.

Simple Web applications that required little labor to create captured the most attention from attendees. Here are three examples that seemed to charm the crowd of govern-

ment IT officials. The Digital Counties Survey is conducted by *Government Technology* and the Center for Digital Government in association with NACo.

Savings Blog

If you're a junior IT worker with a brilliant idea, getting a meeting with your CIO can be difficult. That's not a problem for staff in the Oakland County, Mich., Department of Information Technology. Due to a mass

Synopsis: Simple applications appeared to steal the show at the Center for Digital Government's Digital Counties Survey awards ceremony in Nashville, Tenn.

Jurisdictions:

Loudoun County, Va.; Oakland County, Mich.; Montgomery County, Md.

Technologies

Video streaming, blogs, Web calculator.

Contact:

Phil Bertolini, CIO, Oakland County, Mich., <u>bertolinip@</u> <u>oakgov.com</u>, 248/858-0810.

exodus of manufacturing jobs from the state, the county will take cost-reduction ideas from any employee.

That's the philosophy underpinning the IT department's Cost Reduction/Investment Blog that lets employees make budgetary suggestions. Deployed earlier this year on the county's intranet, the blog helped Oakland County win the top honor in the Digital Counties Survey for counties with populations of half a million or more. Cost-cutting ideas contributed to the blog have helped trim nearly \$600,000 from the county's IT budget.

"Employees go out, do the research and provide the links and everything necessary to vet it properly," explained Phil Bertolini, the county's CIO.

The idea came from Jim Taylor, the county's chief of e-government. He believes the blog gives employees a stronger sense of personal ownership. "I think we all feel like a family in Michigan. We're in this budget crisis together. If we can save costs, we can save jobs and it's better for citizens," Taylor said. The blog was easy to create using Microsoft Share-Point software, he said, and it took only 20 hours of development time.

Bertolini meets weekly with a steering committee to analyze the suggestions and responds to employees via the blog. Taylor thinks employees are motivated to contribute because they're assured their ideas will be considered. They also know it won't just be top-level executives who comment.

Other employees also comment on suggestions, Taylor said. "So an idea that starts a certain way sometimes takes a different avenue and you get different costs and savings on it."

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local government



Oakland County, Mich., took first place in the 500,000 or more population category.

The county eliminated \$325,000 a year after an employee suggested freezing software licensing and maintenance services for the government's Oracle PeopleSoft enterprise resource planning (ERP) system. Therefore, Oakland County stopped paying for and receiving software updates for the system. Having canceled the maintenance services too, the county's in-house IT staff maintains the ERP. The county now contracts with a separate vendor to provide emergency support services.

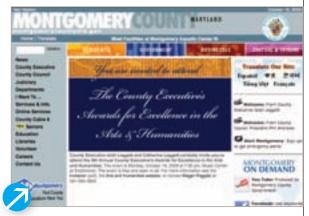
Oakland County slashed another \$19,000 from its annual IT budget thanks to Gloria Landon, a phone technician for the IT department. It may seem like common sense for organizations to save money by pooling their cell phone minutes, but the

Agencies didn't complain when the county IT department took control of agencies' cell phone plans. Their

cost per month didn't increase. If anything, it dropped, Landon said. She purchased a 20 percent surplus of minutes over what the county typically used as a cushion to avoid overage charges. "You have to take six to eight months to figure it out. Certain times of the year you may be busier than others," Landon explained.

Several other county agencies have imitated the IT department's cost reduction blog and are already producing savings, according to Bertolini.

of Technology Services matches property appraisal GIS data with the county's tax table to calculate the taxes of each home. The



Montgomery County, Md., came in second among counties with more than 500,000 residents.

Correct Calculations

Potential homebuyers in Montgomery County, Md., now receive an accurate estimate of the property taxes on a home purchase, thanks to the county's online tax calculator. The Montgomery County Council mandated creation of the calculator in response to purchasers' confusion over receiving tax bills that differed from those paid by the previous owners. County regulations limit the degree to which property taxes can increase for existing owners, but tax amounts can rise significantly once a home is sold.

"If somebody had been in a house for 15 to 20 years and suddenly decided to retire,

agency created the calculator in two months with existing resources. Emanuel said the project was roughly \$60,000 worth of work.

Cat Cam

Cats awaiting adoption at the Loudoun County, Va., Department of Animal Care and Control can be seen on YouTube. The department initially bought a high-definition digital video camera to record evidence for a cockfighting investigation. But Laura Rizer, the department's community outreach and resource services manager, found the camera sitting unused in a closet and thought of an additional way it could help animals that were down on their luck.

"It was just sitting in there until the next big case came along, and I thought maybe I could borrow it," Rizer said.

"We're in this budget crisis together. If we can **save costs**, we can **save jobs**, and it's better

Jim Taylor, chief of e-government, Oakland County, Mich.

county had never implemented that strategy. Using the blog, Landon successfully advocated a shared-minutes plan for all county agencies.

for citizens.

Several agencies had hundreds more minutes than they used, she explained.

"If you have a water resources commissioner who's only using 20 minutes out of his 200 or 300 minutes, maybe another person within the county could utilize those extra minutes if they require more to do their job," Landon said.

they may be paying \$4,000 to \$5,000 in taxes, but the new owner might have to pay \$8,000," said Steve Emanuel, the county's CIO.

The tax calculator, which was added to the county's portal, has become a selling tool for real estate agents. It helped Montgomery County rank second in the 2009 Digital Counties Survey for counties with populations of 500,000 or more residents. The Montgomery County Department



Loudoun County, Va., placed first in the 250,000-499,999 population category.

One of the animal shelter's 50-person volunteer staff shoots the videos, introduces the cats and offers insight into their personalities. For example, by watching the videos, a local viewer who is seeking a rambunctious cat could take a liking to a feline named Precious.

After uploading the videos to YouTube, Rizer enters the URLs into software called Chameleon Public Access. From there the videos travel to a Web search engine called PetHarbor, which shows the videos on the agency's Web site.

"We've seen some videos that have had **300 and 400 views**. Hopefully those are people who want to adopt a cat."

Laura Rizer, community outreach and resource services manager, Loudoun County Department of Animal Care and Control

Loudoun County's animal shelter is in a remote area, so previewing the animals on video can help citizens save unnecessary trips to the facility, said Andrea McGimsey, a Loudoun County supervisor. The county won first place in the Digital Counties Survey for counties with population of 250,000 to 499,999.

"We live in a very busy part of the country. People commute long distances," McGimsey said. "It's going to incentivize them to make the trip and hopefully adopt the animal."

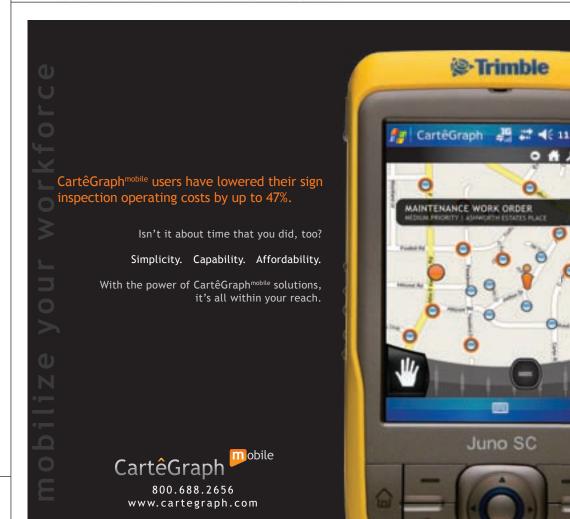
Rizer couldn't say definitively if the project had led to more cat adoptions, but the videos have been popular on the Internet. "We've seen some videos that have had 300 and 400 views," Rizer said. "Hopefully those are people who want to adopt a cat."

The department plans to post videos of dogs as well, however, recording the dogs is more difficult because they tend to bark at the camera. "We're trying to focus on our cats right now because we have a lot more trouble adopting out cats," Rizer said. "Dogs don't seem to need the extra help."



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Spectrum reports from the IT horizon

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The Sacramento Bee: The Sacramento,

Calif., Public Library

has expanded its audiobook inventory for iPod users on its Web site, www.saclibrary.org.

The library offers 2,400 audio files, 700 of which

are iPod compatible. The site is also accessible in six languages and has a **txt4nswrs** feature for users who want to inquire about library services on the go and a 24/7 **Ask Now** tool for those who'd rather instant message a librarian.

USA Today: Residents in Black Hawk County, lowa, can seek emergency assistance by

texting their local 911 dispatch center. Only users of i wireless, a T-Mobile affiliate, can text 911, but the service will likely expand, according to the county's police chief. Although Black Hawk County pioneered this effort, others, like the Minnesota Department of Public Safety, plan to follow suit.

Broadband Barriers

In July 2009, *Government Technology* asked more than 100 subscribers about the barriers to broadband Internet adoption in their jurisdictions. Here are their top answers:

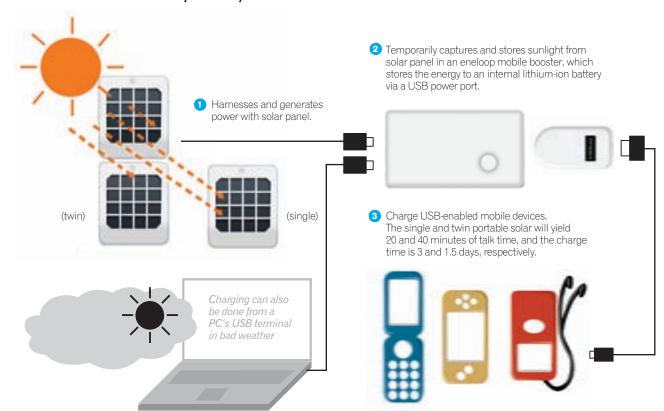
High cost of service	67%
Lack of availability	48%
Lack of perceived importance	46%
Lack of competition	28%
Reliability/quality issues	28%

Send spectrum ideas to managing editor

to managing editor Karen Stewartson kstewartson@ govtech.com

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Sanyo's eneloop portable solar device lets mobile users power their gadgets by harnessing the sun's energy. The two-piece charging system may be ideal for employees in the field or people who wish to be environmentally friendly. Here's how it works:



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Dallas Police Department uses a power management solution that reduces its car fleet's dead batteries and emissions.

Jurisdiction: Dalla

Technologies: Energy Etreme power

management system.

Contact: Lt. Dale Barnard, fleet manager, Dallas Police Department, dale.barnard@dpd .ci.dallas.tx.us.

Dallas Police Department pilots anti-idling technology that operates a patrol car's electrical system while it's turned off.



ith all the technology that law enforcement vehicles are required to run — like laptops, radios and other equipment — it's no surprise that dead car batteries constantly plague officers. When a company called Energy Xtreme presented its anti-idling technology to the Dallas Police Department as a way to reduce its vehicles' carbon dioxide emissions, fleet manager Lt. Dale Barnard thought it could also help eliminate dead batteries.

Barnard said police officers constantly face the dilemma of what to do with their cars when making stops. For instance, when handling a major car accident that could take a couple hours to clean up, should they leave the car lights on but take the keys and lock

the door? Should they leave the car running, but worry about it being stolen? Or should they sit idling to power the technology, but waste gas?

The anti-idling technology manages a car's electrical system while it's turned off. Barnard said the solution comprises two solid-state power storage devices installed in a car's trunk. "You could leave on the headlights, the spotlight, red lights and the radio, and we've gone to full-sized laptops in all cars — so it's an enormous power drain. You could leave all that equipment on for up to 5 hours with the engine off," he said.

According to Ross Johnson, director of business development for Energy Xtreme, the system connects to a vehicle's alternator and captures its excess power. So anytime the car is driven, the power management system is charging.

Usage Statistics

The department installed Energy Xtreme's power management system — called the Independence Package — in a Dodge Charger in March 2009. It required engineers to design a custom box to fit the car. "It's literally two wires. It just bolts into the car and you connect two wires, and you're done," he said. "It's an extremely simple connection."

Two inexpensive data loggers, called HOBOs, are connected to the system to track usage. Every 30 days, Barnard sends the devices to the company, where the information is downloaded into its proprietary software. Barnard said he then is sent a report outlining the average number of hours per day that the system operated. Therefore, the report calculates amount of eliminated idling — and the estimated fuel and carbon dioxide emissions savings.

"It was telling me, according to that computer, that 4.87 hours a day I was running my equipment from that solid-state device," he said. "So that's almost five hours a day that my engine wasn't idling. Any mechanic could tell you that the worst thing you could do to a car is idle the engine."

Barnard said that for every hour a car idles, one gallon of gas is wasted. Idling also creates "ghost miles."

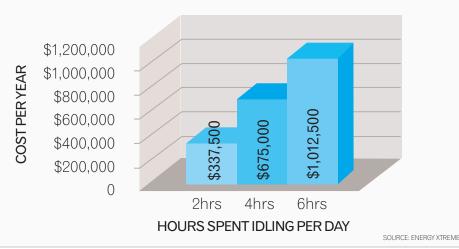
"They've done several studies nationally over the years that say every hour you idle the engine is equivalent to 33 to 35 miles of engine driving-time wear and tear," he said. "Ghost miles never appear on your odometer, but they cause extra damage."

45

govtech com



By preventing just two hours of engine idle a day, a fleet of 100 vehicles can save \$337,500 in annual fuel costs.



In addition to the HOBOs, the department also has the option to track data for the duration of the deployment. In this arrangement, the company installs a battery monitoring system by Bogart Engineering called a Penta-Metric. Once a year, an officer will take a laptop to the car, use a computer cord similar

to a USB drive to download the data from the device, and then send the information to the company.

The Dallas Police Department replaces police cars at 100,000 miles, according to Barnard. He is examining if the device would extend the fleet's lifespan.

Barnard said the systems cost about \$3,900 apiece, and he has a pending grant to purchase 125 more devices.

Safer Jump-Starts

Another benefit to officers is that the device can jump-start other vehicles. Since it's located in the trunk, police officers don't have to park the vehicles engine to engine, which can be dangerous on a highway or busy roadway.

It also ensures that police officers are never stranded. Barnard said there's an emergency button connected to the solid-state device that powers the car's engine when pushed. This could be especially beneficial to officers who work in rural areas.

"It provides officers constant, neverending power. Whether the engine's running doesn't make any difference," he said. "They can power anything they want to power; they can jump-start anything they want to jump-start; they're never left stranded."

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Title of publication: Government Technology. Publication No.: 1043-9668. Date of filing October 1, 2009. Frequency of issue: Monthly No. of issues published annually: 12. Complete mailing address of known office of publication: 100 Blue Ravine Road, Folsom CA 95630. Complete mailing address of general business offices of publisher: 100 Blue Ravine Road, Folsom CA 95630. Full names and complete mailing addresses of publisher, editor and managing editor; Publisher: Don Pearson, 100 Blue Ravine Road, Folsom CA 95630. Editor: Steve Towns, 100 Blue Ravine Road, Folsom CA 95630. Managing Editor: Karen Stewartson: 100 Blue Ravine Road, Folsom CA 95630. Owner: e.Republic, Inc. dba Government Technology: Dennis McKenna and Robert Graves, 100 Blue Ravine Road, Folsom CA 95630. Known bondholders, mortgages and other security holders owning 1 percent or more of the total amount of bonds, mortgages or other securities, none.

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Extent and nature of Circulation

two cents

our take on the latest technology

Beast in a Box

NewTek TriCaster video production system makes broadcasting easy.







Editor's Note: In January 2009, the Tri-Caster video production system was used for live broadcasting of President Barack Obama's Inaugural Ball so troops overseas could be a part of the festivities and receive messages of encouragement from the ball's attendees. The system was also used by a Des Moines, Iowa, local government TV station to produce and air live conferences to update citizens during a June 2008 flood. In this month's Two Cents, guest reviewer Theo Mayer explains why the TriCaster is becoming the system of choice for professional-quality video production.



The NewTek TriCaster is a complete video production system contained in a rugged, portable box that measures only 11.5 by 8 by 7.5 inches.

The name TriCaster comes from the three functions it provides:

Broadcast. It's a broadcast-quality live production and recording system with standard and unique features that allow one production engineer to manage and record a six-camera show that's graphics intensive and special-effects filled, and enhanced B-roll supplemental footage.

Webcast. The TriCaster is a webcasting system with built-in encoding and

"push" or "pull" streaming at selectable resolutions.

ScreenCast. It's a live event production system for feeding video projectors, with clever capabilities that keep graphics and data at computer resolution while integrating video.

There are several models to choose from, starting with composite video, two-camera systems at \$3,995.

I've been using the TriCaster Broadcast that lists for \$11,995, which can operate in six-camera mode along with a variety of professional-level specifications. For nonvideo production people, it



has everything imaginable, including the kitchen "sync."

The TriCaster is engineered with professional video in mind. This isn't surprising since the TriCaster is the brainchild of the same people who created the landmark 1990 Video Toaster — a device that included the hardware and software for creating broadcast-quality television.

There are three major tabs on the user interface. One is "Live Production," featuring a special effects video switcher that rivals any physical hardware. Transitions include more than 100 effects — from page curls and dissolves to animated laser beams.

There are two feature-filled digital disk recorders (DDRs) that can be set up with unlimited numbers of video clips for Broll, backgrounds or special effects.

The TriCaster includes full graphics capabilities with lower-third titling, plates, overlays, backgrounds and foregrounds - all of which can be composited to create professional-quality

One striking feature is the TriCaster's ability to generate virtual sets. By putting the talent in front of a green screen, they're magically incorporated into a selection of 3-D virtual sets. These sets feature shadows, reflections, foreground elements, background elements, multiple camera angles and even media displays. This isn't something you would expect, even in a \$100,000 system.

Webcasting is simple. Connect the TriCaster to the Web, select settings from a drop-down menu (resolution, frame rate, bandwidth and format), press the red button marked "webcast" - and wham, you're streaming on the Internet.

Besides the "Live Production" tab, there's a tab for "Media Capture." It has all the tools needed to capture and import video, audio and graphics into a produc-

The "Edit Media" tab includes a fullfeatured nonlinear digital editing system for postproducing shows. I use it mostly to prepare video clips and elements for the DDRs or uploading to the Internet. NewTek has its own set of video editing conventions. I find it a little difficult to flip between Apple's Final Cut (an industry standard) and the NewTek editor without struggling a bit in transition. However, after working on the NewTek editor for several hours, I am impressed by some of its clever nuances.

Finally there's a tab called "Edit Text," a full-featured graphics studio that allows users to create lower thirds, production graphics, backgrounds and more. Again, users may be more comfortable with Photoshop, Illustrator or Fireworks for graphics production. However, this is the perfect environment to prep a graphics package to use back on the "Live Production" tab.

pros

Complete, feature-rich product for a low price.

It does everything it claims to — superbly.

It's simple to set up and provides (at least on the Broadcast model) all the connectors and input/output options needed in a professional production system.

It allows you to capture, create, edit, record, postproduce and stream your results onto the Internet in a single, self-contained system.

cons

The documentation only provides a glimpse into all the features and capabilities.

The "Edit Media" and "Edit Text" functions use numerous conventions that are unique to NewTek and TriCaster rather than standard conventions established by core applications, such as Photoshop, Final Cut, Illustrator, etc.

No high-definition model is available. However, NewTek is promising one soon and offers an upgrade program so customers who get the standard-definition model can upgrade to high definition without penalty.

rating:





starting at

Specs

- Recording Capacity: 10 hours MPEG-2
- Video Input: three Y/C, three composite (RCA)
- Video Output: one Y/C, one composite (RCA)
- Audio Input: two unbalanced mic inputs (phone).
- one stereo line in (RCA)
- Audio Output: one unbalanced line out (phone).
- one stereo headphone out
- File Formats: AVI, DV, MPEG-2, QuickTime, HDV, JPG, PNG and more
- Camera Auto-Calibration
- 16:9 streaming
- DDR Playback: one DDR, one still store

* Specs listed are for the base model TriCaster. For TriCaster Broadcast specifications visit www.newtek.com



THEO MAYER IS A SENIOR TECHNOLOGY ADVISER WHO INTEGRATES COMMERCIAL TECHNOLOGIES INTO NEW APPLICATIONS. HE FORMED TECHAPPLICATION.COM IN 2008 AND WORKS UNDER CONTRACT WITH THE U.S. DEPARTMENT OF HOMELAND SECURITY TO IMPLEMENT WEB-BASED TECHNOLOGIES.



Hercules Dualpix HD720p mini webcam features ultra-mobility and high definition. The webcam provides 720p high-definition resolution with a 1 megapixel CMOS sensor (1280x800 pixels) for high image quality. The 5-megapixel Dualpix HD720p can rotate on two axes for the best angle, and has a wide-angle auto focus lens with 3x zoom, capability in low-light conditions and a built-in microphone. The webcam operates at 1280x720 pixel video resolution with up to 30 frames per second for 16:9 high-definition videos. www.hercules.com



Getac introduces ultra-rugged GPS handheld with camera, real-time voice and data, altimeter and e-compass. The PS236 portable device features a 3 megapixel autofocus camera, 10-hour battery life and up to 12 GB of storage. The builtin altimeter and e-compass provide latitude, longitude and altitude, and can give directional relations between the targeted subject and the user's position. It includes a Marvell PXA310 806 MHz processor, 128 MB MDDR memory, integrated Bluetooth 2.0 and WLAN b/g capability. www.getac.com





NEC Display Solutions 19-inch MultiSync EA190M standard-aspect ratio (or 5:4) display provides green features, enhanced screen performance. The four-way ergonomic stand offers 110 mm height adjust, pivot, tilt and swivel. The EA190M includes brightness at 250 cd/m², a 900:1 contrast ratio and full-motion video with 5 ms response. With a native resolution of 1280x1024, this monitor provides bright, crisp images. It consumes 50 percent less energy and contains 50 percent less mercury than traditional LCD monitors. www.necdisplay.com



Who's Talking?

Calling all readers to join the discussion as experts dispatch witty observations and tackle the tough issues. Converse with like-minded views, or agree to disagree. We look forward to the debate!



→ FastGov:

Paul W. Taylor
Chief Strategy Officer
Center for Digital Government

blogs on the continuing campaign for government modernization.

→ Securing GovSpace:

Mark Weatherford
Director and Chief Information
Security Officer
California Office of Information

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





Notes from a City CIO:

> Bill Schrier Chief Technology Officer City of Seattle

blogs on making technology work for city government.

Lohrmann on Infrastructure:

> Dan Lohrmann Chief Technology Officer Michigan

blogs on the virtual tsunami of IT challenges and options government faces today.



Join the discussion at govtech.com/blogs!

signal: noise

PAUL W. TAYLOR



Wanted: Fresh Thinking on Cyber-Security

n the heels of the sixth annual National Cybersecurity Awareness Month, information security has been generally accepted as a cost of doing business. The question is how to pay the tab.

Confronted by the Great Recession, some states and localities have deferred security spending to survive the budget crisis, making the same kind of Faustian bargain uninsured motorists do when they choose rent and food over insurance premiums. They perilously calculate that they'll catch up eventually and gamble that they can avoid accidents in the meantime. When the bet goes bad, there's hell to pay.

That is a loser's game because there's no telling where and when the next threat will hit. Just ask those who must secure the information and systems on which government relies. California Chief Information Security Officer (CISO) Mark Weatherford and New York CISO Will Pelgrin, who also heads the Multi-State Information Sharing and Analysis Center (MS-ISAC), have strikingly similar top-of-mind issues that need work. The issues are theirs, the categorization here is mine:

- **A. Resolving Domains:** Governments much consider domain name system security and the increased vulnerability that comes when states and localities use the dot-gov top-level domain, which has become the attack vector of choice.
- **B. Resource Roulette:** Even the relatively young cyber-security discipline has tended to produce silos rather than synergies while competing for resources. Critical infrastructure, new platforms (smart grid, cloud computing and Web 2.0), applications (light, legacy and new enterprise) and devices (desktop and mobile) all must be secured, but you'd never know it by looking at the funding and policy patchwork in most jurisdictions.

C. Reconciling Friends: Cyber-security deserves to be the next national priority, but "national" is more than the federal government. The federal government is rightfully concerned with getting its own house in order, but in an interconnected world security must account for states and localities where system outages and breaches are felt most profoundly.

To be sure, there's much work going on. Washington state is the most recent to formally adopt a new security policy framework, New York is issuing best practices for integrating Web 2.0 into a secure environment, and several states are exploring the introduction of a standard configuration for their desktop core operating system to bring order and discipline to security settings, practices and patch management. Of course, all this occurs in the context of interstate collaboration — witness the strong track record of collaborative work through the MS-ISAC and, more recently, a nascent but allied effort through the Digital States Performance Institute.

Funding options have always been limited and have become more so with the recession. General fund appropriations are unlikely, and there isn't much elasticity left in the rate structure of technology agencies to make cyber-security costs recoverable.

In such circumstances, eyes turn to the federal government. As a practical matter, state and local cyber-security efforts compete for resources in a federal funding structure that grew up around physical security concerns.

Fresh guidance from the U.S. Department of Homeland Security on federal grant prioritization would help. So too would fresh thinking about a unified cyber-security funding model that accounts for potential weak links regardless of whether they are at the center or the periphery of what ultimately is government's shared operating environment.

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