

GOVERNMENT TECHNOLOGY®

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SOLUTIONS FOR STATE AND LOCAL GOVERNMENT IN THE INFORMATION AGE

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ERP Overhaul

Web Worries:
Will IE 8 Crash
Your Site?



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STRUGGLE
WITH ONLINE
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open government

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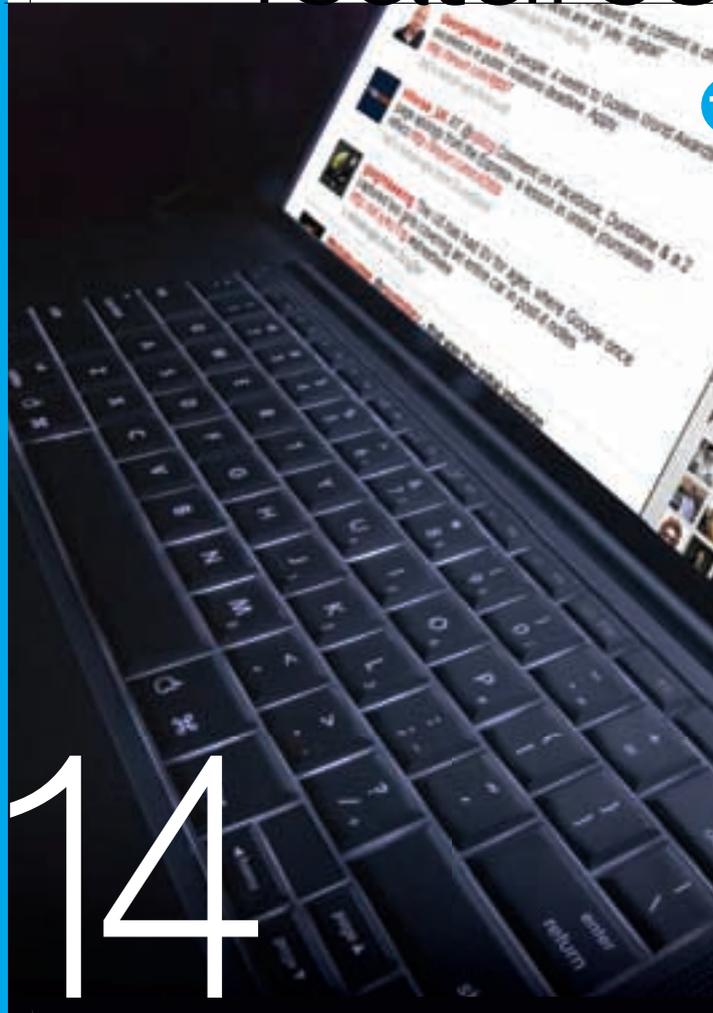
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Whispering Tweet Nothings

Twitter co-founder Evan Williams told *New York* magazine in February that his company “lowers the bar.” Generally that isn’t a description the suits over in marketing would like assigned to their brand. But what Williams was getting at, I believe, is that Twitter lowers the bar for entry into the social networking phenomenon, which is for many people increasingly important. Sure, the whimsical Web site and its 140-character limit also lowers the bar on reading, writing and grammar. And sure, it perpetuates the revolting inhumanity of actor Ashton Kutcher’s celebrity status.

But it also gives everyone a voice.

Twitter is a digital reflection of our modern selves.

For a long time (in Internet time), I loathed Twitter for being just another digital popularity contest. Today I merely dislike it. What moved me from hate to mild disdain was when Twitter actually proved useful. Somehow former astronaut Bernard Harris ended up following me on Twitter. Harris is active in renewing enthusiasm for science and math education. Through my Twitter feed he connected with *Converge*, our sister magazine that covers education.

I’ve also found Twitter to be moderately successful at driving traffic to Govtech.com. Occasionally I’ll post a link that takes readers to one of our stories with an appeal

that extends beyond the public-sector IT audience, since my list of followers is growing eclectic.

But I still think Twitter is akin to shouting in the wind. The only people making any money from Twitter are snake oil salesmen, who are hawkling books and strategies on how to make money. If the fellows who founded Twitter have figured out a way to cash in, they ain’t sayin’, though according to TechCrunch.com, they have enough in venture capital to keep them comfortable for the time being.

But Twitter is much more — or much less, depending on how you look at it — than meets the eye. Twitter is a digital reflection of our modern selves. Many of us have grown accustomed to the notion that the world is eagerly waiting to read our next pithy blog post. But we have so much to occupy and distract us that really, who has time anymore to write a reasoned, multi-paragraph blog? So, since we’re all in a hurry, but all have very important things to say, we end up with Twitter, where anything worth saying can be said in fewer characters than are in this sentence.

It’s easy for me to knock Twitter as being a little more than the latest way for each of us to reassure ourselves how important we are. But that’s a little disingenuous, since you and I both know I’m going to post a link to this column on my Twitter feed. So I’ll leave you with this: If you want to use Twitter to make a difference, follow Sockington the cat. Help him get more followers than Ashton Kutcher because if that guy should be famous for anything, it should be for being less popular than a housecat. **GT**

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on the scene

Govtech.com Hot List

Here are the 10 most popular stories on Govtech.com from May 5, 2009 to June 5, 2009

HP CEO: Transformation Takes Commitment, Investment

One day after California's sweeping consolidation plan cleared its last legislative hurdle, Hewlett-Packard CEO **Mark Hurd** gave state IT executives an inside look at technology transformation on a grand scale.

Speaking in Sacramento, Calif., May 12 at Government Technology's Conference on California's Future, Hurd said HP has modernized and drastically simplified its technology systems the past four years. Those efforts produced significant gains, he added, but they demanded serious investment and management commitment.

"It's been tough work for us. I think many people focus on our IT transformation — but it's really HP's transformation," said Hurd, who turned the company into

a \$118 billion model of efficiency since becoming CEO in 2005. "This doesn't get done without the CEO's support. You can't delegate this to an IT group."

Under Hurd, HP replaced 87 data centers worldwide with six new facilities, reduced the number of software applications it uses from 6,000 to around 2,000, and slashed its annual IT budget by 40 percent.

Similarly California Gov. Arnold Schwarzenegger hopes to save at least \$1.5 billion over the next five years under an IT consolidation plan that was accepted by the state Assembly May 11. The plan gives control of California's largest state government data centers to CIO **Teri Takai**. —STEVE TOWNS, EDITOR

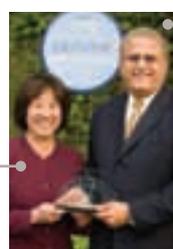
High-Speed Rail in California by 2015?

With \$8 billion from the economic stimulus and backing from President Barack Obama, it appears to be a matter of when, not if, high-speed rail service will be speeding down the tracks in the U.S. It could happen sooner than you think, according to **Quentin Kopp**, chairman of the California High-Speed Rail Authority.

Speaking at Government Technology's Conference on California's Future, Kopp said some segments of a 200 mph bullet train that's planned for the length of the state — like the 50 miles between San Francisco and San Jose — could be ready for passengers as early as 2015.

The completed California line could cost approximately \$45 billion, Kopp said, with some of that coming from the stimulus package. It will also be funded by private equity, federal grants, general obligation bonds, and from yearly federal budgets. —MATT WILLIAMS, ASSISTANT EDITOR

IT Visionaries Awarded



Davoud Ghods, agency information officer for the California Department of Food and Agriculture (CDFA), and **Fred Klass**, chief operating officer of the Department of Finance, received California's 2009 Awards for Vision and Innovation in Government.

California CIO **Teri Takai** presented the awards. Ghods guided his department through the consolidation and streamlining of IT functions within several independent branches. He led the effort to align the CDFA's IT governance process with industry best practices.

Klass has worked for 20 years developing and administering budgets for state programs in a wide variety of areas, including natural resources, environmental protection, energy and IT.

- 1
↗
ESRI's Jack Dangermond: GIS for Better Government Transparency Dangermond explains role of GIS in smart grid, stimulus tracking and open government. www.govtech.com/652976
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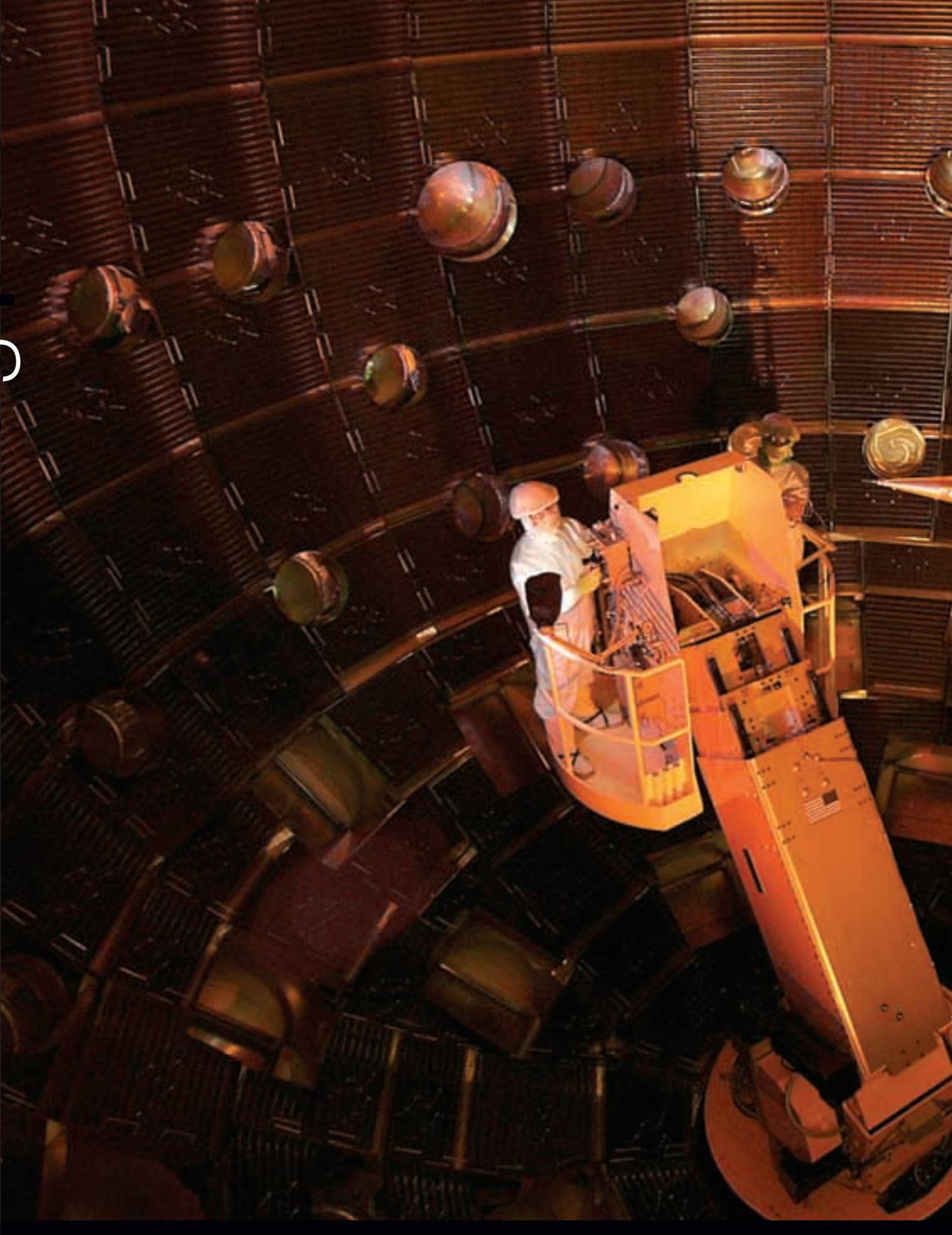
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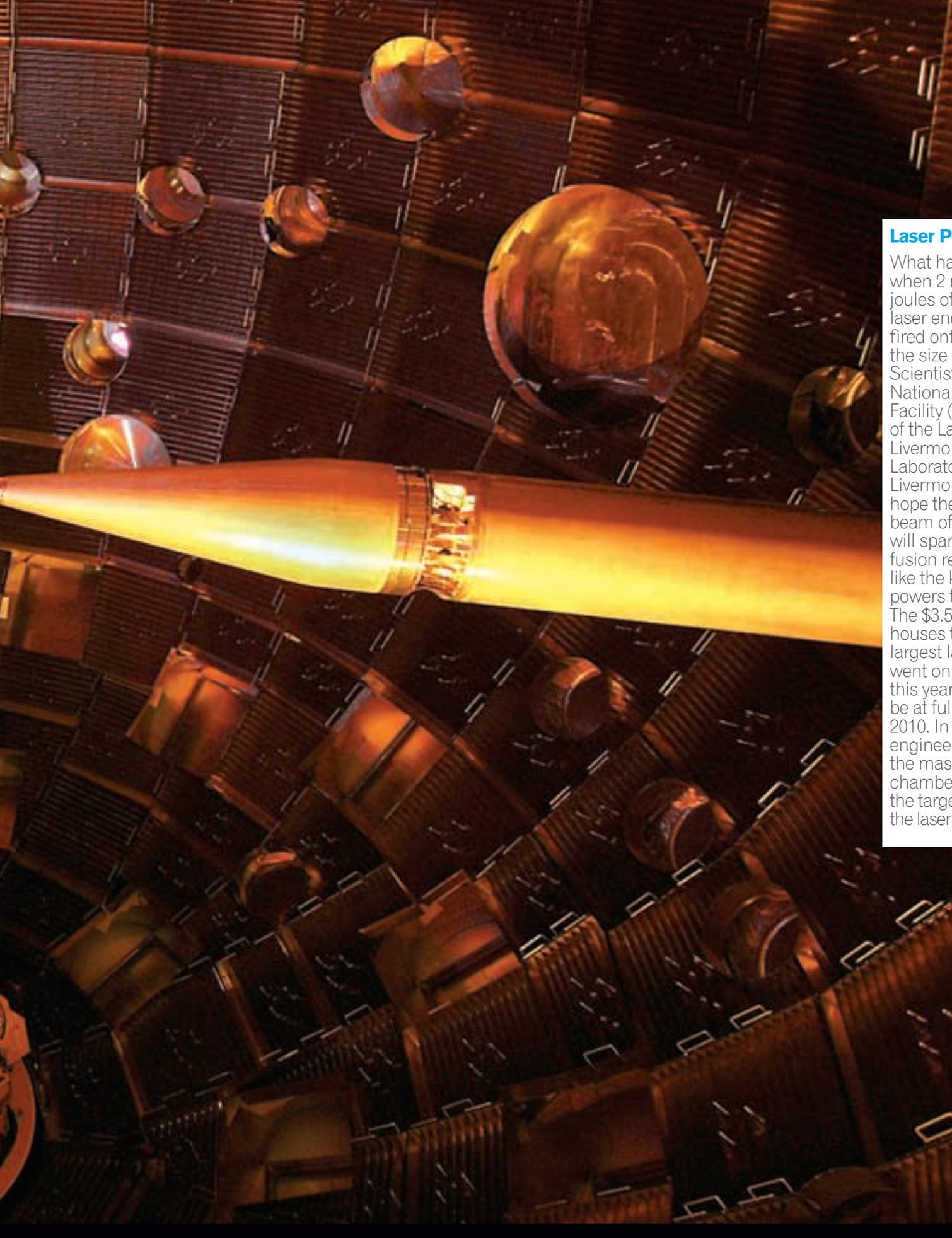
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Laser Pointer

What happens when 2 million joules of ultraviolet laser energy are fired onto a target the size of a BB? Scientists at the National Ignition Facility (NIF), part of the Lawrence Livermore National Laboratory in Livermore, Calif., hope the intense beam of energy will spark a nuclear fusion reaction like the kind that powers the sun. The \$3.5 billion NIF houses the world's largest laser, which went online earlier this year and will be at full power in 2010. In this image, engineers inside the massive target chamber examine the target positioner, the laser's focal point.



Four Questions

for Beth Noveck

DEPUTY DIRECTOR OF OPEN GOVERNMENT, U.S. OFFICE OF SCIENCE AND TECHNOLOGY POLICY

BETH NOVECK LEADS PRESIDENT BARACK OBAMA'S OPEN-GOVERNMENT INITIATIVE. ON LEAVE FROM NEW YORK LAW SCHOOL, SHE IS AN EXPERT ON TECHNOLOGY'S IMPACT ON LEGAL AND POLITICAL INSTITUTIONS. SHE'S ALSO THE AUTHOR OF A NEW BOOK CALLED *WIKI GOVERNMENT: HOW TECHNOLOGY CAN MAKE GOVERNMENT BETTER, DEMOCRACY STRONGER AND CITIZENS MORE POWERFUL*.



1 How does the state and local government IT community fit into federal transparency efforts?

When we talk about creating government that actually taps citizens' intelligence, involves them in decision-making and creates opportunities for engagement, I think that has to start at the state and local level. [Also] the state CIO community is particularly important when it comes to getting information back into the federal government in order to inform decision-making. We're heavily dependent on the states and localities for getting that information back to us — and on state CIOs in particular for helping to set standards and creating the back-end systems.

2 How will the Obama administration help other levels of government provide the kind of transparency the president wants?

The Federal CIO Council is moving toward really radical data transparency — transparency that's consistent with legal requirements, security, privacy, etc. — to help provision more and better government data to the public so it can be mashed up, visualized and used by people to create useful social applications or drive more accountability. Part of that is about

getting out data, and part of that is going to be how do we make simple tools available for reuse by government agencies and also just modeling out good practices.

3 How are these efforts taking shape?

The White House Web site is doing amazingly far-reaching things, like taking questions and running a blog. The Office of Science and Technology Policy just launched a blog with comments, and we have a Twitter feed. When you

“When we talk about **creating government that actually taps citizens' intelligence**, involves them in decision-making and creates opportunities for engagement, I think that has to start at the state and local level.”

start doing these things, it becomes easier for other people to take that first step. There's also the next step of helping to make tools available for those who want them. Many of these tools are cheap. They're free. They're easy to maintain. It's just a matter of being ready and willing to put a toe in the water and say, “We're going to try this, and we're going to see what works for us and really try to adapt new innovations.”

4 How will you measure the impact of these innovations?

Developing recommendations on transparency and open government has to include a process for developing metrics. We can talk about the number of data feeds we've released, or the number of people who've participated in rule making [but] we really have to look at transparency and participation to a specific end. So if our goal is improving the quality of American education or increasing accessibility and affordability

of health care, we really have to look at those as the metrics and ask ourselves, “How does driving innovation into the way the public sector works help us to ultimately do the job better of making those hard policy decisions?” **GT**

BY STEVE TOWNS, EDITOR

GTV WATCH GTV'S INTERVIEW WITH BETH NOVECK AT WWW.GOVTECH.COM/BETHNOVECK

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What happens
when employers
and employees end
up on the same
social network?

“Cisco just offered me a job! Now I have to weigh the utility of a fatty paycheck against the daily commute to San Jose and hating the work,” tweeted a Twitterer known as “theconnor,” a San Francisco Bay Area job seeker.

“Who is the hiring manager? I’m sure they would love to know that you will hate the work. We here at Cisco are versed in the Web,” responded a Twitterer known as “timmylevad,” a.k.a. Tim Levad, a business development manager at Cisco.

D’oh.



Blurring the Line



Web 2.0 — social networking, in particular — is changing the way we communicate. Now we can all share our inner monologues with the world. For good or ill, each of us can give in to the fantasy that someone actually cares what mood we're in or that we just woke up from a nap. Unfortunately for people like "theconnor" who use the popular social network Twitter, it turns out inner monologues are inner for a reason. Just because we have thoughts rattling around in our brains doesn't mean all information is suitable for mass consumption.

In addition to making the 1970s "Me Decade" seem like the height of altruism, social networking is transforming the Web 2.0 experience into a bizarre, hybridized journal of our personal and professional lives. As corporations and organizations commandeer Twitter and Facebook to suit their own purposes, these oases of personal expression are now fraught with potential for making career-ending gaffes. This peculiar circumstance has spawned intriguing questions. One among many: What happens when your boss wants to be your Facebook friend?

The Rise of Facebook

There was a time when Facebook was a little-known Web site exclusive to those with an e-mail address that ended in .edu. It was 2004, John Kerry was running an impotent campaign to unseat an unpopular president, Montreal still had a Major League Baseball team, and SpaceShipOne seemed poised to launch the private spaceflight industry.

In those halcyon days, social networking began and ended with MySpace. Facebook toiled in obscurity and Twitter's concept of expressing oneself in 140 characters or fewer wasn't born. Five years later, the world is a different place. MySpace and its quirky user-created pages have been usurped by Facebook's slick, corporate-friendly format. Consequently some 200 million of us today are feigning interest in what our grade-school classmates are eating for lunch. About a quarter of those same people are coupling with Facebook's rigmarole the ability to share with the planet their most compelling thoughts via Twitter, e.g., "I'm writing an article about Facebook and Twitter."

Snark aside, there is legitimacy as worthwhile communication tools to Facebook and to a lesser extent, Twitter. These applications reconnect old friends, keep new ones in touch and serve as a hub for far-flung siblings.

But a curious trend is emerging: These and other Web 2.0 tools, which were designed to be outlets for personal expression, increasingly are being used by corporate and public-sector entities for marketing and other unintended purposes. Furthermore, people who once adored Facebook as their private online paradise now find themselves in the awkward position of either declining a



"friend" request from a workplace superior or willfully exposing to company bigwigs their personal and unflattering photos from years or weekends past.

This convergence of work life and private life seems destined to become the way society functions, said social media observer and *World Wide Rave* author David Meerman Scott.

"I think what is happening today is our work worlds, social worlds and family worlds are all converging," he said. "They always have been interlinked, but I think social network-

ing interlinks them even more. It's difficult to keep those separate unless you're prepared to not use social networking."

Scott said he believes social networking has crossed a bridge, leaving the land of novelty and arriving in the realm of everyday tool. That means social networking must be conceived of differently, as should those who use it.

"Yeah, your boss can be on Facebook and ask to be your friend," Scott said. "What do you do, say yes or no? If you say yes, then they found out what you did last night. And I think that's the reality of where this kind of communication is going. I truly believe that a Facebook profile or a Twitter stream or a MySpace page is a very public thing. You can go to a bar and get totally drunk, take off all your clothes and make a fool of yourself. You can do the same thing on Facebook — the virtual equivalent of making a fool of yourself. But just like in that bar, it's entirely possible your boss could have been sitting in the corner, or someone who would tell your boss."

Whether or not a friend request from employer to employee puts the employee in an uncomfortable situation is beside the point. The fact is, social networking is an accepted way to communicate — and a fairly efficient one to boot. So employees should expect such requests. As Scott suggested, a smart approach for those who care about how they represent themselves online is to treat Facebook less like a gossip column and more like Outlook. Although most would agree that whatever joy existed in the Facebook experience is largely stripped away with this strategy.

But the burden of social network etiquette doesn't fall squarely on those receiving friend requests. There's courtesy that must be extended by those issuing the invitation, especially when the invitation is sent from superior to subordinate.

Esther Cepeda, communications officer for the Illinois Student Assistance Commission, works at the epicenter of the social networking movement. College students, after all, were responsible for Facebook's ascent from campus curiosity to the fourth most-popular Web site on Earth. Cepeda believes that bosses who have employees as Facebook friends need to set limits for themselves on how they'll use the site.

“I happen to be friends on Facebook with several of my employees, and I personally am very careful to give myself a boundary,” she said. “Many times on the weekend I am interested in moseying over to one of my [employee’s] Facebook page to see some pictures, and sometimes I do. ... But I don’t comment on them. I don’t always comment on their statuses because I don’t want them feeling like they’re being watched. I’m very careful about not being too chummy, commenting on pictures or ‘wall’ posts, and not making anyone feel like, ‘Oh, I’m friends with my boss on Facebook and she’s watching over me.’”

The Open Generation

Some of the issues that crop up when employers and employees use social networks together are due to the different attitude that older and younger users have about sharing personal information online. Whether an image or video of yourself is appropriate to share depends on whom you ask. Most of the college students Cepeda works with probably have few qualms about putting anything online. Until, that is, they get ready to leave the campus confines.

Cepeda said college students’ attitudes range from not caring at all what’s online, to realizing maybe some things should stay private for professional or academic reasons. “I think people are waking up to the reality that what you put up there is kind of out there for everybody,” she said. “But in general, I think college kids are just really loose with what they have to show for their life. They are very open. That’s the mindset at that age.”

This willingness to share any and all details of everyday life is being drilled into students at an early age, argues Mark Bauerlein, an English professor at Emory University and author of *The Dumbest Generation: How the Digital Age Stupefies Young Americans and Jeopardizes Our Future*. He contends social networking encourages a vastly inflated sense of self-importance in today’s children. Teenagers are being trained to



Mark Bauerlein is an English professor at Emory University and author of *The Dumbest Generation: How the Digital Age Stupefies Young Americans and Jeopardizes Our Future*.

Social networking while on the job has become so commonplace that even astronauts are doing it. During a recent mission to repair the Hubble Space Telescope, **astronauts regularly updated their Twitter feeds** from inside Space Shuttle Atlantis.



believe that their every thought deserves the world’s attention.

“I can’t imagine what it would’ve been like, when I was 15 years old, if I could have had my own Web site, and write down things about myself and [post] pictures of myself online — and other people could look at it and respond to it,” Bauerlein said. “I would think, what a temptation — to consider my own needs and desires as something worthy of the world respecting, and everyone taking these things seriously.

“That’s the temptation of adolescence. You always want to think you’re an important person, you’re somebody. Because you’re insecure; you’re a little narcissistic; you’re also fragile. You don’t know what kind of person you’re going to be. The allure of being able to write down things that happen in your life and other people look at it — I think fits into a form of ego development that, over time, does lead to an expectation about the world being something that should mirror what you’re about.”

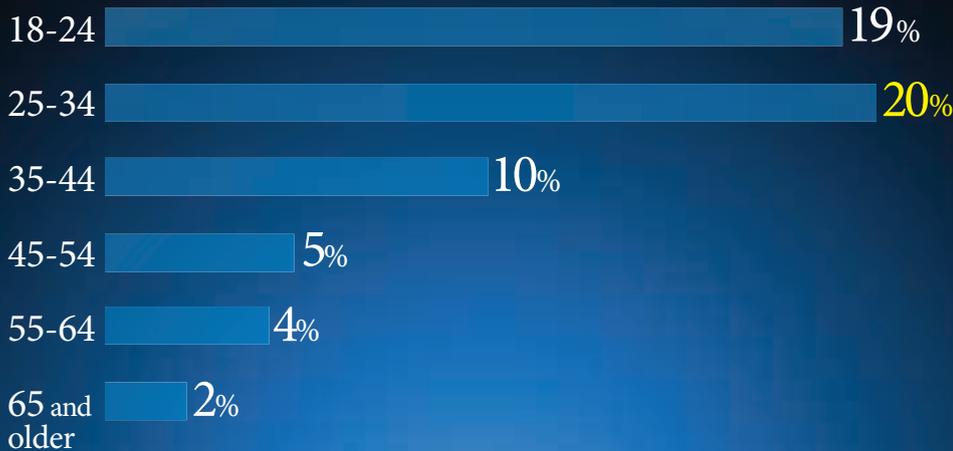
What results are more students entering the workplace who are generally OK with posting intimate details online,

Bauerlein said. At the same time, however, CIOs, CEOs and other bosses are venturing onto social networks out of curiosity, or as many interviewees for this story suggested, because someone in marketing told them they should. These factions converge online and a relationship is born that sails deep into uncharted waters.





Percentage of American adults who use Twitter or a similar service to share updates about themselves:



Source: Pew Internet and American Life Project. Numbers as of December 2008

“As these kids start climbing up the chain, **their actions are going to catch up with them.** There are going to be consequences and people are going to slowly start **self-regulating.**”

Anand Dubey, director, Enterprise Technology Services, Alaska

Double Edge

Should a manager who “friends” his employees be ready to look the other way when he discovers objectionable content? Or should employees — or potential employees like “theconnor” — use social networks more conservatively? Have we reached some sort of online impasse, or is there another possibility?

Anand Dubey is the director of Alaska’s Enterprise Technology Services. He’s also one of the country’s youngest state IT chiefs. He said the first step for those using social net-

works in the workplace is to understand why they’re doing it.

It’s a tool like anything else, Dubey said, and you must ask yourself what you’re going to do with the tool. It’s like enterprise resource planning (ERP), he added. “People would rather buy an ERP and they somehow think that ERP is going to fix all their issues. Well, that’s never the case. The thing is, you need to be very clear-cut about your processes on a manual level. Once you’ve optimized those, then pretty much any tool can fit your need — and that’s where this Facebook stuff comes in,” Dubey said. “People

are doing it, but they don’t really know why. It’s the cool thing people have picked up, but now what?”

Despite the indoctrination of sharing that Bauerlein said exists, Dubey said he believes most people are intelligent enough to know what is and isn’t acceptable to put online. And if they don’t know, eventually they’ll get the hint.

“In the old days, if you did something stupid like get a tattoo, it looked really cool and if you were working at Wendy’s, nobody cared and maybe you got a few dates. But the moment you try to get a professional job and you’re all tattooed, regardless of what employers say, you know you’re not going to get a fair shake,” Dubey said. “So as these kids start climbing up the chain, their actions are going to catch up with them. There are going to be consequences and people are going to slowly start self-regulating. It’s all going to stabilize.”

Don Patterson, assistant professor of informatics at the University of California, Irvine, said in order for employers to use social networking smartly, superiors should try channeling younger people’s mastery of social networking tools into something that benefits the agency or company.

One possibility is to enlist young workers to be the organization’s public spokespeople, Patterson said. “In a lot of cases, they really understand marketing and branding, and they do it naturally for themselves.” Enlisting employees who are good at social networking to represent the organization may be beneficial, said Patterson. “Maybe viewing these things as skills rather than liabilities is helpful.”

Successfully managing the convergence of personal and public life on the Web is going to be an ongoing challenge. Those who use social networks would be well served to be more thoughtful about how they use these sites and what they reveal about individuals. And perhaps paradoxically, it might behoove society to relax standards about what is acceptable.

But if the Information Age has taught anything, it’s that by the time the world is on the same page, everyone will be reading the next chapter. **GT**

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DO **OPEN SOURCE** PROGRAMS COME WITH SECURITY CONCERNS THAT “CLOSED” ONES DON’T HAVE?

LEAP

HILTON COLLINS | STAFF WRITER

OF

When you buy software, you probably trust that you’re getting a secure product that runs well. This faith may come from the fact that the source code — the digital DNA that tells the program how to work and what to do — is hidden from consumers. In most cases, only the select programmers tasked with maintenance and security can see it and make changes.

Closed or proprietary code is the engine of legions of vendor-made products. Many of them, like Microsoft’s nearly ubiquitous Windows software, are closed code to prevent piracy and duplication by competitors or users. And for some license owners, the perceived benefit of closed code is that if no one sees it, those who intend to do harm can’t see the software’s vulnerabilities easily and exploit them.

FAITH?



The prevalence of open source code, however, could make one wonder how much secret code matters. The term “open source” generally refers to programs in which people can view or modify the programming code. Open code is developed in a collaborative environment where programmers can make changes that are visible for the community to see. People can download many of these programs free of charge and can choose to join the development process by making modifications or viewing changes as they see fit.

The open source **Apache Web server** has been the most popular Web server technology since 1996, according to Netcraft.

But does this openness make it less secure than its closed source brethren? Open source advocates certainly don't think so.

“You know exactly what needs to be done to secure it and what vulnerability it has. It's quantifiable; it's knowable,”

said Christopher Adelman, vice president of sales and marketing for Alien Vault. Alien Vault created OSSIM (Open Source Security Information Management). “The problem with closed source solutions is there's a certain leap of faith associated with closed source software.”

Open source code lets users judge how secure a program is, Adelman said. When you can't see the code, you can't see for yourself just how secure it is or isn't. “You know exactly what you're getting into, and for me, that's everything. Game won right there.”

Open or Closed?

A popular argument of the pro-open source crowd is this: If it's open, it's essentially up for peer review, which means there are more sets of eyes to identify security holes and fix them. In a closed environment, how do you know how thorough your software's being reviewed if you can't see what's happening or know who's doing it?

“The things that keep me awake at night are the things I don't know about. It's the

things that I have no idea are out there that the hackers know, that are going to cause us problems on our security operation front,” said Jon Dolan, chief information security officer of Oregon State University.

Open source can also make patching software a bit faster. There's no need to contact the vendor about a bug — like you'd have to with proprietary code — or wait for a next release of the software that's fixed the bug.

“If I find a bug in an open source program ... I submit a fix to the people who are responsible for the program,” Dolan said. “It gets peer reviewed before it's accepted, but then it is accepted in short order, so we eliminate this whole workflow of reporting a bug to have somebody else fix it. You just fix it yourself and pass along the fix to everyone else.”

Other users feel the same way.

“What I think is good about an open source project is that all of those discussions happen out in the open, and so people can see if there's a fix for something right away,” said Michael Tutty, enterprise IT expert for the Iowa Department of Administrative Services, where IT personnel use open source Geeklog, a PHP/MySQL-based application for content management. “I don't believe that a for-profit company could approach the speed that an open source company can patch things at.”



“I don't believe that a for-profit company could approach the speed that an open source company can patch things at.”

Michael Tutty, enterprise IT expert, Iowa Department of Administrative Services

Open source advocates can point to strong evidence of just how much consumers support open code in spite of any security-related distinctions between it and closed code.

Netcraft uses a tool to periodically query Web sites and discern statistical data about them, including what Web servers and operating systems they use. The company's April 2009 query received responses from more than 231 million sites from around the world, and approximately 106 million of them used Apache Web servers — technology developed in an open source community facilitated by the Apache Software Foundation. Apache Web server technology has been No. 1 in Netcraft surveys like this since 1996.



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“I think it's true that most people run both open source code and closed code, and that there's a hodgepodge of it on all of our computers today,” Dolan said.

But do users themselves worry about the integrity of their open code? Of course, but to some, the closed versus open argument oversimplifies the issue.

“From my perspective, no code is truly safe and secure. Whether the code base is open or closed, they both have the same level of frailties, and that's because it's designed by humans, and all things that we do are imperfect,” said Noel Hidalgo, director of technology innovation for the New York state Senate.

His office uses Drupal open source software to manage Web site content. He feels that open source, by its very nature, could motivate people to plug security holes.

“They're always having to go about greater levels of security audits, and maybe that's because people just feel insecure about it and that there's a certain level of insecurity. But in the end,” he said, “because more eyes are being viewed upon it and that they are forced to do more security audits, I feel that open source software has a tendency to be more secure.”

People Behind the Code

Software audits for open source code might not necessarily be the same, however, as ones done by a technology giant that sells code to millions of consumers. These companies have thorough and laborious documentation and quality assurance processes. They also have cash.

“If you consider somebody’s time equal to the money that it would cost for them to do the work, how much are people really going to spend auditing open source software seriously to find bugs versus a commercial piece of software?” said John Viega, chief technology officer of the software-as-a-service business unit at McAfee.

It’s assumed that vendors pay skilled programmers to iron out the kinks in their own closed code. Which makes one wonder: In an open environment, if programmers often operate for free, are they as skilled or motivated as seasoned programmers at a Microsoft- or Oracle-level company? Wouldn’t programmers who have the threat of unhappy bosses and the allure of paychecks have more incentive to work harder than those who don’t?

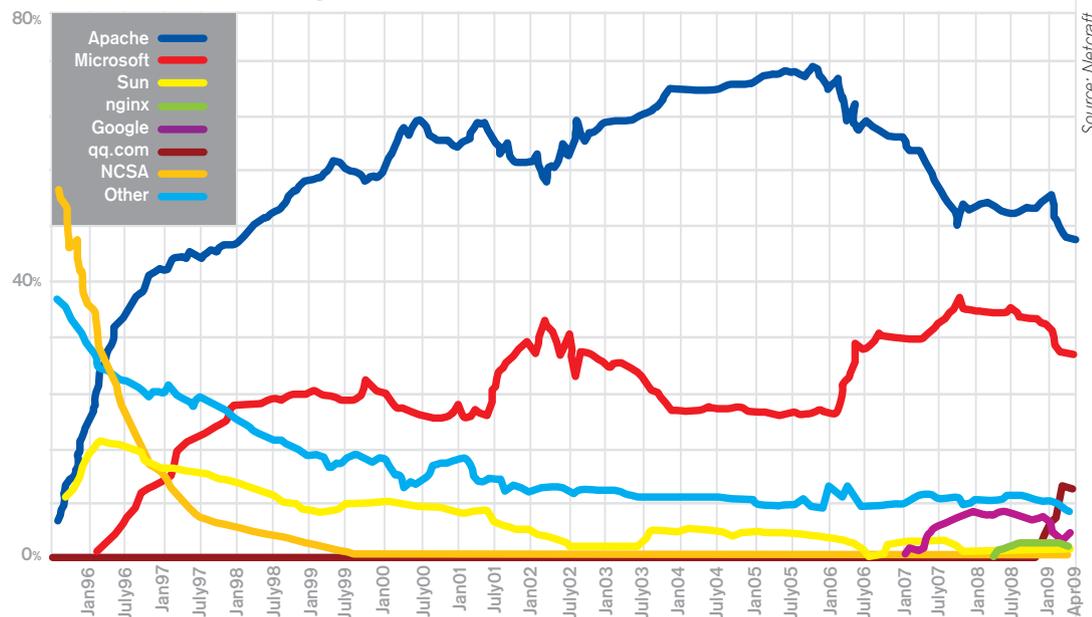
Answers vary depending on whom you ask, but most people don’t seem too worried about the credentials of the developers in their open source communities.

“I don’t think that’s true at all,” said Steve Grubb, team lead for the security technologies team at Red Hat, a prominent provider of open source technology. “I think that if word got out that the Red Hat operating system is not secure, the government would not be buying and deploying it. There’s just as much motivation for us to make sure that our source code is as good as it can be because it really comes down to reputation.”

He feels that a collaborative community brings benefits that outweigh financial incentive.

“In the open source world, the source code is viewable all over the world by just about anybody, and so you can draw upon the experience of security experts from all

Market Share for Top Web Servers



Source: Netcraft

over the world and you’re not limited to just how many people you can put on your own payroll,” he said.

Even so, Red Hat has the money to pay its programmers. The company makes revenue when customers pay for maintenance, not for the free software. So in these cases, the “many eyes” in the open environment have a financial incentive to be diligent.

Once you go a few — or quite a few — steps below an operation at Red Hat’s level, you’ll find communities of programmers who are working for free, or sometimes a mixture of the paid and unpaid. In Geeklog’s case, Tutty said the majority of developers don’t receive pay for their work.

“They’re all volunteers. Some of the contributors to the project are people who actually do sell their time to do support for Geeklog sites,” he said. But it’s not anything like the sophisticated affair of larger open source providers. “These guys are much more informal, much more ‘open sourcy’ about it. Their main goal is to put out this thing because they all use it, and they all like it, and then, if you need help, you get it from the forums or mailing lists.”

In smaller open source communities, peer review still makes open code worthwhile, developers say, even when monetary compensation isn’t a factor.

“The vast majority of these people are not paid to do this. This is done because they have a hobby. They don’t play sports; they don’t go to play tennis at lunch; they don’t play racquetball. They code. That’s where they get their enjoyment,” said Harper Apted, network administrator of the Warsaw Community Public Library in Indiana. “When they submit code, they get ‘props’ for this. They get reputation, perks, and are known in their community and their social circle.”

According to Apted, if you’re a hardcore programmer, then successfully creating or tweaking programs during your free time that satisfy users is enough to make you do exemplary work.

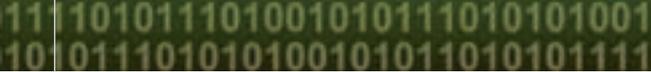
“If you are known for submitting bad, buggy code, corrupt or even virus-laden [code], you will be the dreg of your social circle,” he said. “You probably won’t even be allowed to participate, so reputation is a very valuable commodity, even if it’s intangible.”

Three out of the Warsaw Community Public Library’s 12 servers run operating systems built on the Linux open source kernel. These servers support the integrated library system, which is a database of books,

“If you consider somebody’s time equal to the money that it would cost for them to do the work, how much are people really going to spend auditing open source software seriously to find bugs versus a commercial piece of software?”

— John Viega, chief technology officer, McAfee software-as-a-service business unit





videotapes, CDs, audio books and everything else that can be checked in or out.

Apted said he and his colleagues don't modify the open source programs they use, but they do view the code as they wish and can see how it's architected. When they need modifications, they hire someone to handle that. And because it's open code, it's relatively simple to see what needs tweaking and do it, he said.

Users of commercial, closed source products generally assume that their software's developers are professionals. But with open source products, consumers may wonder about the credentials of these mysterious programmers wandering around in these free environments.

"Frankly you look at a lot of open source projects, there's somewhat of a perception that large parts of it were written by high school kids just to start learning and building a reputation," McAfee's Viega said.

But the reality is that most users don't know who developed their software — whether it's open source or proprietary. You probably don't give much thought to the Microsoft staffers who created your latest Windows release. It's probably not much different if you're downloading software from an open source resource like SourceForge.net, either.

"As far as it goes, how do you really know anybody that's writing the code is worth it? I don't know that it's necessarily built on trust. A lot of it is built on reputation," Apted said.

Popularity Is Everything

Software's integrity may have little to do with whether it's open or closed and everything to do with how widely it's used. If people care about it, they'll scrutinize it.

"I know that the U.S. government has paid to review many open source projects, such as OpenSSL, the free security library, and Apache. So I'm sure they've done it more than once," Viega said. "The government even paid for OpenSSL to be FIPS [Federal Information Processing Standards] certified."

The National Institutes of Standards and Technology (NIST) first certified OpenSSL in January 2006 as compliant with FIPS 140-2 Level 1 standards. This certification was revoked in June that year after concern



about how it interacted with other software. However, NIST reinstated the certification in 2007.

In open source's case, this scrutiny comes not only from the members of the open community creating and modifying it, but also from third parties like private companies and the government that want to vet software for their own use. In the closed code world, companies typically pay for the same sort of vetting themselves, but again, these companies likely only do it for the most popular applications. Security, in these cases, has little to do with whether code is hidden, but everything to do with how much people want to use it.

"The way that security bugs are found is by people looking at the code," Viega said. "There's a big industry around this. There are many companies looking for vulnerabilities. The vulnerability company is focused on self-marketing, really, at the expense of the customers."

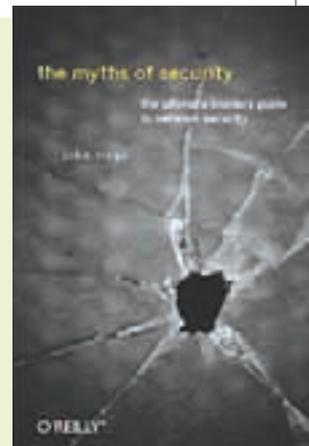
In his book, *The Myths of Security*, Viega wrote that "the most popular open source software gets reviewed more. The most popular commercial software typically has a large investment in training, tools, auditing and so on." He implies that if you're concerned about the security of your software and asking if it's closed or open source,

you're asking the wrong question. It's a moot point.

Perhaps you should consider how long the product has existed, how well it has performed, and how you would handle modifications if they're necessary. You may have to pay a third party or the open source provider to handle the work, but if the community your code came from is robust and thriving, you likely won't have to.

"One aspect of open source security that is a little less tangible but makes sense when you think about it is, when security professionals have all of the source code, they can explore new solutions to old problems in a very creative way," Grubb said. [GT](#)

The Myths of Security, a new book from **John Viega**, offers an insider's perspective on network security. Viega reports on the sorry state of current security efforts and gives advice for improving them.



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NPR's justice correspondent, will be the keynote speaker for the opening session of

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Synopsis:
Los Angeles shares the approach that helped the city successfully accomplish its enterprise resource planning goals.

Four Steps for **ERP Success**

“Glitches in Payroll System Spark Furor” ... “City Fires Vendor Over ERP Implementation Problems” ... “City’s Financial System Upgrade Runs Into Problems” ... “County Will Try Again to Modernize Computer System.”

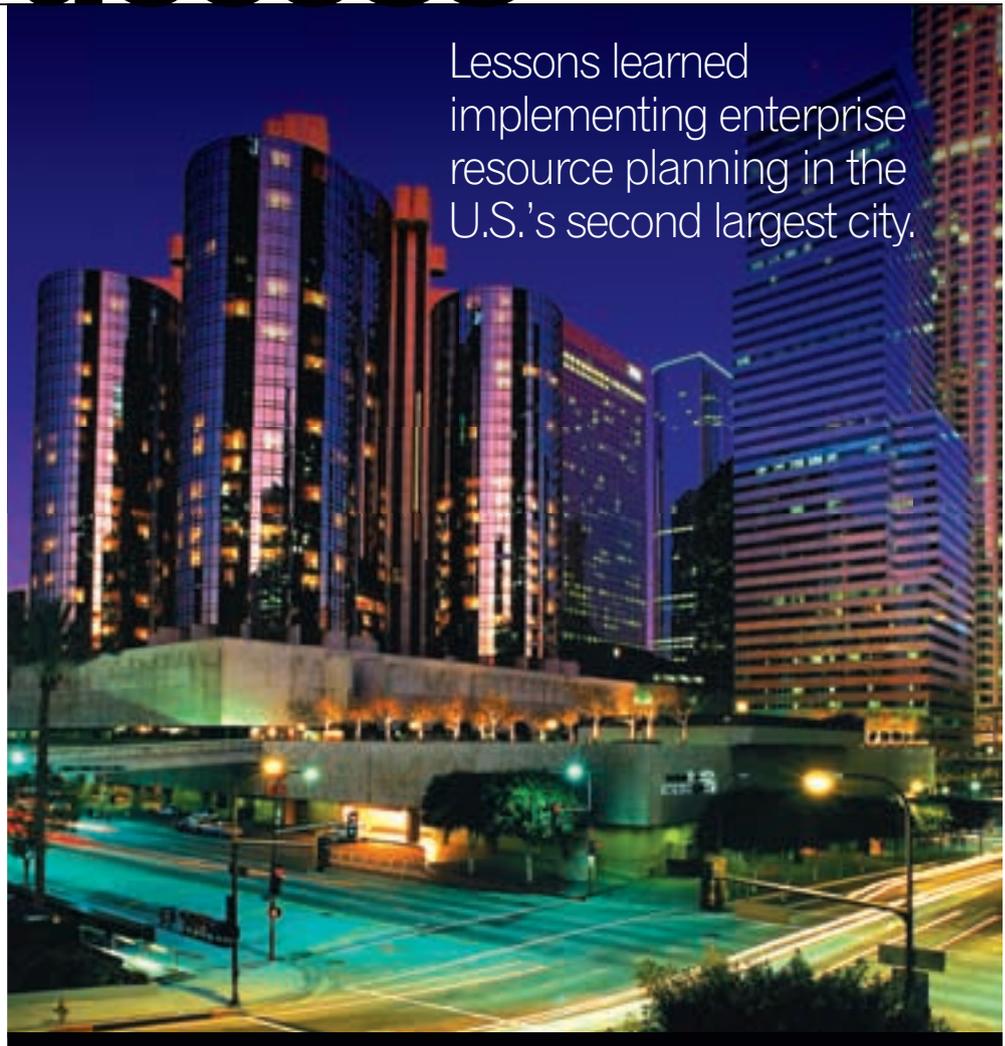
What state or local municipal IT executive wants to read these real headlines in the local newspaper?

The fact is they highlight the challenges city executives face when implementing or upgrading technology. There’s often a natural resistance among municipal leaders to risk change because when implementations go poorly, there’s a good chance they’ll receive public criticism. Whether from the employee’s or vendor’s perspective, failure is a badge no executive wants to wear.

With the economy struggling, technology executives at municipalities across the country are under increasing pressure to cut costs and find ways to operate more efficiently and effectively. Enterprise resource planning (ERP) has long been held up as a primary vehicle to get there, both in the commercial and municipal sectors. But as the aforementioned headlines show, when it comes to municipal ERP implementations, the end results seem hardly guaranteed.

L.A. Story

Los Angeles was in a technological hornet’s nest in 2005. Government officials were under scrutiny for a PeopleSoft 8.8 upgrade that had gone badly. Beyond the multimillion-dollar price tag for taxpayers, the purchased technology wasn’t delivering on its promised capabilities. City staff was working overtime to make the system operational.



Lessons learned implementing enterprise resource planning in the U.S.’s second largest city.

Internally the situation was so bad, city personnel couldn’t perform routine updates. System glitches and outdated business processes required an ongoing focus on issue resolution rather than software maintenance and financial positioning. Employees were forced to “backdoor” individual transactions into the city’s large information database

— this led to a significant backlog of maintenance tasks and problems reconciling contractual obligations due to quality control issues. Additionally several problems with the interface between citywide systems — including heavily customized software code — were preventing data from being shared across departments.



Externally vendors weren't being paid, and the first audit of the full fiscal year was approaching. For nine months, the contractor responsible for the upgrade attempted to diagnose the issues, without success. This led, albeit erroneously, to a widely held opinion that the Oracle software was to blame.

Although many factors worked against L.A., there were some strategic points in the city's favor: a centralized approach to solving problems — rather than letting each functional department manager micromanage projects, city leaders determined the best course of action citywide; good coordination between key agencies; and a strong propensity for seeing the big picture rather than getting caught up in the minutiae of specific problems.

In a rare move, the original software vendor called on Metaformers Inc., a McLean, Va.-based ERP integrator, to help diagnose the problem. During a 72-hour period, Metaformers staff analyzed and diagnosed issues related to the system software, business processes, city databases, specific program settings and more. Metaformers executives then outlined a plan to fix the problems. It was presented to city management, which put the plan into action.

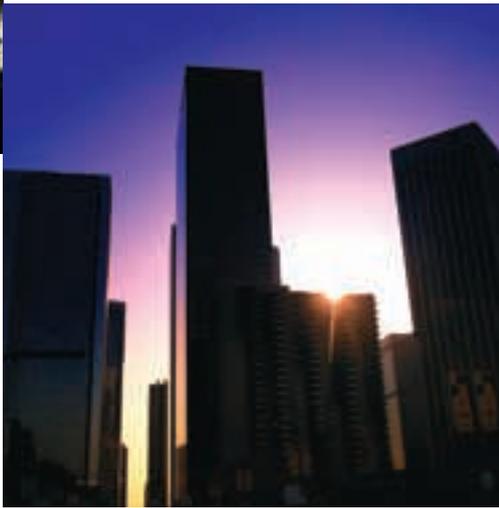
Today L.A. is back on track. In December 2008, the city announced it successfully upgraded and went live with PeopleSoft 9.0 Financials.

Successful ERP is a blend of science and art, so there's no one-size-fits-all formula for

success. But as we learned during L.A.'s ERP implementation, just following a few consistent rules will increase the likelihood you'll accomplish your goals.

1. Software won't fix organizational problems.

In the past, city staff saw the IT department as order takers rather than strategic partners for change. This was evidenced by the "fix-it-now" expectation that surrounded the supply management system, the citywide procurement and payables program. Whenever a



problem arose, rather than resolving the fundamental issue via the purchased software, the IT department was expected to create an immediate resolution with software patches and database corrections. But fix upon fix created a maze of system tweaks and changes that only a select few could decipher. This led to information chokepoints across the orga-

nization and imbalanced power in the hands of only a few employees. The problem was more than software: Culture, process and organization all played a role in what, on the surface, looked like software problems.

Nothing exempts civic leaders from leadership. **Software helps implement change**, but it shouldn't be the vanguard of change — that's the role of executive leadership.

Buying software in hopes of fixing fundamental organizational issues is a mistake. Unless leaders at the top (i.e., the CIO,

chief financial officer, commissioner, CEO, mayor or director) are willing to turn over rocks and deal with the problems underneath, they shouldn't bother with a large software investment. Governments are often years behind the commercial sector in areas like business process and procedure, and organizational management. Political will — and often, political capital — is required to take on established cultural and procedural roadblocks to change.

Nothing exempts civic leaders from leadership. Software helps implement change, but it shouldn't be the vanguard of change — that's the role of executive leadership.

2. The corporate sales model doesn't work for government.

L.A. ran into serious issues beginning in 2005 with an upgrade from PeopleSoft 7.5 to 8.8. The city proved vulnerable to the corporate sales model — a soothing corporate message that a software solution would make all problems go away. The city's leadership wisely decided to resolve issues with the current software rather than buy something new. Had it opted for a change in software, the same problems would have inevitably occurred.

It's important to understand that government enterprises have fundamental issues that don't align with the corporate sales model.

Corporations are structured to produce financial and operational results on a short time frame. Consultants need revenue, and software vendors need sales to achieve quarterly results. Consequently there's an ongoing

corporate push for quick sales and implementation cycles.

On the other hand, governments have strategic, fundamental issues that limit their ability to achieve short-term returns on investment (ROI), although they're also pressured to deliver short-term results. For example, many governments are willing to

accept large, discounted deals today and worry tomorrow about how to get the greatest productivity and ROI from the purchase.

Developing a plan to address these issues *before* purchasing a high-powered enterprise solution is critical. In government, every significant IT-related decision should focus on long-term results. However, short-term needs, including political considerations, often drive decisions. When it comes to enterprise solutions, this is usually where the problems start. By and large, governments should reject the “we can help you in the short term” response from the corporate world and instead focus on long-term strategic change.

When government leaders think only in the short term, they feed the corporate sales model. Looking in the mirror and telling yourself that you’re the problem isn’t an easy task — you only do it if there’s a long-term benefit. It’s the job of the CIO and other government executives to see, as the bigger picture, a vision for change. They should avoid the pitfalls of the corporate sales cycle that’s misaligned with government. They should spend wisely, but not necessarily cheaply, in pursuit of that vision.

3. Know your limits.

L.A. had several issues with its supply management system, beginning with the organization’s culture. The city’s leaders could have chosen to make sweeping changes, but in this case, executives saw that a smaller but successful effort with the supply management system would build momentum toward broader challenges.



will not account for the ROI, nor will it subsequently achieve it. What’s more, it will inevitably lose ground and waste the investment. The risks associated with cramming through change initiatives are broad and many: overloading resources, creating single points of failure and knowledge bottlenecks, creating or exacerbating cultural problems, demoralizing personnel and losing momentum on the change initiatives.

It’s important to be up front with your vendors about how you do business, and expect and demand support for that model. You will suffer to some degree on the discounts you can get, but in a highly competitive industry, vendors can’t afford to be too pricey — they’ll follow *your* model.

4. Get out of the software business.

During the failed upgrade from version 7.5 to 8.8, L.A. and the original contractor created invasive customizations. This seemed to be the right thing to do at the time. After all, it’s tempting to opt for your own code rather than

end, even if the grand vision comes together, few government enterprises can afford to maintain such systems for long.

In a similar vein, many organizations are caught in the trap of meeting their demands by letting contractors overly customize out-of-box software packages. In addition to opening the door for out-of-the-ordinary software and system conflicts, this sort of coding can lock an organization into the need for significant long-term contracts with contractors. This “deadly embrace” can dilute the long-term ROI and autonomy that a system is designed to achieve. Based on these customizations, the deadly embrace gives a contractor a knowledge monopoly, which leaves the government no choice but to continue a long-term contracted service arrangement for specialized support, in addition to the government’s own support staff.

Software vendors maintain their code and have thousands of customers using it and reporting issues to them. The software vendor’s code is constantly improved with millions of dollars of investment. Cities don’t have the technical expertise or support structure to maintain customization. A customization should be simple and noninvasive, if it’s done at all.

Going Forward

Government executives must not shut down IT investments because they fear failure or a challenging economy. Government leaders have an unprecedented opportunity today to implement change. Software can be used as a catalyst, but not at the expense of sound strategic fundamentals. Leadership is crucial.

Define your vision for change; understand the strategic, fundamental roadblocks to achieving that change; make plans to address each of those roadblocks and incorporate software tools that can enable them. Be bold in your strategy and vision, and be wise spending your resources.

This is rarely the sort of activity that makes for sensational headlines, but it will position your organization for the significant, positive change that’s badly needed in today’s government. [GT](#)

RANDI LEVIN IS CHIEF TECHNOLOGY OFFICER FOR THE CITY OF LOS ANGELES AND **ED BOURYNG** IS PRESIDENT OF METAFORMERS INC.

Government executives **must not shut down IT investments** because they fear failure or a challenging economy.

Government executives need to understand the limitations within their organizations. There may be a political will to change, and even the financial and human resources to support it — but these are not limitless. It’s important to set reasonable expectations for change before allocating funds. Executives should take on manageable, achievable chunks and spend resources with the government’s limitations in mind.

Meeting a change initiative if a government is unprepared is a recipe for disaster. It

the code provided by the software vendor. But in this case, it was a failure that caused system glitches and conflicts. The customizations were removed in the upgrade to version 9.0 because it was the correct long-term decision.

Understand that you likely won’t be able to maintain the slick solution that’s presented on the PowerPoint sales slides. Although the grand vision is politically appealing, the true cost is easily dismissed or overlooked as the contractor, software vendor and project leadership all desperately want it to succeed. In the

UMUC HOMELAND SECURITY



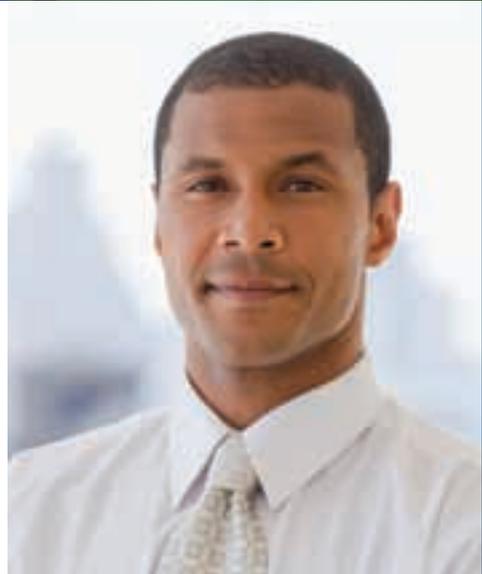
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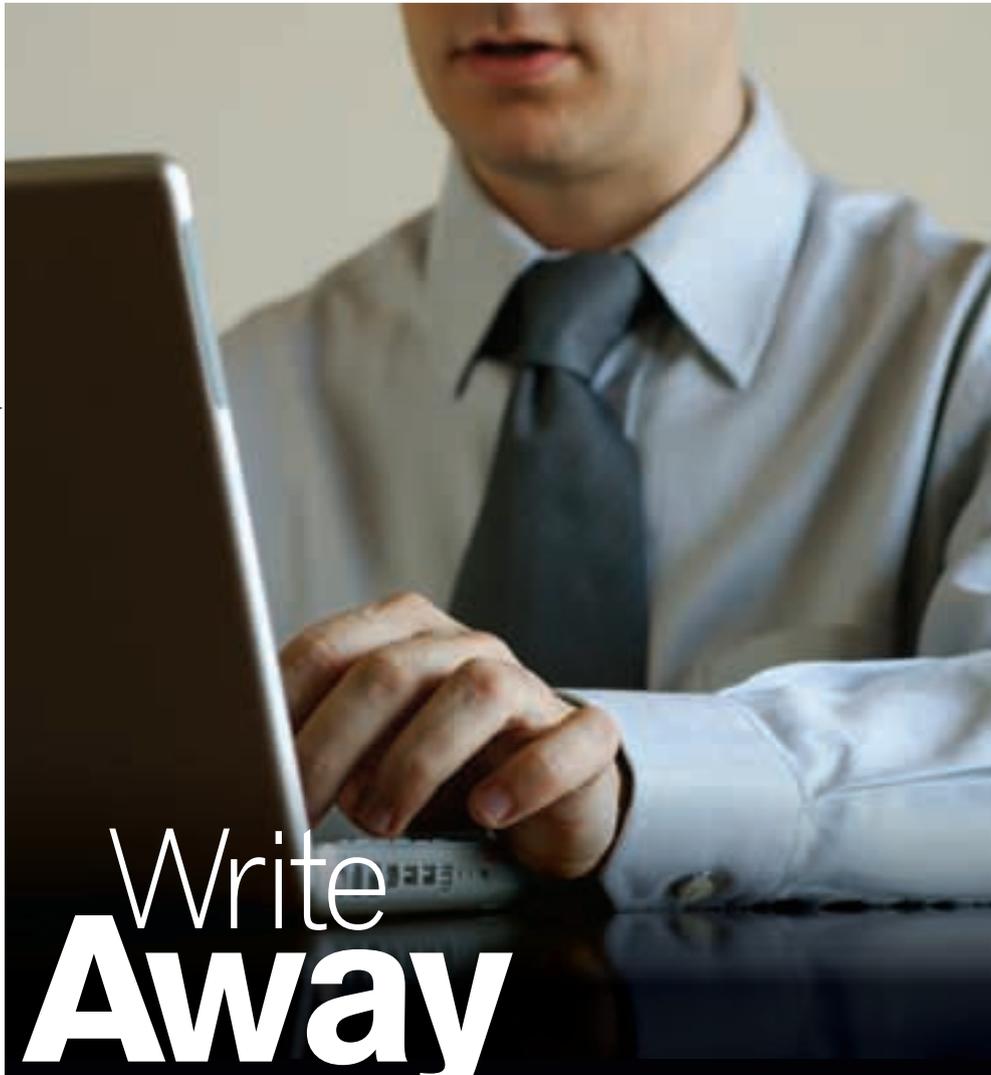


Synopsis: Local government bloggers offer insight on what makes a good blog.

Agencies: Seattle Department of Information Technology; Lakewood, Wash., City Council.

Technologies: Web 2.0, Internet.

Contact: Bill Schrier, Bill.Schrier@seattle.gov, 206/684-0633.



Write Away

How state and local officials can blog without looking clueless.

Back in high school, do you remember parents who tried to be hip by dressing like their kids? You wondered why the parents bothered, because they just looked silly.

A similar fad that has grown legs in government IT circles: public officials blogging. After all, the coveted Millennial generation reads blogs. Government technophiles promoting this may enjoy showing off how in touch they are with Web 2.0, but how in touch do they really look to the people blogging is supposed to attract?

Blogs that catch fire typically project a casual personality and feature provocative commentary. But getting that type of language past a

public information office, whose job is to keep things uncontroversial, can be difficult. Consequently most public-official blogs tend to be extensions of press releases, said Seattle Chief Technology Officer Bill Schrier. He considers public-servant blogs that offer only scrubbed, official-sounding prose largely pointless.

"The best blogs are ones that carry a personal point of view, reveal what an elected official is thinking and have a little bit of personality and edge to them," Schrier said.

He writes a blog called *Chief Seattle Geek*.

"I blog because I like writing — putting my thoughts coherently into an argument. I like pushing the envelope in terms of how city

government ought to use technology and how we should be adapting technology to better take care of citizens," Schrier explained.

Schrier doesn't even check his Web traffic. For him, blogging is not about volume, but sharing his personality and insights with anyone who's interested. He spends roughly four hours of his personal time crafting each post.

However, Schrier contends that for agencies especially prone to contentious media coverage — like law enforcement, transportation or the mayor's office — freewheeling, pithy commentary might not be worth the trouble.

One also might question whether public officials who use blogs as fashionable Web 2.0 vehicles for press releases are only kidding themselves.

Small Dog World

The people in government who are freest to create enticing blogs are usually officials working under the radar, Schrier said. He occasionally breaks unfavorable news about Seattle on his blog. Nobody tries to muzzle him because the IT department isn't a hotly watched agency.

"I tend to expose things that happen internally to city government that otherwise wouldn't see the light of day. We had an incident in November where our data center went over 108 degrees because of a failure in the cooling system. I blogged about that," Schrier explained. "I don't know how interesting or uninteresting that was to people, but obviously it would have made headline news if the data center actually melted or had we lost several thousand dollars worth of servers. That's an example of an incident you normally wouldn't read about."

Lakewood, Wash., Councilmember Walter Neary said an elected official risks his career each time he blogs in the true sense of the word.

“The people who read your blog most carefully are your political opponents. If you blog right, you make yourself a bigger target,” Neary said. “You go to a lot of trouble to get elected, and then when you open yourself up, it gives people a lot more information they can use to try to unseat you.”

This raises a question: Should closely watched agencies skip blogging altogether? Pithy opinions often cause unintended controversies. Responding to those can be taxing and counter-productive for an agency’s staff. Furthermore, should voters be paying public servants to spend time vetting and approving blog posts just so government can look Web 2.0 savvy?

Andrea Di Maio, an analyst for the IT research and advisory firm Gartner, recommends agencies quit blogging altogether.

“They’re trying to put information where people are more likely to look for it, but blogs are really hopeless stuff. Blogs are good for politicians, but from a government organization perspective, they don’t really make much sense,” Di Maio said. Anything hosted by or linked from a government site can’t help but come across stiff and institutional, he said. That’s because content coming from an institution has to run through bureaucracy.

The Web 2.0 Alternative

Di Maio predicts social-networking sites like Twitter and Facebook will be more effective for government officials. He suspects agencies will feel more comfortable keeping employee communications as-is on those sites. When workers post on social networks, the perception is shed that their comments represent the entire agency, in Di Maio’s view. He said existing Web communities, like Twitter and Facebook, will give government officials more incentive to post with personality. Crafting original, thought-provoking posts is more attractive when a community of interested users already exists to respond to them, Di Maio said.

He said the key is stimulating employees’ interest in social networks to encourage them to blog for their own sake instead of the agency’s sake.

“An individual employee will want to participate if he or she has a compelling reason to do so. That’s when the ball starts rolling. If it’s more of an official thing, meaning you have to do it because it’s fashionable



Bill Schrier shares his technological point of view, as well as how state and local governments can use technology to better serve citizens on chiefseattlegeek.com.

or because the minister or governor likes it, that’s not going to work,” Di Maio said, later adding, “There’s been too much focus on whether something is the right thing — the cool thing.”

He recommends employees find discussion groups that can bring them usable benefits, like information for doing their jobs better or even advancing to higher government positions.

“The best blogs are ones that carry a personal point of view, reveal what an elected official is thinking and have **a little bit of personality and edge to them.**”

Bill Schrier, chief technology officer, Seattle

Interacting on those sites in a way that won’t get the employee’s agency into trouble is simply a matter of establishing codes of conduct, Di Maio insisted.

“There are other countries, like the UK, that have developed codes of conduct for government employees when they go into these communities. The codes are not that complex,” Di Maio said. “If you already have a code of conduct for employees, meaning you already have a set of rules for how to talk to the press, the public — deciding when to publish or not publish information — all you need are two or three additional points on how to react to posted comments.”

Whether or not state and local agencies can establish the type of presence on social networks that Di Maio advocates is uncertain. Agencies have been on these sites for a while, and Di Maio acknowledges the content they post isn’t much different than the lackluster prose on government blogs.

“The [Twitter] tweets look like press releases or announcements — official stuff. Again, they miss the point, but the good thing is they’ve started using these tools,” Di Maio said. Many agencies acknowledge to him in private that their posts miss the point, he said, and they want to improve. The problem is they’re still uncertain what the code of conduct should be.

Blogging in Private

People usually think of blogs as mass-media vehicles. However, many small groups subscribe to invitation-only blogs. A limited audience eliminates the danger of public controversies from brashly worded posts. Schrier is considering a few private, internal blogs targeting two different Seattle groups, one being his IT staff.

“I’m really not well known to most of them. Over the next couple of years, it’s going to be a scary time to be an employee in any company. Layoffs and budget cuts and those things,” Schrier explained. “I want to have more of a personal perspective that I’m able to

put out there for the employees in my department about what’s going on and my thoughts on how the department is managed.”

The second internal group he’d like to blog for is his agency’s end-users.

“There are 11,000 employees in Seattle and probably 38 departments and offices. I’m the chief technology officer for setting standards across that organization,” Schrier said. “I do publish a newsletter now, but I might consider blogging for people interested in technology elsewhere in the city, and where we as a city government ought to take that technology.” 

New York City health department boosts electronic health record adoption with a focus on improving care.

Most agree that electronic health records (EHRs) can cut health-care costs and reduce errors. However, only a few providers have adopted EHRs because deployment costs are often prohibitive. The New York City Department of Health and Mental Hygiene (DOHMH) is taking the bull by the horns and helping physicians deploy and use EHR systems.

Through its Primary Care Information Project (PCIP), the department pays some costs of deploying EHR systems. The goal is to boost EHR adoption among New York City doctors and give them the tools they need to improve patient care.

“We believe the absence of consistent evidence-based care in primary practice is a public health problem,” said Farzad Mostashari, assistant commissioner of the DOHMH.

A focus on chronic diseases and common killers like high blood pressure and diabetes can save lives and result in a healthier population, making it a matter of public health, he explained. However, in some ways, agencies like the DOHMH are limited to combat these common issues.

“We don’t directly provide health care. We don’t pay for or even regulate health care,” Mostashari said. “Our solution was to try to change the decision-making context for the clinicians by providing them with electronic health records that have a public health perspective baked into it.”

Improving Care

Doctors have been reluctant to adopt EHRs because the expense and inconvenience come with little payback.

“This transition is laborious and it’s difficult to change one’s workflows completely



Quality Counts

and every aspect of their day. This also can be expensive for practices to adopt health records, and only a small portion of the benefits accrue to the physician who’s expected to put all the money in,” Mostashari explained. “So there’s been a market failure in this industry.”

The result, he said, is that only 2 percent of U.S. practices have a full-featured EHR system in place. Even when practices use EHRs, health goals aren’t necessarily built into the product. To improve adoption and help physicians handle these public health measures, the DOHMH is working with providers to roll out EHRs with tools that support public health goals — at minimal expense to providers.

The city assists doctors whose Medicaid or uninsured patients constitute more than 10 percent of their total visitors, as long as the physicians are willing to work with the city on quality improvement. According to Mostashari, 1,100 doctors are participating, with several

hundred more in the pipeline. Participants include small practices, community health centers and hospital outpatient departments.

The system has alerts and tools that help physicians better manage targeted health conditions, pull patient reports and see how they handle certain conditions compared to other physicians who use the system.

“It pops up with alerts. It allows them to act on it when the patient is there. It also allows the physician to see at the end of the month how they’re doing against those alerts — compare themselves,” said eClinicalWorks CEO Girish Kumar Navani. “That’s a step up over most EHR deployments.”

The DOHMH helps physicians financially by covering software and license costs, project management, and two years of maintenance and support from software provider eClinicalWorks. Practices must buy their own hardware and contribute \$4,000 to a quality improvement fund that provides

Synopsis: New York City facilitates electronic health records for physicians across the city who have quality improvement measures “baked in.”

Agency: New York City Department of Health and Mental Hygiene.

Technologies: EHR software.



Big Benefits

New York City's EHRs reduce health-care costs and error, allow doctors to log in remotely and compare patient care among participating doctors, and provide faster service.

program support. However, the department has identified several high-priority areas: Harlem, central Brooklyn and the south Bronx. For doctors in those areas, the DOHMH waives the \$4,000 contribution and provides a hardware package worth approximately \$10,000. Mostashari said more than half of small practices and community health centers in the three areas have signed on.

When interviewed in February, Mostashari said approximately \$20 million had been spent on the project, he said, with funding from the city, New York state,

the Centers for Disease Control and Prevention, and the federal Agency for Healthcare Research and Quality.

The Big Picture

The system also will support larger public health goals by giving the DOHMH de-identified reports on patients who visit participating physicians. Besides letting doctors see how their patients compare, the department hopes the data will help identify outbreaks and quality-of-care trends.

However, Mostashari and Navani made it clear that the DOHMH doesn't collect patient-level data.

“We felt that in terms of earning and keeping the public’s trust, we **could not afford** to have even the possibility of a large data breach.”

Farzad Mostashari, assistant commissioner, New York City Department of Health and Mental Hygiene

“We don’t need it. We don’t want it. We don’t get it,” said Mostashari, adding that only de-identified reports are collected.

“We’d only get summarized counts for those various measures,” he said. For instance, the health department could only see that seven patients out of 20 have a flulike illness.

The department collects data to ensure that providers use the system as required by their contracts, gauge key quality of care indicators and monitor illness trends in the community.

As a government agency, Mostashari said it was important to collect only the necessary data.

“We felt that in terms of earning and keeping the public’s trust, we could not afford to have even the possibility of a large data breach,” he said.

The Little Picture

Although EHR deployment requires an upfront time and cost investment, some participants said EHRs offer better convenience and lower costs. Dr. Michelle C. Reed, who has practices in Queens and Long Island, said she jumped at the chance to participate.

Reed said she likes the convenience EHRs provide. Being able to log in remotely has been handy, she added.

If Reed must leave the office, she can log in from home later to finish her notes. “You can log in to the system and do it at home, as opposed to waiting until the next day and maybe forgetting what you might have discussed with a patient.”

Remote login also helps when Reed is on call because she doesn’t have to rely on patients for prescription or treatment information. She can look up the data from anywhere.

Being able to pull reports on all of her patients and look at historical data helps her provide better care.

EclinicalWorks has a training site, and Reed made sure her staff had access to it before training began.

To accommodate the deployment learning curve required, Reed said her practice

began implementing the system during the off-peak season.

“We knew we were going to be slow, so that’s why we planned the training to occur right before school started in the last week of August, beginning of September.”

Now that the system is in place, she said being paperless has been a boon to the office’s productivity, allowing her to submit prescriptions in less than a minute, pull patient files on the spot and quickly return calls.

“Because we are a smaller practice, we don’t have to delegate someone to pull charts when someone leaves a message, so doctors are able to return calls a lot faster as opposed to waiting until we get a break in our schedule and going back to our room,” she said. “All of our rooms have computers, so if I’m sitting in the exam room waiting for our next patient, I can just quickly place a phone call to a patient because everything is right there, I don’t have to wait until someone hands me a chart.”

She said the office has yet to launch its patient portal, but soon patients can view their health information, make appointments or change their personal information online.

No Data Sharing — Yet

One thing the EHR systems being offered by the health department won’t do — at least, not yet — is share data with other providers. The health department won’t facilitate data sharing directly, but will link providers with regional health information organizations (RHIOs) when the organizations are ready.

“There has been more than \$100 million of investment in New York state on the development of health information exchange protocol systems and organizations and the RHIOs,” Mostashari said. “Our approach has been to not try to reinvent the wheel, but use that infrastructure that’s developed when it becomes available to our practices — to communicate with each other and with other hospitals and practices outside of our network.”

Mostashari said he hopes the city’s PCIP will serve as a model for other jurisdictions and the country. He urged governments to focus on quality of care as stimulus dollars become available for health IT.

“Government agencies across the board are facing some very challenging times. I would urge my colleagues in other locales or jurisdictions to engage with this opportunity around health IT and the stimulus funding that’s available to bring that public perspective and expectation of getting public benefit from the investment of taxpayer dollars,” Mostashari said, “because absent a strong perspective that we can provide, there is a definite risk that the result of this is going to be a lot of health information technology, but not much improvement in the public’s health.” **GT**



Get Ready for IE8

State and local governments vexed by the relentless need to continually design their Web sites for multiple browsers have a new challenge: the recent release of Internet Explorer (IE) 8, which is expected to cause even more problems.

Apparently IE's rollout "may cause content written for previous versions of Internet Explorer to display differently than intended," according to Nick MacKechnie, a senior technical account manager for Microsoft.

Granted, the impending havoc, which began in May with IE 8's official release, probably would've been even worse in the heyday of IE, when the browser was pretty much the only game in town.

But even without complete market dominance, the changeover is expected to have a major impact. More than two-thirds (68 percent) of all PCs still use IE as of December 2008, according to a study by market watcher Net Applications.

And while rival browsers are gaining steadily, they're still very far back in the pack. Firefox, Microsoft's primary challenger, still only has a 21 percent market share, according to the study. And Mac's Safari browser clocks in at less than 8 percent. Meanwhile, Google's much-touted Chrome browser barely makes a blip, with just 1 percent of the market share.

Fending off Microsoft

As with many upgrades instituted by Microsoft, most governments may not be able to "defend" against this latest version of IE because the new browser is being distributed by Microsoft as an automatic update. Essentially one day you'll have IE 7 on your machine, and the next morning you may walk



With the latest release of Internet Explorer, expect some wonky Web sites.

Synopsis: With the release of Internet Explorer 8, government Web sites may experience problems that could be tough to manage.

Technologies: Internet, Web browsers.

Contact: Nick MacKechnie, senior technical account manager, Microsoft
nick@mackechnie.co.nz

The home page for [Nd.gov](http://nd.gov), the official portal for North Dakota state government, displays several badges indicating that the Web site is W3C compliant.



Governments that regularly use Web-based software could also be in for added headaches. These sites could also stop working properly and could take weeks or months to fix by the service providers that decide to play catch-up — rather than be proactive — to IE's 8 rollout.

The takeaway? Unearthing how bad the carnage will be at your own government site will hinge on your webmaster's design philosophy. Sites based primarily on Web standards and only tweaked for IE 7 may only face minor problems. Sites specifically designed to work in previous

versions of IE, with no regard to Web standards whatsoever, could face major snafus.

in to find the new IE 8 interface staring back at you — like it or not.

Ironically the anticipated problems with IE 8 are the result of fundamental shift at Microsoft: a decision, for the first time, to adhere to Web design standards set by the Web design community at large, rather than a stance of trying to force designers to accept IE as the *de facto* global standard.

Long term, the about-face is expected to reap real savings for Web designers and governments. Coders will be able to spend more time designing and less time tweaking for IE idiosyncrasies. And more governments will be relying on standard-compliant sites that take less revenue to produce, download faster and are better optimized for search engines.

Still, getting from here to there will be a bit painful.

“What’s going to happen is that a lot of sites coded for IE will not work in IE 8,” said Jeffrey Zeldman, author of *Designing With Web Standards*, second edition, and a globally recognized standards guru. “Not only will layouts look wonky, scripting will also change.”

In common parlance, that problem with scripting means all those request-for-quote forms used by government agencies could stop working. Government forums and feedback forms also may have some trouble. And much of the rich media that many of today’s Web sites rely on may simply stop working.

“If you write IE-only scripts, your site will break,” added a blunt Zeldman.

The W3C Standard

The official portal for North Dakota state government, www.nd.gov, for example, is sitting pretty. It’s home page is emblazoned at the bottom with a number of badges indicating that the Web site complies with the World Wide Web Consortium (W3C) — the globally recognized Web standards body — and consequently will suffer little from the changeover. Connecticut’s Web site, www.access.state.ct.us, displays a similar W3C badge. And Santa Rosa, Calif. Site, <http://ci.santa-rosa.ca.us>, professes a desire to conform to those same standards.

For government sites that aren’t so lucky, Microsoft has a short-term, quick fix. “We have provided a metatag usable on a per-page or per-site level to maintain backward compatibility with Internet Explorer 7,” MacKechnie said. “Adding this tag instructs Internet Explorer 8 to render content like it did in Internet Explorer 7, without requiring any additional changes.”

Plus, governments that would rather not deal with an automatic update in the dead of night to a fleet of PCs can stop that change in its tracks with Microsoft’s Internet Explorer Blocker Toolkit.

“The old-school techniques had their place when some standards had yet to be written and others were poorly supported in mainstream browsers. But that day is gone.”

Jeffrey Zeldman, author, *Designing With Web Standards*

Once protected, all PCs with the blocker will remain on IE 7 until the IT department decides the government is ready to upgrade. As many of us have learned the hard way, once installed, Microsoft’s automatic updates are often tough or even impossible to reverse.

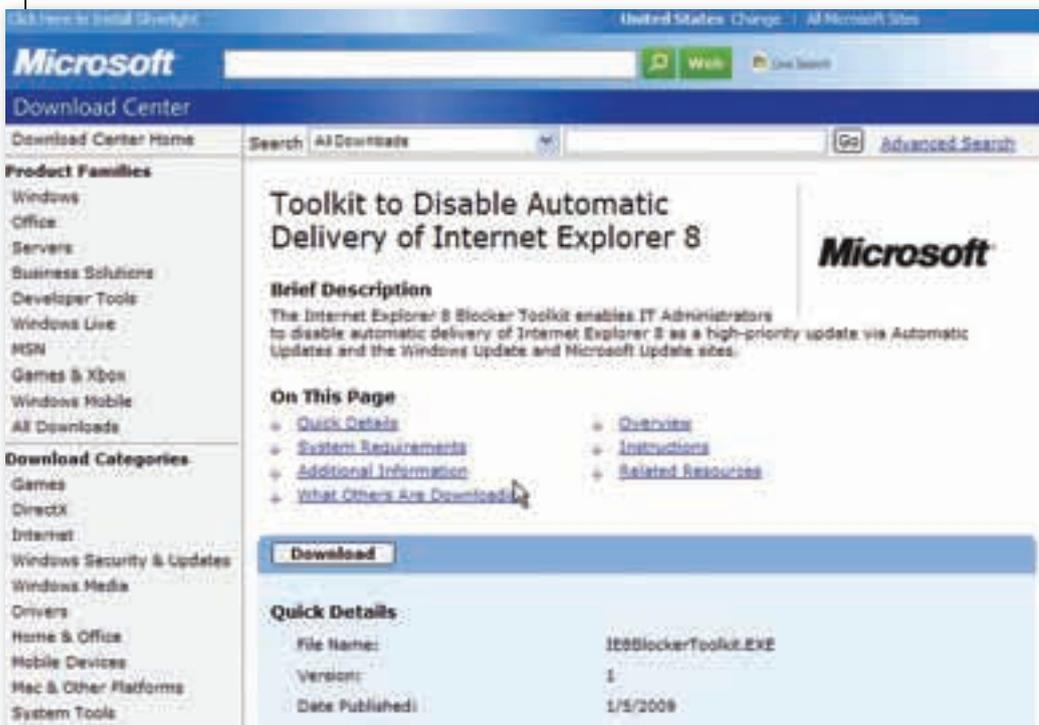
The long-term solution to the release of IE 8 will be for every government to design and maintain sites based on standards created by the W3C, Zeldman said.

Fortunately the W3C offers two free online tools that validate Web standards compliance, one for HTML <http://validator.w3.org> and another for CSS <http://jigsaw.w3.org/css-validator> — two acronyms instantly recognizable to any designer.

Zeldman also has released his own Web Standards Advisor validator, which is designed to work with Dreamweaver, one of the more popular Web authoring tools. “The Web Standards Advisor is great for the designer who is climbing aboard the Web standards design train,” Zeldman said, “but



Santa Rosa, Calif.’s Web portal also professes a commitment to W3C standards.



Governments looking to block an auto-update to Internet Explorer 8 can install this tool, freely available from Microsoft on the Web.

Internet Explorer 8 Resources

Government IT workers looking for detailed help on IE 8 can find a cornucopia of online tools Microsoft has created to help organizations understand, adapt to, and monitor IE 8's rollout:

- ✓ Internet Explorer 8 main site
www.microsoft.com/ie/ie8
- ✓ Internet Explorer Team Blog
<http://blogs.msdn.com/ie>
- ✓ Internet Explorer Developer Center
<http://msdn2.microsoft.com/en-us/ie/default.aspx>
- ✓ Internet Explorer 8 Readiness Toolkit for Web designers and developers
www.microsoft.com/windows/products/winfamily/ie/ie8/readiness/default.htm
- ✓ Microsoft Interoperability Principles
www.microsoft.com/interop/principles/default.mspx

it's also surprisingly useful for the advanced coder. I found mistakes in my own Web site [with the tool]."

With the move to fully adopt Web standards, Microsoft is finally falling in line with all the other major Web browsers, including Firefox and Opera, the Safari and Camino browsers for the Mac, and the new Chrome browser from Google, which have long endorsed Web standards.

There's a reason all those browsers adhere to W3C standards, Zeldman said. Sites based on standards generally download significantly faster than other sites, resulting in "real bandwidth cost savings" for the companies hosting those sites, he said.

Plus standards-compliant sites are also "read" more easily in search engines, and consequently rank higher on search engine returns. "Having W3C-compliant code can make all the difference," said Michael Fleischner, founder of Marketing Scoop, a search engine optimization firm.

Sites designed in harmony with the W3C today also will continue to work in years to come, even though today's browsers will inevitably evolve over time. "Open standards make this possible," Zeldman said.

And content designed for a standards-compliant site can be repurposed much more easily and inexpensively. For example, governments can migrate content from their primary site to a newly created, mobile-phone friendly site much more easily and inexpensively if the original site embraces W3C standards, Zeldman said.

Of course, even the most standards-compliant site is not beyond reproach. Jason Correia, marketing director of DreamCo Design, said his company is sometimes forced to stray beyond acceptable Web standards to make a design work.

"Making it appear correctly at times clashes with W3C standards, but the way a Web site appears is more important than someone's suggested opinion."

Moreover, even with standards, some aspects of Web display are beyond the Web designers' control. The screen settings on a particular PC, for example, can undo months of site planning and development, at least from a graphic display standpoint. For example, sites set to display in 1024x768 screen resolution can appear different on a screen optimized for an older 800x600 screen resolution setting, Correia said.

Even so, on balance, the W3C standards are the way to go, experts insist.

"The old-school techniques had their place when some standards had yet to be written and others were poorly supported in mainstream browsers," Zeldman said. "But that day is gone. Before IE 8, designers and developers could keep their heads in the sand if they wanted to. With IE 8, 'head in the sand' equals 'dead on arrival.'" 

CONTRIBUTING WRITER JOE DYSART IS AN INTERNET SPEAKER AND BUSINESS CONSULTANT BASED IN MANHATTAN.



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Synopsis:
OpenCape's broadband business model provides an innovative perspective on obtaining stimulus funds.

Agencies:
OpenCape,
OSHEAN Inc.

Technologies:
Fiber backhaul and
broadband.

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Eyes on the Competition

Stiff competition awaits local governments that are seeking a piece of the \$7.2 billion set aside for broadband infrastructure in the American Recovery and Reinvestment Act. Many already have plans that were shelved after the national craze for broadband deployments imploded a few years ago.

Local governments with less developed strategies may want to learn from one initiative observers consider a likely recipient of stimulus money: OpenCape is a consortium of local government and small business representatives in Cape Cod, Mass., who spent the last two years crafting a plan to deploy a broadband backhaul network for the entire cape.

OpenCape is applying for stimulus funds to build the network. Commercial providers will be able to use the infrastructure to provide services to residents, businesses and government entities on the cape that the providers currently don't serve because it's cost prohibitive.

Funding the backhaul with federal money should make doing business less costly for "last-mile" service providers, said Daniel Gallagher, executive director of IT for Cape Cod Community College and an OpenCape representative.

"We intend to build the middle mile for the region that will serve as the conduit for all of the Internet service providers that might wish to provide last-mile services," Gallagher explained.

Critical to OpenCape's strategy is its plan to sustain the network financially in the future. The organization gleaned input from broadband providers on what would make offering services in Cape Cod's low-density towns more profitable.

One challenge is providers can't afford to build the infrastructure required to connect Cape Cod to the broader Internet, Gallagher



OpenCape demonstrates a business model that local governments seeking broadband stimulus money may want to study.

said. "The capital expenditure is far too great, but if they could get a prorated cost and pay per megabit or whatever their need might be, then it would be a reasonable business model to offer those services."

The final submission window for broadband stimulus applications will likely end in September 2010, according to Mark Tolbert, spokesman of the U.S. National Telecommunications and Information Administration, which is disbursing \$4.7 billion of the broad-

band stimulus. That gives governments roughly a year to hone their strategies before the money is spent entirely. A look at OpenCape's business plan could give competing governments a focus.

Not Repeating History

By studying past municipal broadband failures, the OpenCape team noticed that overly broad goals were a factor in their demise.

“Some of those wireless metropolitan solutions where they were trying to deal with the underserved, the poor and businesses — they were basically trying to be all things to all people,” Gallagher said. “They failed because of it.”

Gallagher and his colleagues decided that a narrow focus for their network goals promised a better chance at success. OpenCape is applying for \$20 million in federal stimulus dollars to install approximately 225 miles of fiber-optic cabling, microwave links and a co-location center on Cape Cod.

Various broadband service vendors can then target communities likely to be good fits for their services. With the fiber backhaul already in place, the vendors could extend their infrastructures from it to whatever community they want to serve. Gallagher said trying to determine which service would best suit individual communities was too complex for OpenCape to do effectively.

“Those technologies — specializations, really — private companies are best able to provide. What they have been missing is the capital,” Gallagher said.

Bypassing Lady Luck

Many failed municipal broadband networks, like Philadelphia’s unsuccessful city-wide WiFi project, gambled that citizens would want to buy service subscriptions. By contrast, OpenCape is composed largely of organizations professing interest in being anchor tenants for broadband providers. Gallagher represents one of them.

“Cape Cod Community College, where I work, would likely be an anchor tenant. So would a lot of the municipalities around the cape, the health-care industry and Woods Hole Oceanographic Institution,” Gallagher explained.

The Woods Hole Oceanographic Institution (WHOI), based in Cape Cod, promises to transfer the bulk of its business to a high-speed provider willing to set up shop on the cape. Certain federal grants evade WHOI because the organization lacks multiple fiber paths leading from the cape back to the broader Internet. Access to those grants would produce more research and more need for broadband services, said Art Gaylord, computer and information services director of WHOI. The resulting research can result in spinoff businesses when WHOI creates technologies with profit potential. For example,

years ago a company called Benthos formed on the cape to sell marine exploration tools first developed by WHOI.

The institute also wants the fiber backhaul because it would be capable of running more than the standard Internet protocols. In the next few years, WHOI plans to use ocean exploration devices that could require an underwater high-speed Internet network.

“We need to be able to use whatever protocol works best to get to those things. That may not always be standard Internet protocol. Fiber will allow us to use whatever protocols we need,” Gallagher said. Research organizations with access to currently unused, or “dark,” fiber, already can do experiments with such technologies, he said. Dark fiber could be necessary to keep WHOI competitive.

While OpenCape has many members promising to be anchor tenants, Gallagher said

section of fiber stretching from the cape to Providence OpenCape would build fiber to Rhode Island’s borderline. The state would deploy the fiber from that point, extending it to Providence. Funding both projects would give the federal government more for its money, said George Loftus, executive director of OSHEAN Inc., a nonprofit leading Rhode Island’s broadband effort.

“It makes both of our stories better,” Loftus explained. “It shows we’re cooperating regionally.”

OSHEAN is a consortium of universities, hospitals, government agencies and nonprofit organizations that purchases technology in bulk and shares services. The organization leases fiber lines in metropolitan areas and functions as its own Internet service provider (ISP), which saves money. However, some institutions can’t partici-

“A government that hasn’t done the analysis we have done **could potentially get in on one of the grants by looking to some other regional proposed solution that has done the homework and partner with them.**”

Daniel Gallagher, executive IT director, Cape Cod Community College

opportunities for broadband providers won’t end with those anchor tenants. He described the questions OpenCape asked while studying the area’s appetite for broadband services.

“What are [end-users] spending now? How much of that market do we think we can capture? What do we expect their growth to be? How much of that growth will we capture? Do they have needs that aren’t being met now?”

“If more retail providers were to come into the market for that last-mile portion, how much of that market could the retailers capture if we provided the backhaul for them? We have a lot of market studies identifying the potential market,” Gallagher explained.

Strength in Neighbors

Cape Cod and Rhode Island think they can strengthen their individual cases for broadband stimulus money by building their networks in conjunction with each other. One of OpenCape’s two proposed fiber lines for leading back to the broader Internet would connect to Providence, R.I. The tiny state happens to need a new fiber line in the same area OpenCape wants to run its fiber. Officials from the two projects realized that Rhode Island and OpenCape could share the

pate because they reside in areas lacking fiber that can be leased. Those organizations buy broadband from ISPs, which is typically more expensive and slower than the organizations want. Like OpenCape, OSHEAN has a strategy to sustain the network financially. Institutions seeking the fiber, like the University of Rhode Island, already have budgets to fund services on the proposed network. They would merely shift the funds they pay an ISP to OSHEAN for running the newly deployed fiber.

Gallagher said partnerships similar to OSHEAN’s with OpenCape could give governments arriving late to the game a better shot at getting stimulus money.

“A government that hasn’t done the analysis we have done could potentially get in on one of the grants by looking to some other regional proposed solution that has done the homework and partner with them,” Gallagher said. 



The Utah Transit Authority's electronic fare collection system streamlines the payment process for the state's transit riders.

Synopsis: Electronic fare collection system lets public transit patrons use smart cards to pay for rides, eliminating the need to pay with cash.

Agency: Utah Transit Authority.

Technology: Smart cards.

Contact: Carrie Bohnsack-Ware, senior media relations specialist, Utah Transit Authority, CBohnsack-Ware@rideuta.com.

Serving millions of commuters is a big job, especially in a state like Utah. Most of the populace is concentrated in urban areas, and the Utah Transit Authority (UTA) serves six counties over 1,400 square miles, including Salt Lake County, which was home to more than 1 million people in 2008, according to the U.S. Census Bureau. The authority deployed a handy payment system to speed fare payment and collection — a system that may be the future of public transportation as we know it.

In January 2009, the UTA announced its electronic fare collection (EFC) system that allows patrons to pass “contactless” smart cards over electronic readers when boarding buses, and train or light rail cars, eliminating the need to pay drivers in person or flash passes. A chip in the card transmits a signal when it's close to the reader.

“The ability to have a card with this technology and be able to board a vehicle, tap a reader and get on makes things a lot more convenient for the customer. It allows them to board more quickly,” said Craig Roberts, manager of technology program development for the UTA. “It allows us to collect a lot of information about ridership and trip patterns.”

The UTA markets its EFC deployment as a “tap on, tap off” system — riders tap their card against a reader when they board and exit. Buses have card readers at each door, and card readers also are mounted on several locations on platforms at train and light rail stations.

“We've asked everyone to both tap on and tap off, which gives us information about where people board, where they get off,” Roberts said. “We will be able to have plan-



Riding Smart

ning data that shows us complete trips people are making within the system, and that is really valuable to us.”

How It Works

After swiping the card, the electronic reader responds with a colored light and a beep. Green and high tone means the pass is valid; red and low tone means the pass has been rejected, perhaps because the card has

been deactivated or reported stolen; yellow and mid tone indicates the rider must take further action like upgrading the pass to use other modes of transportation.

The EFC system currently serves riders with an Eco Pass — a company-sponsored annual pass that employers issue to employees — or an Ed Pass — a school-issued pass. In each case, the company or school has paid for the passes through a contract with the UTA, so patrons can use public transportation for free

as long as they're employed by or enrolled in a participating company or school.

The system also accepts contactless credit and debit cards like Visa payWave, MasterCard PayPass and American Express expresspay. Roberts describes this as an open-payment system because users can use bank-issued or other cards instead of UTA-specific cards to pay for rides. This is less restrictive than some other "closed" contactless systems, which Roberts said are typically proprietary systems.

"They're developed with a specific contractor, and the transit agency issues its own card," he said, but with the UTA system, you can use the same card to ride the bus as you would to pay for your groceries.

One "closed" card he compares the UTA system to is the SmarTrip card offered by Washington, D.C.'s Washington Metropolitan Area Transit Authority. It's a plastic, rechargeable fare card with a computer chip that people touch to circular targets on or inside of fare gates to pay for rides. Riders can purchase the card and add money to it as they wish, but transportation is its sole use.

However, open systems aren't found only in Utah. The Octopus Card — a multipurpose card used to pay for public transit and purchases from vending machines, stores and schools — debuted in Hong Kong in 1997. Contactless cards are used for transit in other places as well. The United Kingdom's Oyster card is a contactless offering for travel via public transit, but like the SmarTrip card, is only for transportation.

Laying the Groundwork

The UTA spoke with other smart card-using transportation authorities years ago to find out what exactly EFC entails. They included the Washington Metropolitan Area Transit Authority, the Massachusetts Bay Transportation Authority and the Chicago Transit Authority.

"I was retained by UTA to try the strategy for electronic fare collection," Roberts said. He estimates that he began working for the UTA in 2005 as a contract employee. "Then as we got into it and began to chart the course that we wanted to follow, the UTA chose to hire me as a full-time employee because it became clear that this was going to be a job that would be going on for a good long time."



Riders can tap their smart cards on readers at several stations in the Utah Transit system.

The authority deployed the contactless cards in a pilot project in December 2006 on the UTA's ski bus service. Roberts and his colleagues put the technology on 41 buses that took skiers and ski resort employees into canyons and tested the system in the 2006-2007 and 2007-2008 ski seasons.

"We did it so we could learn how to do it, and we learned an enormous amount," Roberts said. "It really did inform and help us to understand what was involved."

The UTA chose ERG Group as the vendor for the pilot program, the same company that supplied the technology for the public rollout currently under way. The transit authority awarded its second contract to ERG in October 2007 for three years with three additional one-year options.

ERG manages all of the data the cards collect on the back end through a system called eO, or the easy open payment system. The card readers, also called validators, record informa-

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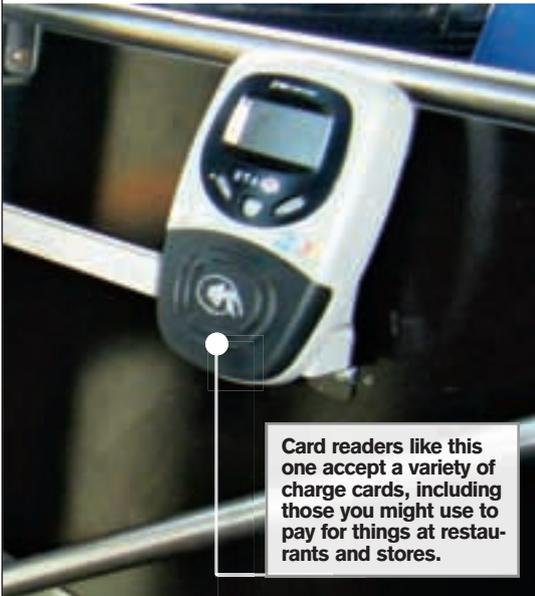
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Card readers like this one accept a variety of charge cards, including those you might use to pay for things at restaurants and stores.

tion the UTA can view through eO, which contains a database of authorized users.

“What’s different with our fare collections system and others is we don’t have equipment. We have a validator that resides on the vehicle, but that’s it. There are no added machines, there are no point-of-sale devices out in the market,” said Michael Cook, vice president of open payment systems at ERG. The transactions and ride authorizations are facilitated by software.

“We will be able to have planning data that shows us complete trips people are making within the system, and that is really valuable to us.”

Craig Roberts, manager of technology program development, Utah Transit Authority

When a rider taps his or her employer- or school-issued card to the reader, the information on the card is checked against the available information in the database. The transaction process is similar with debit and credit cards.

“Let’s say you had not registered and you’re a first-time user. You take out your bank card and that reader will read the bank card information, and it will deliver it to our server where we will then deliver it to the payments network for authorization,” Cook said.

Emerging Possibilities

Currently authorizations and transactions occur when someone taps on, so it doesn’t

matter when he or she exits or how long the ride goes, but as data is collected and assessed on transit routes and the time spent riding, payment structures may change.

“In the future, point A and point B will be defined and there may be some distance-based fares, so it will matter where you tap off, and the fares will be calculated after you tap off,” Cook said.



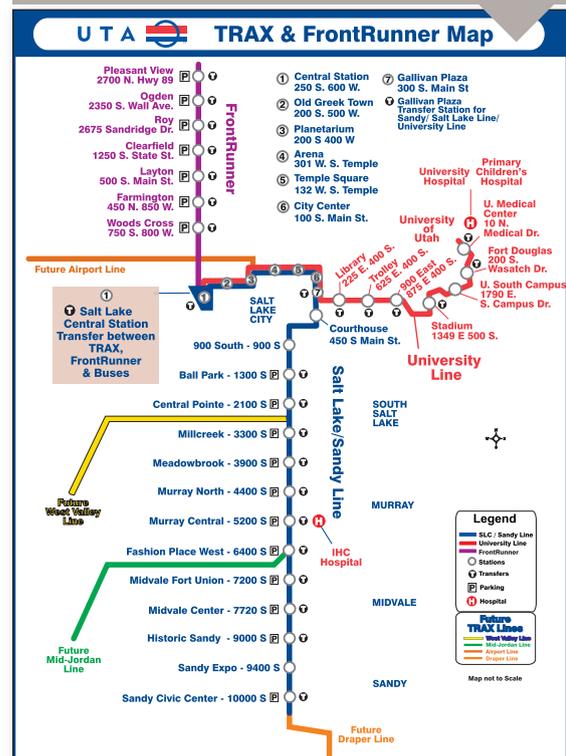
He envisions that it may be similar to buying fuel for a vehicle. “When you pump gas and you present your card at the pump, it goes through an authorization,” Cook said.

numbers,” Roberts said. The UTA tracks information by these numbers, not by name.

Cook said the UTA is currently in Phase I of the project. When Phase II is rolled out, possibly in late 2009 or 2010, people can buy additional fare products within the credit and debit architecture, like prepaid passes of varying amounts or gift cards. **GT**

On Schedule

Passengers can access bus and train schedules and route information from their mobile devices on www.uta2go.com.



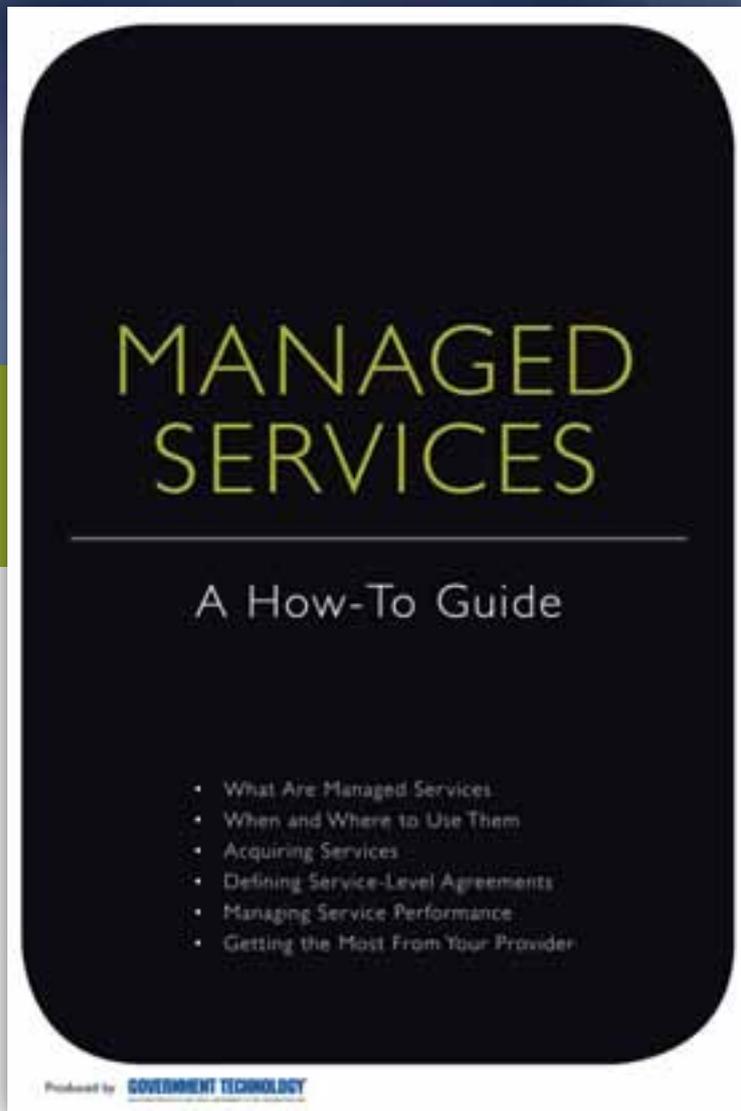
And depending on how much you pump, your card is debited or charged that amount.

Of course, people can still pay with good old-fashioned cash. But Roberts thinks that cash transactions will occur less and less.

The UTA also plans to let people track their travel history online through the transit authority’s Web site, thanks to the information collected by eO. Transit authority personnel can also track rider activity, but not by personal identity.

“We have designed the system from the beginning to make sure that no employee of UTA can track somebody’s individual movements by their identity. Thus, with our third-party pass program, the schools employers and ski resorts provide to us a list of card

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Synopsis:
Interoperable, high-speed wireless network streamlines communication among first responders.

Jurisdiction: New York City.

Technology:
Universal mobile telecommunications system.

Winning With Wireless

New York City wireless network goes live, providing emergency responders high-speed connectivity across the city.

“We covered the city with 380 cell sites. If we did Wi-Fi, it would have taken 20,000 Wi-Fi transmitters,” Harte said.

Placing the UMTS towers required approval by zoning bureaucracies throughout the city.

“You have to go out and make multiple presentations to community boards, the elected officials across the city council and the outer-borough presidents to get approvals for some of the sites,” Harte said. “That was the most challenging, but it also brought them into the process. It enabled us to really express the benefits of the network to the communities that the first responders and public service agencies serve.”

DoITT Commissioner Paul Cosgrave considered the most challenging aspect of deployment to be alleviating community health concerns regarding the UMTS towers, which transmit radio frequency emissions that some worried would be harmful. Cosgrave explained that the towers transmitted radio frequency at a level far below the maximum permitted by the FCC.

“There is no more radio frequency coming out of a cell site than coming out of a microwave oven. In fact, people might be more exposed by having a cell phone at their heads all day,” Cosgrave said.

The DoITT resolved the concerns with community education outreach efforts.

While Northrop Grumman will handle the daily operation and maintenance of NYCWiN, agency IT staff will be responsible for securing the network. Employees, like building inspectors, have already begun using mobile applications that enable them to submit inspection data from the field. Saving inspection employees from bringing that information back to the office physically has quadrupled their productivity, according to Sbordone.

“The same security rules and policies that are established for an end-user logging on to their desktop computer, whether they’re accessing agency databases or the Internet or intranet, all of those rules apply to handhelds that are deployed in the field,” Sbordone said. 

New York City first responders have high-speed wireless connectivity across its more than 300 square miles, thanks to the newly deployed New York City Wireless Network (NYCWiN). The city paid Northrop Grumman \$500 million to build the network, then operate and maintain it during the next five years. The New York City Department of Information Technology and Telecommunications (DoITT) initiated the project with the vendor in 2006. The network has already begun powering the city’s mobile applications for building inspectors.

NYCWiN lets responders transmit large files, including fingerprints, mug shots, city maps, automatic vehicle location and full-motion streaming video. As a fully interoperable, IP-based network, NYCWiN lets various responder disciplines access information from other responder agencies wirelessly. This means the city’s fire department and Office of Emergency Management workers could utilize video being shot by the New York City Police Department

(NYPD), explained Nicholas Sbordone, director of external affairs for DoITT. Officials commanding the responders do so from remote sites using real-time data and video feeds.

DoITT and NYPD plan to install wireless modems in 1,800 patrol fleet vehicles, enabling officers in the field to access applications previously available only from their desktops. Mug shots and moving traffic violations information are prime examples, according to DoITT.

Unlike many of the citywide wireless networks proposed in the past using Wi-Fi, NYCWiN is powered by a universal mobile telecommunications system (UMTS). New York’s UMTS uses radio towers built throughout the city that keep a user connected as he or she moves from tower to tower. Wi-Fi, by contrast, would require users to reconnect as they move from one transmitter’s field range to another’s, explained Steve Harte, DoITT’s associate commissioner of wireless technologies. He said UMTS towers are similar to cell phone towers.

Spectrum

reports from the IT horizon

Crime Tracker

Worried about crime in your community? Citizens nationwide can search and track crime data from more than 800 participating police departments on [CrimeMapping.com](#), [CrimeReports.com](#) and [EveryBlock.com](#).

Live feeds from police record-keeping systems are automatically posted to these sites, according to *The Wall Street Journal*. The service is free to users and lets them post blogs and offer tips to law enforcement.



San Francisco Tweet

San Francisco Mayor Gavin Newsom announced in June that residents can make 311 customer service requests or complaints to the city's call center using Twitter.

Residents can tweet to the city's call center, www.sfgov.org/site/sf311, about various services like graffiti removal, potholes, garbage maintenance and street cleaning. Mobile users also can send messages and pictures using a third-party application.

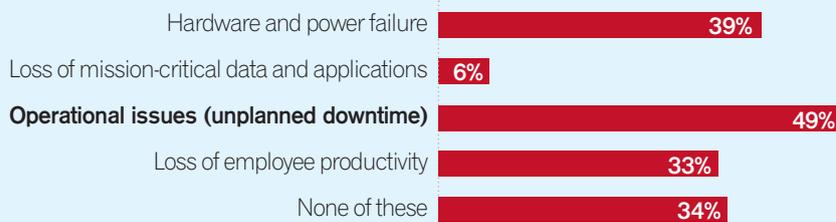
To make service requests, residents who have Twitter accounts must follow San Francisco's account at **SF311**. Once a service request is submitted, it's logged by a call taker into a customer relationship management database. The resident is then given a tracking number so he or she can follow up on the issue. Users can send direct messages to the call center by appending the letter "D" before SF311, which allows them to receive real-time responses. However, users with general inquiries usually receive a link to the information they need.

The city had 1,500 followers in the first days of service. The city's site also features a list of sample tweets.

— Karen Stewartson, Managing Editor

Business Continuity

A recent survey of 159 *Government Technology* subscribers found that many had experienced unplanned outages and other business continuity issues during the past 12 months.



Sensible System

MIT architects and engineers have taken the guesswork out of public transit for commuters in Florence, Italy, by creating a futuristic bus stop called EyeStop, which lets users plan bus trips

on an interactive map, surf the Web, monitor their real-time exposure to pollutants and use their mobile devices as an interface with the bus shelter. Users can post ads and community announcements on

its electronic bulletin board. EyeStop also powers itself through sunlight and collects real-time information about the surrounding environment.

— MASSACHUSETTS INSTITUTE OF TECHNOLOGY



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Send **spectrum ideas** to managing editor **Karen Stewartson** kstewartson@govtech.com

Synopsis:
Gov. Arnold Schwarzenegger announces the launch of the California Digital Textbooks Initiative.

Book Bytes

California Gov. Arnold Schwarzenegger held a press conference at a Los Angeles-area high school in June to announce the launch of a statewide digital textbook initiative. Alongside a host of school administrators from regional school districts, the governor explained the initiative and why he believed it would benefit both students and state coffers.

Textbooks are outdated, antiquated and expensive, the governor said. With California being the “world leader in technology and innovation,” Schwarzenegger said a better solution was possible.

“That’s why I’m so excited about California’s Digital Textbook Initiative,” he said. “Starting this fall with high school math and science, we will be the first state in the nation — the first state in the nation — to provide schools with a state-approved list of digital textbooks. Think about this. Traditional hardbound textbooks are adopted in six-year cycles, so as soon as they are printed, then the next six years you don’t get the latest information.”

Citing rapid changes in fields like medicine, science and economics, Schwarzenegger explained traditional textbooks do a disservice to the state’s students.

Dave Moorman, president of the Las Virgenes Unified School District Board of Education, was one of many educators participating in the press conference. Moorman expounded on the governor’s comments, noting that the oft-changing world means billions of dollars in textbook revisions. With digital textbooks, the information that students are being taught can be updated almost instantaneously.

“When Pluto loses its status as one of our planets, this is not about going back and rethinking the textbooks, doing a new adop-



tion, having billions of dollars wasted and resources used in order to create new textbooks,” he said. “This is about making one change electronically and having that instantly available in all of our classrooms everywhere.”

The Las Virgenes Unified School District already uses digital textbooks for math and science. Administrators there credit the digital textbooks for helping the district achieve high graduation rates as well as a number of awards and accolades.

Schwarzenegger said if each of California’s 2 million high school students had access to digital textbooks, not only would academic achievement improve, state schools could expect cost savings on the order of \$400 million annually — welcome news as the governor looks to significantly cut school funding to ease the state’s fiscal crisis.

“To me it’s amazing, when you think about it, that for so many years and decades we are trying to teach the kids exactly the same way,”

Schwarzenegger said. Later, speaking about the timeline for rolling out digital textbooks statewide, the governor cautioned the process may proceed slowly as resistance from school districts and textbook publishers sets in.

In addition to the financial and academic rewards that digital textbooks could bring the state, the fitness-minded and ecologically conscious governor also pointed out the physical burden traditional textbooks place on the backs of students and the environment.

“No. 1, you don’t have to carry around this heavy load in your bag, in your school bag, which my kids always complain about — you know, these 50 pounds of school bags that they’re schlepping around,” Schwarzenegger said. “And then, No. 2, I think it will help because you don’t have to cut down as many trees. Think about that: How much paper is being used in those textbooks? And it makes education and learning much more fun because it’s interactive and it helps the bottom line in our schools and helps them with their finances.” **GT**

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Multi-Connect

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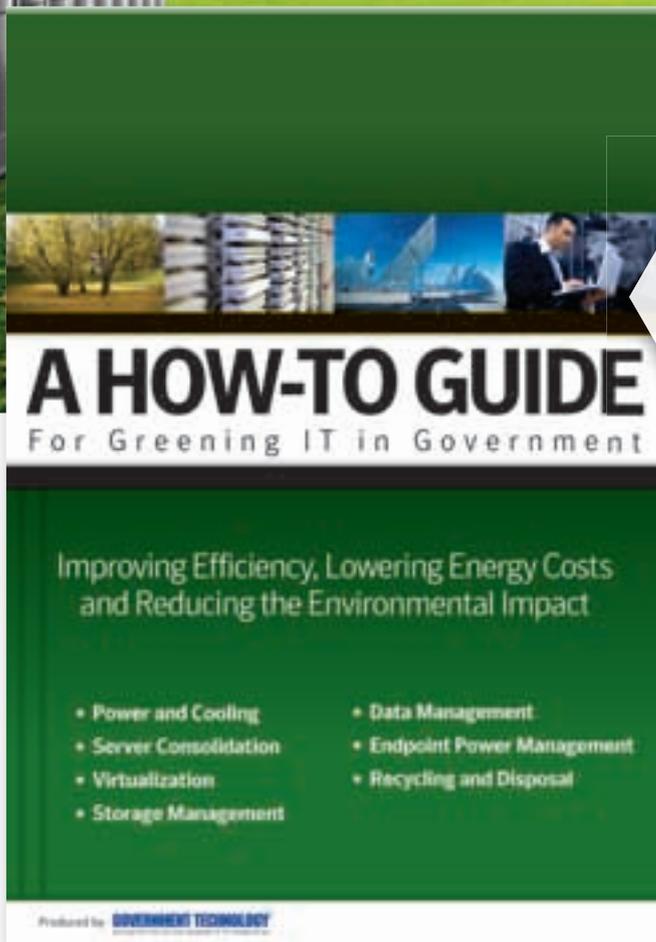
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Not Another Sock Puppet

If you were around when the Web without a version number came to town, you'll remember that a microphone-toting Pets.com sock puppet became a symbol of the dot-com era's excesses. Sure, he got some temp work with another e-retailer after Pets.com collapsed, but it was never the same. With the help of some revisionist history, the mascot was recast as the triumph of style (a sock puppet that channeled a hip Kermit the Frog) over substance (a business model that required shipping small quantities of dog food and other bulky products over large distances).

Fast-forward to the Web 2.0 age, itself a much-hyped umbrella term that isn't aging particularly well — and not just because Web 3.0 advocates seem intent on perpetuating the myth that becoming and being digital is linear and incremental. The reality is that the commodity Internet matters because of its unique ability to exploit disruptive moments.

Given the rapidity of change and the need to take risks on the fly, CIOs, chief technology officers (CTOs) and business executives can be excused for wanting to avoid the next sock puppet mascot. Put another way, people responsible for enterprise technology worry that the new young Turks and their Web 2.0 advocacy may be as dangerous to enterprise stability as a toddler with a fork waddling toward an electrical outlet.

But the enterprise — or more properly, the federated state and local government environments — is resilient. What were once dismissed as toys are becoming platforms and platform extenders.

Not long ago, Microsoft Virtual Earth, Google Earth and their mapping Web services were dismissed by serious public-sector GIS shops, the stock-in-trade of which was expert GIS systems. Old and new were less competitors

than adversaries. That was then. ESRI founder Jack Dangermond told *Government Technology* in its May issue how things have changed in the relationship between professional GIS and the new public-facing virtualization environments: "The public likes this, as they love traditional Rand McNally street atlases or [Autodesk] MapGuide applications. We have been working closely with both of those companies to integrate our tools with theirs."

Public love of not just the new, but also the useful can help in decision-making. Utah CTO Dave Fletcher suggested that "you can only ignore 30 million iPhone users for so long" during a conversation about Utah's iPhone apps that help users pinpoint state services or check to ensure licensed professionals are in good standing. Add a third-party, auto-updating bit of client software that effectively turns the iPhone into a universal remote control for managing everything from enterprise financials to virtual servers. The launch of the Citrix Receiver, as the client is known, came after the billionth download from Apple's App Store.

Twitter has morphed from a curiosity, to a lightweight 140-character messaging service, to a platform on which dozens of other applications now ride. Rhode Island tweets the state's daily tally of income and expenditures, and the Environmental Protection Agency about public-health concerns.

Mash-up contests *Apps for Democracy* and *Apps for America* (host of the Data.gov Challenge) are in their second iterations within a year. They're hothouse incubators for seeing what happens when public data is actually made public. Some of them — such as "Filibustered" — are immediately useful, while others are simply curious. But we've seen where curious can get you, all without the downside of having a sock puppet. **GT**

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