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GOVERNMENT TECHNOLOGY®

SOLUTIONS FOR STATE AND LOCAL GOVERNMENT IN THE INFORMATION AGE

GOVERNMENT TECHNOLOGY 20 YEARS

VOL 20 ISSUE 10

OCTOBER 2007

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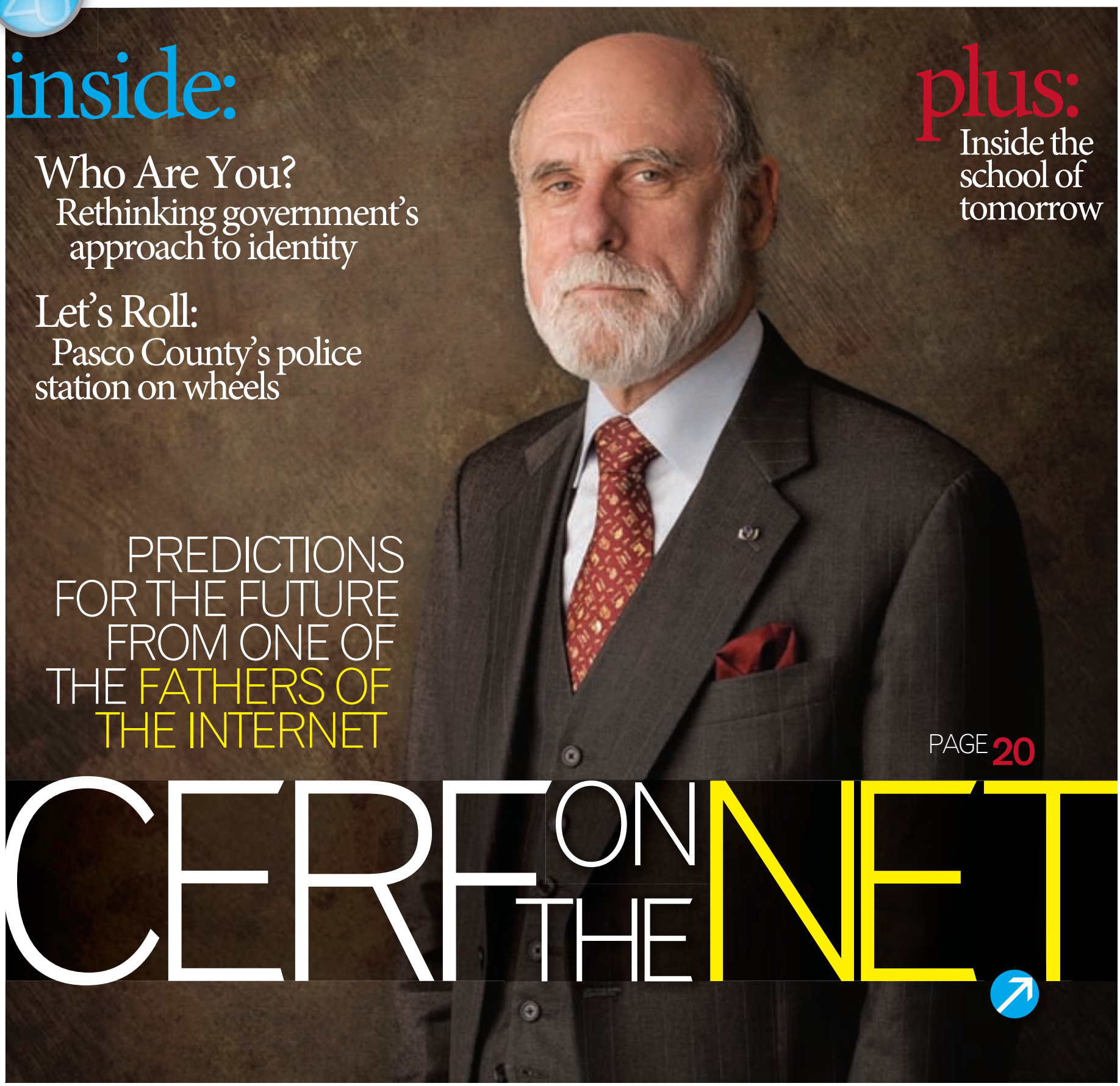
Who Are You?
Rethinking government's approach to identity

Let's Roll:
Pasco County's police station on wheels

plus:
Inside the school of tomorrow



PREDICTIONS FOR THE FUTURE FROM ONE OF THE FATHERS OF THE INTERNET

CERF ON THE NET

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Editor's note: This column marks the end of Shane Peterson's tenure at Government Technology *after more than eight years. We are grateful for his dedication and hard work, and wish him luck in his future endeavors.*

Local government leaders deserve praise for pursuing the noble goal of free or low-cost Internet access for all via municipally backed Wi-Fi networks. But the slew of faltering efforts to roll out municipal Wi-Fi networks suggests it's time for local governments to consider new tactics.

Just what role should government play in erasing the digital divide? It's a question that's not easily answered, but it appears the knight-in-shining-armor role isn't a good fit.

The digital divide **isn't a problem for government** to solve. It's a problem the **private sector needs to solve**.

The digital divide isn't a problem for government to solve. It's a problem the private sector needs to solve. The corporate world tolerates government intervention and will grudgingly take action if prodded by the threat of regulatory retaliation. But people have the power, through consumer opinion, to motivate businesses to try extra hard to solve a problem.

People can also take things into their own hands, and one approach that taps the power of average Janes and Joes is the "San Francisco Free the Net" campaign. It's a people-driven mesh network that, as of August 2007, counts more than 1,500 volunteers in San Francisco.

These people power an ever-expanding wireless network — a network that offers free Internet access. The technology behind the Free the Net movement is built by Meraki; a start-up founded in 2006 by a small team of Ph.D. students from the Massachusetts Institute of Technology. The company's self-described goal is "to change the economics of Internet access."

Setup is simple: A person buys a $50 repeater, and either plugs it into his or her own broadband DSL connection or cable modem (thereby donating unused broadband capacity to the network) or uses the repeater to wirelessly access another repeater plugged into a Meraki-sponsored DSL connection.

The repeaters connect to a Meraki-hosted back-end system, and a Web-based dashboard lets people control their own networks, set bandwidth limits and block unwanted users, such as spammers.

The company donated a limited number of repeaters to San Franciscans who want to join the Free the Net campaign — it's a model polar opposite of muni Wi-Fi — but that may well be what makes it succeed.

It's *not* a top-down network designed by some big company and made available only to people who agree to whatever conditions the company specifies, perhaps watching advertisements in exchange for "free" Internet access.

It's a bottom-up network built by participants themselves, and potential members don't have to agree to conditions imposed on them. They just get uncomplicated Internet access at the affordable cost of a $50 repeater.

In some cases, the best thing government can do to help people is simply get out of the way. GT

SHANE PETERSON
ASSOCIATE EDITOR

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big picture

Auto Pilot

A self-driving vehicle developed by the Massachusetts Institute of Technology (MIT) is a semifinalist in the 2007 Defense Advanced Research Projects Agency Urban Challenge — a competition for cars and trucks that run without human help. MIT's vehicle and its team of student and faculty developers will travel to an urban military training facility in Victorville, Calif., in late October to compete against 35 other robotic vehicles from across the country.

In the semifinals and finals, held in early November, the robots must execute simulated military supply missions in a mock urban area while obeying California traffic laws.

— MIT

BY CHAD VANDER VEEN
TECHNOLOGY AND POLITICS EDITOR

Free Me From Freeway Gridlock

Over the summer, my wife and I had to make a trip from Sacramento to San Francisco. She was forcibly dragging me to her high-school reunion — though it turned out to be slightly less miserable than I was anticipating.

I've made the 90-mile drive more times than I can count, yet stupidly chose to take the most direct route — Interstate 80. It was a Saturday afternoon, I said to myself, "How many people could possibly be on the road?" Sadly as we approached the aptly nicknamed "Berkeley Crawl" — a section of "freeway" that leads to Oakland and the Bay Bridge — I realized my costly mistake. I hadn't anticipated the thousands of people battling to get to downtown San Francisco in hopes of seeing Barry Bonds inject himself into baseball's record books.

"I beg you, **use your powers to change** transportation's currently **bleak future**."

The Berkeley Crawl is a hellish bit of interstate. It always works the same way. When approaching from the east, traffic is light and all seems well. One is lulled into a sense that this time, finally, there won't be the sort of soul-crushing gridlock there was on the previous trip. The freeway gently slopes upward and swoops to the left, affording grand views of the bay.

Upon cresting the hill, however, I was confronted with a nightmarish vision of things to come. Laid out before me was what seemed like millions of cars crammed together in some parking lot designed by Satan himself. I felt as though I was looking directly into the eyes of madness.

For 90 minutes we inched along in our metal coffin, the Bay Bridge a mere mile away. I could clearly see the great span, our salvation, beckoning in the afternoon sun. But I could not reach it. I calculated our average speed as somewhere in the neighborhood of 0.7 mph. My mood deteriorated quickly. The fact that we were headed somewhere I didn't want to go in the first place made being part of this slowly, snaking steel conduit even more unbearable.

Finally, after high tension and raised blood pressure shaved at least a year off my life expectancy, we reached the tollbooth where a silent employee dutifully extracted $4 from me. Meanwhile, I watched as a few cars with FasTrak whizzed through their gilded, beautifully empty lanes. I cursed myself for failing to possess one.

With tens of millions of new Californians expected over the next few decades, I shudder to think of what traffic will be like in the future. It should be clear to anyone that simply adding more lanes to freeways is a shortsighted solution. Are high-speed trains the answer? Perhaps. Does anyone with the power to build them have the political will to do so? Probably not. Since we are already sliding toward a nanny-state, maybe we can force everyone to have FasTrak, you know, for their own good.

I am but a lowly writer — a man with neither the know-how nor resources to change the future. I don't even get paid real money — I get paid in cured meats. While sad, I am looking forward to next week's honey baked ham — if only I could afford an appliance on which to cook it.

But you, dear readers, you are the ones with the power. You are the innovators, the technologists and the change agents. I beg you, use your powers to change transportation's currently bleak future.

Change it before the Berkeley Crawl ceases to be the exception and becomes the rule. GT

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Spectrum

reports from the IT horizon

Sky's the Limit

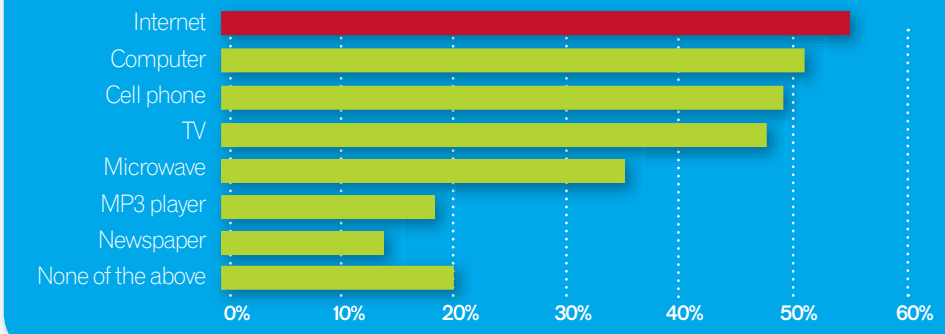
Google is attempting to interest millions of Internet users in stargazing with the launch of Sky, a new feature of Google Earth. Sky lets people view the night sky through a virtual telescope.

Users can zoom in to see images of 100 million stars and 200 million galaxies, which Google compiled based on data from the Hubble space telescope, NASA and other scientific institutions. Google Earth users can select a location on the planet and then click "Switch to Sky" to see a view of the night sky as seen from that spot. They can then navigate this like a road map, moving across the sky or zooming in for close-up images. Users can search for approximately 20,000 celestial objects.

— THE FINANCIAL TIMES LIMITED

Techno Lifeline

A recent study conducted by Knowledge Networks looked at various media and technologies that U.S. consumers ages 13 to 24 couldn't live without — and the Internet tops the list.



Show Me the Money

The worldwide market for peer-to-peer and file sharing services is expected to generate $28 billion in revenue for carriers and Internet service providers over the next four years, according to Insight Research Corp.

Fast Tracker

At least 20,000 police surveillance cameras installed along streets in southern China will soon be guided by sophisticated computer software to automatically recognize the faces of police suspects and detect unusual activity.

Most citizens will be issued a residency card fitted with a powerful computer chip, which will include their name, address, work history, educational background, religion, ethnicity, police record, medical insurance status and landlord's phone number. Personal reproductive history will be included, for enforcement of China's controversial "one child" policy. Plans are being studied to add credit histories, subway travel payments and small purchases charged to the card.

Security experts describe China's plans as the world's largest effort to meld cutting-edge computer technology with police work to track the activities of a population and fight crime. But they warn that the technology can be used to violate civil rights. — *The New York Times*

In Good Hands

More than 130 Iraq War veterans now face the daunting challenge of living with a missing arm. To make this transition easier, the Defense Advanced Research Projects Agency launched a $55 million project that pools prosthetics experts nationwide to create a thought-controlled bionic arm that duplicates the functions of a natural limb.

The Proto 2, a thought-controlled mechanical arm — complete with hand and articulated fingers — performs 25 joint motions. This dexterity approaches that of an organic arm, which can make 30 motions, and trumps the previously most agile bionic arm, the Proto 1, which could bend at the elbow, rotate its wrist and shoulder, and open and close its fingers. The next steps are to shrink the battery, develop more efficient motors, and refine the bulky electrodes used to read electrical signals in muscles. — *NASA*

Survival of the Fittest

Two months after sky-darkening dust from severe storms nearly killed NASA's Mars exploration rovers — Opportunity and Spirit — the solar-powered robots are awake and ready to continue their mission. Opportunity's planned descent into the giant Victoria Crater was delayed, but now the rover is preparing to drive into the half-mile-diameter crater. Spirit also survived the global dust storm, and on Sept. 5, climbed onto its long-term destination called Home Plate, a plateau of layered bedrock bearing clues to an explosive mixture of lava and water. — NASA

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

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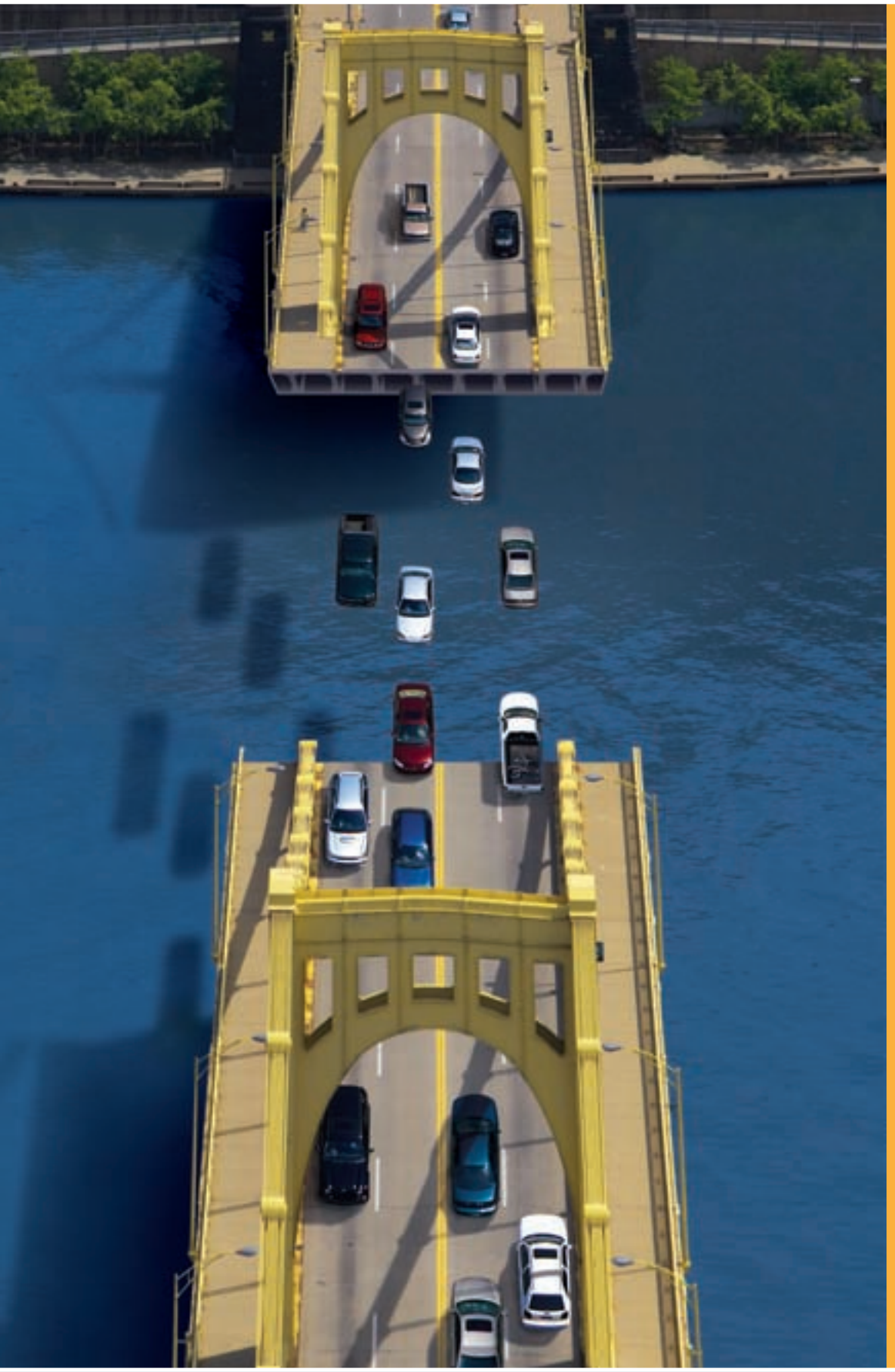

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Second Life Newbie

I really enjoyed reading the July issue [and the] *Get a (Real) Life* and *Reality Check* articles about *Second Life*. I have heard of *Second Life* from an academic point of view but never visited the site myself.

It does give me some idea about the virtual life. Thanks for sharing.

CECILIA HUI, PACIFIC NORTHWEST NATIONAL LAB

No Politics Wanted

I wasn't aware that this was a political opinion magazine. I thought that technology information distribution was the goal. Your private political opinions [are] of little interest to me — and perhaps to other readers??

PAT HOEPNER, EAU CLAIRE, WIS.

Local Action

Your August editorial [*The Sacrifice at Home*] raises some interesting questions. It suggests first that your real target is the Bush administration's prosecution of the war effort in Iraq — rather than federal funding and crime rates. I would suggest that misses the real issue, which is that the level of federal spending may or may not have affected the crime rates. I seriously question that relationship.

I've been engaged in transportation issues for nearly 40 years, and there are some strong parallels — including those technology related. So, a few questions:

How does handing the states and municipalities back their own money, after taking a 10 percent to 20 percent cut and creating another layer of bureaucratic oversight and control, help crime local rates?

Is the lost flexibility to respond to local issues that may differ from federal perspectives worth the typically small change in distribution of the funds?

Is the issue really one of willingness of state and local government to directly address their own needs?

In my view, more than 40 years of federal oversight has not significantly changed how transportation systems are constructed, with the single exception of the interstate, or the general levels of safety of those facilities.

That said, like crime issues, there are many variables. For example, I believe that in both issues federal guidance on standards has helped, but not the "redistribution of wealth." One could make the same argument for streets, roads and highways as you suggest for crime, and I believe the same questions are important to resolving what we are trying to accomplish, and the best way to do so.

It would seem to me that the best solutions have come from local resolve and action.

AL KING, P.E.

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Turning technology inside out

PHOTOS COURTESY OF THE PRISCO GROUP

Philadelphia's School of the Future is technologically advanced and environmentally friendly.

High-Tech High

AT 8 A.M. ON SEPT. 7, 2006, a school bell rang for the first time at Philadelphia's School of the Future, officially opening one of the nation's most advanced high schools.

The school, conceived by the School District of Philadelphia, Microsoft and the community of West Philadelphia, delivers a new approach to curriculum, school design and the integration of technology into the daily lives of teachers and students.

Instructional, environmental, architectural and technical elements focus on building a sustainable, curriculum-driven environment to help students learn, and help teachers and administrators succeed.

Each student receives a tablet PC, wireless Internet access on campus and broadband access at home. The school is packed with technology — it features a performance center with two hydraulically-rotating lecture halls to create small performing spaces for school and community performances; smart-card accessible lockers; a water catchment system on the roof to collect rainwater for use in nonpotable applications; and photovoltaic panels in the building's glass windows and the roof.

The panels reduce heating and cooling costs by converting sunlight into direct current, contributing electricity for the building and transmitting real-time data to students so they can assess the positive impact on the environment.

In addition, a virtual teaching assistant, created by Microsoft specifically for the school, gauges each student's progress, allowing teachers to tailor deeper instruction plans for the advanced student or incorporate extra review for students needing additional time to master a topic.

The 170 freshman students who make up the first School of the Future's graduating class — of 2010 — began their sophomore year in September. GT

WATCH A GTtv REPORT ON THE SCHOOL OF THE FUTURE AT **WWW.GOVTECH.COM**

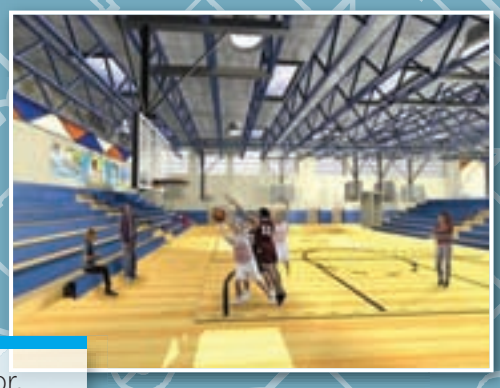
BY JESSICA JONES | ASSISTANT EDITOR | **ILLUSTRATION BY** TOM McKEITH

FIRST FLOOR
INTERACTIVE
LEARNING CENTER

The **interactive learning center,** on the first floor, contains a technology lab with wired and wireless connections; has a lower level with individual and group seating, and a literacy nook designed for small group discussions; a production and copy room; and a conference room.

Consisting of a restaurant-style kitchen, food pick-up and service area, the first-floor **food court** promotes interaction among all individuals. The interior holds up to 274 students simultaneously, and includes an outdoor cyber-patio.

FIRST FLOOR
FOOD COURT



On the first floor, the suite of **gymnasiums** consists of two gyms, locker rooms, a training room, three physical education offices, two storage rooms and a fitness center. The main gym is approximately 9,000 square feet and has two-sided retractable bleachers with 800 seats.

LOWER LEVEL
PERFORMING ARTS CENTER

The **performing arts center pavilion**, on the lower level, is 5,000 square feet and has 480 seats. In addition to the 3,500-square-foot stage, the center includes two rotating lecture halls with 100 seats each for smaller performing spaces. Ceiling clouds, and acoustical and reflective panels, provide adequate acoustics.

FIRST FLOOR
GYMNASIUM

CERF ON THE NET

PREDICTIONS FOR THE FUTURE FROM ONE OF THE FATHERS OF THE INTERNET.

BY STEVE TOWNS AND JESSICA JONES

PHOTOS BY CADE MARTIN

MORE THAN 30 YEARS AGO,

VINT CERF AND COLLEAGUE ROBERT KAHN — PERFORMING RESEARCH SPONSORED BY THE DEFENSE ADVANCED RESEARCH PROJECTS AGENCY — CREATED THE CORE STANDARDS THAT ALLOW COMPUTERS ACROSS THE GLOBE TO LINK TOGETHER.

THE TWO MEN DEVELOPED THE TRANSMISSION CONTROL PROTOCOL/INTERNET PROTOCOL (TCP/IP) SUITE, A STACK OF NETWORKING PROTOCOLS THAT FORMS THE INTERNET'S FOUNDATION. ULTIMATELY THEIR WORK REVOLUTIONIZED HOW CITIZENS, BUSINESSES AND GOVERNMENTS USE AND SHARE INFORMATION.

TODAY CERF IS VICE PRESIDENT AND CHIEF INTERNET EVANGELIST OF GOOGLE, WHERE PART OF HIS JOB IS TO IDENTIFY NEW INTERNET APPLICATIONS AND TECHNOLOGIES. IN ADDITION, CERF IS CHAIRMAN OF THE INTERNET CORPORATION FOR ASSIGNED NAMES AND NUMBERS (ICANN) A NONPROFIT ORGANIZATION THAT COORDINATES INTERNET DOMAIN NAMES AND IP ADDRESSES GLOBALLY.

CERF SPOKE WITH *GOVERNMENT TECHNOLOGY* AT GOOGLE'S WASHINGTON, D.C., OFFICES. DURING THE HOUR-LONG CONVERSATION, CERF DISCUSSED NUMEROUS ISSUES THAT WILL SHAPE THE INTERNET'S FUTURE, INCLUDING NET NEUTRALITY, MUNICIPAL WIRELESS PROJECTS AND MOBILE CONNECTIVITY. »

GT: A QUOTE FROM YOU SAYS THAT 99 PERCENT OF ALL INTERNET APPLICATIONS HAVEN'T BEEN CONCEIVED OF YET. WHY DO YOU SAY THAT?

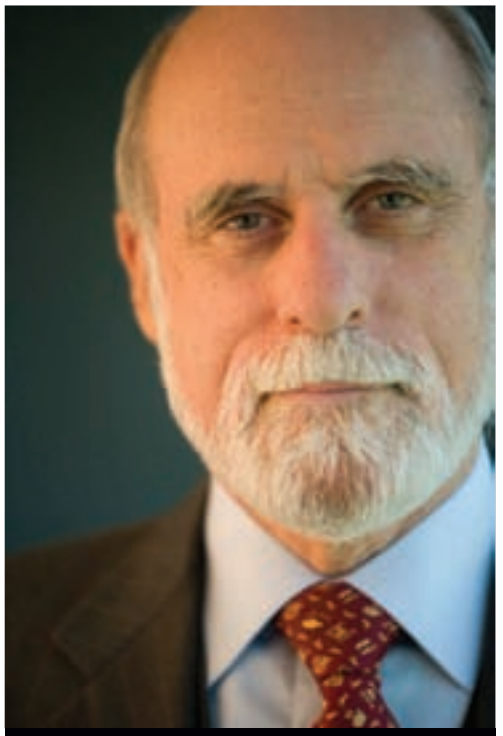
CERF: The basis for my speculation is to look at the rate at which new ideas are coming along on the Net, either within the Web context or elsewhere. There is an increasing number of people with capability and interest in building applications on the Net. You can predict even now, with only 1 billion users on the Net, that as we move toward the next decade of the 21st century, maybe we'll have 5 billion users — that's a factor of five right there. And some of these things are not linear in terms of the rate at which inventions happen. Every time somebody invents something that's successful or comes up with a new standard, it creates another platform on top of which invention can happen. So this thing is a positive feedback loop.

GT: WHAT WILL THE INTERNET LOOK LIKE IN THE FUTURE?

CERF: We can already see some very clear trends, and I think the clarity of my vision probably doesn't go more than five or six years out. One thing for sure is that an increasing amount of applications will be available on mobile devices. Second, the speeds at which you can access the Net will increase over time, both in the wireless and the wired world. Third, more and more devices are going to be Internet-enabled, which means they can be managed through the network. You can imagine exchanging all your remotes to control your entertainment equipment with one single mobile, which interacts with them through the Internet, which means it could be anywhere. You don't have to be at home in the living room or entertainment room controlling the device directly with an infrared signal. Instead you're talking through the network to those devices, and of course strong authentication keeps the 15-year-old next door from reprogramming your entertainment system.

Another thing we'll see is an increasing amount of sensor-type systems being part of the Internet, so their information is accessible that way. It could be buildings or automobiles that are instrumented. Devices we carry around might be capable of detecting hazardous materials in the air. They may even be capable of detecting humidity, temperature and other very basic things. But the result of collecting all of that information is a micro-view of climates or weather, making our weather prediction even more precise because of the data we get.

Beyond that, it's a little hard to say, except for an effort to expand the Internet's operation so it can work across the solar system. That's part of an application I have been working on



"EVERY TIME SOMEBODY INVENTS SOMETHING THAT'S SUCCESSFUL OR COMES UP WITH A NEW STANDARD, IT CREATES ANOTHER PLATFORM ON TOP OF WHICH INVENTION CAN HAPPEN."

with the Jet Propulsion Laboratory, and more generally with NASA. It is reasonably predictable that during the second decade of the 21st century, a networking platform for deep-space communication will emerge and make the kinds of spacecraft we use for exploration more flexible. Often these spacecraft are single-platform devices, and you talk to them through a single radio link from Earth. The exchange is just two-way.

As we build more flexible networking capabilities that can work in deep space, we can imagine constellations of spacecraft, sensor networks and orbiters all communicating locally with each other, maybe on an interplanetary basis, and not necessarily just back to Earth. So in the very much longer time frame — 20, 30, 40 years from now — we might see quite a collection of devices around the solar system interacting through this deep space interplanetary network.

GT: HOW FAR ALONG IS THAT WORK?

CERF: The new protocols required to make things work flexibly in deep space across interplanetary distances are pretty well stabilized. In fact, when we were working on the interplanetary networking design, we realized that we actually ended up working on a special case of a more general concept called delay- and disruption-tolerant networking. When you're communicating with something on another planet, the planet's rotating and you're cut off from communication until the rotation brings it back in view. Or you may not be able to talk to an orbiter when it's behind a planet. So those are types of disruptions. Delay, of course, is inescapable because of the distances between the planets. They are literally astronomical.

We looked at the general case of delay and disruption tolerance in networking protocols and realized this would apply to certain tactical situations here on Earth. In tactical mobile communications, you're using radios, you're moving around, and the connectivity is varying. You might lose radio contact, or you could be jammed. A variety of impairments could occur which cause communication to be disrupted for uncertain amounts of time. Hence, delay and disruption tolerance is needed.

We've been testing that theory with the Defense Department. We've taken the space protocols and implemented them for the Marine Corps, which is trying them out in tactical environments, and they work very well. Then we worked with the sensory network people to use these techniques for sensor networks, and that's working out very well. This is sort of a nascent beginning of a whole new class of communication protocols that are not based on exactly the same assumptions that the TCP/IP protocols were 30 years ago.

GT: SO THAT RESEARCH IS PRODUCING BENEFITS RIGHT NOW?

CERF: Yes, terrestrially. That was a very satisfying outcome because people were saying, "Why are you bothering to network the planets? It's 100 years from now." In truth, the initial motivation was simply to look as far ahead as possible and say, "What would we have to do if we really wanted to have an interplanetary network? What would it look like?" But then we realized there were some terrestrial applications. That's true for the civilian sector also. People who carry mobile devices are well aware of the potential for discontinuity and impairment, and these protocols try to overcome that.

GT: WHAT ARE SOME OF THE BARRIERS TO CONTINUED INTERNET EXPANSION?

CERF: The network needs to go through some major changes to continue to grow. The current design was standardized in 1978. The address

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space available for the Internet protocol is 4.3 billion unique terminations. It's called IP version 4, and the address space is 32 bits long, and those 32 bits are not used absolutely 100 percent efficiently. So we can foresee a time when the allocations of addresses will end, at least from the ICANN point of view. Its IANA [Internet Assigned Numbers Authority] function hands out address space to the regional Internet registries, which in turn hand them out to the Internet service providers [ISPs].

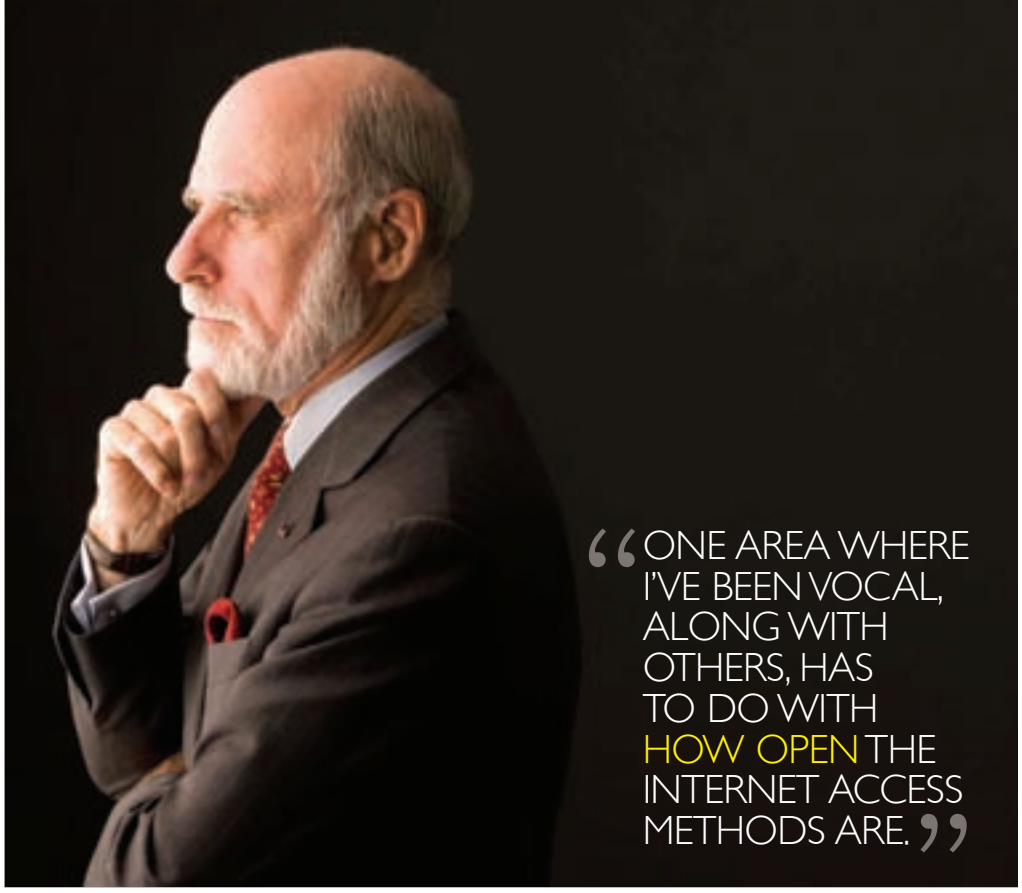
We can foresee a time around 2011 when there won't be any more address space for IANA to hand out. By that time, I'd like to see everyone ready to operate using IP version 6. It was standardized some years ago, probably in 1995 or 1996. But in the 10-year interim, there has been enough IPv4 address space available — and certain types of hacks, called network address translation, have allowed the Internet user and provider communities to avoid moving to IPv6.

But they can't avoid that after 2011. So I've been encouraging everyone to move quickly to have a v6 capability in parallel with v4. Some people speak as if you throw a switch and everyone is running v6, but these will have to run in parallel for some time. If you're a server, you want to have both v4 and v6 access to the Internet so that you won't care whether your customers come to you with either protocol. The reason IPv6 is important is that it has a 128-bit address space — that's about 340 trillion, trillion, trillion addresses or 3.4×10^{38}.

Vint Cerf is commonly referred to as one of the Internet's founding fathers, and has been honored by many organizations for his tremendous contributions in the computer science field, such as receiving the **Presidential Medal of Freedom** in 2005.

The technology is more or less there. Software makers have already produced it in the routers. It's sitting in Windows Vista, or XP for that matter. It's sitting in the Macintosh OS X. And it's available in Linux and the other derivatives of UNIX. There are still some issues associated with all the network management software that needs to run simultaneously with v4 and v6, and the ISPs have not been offering IPv6 service readily because people haven't been asking for it. People need to realize that when you do run out of v4 address space, the only way to expand is to have v6 capability. We want to be there ahead of time so we don't have a big crisis.

The second thing happening in the Internet is making the domain name system capable of expressing identifiers using scripts other than Roman characters. We'd like people to be able to make registrations in Cyrillic if they happen to speak Russian or Bulgarian, or one of the languages that uses the Cyrillic script, or in Farsi, Arabic or Urdu, which is the Arabic script, or in Korean which uses Hangul, or in Chinese which uses the Chinese syllabary, and so on. ICANN has been working to adopt standards, which are being devised by the Internet engineering task force for the use of these scripts beyond simply Latin characters.



We are coming to a time now where testing is going on to put entries in the root zone file of the domain name space. The root is the thing that points to the ".us" and the ".fr" and the ".com" and the ".net" and ".org." So those roots today only have things in it that are expressed in Latin characters. We are going to test putting things in the root that express identifiers in things like using Cyrillic script, Arabic script and so on — 11 of them altogether. We're hoping that sometime in 2008, we will be able to accept applications for new top-level domains that are expressed in these other scripts.

The third thing going on is called DNSSEC, which means Domain Name System Security. The domain system maps from names — Gmail.com, for instance — to IP addresses. With DNSSEC, when your computer asks, "What's the IP address associated with this domain name?" we'd like to offer a digitally signed answer. This guarantees to the consumer of the DNS service that the information they receive has not been altered since it was placed in the domain name system.

There are some forms of attack against the domain name system today, which involve what we call pollution or compromise of the caches, which is information that's accumulated by a resolver that's near you. Right now, someone can attack the resolver and give www.google.com the wrong IP address, and send you to the wrong place. That would not be a good thing, certainly, from Google's point of view. More importantly, if that happened to your bank account, you wouldn't want to have a party running an application looking like your bank, but it's really someone saying, "Please give me your username and password." Digital signatures are one way of removing opportunities for misleading people in the network.

GT: HOW WILL GOVERNMENT REGULATION INFLUENCE IPV6 ACCEPTANCE AND MOBILE INTERNET CONNECTIVITY?

CERF: One area where I've been vocal, along with others, has to do with how open the Internet access methods are. When the Internet was first becoming available to the public in the early to mid-1990s, most people got access to the network by dialing an Internet service provider. If you didn't like the service from one Internet service provider, you could dial a different telephone number and switch to another. When broadband capability emerged from cable modems and digital subscriber loops, the number of competing ISPs collapsed to the point where some people have no broadband access at all. The FCC estimated in 2005 that something like 60 percent of the country had a choice of either DSL or cable, 30 percent had one but not both, and 10 percent had no broadband at all, often in the rural parts of the country.

Even where there are two competitors, it isn't clear the degree to which that drives prices down and increases quality. So this absence of competition is of some concern. Another concern is that the parties offering these broadband facilities — and also the parties that offer wireless capability — are designing business models that constrain what applications are permitted. This isn't as open an environment as the Internet has been in the past. It's the

CONTINUED ON PAGE 28

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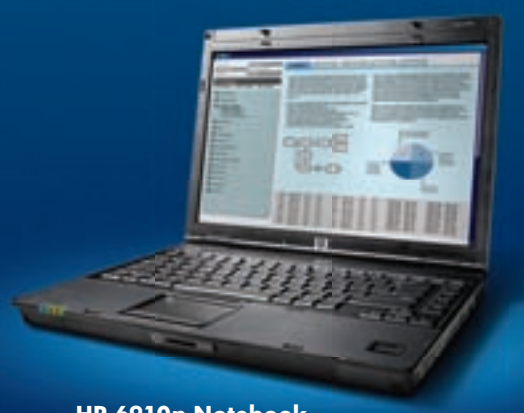

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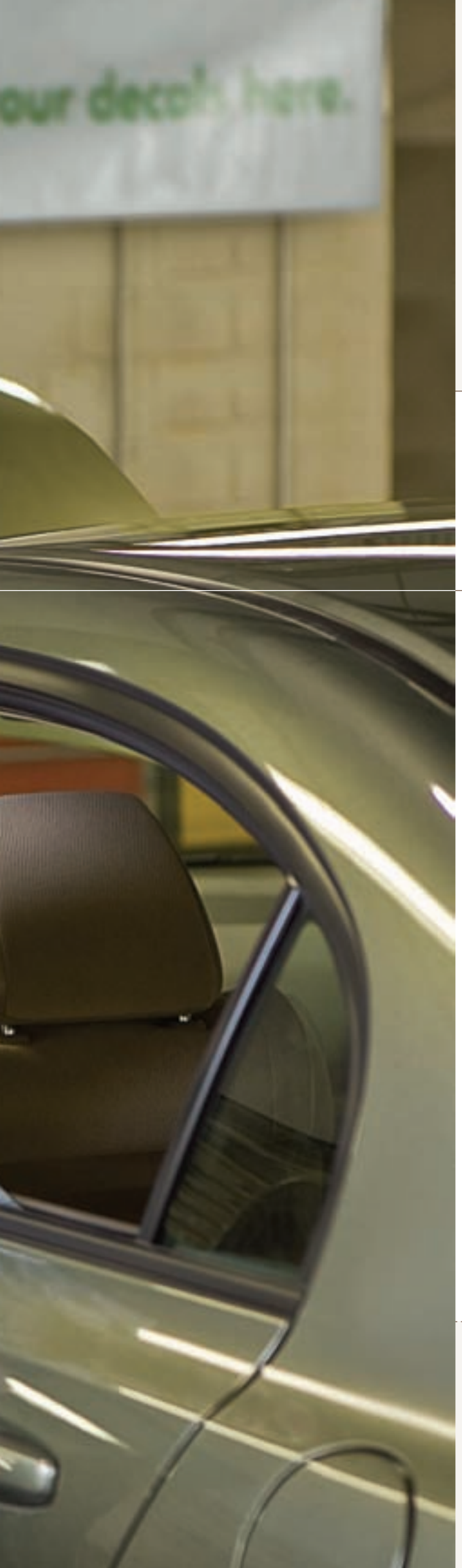

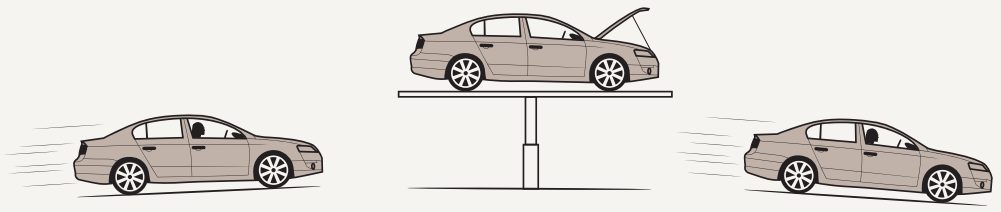

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CONTINUED FROM PAGE 24

openness, the opportunity to offer arbitrary services, which has given the network its vigor in the economic and innovative sense.

For example, when Larry Page and Sergey Brin started Google, they didn't need permission from an ISP to offer the service. They simply put it up, and if you had access to the Internet, you could go there. There has been a debate under the term "Net neutrality," a term whose definition has been distorted and twisted in the course of the arguments. But from Google's point of view, our interest is keeping the network as open as possible. Once the consumer gets access to the network, they should be free to go anywhere in the world to get any application. If you have a device capable of doing Internet, it should be able to use any Internet service. If it's capable of using the Internet at all, you should be able to download new applications and run them.

In the wireless world, that isn't the case. The platforms, even when they're Internet enabled, are not open — you may not be able to download a new application unless the wireless provider agrees and puts it on the platform for you.

This openness can be seen in different ways, whether it's open platforms, open applications on the platforms, open interconnection and access to the various Internet-based networks. In the absence of a regime which preserves that openness, the Internet could easily move into a very constrained mode, which makes it look more like cable television. Personally I don't think that would be a good thing. Not just because of a personal preference for openness, but I believe the economic energy behind the network has been aided by an environment where standards are openly available and any platform is free to implement these standards and then access the Internet.

I'm worried the U.S. government, and other governments around the world, may fail to fully understand how important that openness is to the economic benefit of the network.

GT: WHEN YOU JOINED GOOGLE, THERE WAS SPECULATION THAT THE COMPANY WOULD CREATE A NATION-WIDE WIRELESS NETWORK. WHAT IS GOOGLE'S VISION IN THAT REGARD?

CERF: Speculation about national networking may have come about because of the work we did in Mountain View, Calif., and San Francisco with wireless communication. The Mountain View wireless system was a test case to figure out how to respond to a request from the city of San Francisco for bids to put in free wireless services. We built the Mountain View network just to figure out what you have to do and what it cost, so we could decide if we should actually offer to do this.

The San Francisco situation was fairly complex. If you proposed to build such a wireless network, and that proposal was accepted, what acceptance meant is you get to negotiate with something like 29 different jurisdictions around the San Francisco Bay Area. So it's taken quite a while to work through that.

But many people, I think, misunderstood our willingness to be good citizens in this wireless effort as the first step in an attempt to do nationwide municipal networking. At the moment, that's not a business model we aspire to.

Google believes that expanding the Internet and providing more of it to more people is a good thing. It certainly is good for our business model, and we're not shy about admitting that. But we also think the Internet has been beneficial to the 1 billion people using it today — unfortunately that's only about one-sixth of the world's population. So we are interested in taking steps that will encourage more Internet to be built. Whether we do it, or someone else does it, is less important than that it does happen and that more people have access to the information that's available.

The amount of information available on the Net today is astonishing. The quality ranges from terrible to spectacularly good. That information is being generated now more by users of the Net than any others. The consumers have become producers, which is an interesting phenomenon, and has a positive spiral associated with it. The more people share information, the more people get access to that information and use it to invent new things and come up with results. GT

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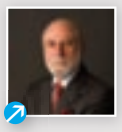
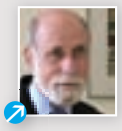


Read more of Vint Cerf's interview with *Government Technology.*



Watch GTtv video from Vint Cerf's interview.

View a map of Wi-Fi coverage for Mountain View, Calif.

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GOVERNMENT TECHNOLOGY'S

WAY BACK MACHINE

Revisiting 20 years of *Government Technology* magazine.

1994

1 In our September issue, we announced our cover story, *Kiosks on the March*, in a ludicrously large font. The article told of kiosks and their visionless promoters. Kiosks would make filling out government forms and applying for government benefits as simple as driving to the grocery store and waiting for a free kiosk — so much easier than going to an actual government office, right?

Why kiosk advocates couldn't see the likelihood of the increasingly popular World Wide Web doing everything a kiosk could do but from a home PC can't be explored in this limited space. For now, just be thankful the $25,000-a-piece machines were, even then, on the march straight into obscurity.

WAY BACK FACT

In April 1995, a terrorist attack perpetrated by Timothy McVeigh and accomplice Terry Nichols decimated the Alfred P. Murrah federal building in Oklahoma City. The bombing claimed 168 lives. McVeigh was later executed in 2001, and Nichols was sentenced to life in prison without parole.

Picture the most ill-timed product launch possible: Say, for example, the railroad was introduced around the same time as the automobile. Or, what if the cassette tape came out right as the iPod hit the shelves? You'd look back at the situation, bemused, wondering why cassette-tape makers didn't pay attention to digital music technology.

Such was the case in 1994 when we and many other media outlets were all atwitter about a harebrained device that would supposedly revolutionize the way government served citizens — the kiosk.

BY CHAD VANDER VEEN | TECHNOLOGY AND POLITICS EDITOR

2 By 1995, it seemed *Government Technology* had become profitable, judging from the beefy advertiser index and 100-plus page magazines of those days. Awash in cash, we finally transitioned from crummy newsprint to the glossy paper typical of most magazines.

WAY BACK FACT

In August, the much-anticipated Windows 95 is released. The operating system's launch was like no other before it, with Microsoft spending a reported $300 million on advertising — including paying millions for the rights to the Rolling Stones' classic *Start Me Up*.

WAY BACK FACT

Though many of us were still getting comfortable with the CD, in 1995 the next generation of optical media was announced. The digital video disc — DVD — more than sextupled the capacity of CDs and would soon supplant the videocassette as the preferred medium for recording video. Now the question is whether DVDs will be overtaken by next-generation Blu-Ray discs, which have up to 50 *gigabytes* of storage.

GOVERNMENT TECHNOLOGY 20 YEARS

4 In our March issue, Editor Wayne Hanson tried to peer into the future and predict how different life would be in 2005. Hanson imagined that in 10 years, cash would disappear and armed robbery along with it. We're getting there, but it's going to be a long time before the cashless society exists. He also believed that by 2005, we'd all be using biometrics like fingerprint scanners to conduct transactions. Hanson's predictions were also a bit grim as he imagined a world where the government maintained DNA records for all citizens and privacy was quickly being eroded in the name of security.

Thankfully most of these Orwellian fears haven't yet come to pass, right?

WAY BACK FACT

In Santa Clara, Calif., a Web site formerly known as Jerry's Guide to the World Wide Web is incorporated. The site was renamed Yahoo. In 2000, Yahoo's stock would reach an all-time high of $475 a share. A year and a half later, the company's stock bottomed out at $8.11 a share.

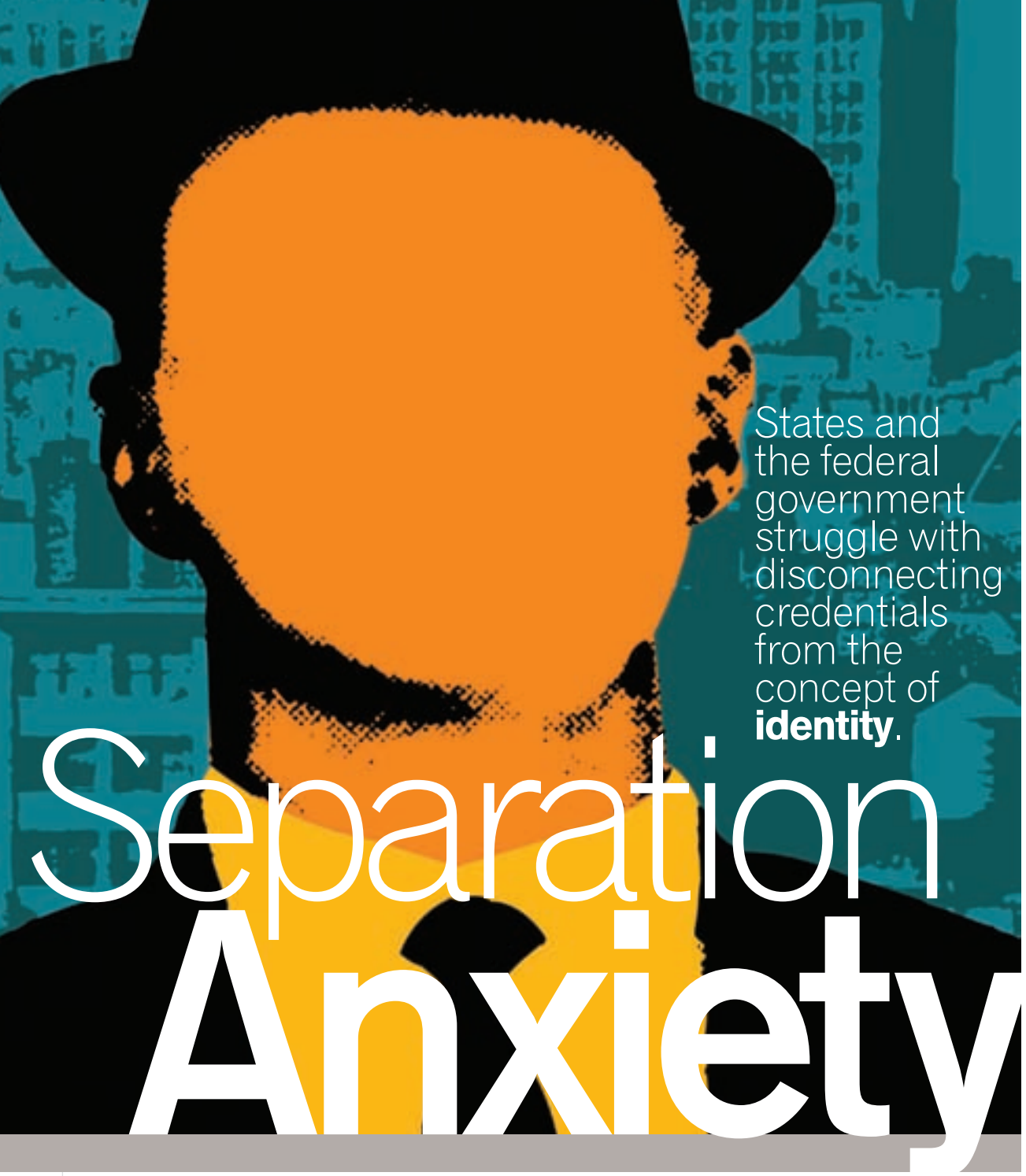
1995

3 It's easy to forget that only a dozen years ago, government was still new to this whole Internet thing. In February 1995, our cover headline was *America's Infostructure,* and was supported by three unique stories that detailed the challenges state and local governments would face in the years to come. Peppered throughout the issue were buzzwords of the day, like "information superhighway" and the "national information infrastructure." Comparing what we had then to what we have now, government can certainly give itself a pat on the back. Everyone has come a very long way in what has been but a wink in time.

WAY BACK FACT

Americans were infatuated with the so-called Trial of the Century during 1995. For 134 days, TV cameras gave the public a courtside view of O.J. Simpson's murder trial. The trial was roundly regarded as a fiasco and, despite the jury returning a verdict of not guilty, many still claim "The Juice" got away with murder.

Later issues in 1995 reinforce the fact that the Internet was a wonderful and frightening new frontier. *Government Technology* featured articles and editorials that shed light on the growing amount of Internet pornography and the murky First Amendment issues it raised. The Government Technology Conference events of that year featured something called the "Internet Theater," an elaborate booth designed to help attendees become more adept at surfing the Net. We even ran a column that claimed the "superhighway" metaphor was already dated. Though just 12 short years ago, 1995 was witness to the creation of a whole new way of life. GT



States and the federal government struggle with disconnecting credentials from the concept of **identity**.

Separation Anxiety

BY SHANE PETERSON | ASSOCIATE EDITOR

We all remember those early college years; bar-hopping the nights away and eating at restaurants of questionable repute at 3:30 a.m. Your pass into the three, four or five bars on the itinerary was your driver's license. It was the only credential you could offer bartenders and bouncers to prove you were of legal drinking age.

Over the course of any given day, this scenario is re-enacted at grocery stores, banks, gas stations or restaurants, though with an important caveat — at these businesses, you produce your driver's license to prove your identity so business transactions can be completed.

Somehow, the lowly driver's license — meant originally to prove only that the holder can legally operate a motor vehicle — took on completely different purposes. It's now the one card you use to prove your identity *and* as a credential to access certain places or buy certain things.

It's a long-recognized problem, but absent any real crisis to act as a motivating force, policymakers adopted a *laissez-faire* attitude and focused their attention elsewhere.

Unfortunately 9/11 forced the problem into the spotlight. The driver's license, in particular, fell under intense scrutiny because many of the terrorists falsified drivers' licenses to board the jetliners used in the attacks.

Policymakers hurriedly dropped the "What, me worry?" stance and duly issued legislation, the Real ID Act, to drastically alter how states issue drivers' licenses. Even before Real ID, the Bush administration issued a series of directives targeting homeland security, one of which, Homeland Security Presidential Directive-12 (HSPD-12), completely changed how the federal government issues credentials to government employees and contractors.

Critics, however, say government-led efforts seek to solve the wrong problem because the "solutions" are based on a misunderstanding of the concept of identity. Some critics also contend that, to succeed, wide-ranging identity management initiatives must be public-private partnerships instead of government-mandated programs.

Uncle Sam's ID Card

Since 2004, the federal government has struggled with its own identity and credentialing issue, HSPD-12. The directive is the federal government's strategy to eliminate variations in the quality and security of identification systems used to control access to federal facilities that could be potential terrorist targets, according to the directive.

"It is the policy of the United States to enhance security, increase government efficiency, reduce identity fraud and protect personal privacy by establishing a mandatory, governmentwide standard for secure and reliable forms of identification issued by the federal government to its employees and contractors, including contractor employees," the directive states.

When articulated in wonk-speak, HSPD-12 seems almost easy. In the real world, however, HSPD-12 mandates the creation of a single identification card for approximately 4 million federal employees that can be used to access any federal building, facility and computer system — not an easy row to hoe.

One significant problem is the existence of more than a dozen agency-specific systems for issuing badges and credentials, systems that maintain data on those badges and credentials in separate data records, said David Temoshok, director of identity policy and management for the Office of Governmentwide Policy in the General Services Administration.

"What the presidential directive did on the broadest scale possible was to require that those individual systems be interoperable," Temoshok explained, "that the cards have the capability to be read in different readers in different agencies, to have data exchange across systems, and data validation to allow authentication across agencies to occur."

To make this happen, agency CIOs, human resources managers and physical security personnel must jointly create standard processes

that integrate access to physical facilities and information systems. Because the cards contain personally identifying information about federal employees, agency privacy officers will also be heavily involved.

"HSPD-12 really has mandated a cultural change to ensure that those different organizations work collectively on this implementation in very short time frames and under very key milestone dates in order to implement systems that, across those organizations and across the board, meet our control and implementation requirements," said Temoshok.

Though HSPD-12 specifically targets federal employees, standardizing the way federal agencies collect personally identifiable information from those employees and encode that information into HSPD-12-compliant identity cards might impact everyday U.S. citizens.

Various communities, including state and local governments, first responders, the health-care industry and international organizations, have expressed interest in the Federal Information Processing Standard 201 (FIPS 201), Temoshok said.

Officially titled *Personal Identity Verification of Federal Employees and Contractors*, FIPS 201 was created by the National Institute of Standards and Technology (NIST) as the federal government's standard for personal identity verification (PIV) based on secure and reliable forms of identification credentials.

FIPS 201 also addresses requirements for initial identity proofing, infrastructures to support interoperability of identity credentials, and accreditation of organizations and processes issuing PIV credentials, according to NIST.

"This is not a national ID card, but it is a national identity standard for the federal government that we can point to," Temoshok said. "Across those groups, we've seen great interest in adopting those standards and potentially implementing solutions that can interoperate with the deployments we're putting into place across the federal government.

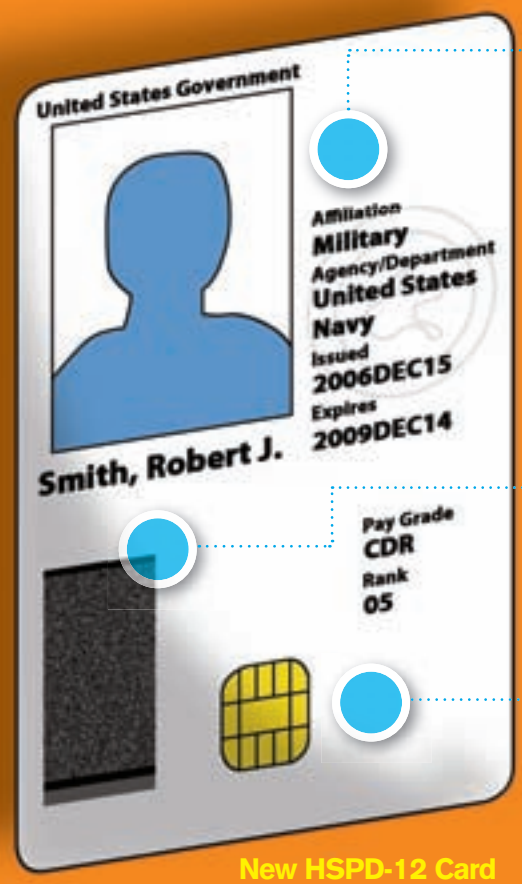
"We had hoped for that," he continued. "We're very pleased and surprised to see that level of interest, and even across those diverse communities."

Defaulting to Identity

Despite the rush to fortify the driver's license and federal credentials, detractors suggest that the policymakers' approach solves the wrong problem. The issue isn't the security of either document, said Jim Harper, director of information policy studies at the Cato Institute. He said the real problem is a misunderstanding of the identity concept.

Access Granted

HSPD-12 mandates the creation of a single identification card for approximately 4 million federal employees that can be used to access any federal building, facility and computer system. This image shows some of the features of an HSPD-12 compliant card.



Information about the cardholder verifies identity and authorizes the individual to access specified facilities.

Detailed cardholder information is now stored electronically.

All data in the card must be read by an HSPD-12 compliant card reader.

SOURCE: ENTERPRISE AIR

"The first mistake is that a lot of people are assuming that identity is a single, uniform thing — that each of us has one, and it starts with us when we're born and it ceases when we die," Harper said. "That's just not the case, and the people who actually work on these problems recognize that."

A person has many identities, he said. The identity shared with family differs from the identity shared with a financial services provider, which may not be the identity shared with the IRS, which is separate from the identity shared with a librarian, he said.

Harper, a member of the Department of Homeland Security's Data Privacy and Integrity Advisory Committee and author of *Identity Crisis: How Identification Is Overused and Misunderstood*, said he and former Utah CIO Phil Windley arrived at the same conclusion.

Jim Harper
director of information policy studies, Cato Institute

"He expressed it very well [in his book, *Digital Identity*]," Harper said. "An identity is a relationship. There isn't just one relationship you have with the government, and that defines every other relationship you have. So the idea that we'd have an identity system structured as a government-created identity system is equally inaccurate."

This mindset is what caused the driver's-license-as-credential problem in the first place, he said, and America is still locked into the idea that there's a simple way to create a single, uniform identification system.

It's a holdover from days gone by, he explained, when so many transactions used to happen face-to-face and proving your identity was crucial to carrying out those sorts of transactions.

Harper said he sees two tracks developing in the struggle to alter identity management: One track is the government-backed, card-based identification, such as Real ID. The other is the private-sector backed, digital identity management track, such as Microsoft's CardSpace, which lets users manage their portfolio of digital identities and is part of the new Vista

operating system, and a multitude of applications built by software companies to identify and credential people.

"There are technologists building interesting key fobs and cards that will sort of cross over between digital identity and the card-based identity we're familiar with," he continued. "Right now, these two different areas are operating on two separate tracks, and they're not really talking to one another."

Harper predicted three possible outcomes, two of which will generate lots of bad PR: First, government ID systems will dominate and citizens will be forced to carry some type of federally issued or designed ID to function in society, leading to the potential invasion of privacy and erosion of civil liberties.

Second, government ID systems could wither on the vine despite significant public-sector investments, potentially wasting tens of millions of dollars.

"The one that makes the most sense is for the government and the people developing systems in the private sector to start to work together so private entities accept credentials that meet government standards and governments will accept them — and government entities, just like today, would issue credentials that private entities accept," Harper said. "An important part of all that is to use credentials that are nonidentifying, when they can be used."

In the Clear

Harper cited the Clear program as an example of how such a partnership can work.

Clear is the brainchild of journalist and media mogul Steven Brill, who founded a Verified Identity Pass (Verified ID) in 2003. The company started enrolling members in Clear's pilot at the Orlando, Fla., International Airport in mid-2005.

Joining the Clear program requires a visit to the company's Web site to submit basic biographic information, including name, address, previous addresses and Social Security number. The next phase requires an in-person appointment at a ClearSpace Enrollment Station, found at participating airports, or one of the company's recently created mobile enrollment stations.

At this visit, a person submits a photograph and biometric information — iris images and 10 fingerprints — and presents two pieces of U.S.-government-issued identification from a preapproved list. Verified ID sends the applicant's enrollment information to the Transportation Security Administration (TSA) for a security-threat assessment. The TSA simply approves or denies the applicant without divulging assessment details to the company.

If an applicant is approved, he or she receives a Clear Card in two to four weeks, and can use it to bypass typical airport security procedures at any of at least seven participating airports, including the Orlando Airport and New York's John F. Kennedy International Airport.

Verified ID announced it had enrolled 48,000 travelers in the Clear program as of June 5, 2007. Public interest in the program seems strong, given the steady growth of applicants since 2005, but despite interest in what Verified ID calls the "voluntary identity credentialing industry," the public sector must do its part.

The TSA's Registered Traveler (RT) program is the government's part of the expedited security screening equation. Created in conjunction with private industry, the RT program is designed to be market-driven. The TSA acts as facilitator by setting program standards, conducting security-threat assessments, performing physical screening of passengers at TSA checkpoints, and providing certain forms of oversight for private-sector program participants.

Private-sector firms, like Verified ID, assume responsibility for enrollment, verification and related services.

Need to Know

Perhaps the Clear Card's most attractive aspect is what it doesn't do.

The card is a credential that tells TSA staff the cardholder passed the TSA's security-

ID Cards Across the Globe

Belgium

In 2003, Belgium's federal government launched its Belgian Personal Identity Card Project. An Electronische Identiteitskaart card (eID) will be issued to every Belgian resident over 12 years old, and the cards function as the official identification document of Belgian citizens.

Since the beginning of 2007, the Belgian government has issued more than 5 million eID cards.

Sweden

In late 2005, Sweden initiated an electronic ID card program, though the program isn't flourishing. According to the eGovernment Unit of the European Commission's Directorate-General Information Society, the reason for the slow adoption rate is competition from another identification initiative called BankID.

BankID is a technology infrastructure that supports electronic ID purposes, and can be used by any bank that uses a customer-identification process that guarantees the customer's identity or can provide a BankID-approved Internet security solution.

Eight banks in Sweden use BankID. More importantly the National Tax Board and the National Social Insurance Board use BankID.

Portugal

In February 2007, the Portuguese government announced a pilot test for an eventual national electronic ID card that will become the official ID for Portuguese citizens.

The "Citizen Card" will include several ID numbers, such as civil identification, taxpayer, Social Security and health. Portugal is planning a variety of e-government services to be available through the Citizen Card because cardholders can use a secret PIN to identify and authenticate themselves. The card generates a legally binding digital signature for secure declarations and administrative procedures.

Hong Kong

The Immigration Department of the Hong Kong Special Administration Region first started issuing smart ID (HKID) cards in June 2003.

Hong Kong residents are required to obtain an HKID card at the age of 11, and residents 15 and over must carry the HKID card with them at all times.

The Hong Kong government said issuing the HKID cards helps establish the foundation of the delivery of e-government services. Among other pieces of personally identifying data, the card contains a person's unique "e-Certificate," or e-Cert.

The e-Cert can be used for public and commercial purposes, such as secure e-mail communication; e-government services; online entertainment, stock trading and payment; and e-banking services.

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threat assessment process and is authorized to use ClearLanes to bypass some aspects of airport security. The card does not reveal the cardholder's identity to TSA staff, effectively separating the person's identity from the physical credential.

Verified ID manages the card independently of any government control. The company tapped Lockheed Martin Corp. to manage the technology and information systems that support the card.

"You get all the security without the surveillance," Harper explained of the Clear program. "Those kinds of things are really the direction we need to go — where you have a variety of credentialing systems that are competitive so that you get cost control, convenience and competition over privacy. You get actual privacy."

Jim Dempsey
policy director, Center for Democracy and Technology

By creating a market for credentialing, Harper said, consumers get a choice in the matter, adding that before rolling out the Clear Card, Verified ID conducted focus group meetings to ask consumers what they wanted from such a card and what would make them want to pay the $99.95 annual fee.

Consumers expressed cost, convenience and privacy as their chief concerns about the Clear Card, Harper said, and Verified ID designed its systems with those three issues in mind — in stark contrast to the way the Real ID Act creates a de facto national identity-card system.

"[A mass identification system] is as likely to distract you from the real problem as to help you find the real problem," Harper said. "None of this is easy to fix, so easy sort of broad brushstrokes like IDing everybody are probably going to be wrong."

Harper predicts Real ID will fail, though that failure may take some time to play out.

"Once it fails, we'll go back and start again on something else," he said. "Hopefully there will be better information on what we can do, and that's where some of the emerging digital-identity management systems coming out of the private sector will help to educate the next round of government identity policy."

Red Flags

Personal identity frameworks (PIFs) serve as evolutionary building blocks that help facilitate easy registration and single sign-on for a variety of online transactions, though predominantly in low-risk contexts, explained Gregg Kreizman, a research director at Gartner.

"We all interact, increasingly online, in a variety of contexts, such as government to citizen, government to business, business to consumer or business to business, and in different verticals within these broad categories, such as education, health, finance or social networks," he said.

Each context has its own risk profiles and therefore, each will have different expectations/requirements for ensuring individuals are who they claim to be.

Government will play a role in private-sector initiatives, such as Microsoft's CardSpace — by supplying information that would appear in PIFs — but involving government in the creation of PIFs will not solve the ID problem, he said.

PIFs are predominantly about the end-user experience.

"If I use CardSpace as my identity selector, I will have a common user interface to access multiple services in different contexts," Kreizman explained. "However, I will still need to have different identity providers — government, health care, finance — depending on context and associated risk profile."

Government is an appropriate source of identity proofing in some contexts, Kreizman said, though telecommunications companies may be in another context and credit bureaus may function as an appropriate source of identity proofing in yet another context.

PIFs provide convenience and a promise of privacy protection, Kreizman said, because PIFs provide ways for service providers to request identity attribute data for registration and provide ways for users to allow or deny access to that data.

"However, PIFs by themselves provide no guarantees that service or identity providers will protect that data from breaches or nefarious uses," he cautioned. "So, who do you want to be your identity provider for all contexts?"

Government should be involved in work on PIFs, Kreizman said, though a full-fledged partnership may be impossible.

"Governments are one type of source for identity proof, and they are also identity consumers," Kreizman said. "We need government-issued IDs for nonelectronic purposes. We could also use government as a source of identity proofing truth for online transactions. But we don't always want that."

Finding Privacy

Some observers caution that the need for security is running roughshod over personal privacy rights.

The federal government alone is juggling six identity card initiatives, said Jim Dempsey, policy director at the Center for Democracy and Technology, and the CDT is alarmed at the proliferation of identity cards created in a policy vacuum.

"The biggest problem is that we have no policy framework for collection, use, storage and exchange of identification information," Dempsey said. "The United States has no comprehensive privacy law."

What exists now is a smattering of sundry privacy protections, he said, noting that Americans possess a constitutional right to privacy, but that right was largely defined in the pre-Internet age. Various statutory privacy protections exist, he said, but those protections target specific sectors, such as financial institutions or hospitals, and are riddled with exceptions.

The CDT has been trying to get the message through, he said but so far, Congress is somewhat mired in the sectoral approach of the past. That approach is, in part, the byproduct of legislative committees being created to examine laws targeted at specific sectors, such as a banking committee or a judiciary committee.

Larger issues also complicate the question of identity and privacy, however. Walking down the street used to be an unidentifiable activity unless someone actually knew you, he observed, the constitutional rule that a person has no privacy when it comes to what he or she does in public doesn't have very broad consequences when what that person did was not identifiable.

"There's a huge amount of activity going on in the proliferation of video cameras, and ultimately we're going to have increasing integration of facial recognition software in those camera systems," Dempsey cautioned. "We are really entering a very different world," he said, adding that there's no clear sense of a system for gathering, applying, storing and sharing identity information or personally identifiable information.

"The rules we've had in the past were based upon the assumption that there was a certain amount of friction in the system," he said. "They were also based upon the assumption that it was hard to link data across databases, as well as a series of other assumptions. Increasingly those assumptions are being blown apart, really, by changes in technology." GT

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Let's Roll

Mobile command center takes missing-children investigations into the community.

Synopsis: A fully equipped mobile abduction vehicle gives investigators a head start on investigations.

Jurisdiction: Pasco County, Fla.

Contact: Steve Szalay, executive director, California State Sheriffs' Association, <sszalay@calsheriffs.org>.

BY JIM McKAY | JUSTICE EDITOR

The time it takes a kidnapper to snatch and murder a child is usually measured in hours rather than days, making it imperative for law enforcement and local communities to find a child promptly after he or she is reported missing.

Statistics show that 91 percent of murdered child abductees are killed within 24 hours of being taken, according to the Florida Department of Law Enforcement's (FDLE) Child Abduction Response Team's Web site. Forty-four percent are killed within an hour.

The Pasco County Sheriff's Department in Florida had those numbers in mind when building the Missing and Abducted Child (MAC) Mobile Command Center.

The MAC, very nearly a police station on wheels, is jam-packed with technology, enabling officers to quickly create posters, video and still photos, as well as track search efforts and disseminate information about the missing child to local businesses, the community and media.

Once Pasco County Sheriff's personnel get to a child abduction scene, the investigation can begin immediately and continue onsite. Everything detectives need to launch the investigation is housed in the MAC, which is important since alerting the public of a missing child is the first and most important step in the retrieval process.

"Minutes saved at the front end of a child abduction investigation can save lives," said Steve Szalay, executive director of the California State Sheriffs' Association. "A mobile command center sounds compelling, especially if implemented on a regional basis."

Rapid Response

A child's abduction creates inherent delays before the child is first reported missing.

The family panics and starts searching, then later calls the police. A deputy arrives on the scene, looks around, calls for another deputy or a supervisor. The officers begin a quick, ad hoc investigation, then travel back to the station to launch a full-blown investigative effort.

In early 2003, the Pasco County Sheriff's Department began experimenting with various ways to expedite that process.

"We looked at the dynamics of a response, how we can fix these delays, and how we can effect a more rapid response," said Sgt. Brett Landsberg who heads the Juvenile and Sex Offender Unit. "We looked at the investigatory angles and said, 'OK, we're on scene. We need fliers. We need to go make pictures. How do we get this flier out faster?'"

The first approach consisted of putting mobile printers in boxes in the back seat of detectives' cars, and using those printers at an abduction scene, Landsberg recalled.

"At six or seven pages per minute, it really wasn't doing the job," he said. "And if you've ever tried to use a regular Hewlett-Packard printer in a car, it's a problem."

Then the department hit on the idea of a mobile command center. A year and a half later, after much community fund raising, the MAC was born, and then deployed in April 2007. So far, the vehicle has been

called out twice, but both times the child was found before the investigation got under way.

It's inevitable, though, that the MAC will be called to duty, and the difference from hours to minutes — which is how Landsberg describes the difference in response time between now and before the vehicle — could save a life.

Fully Loaded

When Pasco Sheriff's detectives arrive on the scene of a missing or abducted child case, they ask for photos or a negative or a digital card with an image of the missing child.

"From the minute I get that [negative, photo or digital card] from you to the time I'm handing out posters is about 30 minutes," Landsberg said. "Once we get on scene, we have the capability of taking any medium, whether it be a still photo, digital video, VHS tape, memory card — it doesn't matter — we have a way of taking that and transposing it into a useable format."

The MAC, a 2006 Ford 450 customized by L&S Coaches, sports a 42-inch monitor affixed to the vehicle's outside to brief the news media visually, and a PA system along with the monitor. It's important to keep the media abreast of the situation as long as the search continues because they keep the public interested and informed.

All the technology onboard gives the sheriff's office many avenues for getting the message out about a missing child. It can send video to the local TV stations to be aired, and it can distribute fliers and posters to other media and local businesses to share with the public.

"People learn in different ways: auditory, kinesthetic and visual," Landsberg explained, adding that they remember different aspects of various means of communication differently. You can affect all three learners by playing that video on TV."

Though the messages can be broadcasted through different mediums, it's important that they are consistent and similarly detailed. "We want to make sure that the information going out is live, it's current, it's accurate," Landsberg said.

Deputies monitor four live TV feeds in the vehicle to ensure a consistent message is disseminated.

The total cost of the outfit was $160,000, all of which, Landsberg said, was procured through local fundraising efforts that included fish fries, window washing, and donations from local organizations and businesses.

> "**Minutes** saved at the front end of a child abduction investigation **can save lives**. A mobile command center sounds compelling, especially if implemented on a regional basis."
>
> **Steve Szalay,** *executive director, California State Sheriffs' Association*

All eight members of the Juvenile and Sex Offender Investigation unit have familiarized themselves with the technology onboard the vehicle. Two detectives from the Major Crimes Unit are trained to use it.

"Training is horrendous because you have to know how all the technology works," Landsberg said, adding that when time is available, he schedules training days to familiarize detectives with the MAC and the technology inside the vehicle.

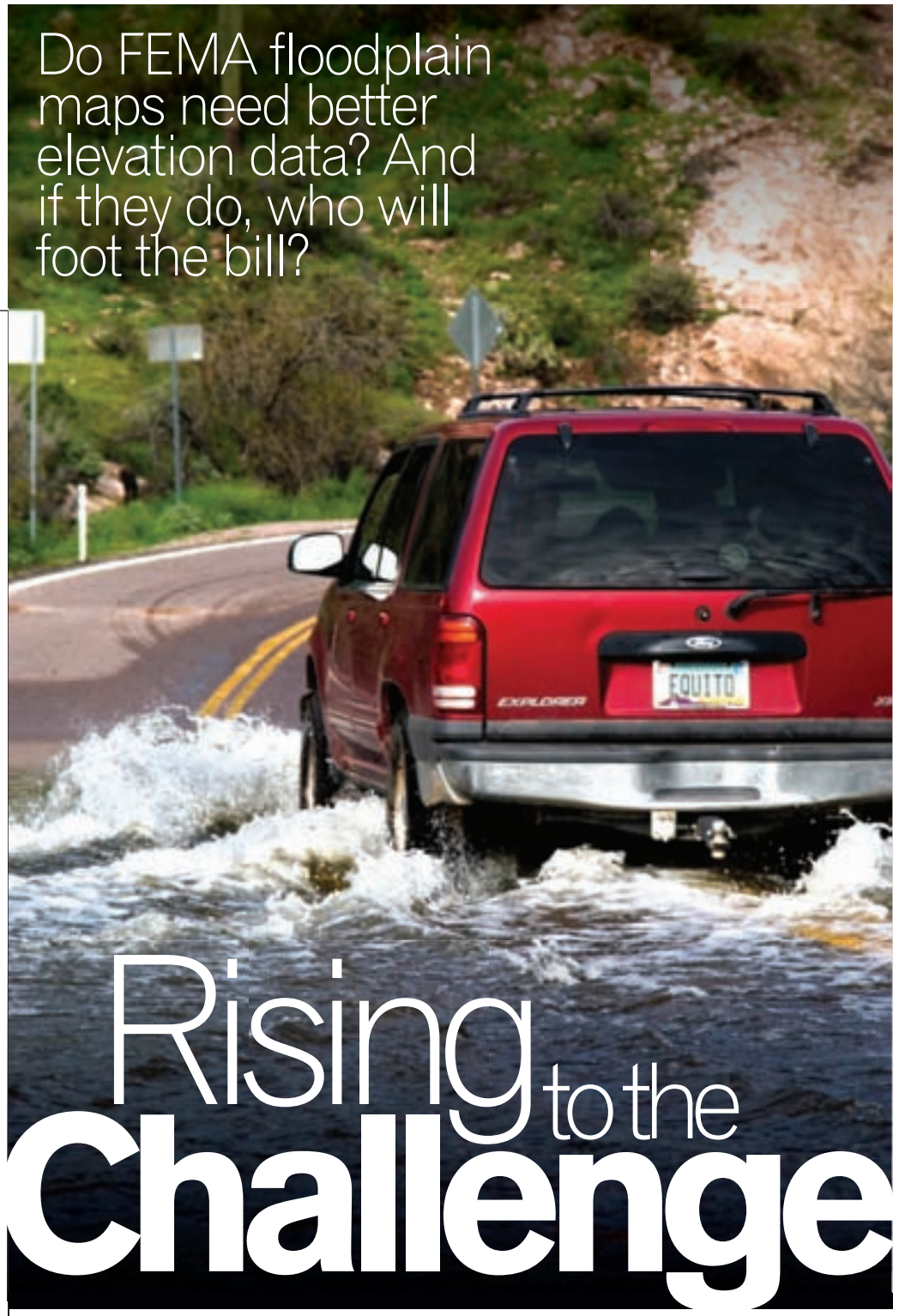
With more than 2,000 reports of missing children every day, according to the National Center for Missing and Exploited Children, chances are Pasco County will soon be in a position to use it. GT

Inside the MAC

The MAC mobile command center is packed with an array of technologies:

- a 42-inch monitor;
- two HP 5550 Color LaserJet printers capable of printing 28 pages per minute;
- 10 GPS radio units to track searches and pinpoint points of interest or evidence;
- a satellite dish, DVR and two TV receivers to monitor local news channels;
- two high-lumen projectors capable of projecting images of the child on buildings at night;
- multiple camcorders and adapters capable of converting photo information from slides, video and prints to DVD; and
- multiple computers to update information instantly to the Pasco Sheriff's Office Web site; two 500-GB removable hard drives.

> "Once we get on scene, we have the capability of **taking any medium**, whether it be a still photo, digital video, VHS tape, memory card — it doesn't matter — we have a way of taking that and **transposing it into a useable format**."
>
> **Sgt. Brett Landsberg,** *Juvenile and Sex Offender Unit, Pasco County, Florida*



Rising to the Challenge

Do FEMA floodplain maps need better elevation data? And if they do, who will foot the bill?

Synopsis: New technologies provide better topographic data — but at what cost?

Jurisdiction: Federal Emergency Management Agency, U.S. Geological Survey, North Carolina.

Technology: Light detection and ranging geospatial systems.

Contact: Larry Larson, executive director, Association of State Floodplain Managers, <larry@floods.org>.

state
local
federal

BY MERRILL DOUGLAS | CONTRIBUTING WRITER

For people whose business is to worry about flooding, there's no debate the Federal Emergency Management Agency (FEMA) needs to keep its flood maps current. But as Congress discusses the future of the National Flood Insurance Program (NFIP), not everyone agrees on the best way to modernize those maps or pay for the effort.

Congress created the NFIP in 1968 to reduce disaster assistance costs after floods by providing insurance on properties that are at high risk of flooding, so fewer owners will need government aid. The program also helps state and local governments manage floodplains so fewer properties are constructed in the way of rising waters. To support those two goals, FEMA works with state and local governments across the U.S. to map floodplains.

FEMA's Floodplain Insurance Rate Maps (FIRMs) indicate Special Flood Hazard Areas (SFHAs) — terrain where, in any given year, the chance that a stream will inundate the land is 1 percent or more. Anyone seeking a federally insured mortgage on a property in an SFHA must have flood insurance, which the NFIP subsidizes.

Insurance agents and lenders use FIRMs to determine which properties require the insurance. State and local governments use them in development planning and flood mitigation programs. Unfortunately in a community with ongoing development, the job of mapping the floodplain is never done.

"As farm fields and forests are turned into rooftops and parking lots, it destroys trees," said Larry Larson, executive director of the Association of State Floodplain Managers (ASFM) in Madison, Wis., adding that with fewer roots to drink up the water, more water runs into the nearest stream. "The flood level of that stream may go up significantly. As it does, the boundary of the 100-year floodplain expands to embrace more properties."

Homeowners continuously complain that their maps are obsolete, said David Maune, senior project manager for remote sensing at Dewberry, a Fairfax, Va. planning, design and program management firm whose expertise includes geographic information.

"I think something like 25 to 30 percent of flood claims are from people outside the special flood hazard areas," Maune added.

This creates a problem because many of these people don't carry flood insurance since, according to the FIRMs, they don't need it.

Funding Running Out

For a long time, FEMA had only $50 million per year to produce and update flood maps, Larson said. In 2003, Congress boosted that budget to $200 million per year, but only for the five-year period ending in 2008.

"Unless some additional authorization and appropriation is provided, FEMA will drop back to that $50 million a year," Larson cautioned, "and once again our maps will quickly become outdated."

A bill introduced in the U.S. House of Representatives in March proposed raising that

> "There are many, many areas of the country where **good topo**, beyond the national minimums, **already exists**."
>
> **Larry Larson,** *executive director, Association of State Floodplain Managers*

funding to $400 million per year for fiscal 2008 through 2013. The Flood Insurance Reform and Modernization Act of 2007 directs FEMA to establish an ongoing program to review, update and maintain the FIRMs.

Among other items, it also requires FEMA to raise the NFIP's insurance coverage limits; phase out insurance subsidies for vacation homes, second homes and nonresidential properties; and submit annual financial reports on the NFIP.

Although FEMA ultimately is responsible for keeping flood maps current, state and local governments, working with private-sector partners, do the bulk of the work and share the costs with the federal government, Larson said.

When engineers study updating the FIRMs, hydrology and hydraulics receive significant attention. The first asks, "If X inches of rain fall, what volume of water will that add to the local stream?" The second asks, "When you add that volume of water, how high will the stream rise?"

A third factor is land elevation, or topography. Topography matters because, for example, if a house stands atop a knoll that puts it 10 feet higher than the surrounding land, it's less likely to flood than another house the same distance from the river on lower ground.

During hearings before the House Financial Services Subcommittee in June, Maune testified that as FEMA updates the FIRMs, it should include elevation data collected using the latest geospatial technologies.

Maune spoke on behalf of MAPPS (originally called the Management Association for Private Photogrammetric Surveyors), an association of private firms that provides spatial data and GISs. These firms provide technology and services to governments when they update their flood maps.

In particular, MAPPS favors using light detection and ranging (lidar) technology to collect new topographic data. In a lidar system, sensors installed on a plane emit 150,000 pulses of laser light per second, scanning the terrain below to collect elevation data. Software then eliminates readings obtained from foliage and structures to calculate the elevation of the bare ground.

Efficient and Accurate

The most accurate way to collect elevation data is on the ground, using traditional surveying techniques, said John Dorman, director of the North Carolina Floodplain Mapping program. Still, he said, lidar can cover a great deal more ground at a lower cost, and it's much more accurate than the method the U.S. Geological Survey (USGS) used to collect much of the topographic data used in today's FIRMs.

That's why the Floodplain Mapping Program used lidar to collect elevation data for all of North Carolina. "We have accuracy that people really can't beat," Dorman said. "It feeds really well into the engineering model."

North Carolina funded the collection of elevation data with $5 million from the Innovative Partnerships program at USGS and completed the work in 2005.

Some elevation data used in today's FIRMs dates from the 1970s, when the USGS used photogrammetric technology, Maune said. Lidar offers the ability to represent changes in elevation much more precisely, he said. Precision is especially important in very flat terrain such as coastal Florida, where a half-foot of elevation could mean the difference between hurricane-related flooding staying near shore or rushing far inland.

Though Larson agrees that collecting more accurate elevation data is a good idea, he doesn't share Maune's sense of urgency on the issue. "New topo, better topo, is always useful," he said, "although there are many, many areas of the country where good topo, beyond the national minimums, already exists."

In some communities, new topographic data would provide better maps, Larson said. "The engineering wouldn't be any better, but it makes the depiction better."

For ASFM, the big concern is that money for acquiring new elevation data should not come from FEMA's mapping program budget.

"There simply isn't enough there," Larson said.

Along with North Carolina, several other states have raised their own funds to acquire new topographic data using Lidar. But all states and local communities, and many other federal agencies besides FEMA, need this data for a variety of purposes.

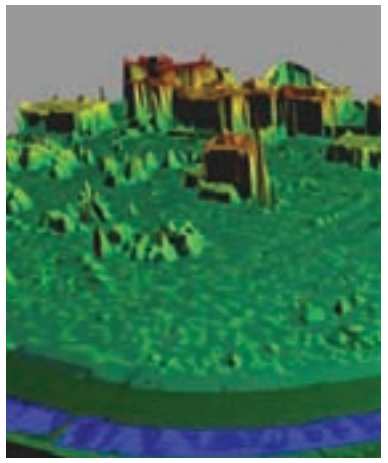


IMAGE **COURTESY OF** DODSON & ASSOCIATES INC.

As part of the Federal Emergency Management Agency's move toward digital technology for processing requests for floodplain map changes, Dodson & Associates Inc. is preparing a re-study of the Brays Bayou watershed in Harris County, Texas. The work involves a completely digital database of ground elevations and other data, much of which has been obtained by light detection and ranging (lidar) sensing technologies.

"I believe that there needs to be federal funding, either through FEMA or through USGS, that allows states to partner and share the costs, but also share the benefit of the data," Dorman said. "I don't think the federal government has its ducks in a row now, but that's the approach that needs to be taken."

> "Homeowners continuously complain that their **maps are obsolete**."
>
> **David Maune,** *senior project manager for remote sensing, Dewberry*

"Nobody is arguing that FEMA ought to solve what is basically a nationwide problem," Maune said. "It's something that OMB [Office of Management and Budget] is going to have to work out with a lot of different appropriations." GT

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Synopsis: West Virginia public schools use a popular video game to help kids get fit.

Agency: West Virginia Department of Education.

Technology: Konami Corp. Dance Dance Revolution.

Wednesday Afternoon Fever

state
local
federal

Physical fitness in West Virginia schools gets groovy.

BY CHAD VANDER VEEN | TECHNOLOGY AND POLITICS EDITOR

You've probably seen them around town — at the mall, the bowling alley or the local pub. The machines are quite elaborate, with flashing lights, psychedelic imagery and familiar music. Yet one element is particularly arresting.

Upon stepping onto one of the machines, seemingly normal kids display dance moves so complex that even Emmitt Smith might not keep up. What could cause ordinary 'tweens, teens — and even some adults — to suddenly bust a move when, under normal circumstances, they couldn't tango their way out of a wet paper bag?

It's the ultra-compelling and ultra-popular Dance Dance Revolution (DDR) — a hip hybrid of video gaming, booty shaking and grooving.

Even casual DDR players know the game is a sensational way to work up a sweat — a fact the West Virginia Department of Education observed.

After statistics showed West Virginia's childhood obesity rate was among the worst in the nation, the Department of Education looked for ways to encourage more physical activity for an increasingly sedentary age group, tapping DDR as a possible solution.

Kick Off Your Sunday Shoes

DDR is a world-renowned video game.

Originally launched by the Japan-based Konami Corp. in 1998, the game has spawned nearly 100 versions, and features more than 1,000 songs. Despite the many iterations of the game, from arcade version to home version, the basics remain the same.

Like other video games, there's a lot occurring onscreen. But DDR's magic happens on the attached dance platform. The platform has four primary foot panels — up, down, left and right, though some versions have two additional diagonal panels — surrounding a neutral center panel. Each panel has a corresponding arrow.

During game play, users watch the screen and listen to a song. While the song plays,

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Students at Dorseyville Middle School in Pittsburgh use Dance Dance Revolution (DDR) machines to elevate their heart rate; work up a sweat; and enhance their agility and foot/eye coordination. Pennsylvania is one of 10 states using DDR in schools.

PHOTO COURTESY OF DORSEYVILLE MIDDLE SCHOOL

arrows appear onscreen and users tap the appropriate foot panel to the song's beat. As users progress, the beat becomes faster, more complex and harder to follow. The result is a wholly unique style of dance that combines elements of tap, break dancing and freestyle. Advanced players often demonstrate impressive abilities.

In spring 2006, at West Virginia University's (WVU) Health Sciences Center, researchers Linda Carson, Ware distinguished professor at the WVU School of Physical Education and director of the WVU Motor Development Center, and Emily Murphy, research instructor in the Department of Pediatrics at the WVU School of Medicine, conducted a study to find ways of addressing the growing problem of childhood obesity.

The study was sponsored by the West Virginia Public Employees Insurance Agency (PEIA) to find a way of preventing costly obesity-related problems among future members before they start.

"PEIA came to Dr. Carson and me, and my mentor Dr. [Rachel] Yeater, and said they had heard we worked with children's programs and wanted to know if we would be interested in trying to develop a home-based intervention for kids," Murphy recalled. "It needed to be something kids could do in their own homes, and in a wide variety of homes."

After investigating possible solutions, Murphy said they came across DDR.

"We'd seen it in the arcades," she said. "So we thought we'd try to use this with this population of kids. It appealed to us for two reasons — kids were able to do it in their home, and also, it had different levels. Kids using it for the first time could, over time, advance with it."

During clinical studies, the researchers found that over a 24-week period, children playing the game five days a week for at least 30 minutes per day improved their cardiovascular risk profiles. Though not all children lost weight, the majority did not gain weight and improved their aerobic capacity.

Dance Hall

Soon after the study began, it drew the attention of both the Department of Education and the governor's office, and it was decided that DDR would be used in the state's public schools.

"We started with the middle schools — and we've completed putting them into all the middle schools in West Virginia," Murphy said. "Now we're moving on to high schools, and eventually we'll get to elementary schools."

In addition to the original PEIA funding, Murphy said Konami has been a partner in the project, covering the costs of the game's software. Still, each unit delivered to the schools is costly — running approximately $800 each. The biggest expense comes from the dance platforms. Konami does not manufacture dance platforms that can withstand dozens of school kids using them daily.

As such, Murphy said they've been purchasing platforms from Cobalt Flux — a third-party vendor that sells "industrial strength" dance platforms. Murphy said they struck a deal with Cobalt Flux to get the platforms at a significant discount.

"[The platforms are] the most expensive part," Murphy said. "We're providing two pads per school and that's about $700."

DDR is a pastime for kids waiting for the school bus, and an outlet for those who don't participate in extracurricular activities. However, any student can use the game.

"We're putting them into the schools not to replace physical education, but to basically provide another opportunity for the kids to be physically active during the day," Murphy said. "What we're planning, once we get them into the schools, is developing an afterschool program based around active video games — like a DDR club for kids who aren't necessarily interested in doing sports activities."

Though it's not a cure-all for the nationwide problem of kids' increasing girths, West Virginia public schools are cleverly harnessing the power of video games.

Since their inception, video games have been loved by kids and reviled by an older generation that regards them as a waste of time. But as those video-game loving kids grow up and move into positions of authority, they give video games a new credibility, posing them as having a positive impact on health instead of being a detriment to it. Placing DDR in schools uses what kids already enjoy to improve their fitness.

The craze has caught on like wild fire — hundreds of schools in 10 states have weaved DDR into their physical education programs. As one might expect, the feedback from West Virginia's students and teachers has been positive.

"The only negative thing is we're not able to provide it quick enough," Murphy said. "We get calls every day, 'When do we get it?'" GT

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Parking Possibilities

New York City's high-tech garage could breathe new life into the U.S. automated parking industry.

Synopsis: New York City welcomes the third fully automated garage to be built in the United States, signaling a shift in the industry.

Jurisdictions: Hoboken, N.J.; New York City; Washington, D.C.

Technologies: Automated garages.

Contact: Ari Milstein, director of planning, Automotion Parking Systems, <arim@adgorg.com>.

BY JESSICA WEIDLING | CONTRIBUTING WRITER

February 2007 marked the third time in U.S. history that a fully automated garage opened its computerized doors to the paying public. New York City welcomed the garage as a complement to a retail and condo complex going up in Chinatown.

Several years ago, it seemed America was on the verge of a parking makeover with the first fully automated garages making big entrances in Hoboken, N.J., and Washington, D.C., and many others slated to open in urban locales.

But a spate of circumstances, including well publicized problems surrounding Hoboken's garage, stringent government building codes, reluctant developers and an uncertain public, among other barriers, kept the garages overseas.

However, the new garage, amid Manhattan's bustling Chinatown, may change how deals are struck between the developers, owners and governments who build these types of facilities.

"The problem with automated parking in the U.S. has been that most of the garages have been proposed on sort of a grand scale," said John Van Horn, founder, editor and publisher of *Parking Today* magazine. "The fact is that in Europe and Asia, most of the garages or automated garages are relatively small."

At 125 feet by 75 feet, the Chinatown structure qualifies as compact.

These new garages allow city developers and public officials to plan urban developments more effectively, said Ari Milstein, director of planning for Automotion Parking Systems, the designer of the garage.

Automotion is the U.S. subsidiary of Germany's Stolzer Parkhaus, which has 32 facilities in 11 countries.

Automotion-affiliated company American Development Group bought the Chinatown property in 2003 and charged Automotion, which offers high-tech parking solutions, with the design. MJS Garage Management was retained to run the garage.

Automotion's setup is ideal because its sister company developed the land and owns the site, Van Horn said, meaning it enjoys full access to the garage's software and can hire its own maintenance crew.

The 18,000-square-foot plot on narrow Baxter and Hester streets was once home to a 100-car, surface parking lot. Now the same footprint accommodates 24 condominiums, ground floor retail and a 67-vehicle underground automated garage — only 33 fewer cars than the former parking facility.

Adoption Impediments

Automated garages take up less space, reduce pollution — since cars don't circle around the garage — and can be built without fire exits, pedestrian elevators, lighting, ventilation or ramps. Theft and other damages that often plague conventional garages are diminished because there's no human interaction with the vehicles.

Even with these incentives, private developers and municipalities in the United States hesitated to embrace automated garages, though their European and Asian counterparts have been using automated garages successfully for decades.

One reason for widespread overseas adoption is that heavily populated cities in foreign countries have long been affected by land-use problems.

"Europe and Japan have more constrained land uses, by and large. I think they confronted demand management strategies and congestion management strategies earlier than the United States did because they had the need for it," said Susan Shaheen, Policy and Behavioral Research program leader for California's Partners for Advanced Transit and Highways, at the University of California, Berkeley.

Stateside adoption of the automated garages was slowed in part because of rigid U.S. building codes, which differ by region, and builders and architects attached to the old way of doing things.

"They are completely uncomfortable in most jurisdictions with applying conventional garages' building codes to this type of system because of its automated nature," said Dale Denda, director of research at PMRC, a parking research company, explaining that local governments don't know whether to classify automated garages as warehouse systems, conventional garages or neither.

But Denda said there is hope for change because building codes have migrated over the years to accommodate new technologies.

New York City, known for its strict building codes, had little difficulty approving the Chinatown project, Milstein said.

The United States has also been notorious for missing the boat on new technology and implementing the technology only after years of trial overseas.

"All of it is delayed because U.S. culture is a little more stubborn when it comes to adopting new technology," Milstein said, adding that the problem of growing metropolitan areas combined with expensive land makes developers and governments increasingly desperate for parking solutions, and could offer an opening for automated garages.

IMAGE COURTESY OF ROBOTIC PARKING INC.

The first fully automated garage built in the United States sits in Hoboken, N.J., and holds a maximum of 314 cars. The facility has dropped a Cadillac DeVille six stories and a Jeep four stories, and is in the midst of a lawsuit regarding property rights.

Picking up Speed

The genesis of automated parking, Milstein said, is automated warehousing systems, which have enjoyed widespread use in U.S. industrial settings for years.

Sensors, elevator-like mechanical components and software constitute the garage's inner workings. Though the process is entirely automated, an onsite employee answers questions and handles problems.

In the garage, a fixed pallet hauls vehicles vertically and horizontally. Upon retrieval, the software finds the car, rotates it outbound and returns it within an estimated two minutes. Mechanical redundancies ensure that the garage can resume its normal functioning during software glitches.

To dispel the garage's mystique, drivers can watch the handling of their vehicles on a closed-circuit television outside the garage. Denda said the technology was first used to shuffle cars in the 1950s when noncomputerized automated garages were used abroad, and in U.S. cities like New York and St. Louis.

Fully automated garages like the one in Chinatown were first designed in Europe 20 years ago, he said.

The second automated garage in the United States was built shortly after the Hoboken garage and operates in Washington, D.C., serving the residents of a high-rise, luxury condominium. The garage parks 74 cars and was designed by Spacesaver Parking Company.

Van Horn said the Washington, D.C., and Chinatown garages are ideal uses of the technology because they don't demand a big slice of city space — they take up approximately half the room a conventional garage would.

"The cost of the equipment is almost meaningless to the additional value added to the project — of gaining back acres of land," Milstein said.

Though automated garages can cost twice as much as conventional garages, comparing the two is like comparing an all-wheel drive truck to a sleek sports car — they serve the same purpose but are valued in different settings. Van Horn said automated garages aren't meant to replace concrete, open space garages. Instead, they are meant for close-quarter urban environments or infill construction.

On average, Denda said, a conventional garage holds approximately 800 cars whereas an automated garage holds fewer than 200 cars.

Hoboken Anomaly

In October 2002, the first fully automated garage was built in the United States, and it's been marred with difficulties ever since. Hoboken, N.J., owns the 314-space above-ground parking facility. Robotic Parking Systems of Clearwater, Fla., originally operated the garage, which is similar to the Chinatown garage.

The facility, which cost millions more than expected, dropped a Cadillac DeVille six stories and a Jeep four stories, and has been plagued by a lack of clarity in agreements, intellectual property rights disputes and high-profile attacks launched from both sides. The ensuing lawsuit is pending a verdict in court. A *Government Technology* article (*Robot Garage Hijacks Cars*, November 2006) chronicled the garage's troubles and stakeholders' arguments.

But the consensus is that the Hoboken experience is situation specific and was influenced less by the technology and more by the difficult process of accepting new technology.

Though the Hoboken garage spawned automated parking skeptics, impeding growth, the industry is now on the upswing, Van Horn said.

Denda said automated parking could still work for future publicly owned projects, explaining that contentions between municipalities and private industry crop up in many projects, especially when the territory is uncharted, or when new technology is first established.

"It happens every day in one sense. Get a private entity and a public entity, they cut a deal and their goals aren't met," Denda said, noting that even conventional garages faced hurdles when they were first constructed.

For now, the Automotion setup seems to be working because the company has teamed with the same developer for more New York projects and is set to break ground this year and next, building another garage in Manhattan, and three in Brooklyn. All will be mixed-use and the largest facility, to be built in Brighton Beach, will house 132 cars.

"If you've got a car, and you live in an urban area, and you can't build up, and you can't build out, eventually you have to do something about how you park that car," said Jeff Faria, a spokesman for Robotic. "So eventually this just happens."

Faria said he's hopeful that automated parking will catch on in the United States. After all, he said, if New York, which peers across the river at Hoboken, has shaken off the garage's negative image, so can everybody else.

Robotic plans to move forward with several projects — the majority of which will be abroad. On the company's agenda is a facility for the ultra-modern Emirates Financial Towers in Dubai, United Arab Emirates, another garage in Saudi Arabia and a 229-car garage for a beach resort in Hollywood, Fla. GT

product news

Serene View

The **Toshiba** TLP-XC2500AU projector offers XGA (1024 x 768) resolution with 2500 ANSI lumens of brightness. Weighing 8.8 pounds, it has three video inputs (one D-sub 15-pin port, one S-Video port and one RCA jack); three audio inputs (one stereo mini-jack and two RCA jacks); automatic keystone correction (vertical +/- 30 degrees); HDTV/DTV compatibility; and has a noise level of 36 decibels (31 decibels in low mode). **<www.toshiba.com>**

Phased In

The **Xerox** Phaser 3200MFP black-and-white multifunction printer prints/copies up to 24 pages per minute. It has 1200 dpi resolution and includes 64 MB of memory and a 300 MHz processor. The unit has 4 MB of fax memory and a monthly duty cycle of 10,000 prints. Scans can be made in black and white or in color at up to 4800 dpi. **<www.xerox.com>**

Against the Elements

The **Datalux** rugged 10.4-inch XG10 LCD monitor features a compact, all-metal enclosure and a sealed display that prevents penetration of dust or other contaminants. The high-bright monitor is extremely readable in daylight and offers an optional serial (RS-232) or USB (USB 2.0) touchscreen interface. With the USB touchscreen interface, the monitor provides a local USB 2.0 port with integrated audio and the ability to connect an additional device, such as a keyboard. **<www.datalux.com>**

Tough Widescreen

Augmentix announced its XTG 630 rugged notebook with 14.1-inch widescreen. It includes Intel Dual Core processor with up to 2.4 GHz processor speeds, 800 MHz FSB, 4 MB L2 cache, and GMA X3100 graphics. The notebook also contains 512 MB, 4 GB DDR2 memory, and an 80 GB rugged, SATA shock-mounted, user-removable hard drive. The device includes integrated Wi-Fi 802.11a/g/n, Bluetooth Class 2 and GPS connectivity. **<www.augmentix.com>**

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CONTINUED FROM PAGE 16

Faulty Findings?

I strongly disagree with your editorial [*The Sacrifice at Home*, August 2007] on several counts, as well as with Mr. McKay's analysis [*Vanishing Act*, August 2007].

First, your opinion of the war and how it has been run should be kept to yourself since it's your opinion. There are many people who read the government news who believe the war is [a] right and just cause, even though I may agree the political, desk-bound generals and Pentagon personnel have truly screwed up the tactics after the initial victory over conventional troops.

This is due to no longer having down-to-earth, fighting generals like Omar Bradley and Patton. It is a syndrome of the present upper echelon to think in terms of big wars instead of down-and-dirty wars, as we are in now, who fail to listen to their own personnel who are experts in fighting this kind of conflict — their egos and political nature got in the way.

The new general in charge — who wrote the book on counter insurgency — is finally in charge. He is moving the troops in the right direction. I do not feel fighting the enemy in their land is a waste of taxpayers' money; unless you wish to fight them eventually in the U.S.

Second, federal grants have been around for ages. States and counties and local agencies should start their own programs, hire their personnel and then ask for federal assistance in obtaining highly expensive equipment to initiate a program that they are capable of supporting locally.

Otherwise, when federal money runs out due to inevitable cutbacks in the government, the agencies drop the program and use the hard equipment for other things than its original purpose. The brass will transfer officers to the patrol or other divisions who are short of personnel or lay off officers since their budget inflated by federal grants has now been reduced to a figure which cannot sustain the extra personnel unless they raise taxes which is never approved by the locals.

Federal grants are temporary — not permanent. If you want a permanent government dole then all police agencies should come under federal control, and all officers be made federal law enforcement officers with one set of policies and procedures etc., and with the power to enforce all federal, state, county and local laws anywhere in the country. This was suggested when grants first started being popular. It made sense financially, *but* state, county and local officials screamed since they would no longer have the power to dictate to the state police, sheriffs or chiefs of police.

The hue and cry was "violation of states' rights."

All local governments have the responsibility to establish and maintain police departments. If they cannot, then they must have state troopers or county sheriffs patrol the area. Ultimately it is the taxpayer who must bear the burden if they want local control.

Crime reduction has never relied on the federal money pumped into agencies. It may help for awhile to put extra bodies on the street, but it is good, hard, aggressive police work that reduces crime. The community also must work in consort with their local agencies, not remain silent when information is needed to apprehend the criminal element including narcotic pushers and dealers.

Community programs started on federal assistance must be able to continue with local funds after the initial seed money from the federal government runs out. If not, then the program should never be started.

Each agency must appropriate the funds needed through taxes to build an agency capable of dealing with local crime. It is not the federal government's job.

If Mr. McKay is referring to a federal government mandated program, which calls on local agencies to enforce federal laws, then money from the DHS to initiate and sustain the program as long as required is appropriate.

States, counties and local agencies are supposed to fend for themselves through local taxes. The federal government takes care of foreign and domestic issues that concern federal law — unless you and Mr. McKay want a permanent federal law enforcement agency responsible to the federal government only, not local politicians.

The average police officer does not object to the concept of a federal police department — one department; one set of policies and rules; pension, uniform and equipment issue (which saves money), etc.

Liberals object to the concept since they are afraid of a national police force. Local politicians object since they would lose control over their private army, unable to dictate what they will or will not do.

You cannot have your cake and eat it too.

I will say it again: Federal money is generally used to sustain an army and enforce federal law; not sustain a state's efforts to fight crime. It should be used for seed money only, never to continue local agencies' programs to fight crime unless it involves federal law (e.g., narcotics movements across state lines).

I like the government news to report, inform, give pros and cons on issues, equipment, [and] programs and let the reader decide. But please leave individual ideas and opinions to yourselves.

JOHN MACKAY STILLMAN

Raise Your Voice

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

BY PAUL W. TAYLOR
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Awarelessness

Everything we know about cyber-security we learned on YouTube.

Not exactly, but a video contest for college students tapped the current YouTube zeitgeist in an attempt to move the needle in the long, hard slog that is cyber-security awareness.

A pair of videos took top honors in the "30 Second Public Service Announcement" genre of the 2007 Computer Security Awareness Video Contest, conducted by the EDUCAUSE/Internet2 Computer and Network Security Task Force, the National Cyber Security Alliance and the ResearchChannel.

The silver award recognized a subtly sardonic PSA, *Whoa, That's Awkward,* by a Dartmouth College student featuring a hapless library patron whose laptop is overtaken by an endless sequence of embarrassing malware ads. The gold went to a more serious and stylized University of Delaware student entry called *Avoid Infection*. The video played on the metaphor of organic infections in a manner reminiscent of the ominous black-and-white films schools once played in health class.

The videos are on message with the allied but officially unrelated National Cyber Security Awareness month — turning on firewalls, turning off computers when not in use and keeping anti-viral software updated in between. The videos may be the bright light in the fourth annual month of cyber-security awareness.

For proof that such messages still have not penetrated organizations that should know better, look no further than a July 2007 memo to federal government agencies from the Office of Management and Budget called the *Top Ten Risks Impeding the Adequate Protection of Government Information*.

In it, E-Government and Information Technology Administrator Karen Evans itemizes common mistakes, including inadequate IT controls. The first in the list encapsulates the other nine in a single, simple sentence — "Security and privacy training is inadequate and poorly aligned" — which brings us back to national awareness month.

Awareness campaigns have a certain truthfulness to them, insofar as they project what we wish were true despite what appears to be a purposeful ignorance, or as *The Colbert Report's* The Wørd might conjure it: "awarelessness."

If awareness were going to work, it would have worked by now. It's just a hunch, but the people and organizations refreshing their cyber-security initiatives this month are likely the same ones that made a point of reviewing their readiness contingencies during National Preparedness Month in September.

> Awareness campaigns have a certain truthfulness to them, insofar as they project what we **wish were true** despite what appears to be a **purposeful ignorance** …

Volunteer efforts only get so far. Absent incentives for good behavior or sanctions against bad behavior, all the safe computing messages in the world will be lost on people who prefer the freedom of computing naked.

Our collective "awarelessness" suggests that we don't have four years of cyber-security awareness, we have one year of awareness four times. GT

LINKS TO THE WINNING AWARENESS VIDEOS ARE AVAILABLE AT <WWW.RESEARCHCHANNEL.ORG/SECURITYVIDEO2007/INDEX.ASPX>

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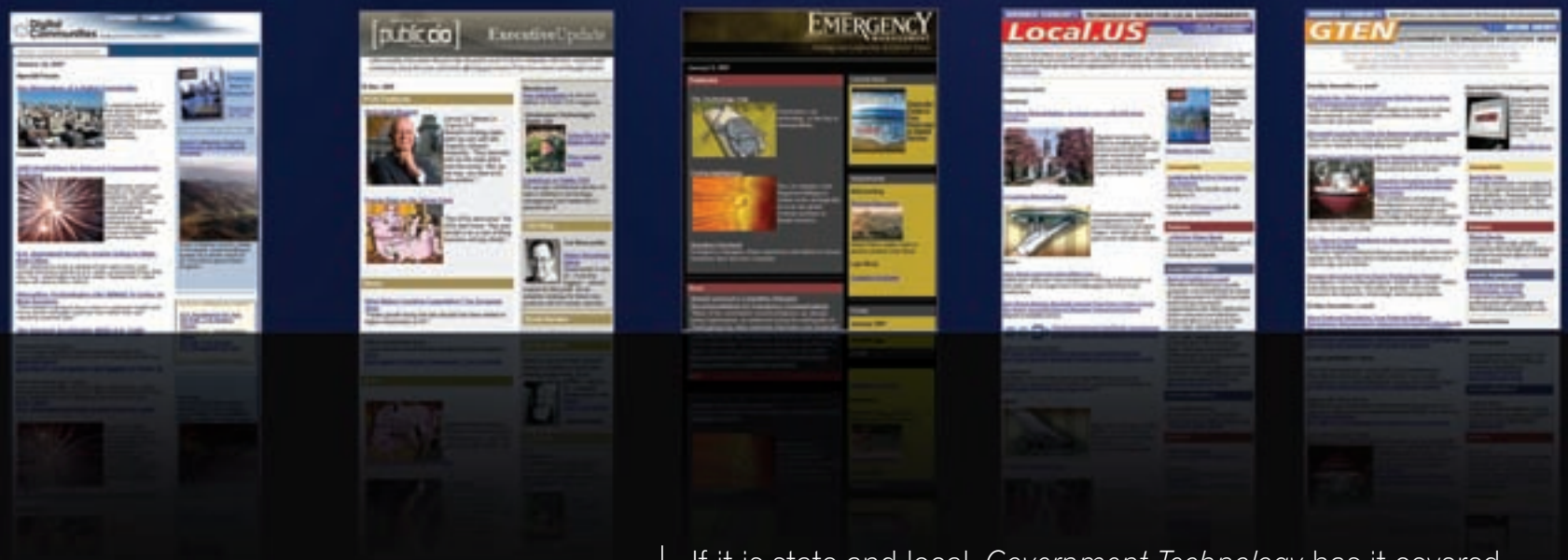

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