50% of surveyed legislators say their state has an inadequate number of cybersecurity personnel.

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Beyond “Kill It with Fire”
A new attitude is gaining ground as CIOs grapple with shadow IT.
By Eyragon Eidam

Change Broker
The job of the CIO needs to transform, but how much and how fast?
By David Raths

Staffing Up
How to get talent in the door, keep them engaged and soften the blow of the retirement wave.
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5 Must-Reads for CIOs (and the Rest of Us)

A CIO I once interviewed, when asked the “what do you know now that you wish you knew then” question, relayed that a critically important component of his workday is the early morning hours when he sets aside some uninterrupted time for critical thinking. What a simple yet profound idea, and an important reminder, to dedicate some energy and time to considering and developing plans to take on the inevitable challenges that come our way. With so many forces jockeying to distract us, the advice seems particularly sage.

At the NASCIO Midyear Conference this past April, we asked CIOs for books that have made an impact on them as they lead their respective IT organizations. Clearly they’re finding some time for quiet reflection and inspiration. Here are some of their recommendations:

Good to Great: Why Some Companies Make the Leap and Others Don’t

Many CIOs mentioned this best-selling book by Jim Collins (not the CIO of Delaware, although it’s on his list too) on top-performing companies as influential in their approaches to leadership. Ohio CIO Stu Davis, for one, appreciated the lessons on advancing good policy whether or not your name is on it. “Don’t be so worried about credit,” he said. “Get it done and bask in the fact that it was completed. Who cares who gets credit? If it’s the right thing to do, just do it.”

The Wolf in CIO’s Clothing: A Machiavellian Strategy for Successful IT Leadership

This title from Gartner analyst Tina Nunno was also popular among state tech leaders. Offering a Machiavellian take on the role of the CIO, many found it a helpful guide to successfully navigating various conflicts common to the job.

The Science of Success: How Market-Based Management Built the World’s Largest Private Company

Kansas Chief IT Officer Phil Wittmer spent four years working for Koch Industries in Wichita, Kan., and calls this book by CEO Charles Koch very influential for him. “As it pertains to IT, he was talking about running IT like a business before it was fashionable,” Wittmer said.

The CIO Edge: Seven Leadership Skills You Need to Drive Results

This book from Graham Waller, Karen Rubenstrunk and George Hallenbeck resonated for Indiana CIO Dewand Neely, particularly for its emphasis on CIOs seeing the big picture beyond technology. “In state government, a CIO is really just an agency head,” said Neely. “The only way you really get things done in the state is influence; you’ve got to be able to speak to the business and persuade folks if you want to move the big machine that is state government.”

Team of Rivals: The Political Genius of Abraham Lincoln

Many biographies were mentioned as holding valuable lessons for the CIOs we spoke with, but this title from Doris Kearns Goodwin about Abraham Lincoln spoke to Mississippi CIO Craig Orgeron for its takeaways on the benefits of building a team with a diversity of thoughts and experiences. While a natural tendency might be to surround yourself with like-minded people, the opposite approach could create the churn that leads to success. “Maybe there’s a little bit of ... not rivalry but a little bit of creative tension there,” Orgeron said. “That may be the kind of team that you really want.”

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WHO SAYS?

“It’s critical that we build a core competency around automation, so the idea of a chief artificial intelligence officer is to do just that.”

SAP thinks it is bringing something to small and mid-sized local governments that most of them don’t have good options for: cloud-based enterprise resource planning (ERP) software. The company has retooled one of its existing products, the commercially focused Business ByDesign ERP, to meet government’s functionality and reporting needs, according to SAP’s Elizabeth McGowan. And it’s specifically shooting for the cities and counties that don’t have huge budgets or workforces — in fact, the company is looking at governments with fewer than 1,500 employees.

Four governments will take a large step this summer toward digitizing residents’ primary form of identification: They will begin piloting a digital driver’s license with hundreds of employees and family members. The smartphone-based tests in Colorado, Idaho, Maryland and Washington, D.C., are part of a collaboration with Amsterdam-based digital security company Gemalto that will last around three months. When the pilot’s over, it’s expected that those hundreds of digital drivers’ licenses — which will live in encrypted form on test subjects’ cell-phones, downloaded through an app created for this purpose — will cease to be active. But like pilot participants, officials are excited about an event some said could be a watershed moment and speed up an epic shift in technology already underway.

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The amount that three New York City BigApps Competition grand prize winners received (in addition to other benefits like admission to the Civic Accelerator).

out of 19 CIOs are investigating blockchains in state government through informal discussions, according to a NASCIO report.

states and territories are in compliance with the Real ID Act of 2005, which changed security, authentication and issuance standards for drivers’ licenses and identity documents.

$15K

The amount that three New York City BigApps Competition grand prize winners received (in addition to other benefits like admission to the Civic Accelerator).

12

out of 19 CIOs are investigating blockchains in state government through informal discussions, according to a NASCIO report.

16%

of mayors surveyed by the National League of Cities said data and tech is a top-level issue for them in 2017.

26

of states and territories are in compliance with the Real ID Act of 2005, which changed security, authentication and issuance standards for drivers’ licenses and identity documents.

Networking²

Louisville, Ky., has launched a new public workspace — one that combines free loaner laptops and a fiber Internet connection with modern design aesthetics, the sort more closely associated with trendy coffee shops than government facilities. A central aim of this space, dubbed the PNC Gigabit Experience Center, is to help foster entrepreneurial partnerships and economic growth in a section of the city facing significant obstacles. “What we’ve discovered is that the west end of Louisville really is a network connectivity desert,” said Grace Simrall, the city’s chief of civic innovation.

Biz Beat

SAP thinks it is bringing something to small and mid-sized local governments that most of them don’t have good options for: cloud-based enterprise resource planning (ERP) software. The company has retooled one of its existing products, the commercially focused Business ByDesign ERP, to meet government’s functionality and reporting needs, according to SAP’s Elizabeth McGowan. And it’s specifically shooting for the cities and counties that don’t have huge budgets or workforces — in fact, the company is looking at governments with fewer than 1,500 employees.

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Envisioned as a way to provide super-fast, affordable transportation, the hyperloop took a step forward as Europe’s first full-scale testing center was unveiled June 1 at Holland’s Delft University of Technology. Elon Musk’s idea involves passengers riding in pod-like vehicles through a vacuum tube faster than the speed of airplanes. Hardt, the company leading the charge in Holland, was formed by a group of winners from Musk’s competition earlier this year to build working pod prototypes, and its latest construction is a nearly 100-foot-long facility to test the technology. The goal is to begin work on a hyperloop route between two cities by 2021. The concept has been touted for years as an alternative to air travel, especially in places like California, where 3.65 million people fly annually between Los Angeles and San Francisco. The hour-and-a-half flight would become a 35-minute ride at speeds topping 700 mph — if the vision becomes reality.

Buckle Up

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Create Lasting Change
Productive civic tech competitions share six traits.

When people think of hackathons, they likely imagine a dimly lit room full of young coders armed with energy drinks and high-powered laptops frantically writing lines of code. However, government hackathons and tech competitions, when done right, require much more than putting a bunch of developers in a room and letting them go to work.

When I was deputy mayor of New York City, I attended the NYC BigApps competition, an annual civic innovation challenge that invites developers, designers, academics and others to design solutions that benefit the city. The contest’s early years produced energy, excitement and some interesting, but not frequently transformative apps. Based on this experience, I have six suggestions for rolling out an engaging and productive civic tech competition.

**Define a clear focus area that meets citizens’ needs.** At the first BigApps competition in 2009, NYC released data and told developers to run with it, giving little direction. The result was some neat tools, but few products that benefit residents long term.

In 2016, BigApps co-creators the New York City Economic Development Corp. and tech nonprofit Civic Hall Labs reframe the competition, reaching out to corporate and community partners to define a set of challenge areas to address the problems that residents wanted fixed. “We wanted New Yorkers to have their voices heard in a way they hadn’t been before,” said Elizabeth Stewart, founding executive director of Civic Hall Labs. The result was community-wide engagement with more than 30 partner organizations and 500 New Yorkers, and an emphasis on design thinking and usability testing throughout the competition.

**Engage with the civic tech community to attract talent.** Bringing talented innovators to a hackathon requires using your city’s existing tech network and creating new connections by reaching out to civic tech groups, visiting meetups and posting on popular forums like Hacker News or Reddit. Advertising your hackathon on college events pages or posting flyers around campuses can also boost your talent pool.

**Make sure your participants aren’t all coders.** It’s important to involve non-coders, especially stakeholders, to ensure that products address civic priorities and are accessible to less tech-savvy residents. Collaboration between developers and stakeholders also promotes understanding between builders and users of tools for government, improving opportunities for future co-production.

**Make the resulting products open sources.** By making code, development processes or results public, participants let other cities replicate their products. As a part of its Analyze Boston Open Data Challenge, the city required creators to share their products to increase their reach.

**Support apps after the competition.** In many cases, participants in these competitions lack the funding, business-savvy and community connections to cultivate a lasting audience on their own. A lack of support was a major flaw in early iterations of the BigApps competition, which saw many winning products sputter shortly after the contest.

This year, BigApps sought to provide more support for participants in order to create lasting products. In addition to a monetary prize, BigApps offers winners admission to a six-month, part-time accelerator program at Civic Hall Labs as well as business and legal support. “The accelerator will help winners establish a proof of concept and explore viable business models to attract seed capital down the road,” Stewart said.

**Use them as a recruiting tool.** Hackathons are useful for producing solutions to civic problems and also can show talented individuals that your city provides an innovative work environment. Tech competitions signal creative work practices, show off tech-savvy offices and highlight important work done in the civic tech space.

When designed with such considerations, competitions can produce lasting tools to improve residents’ lives in many cities. Organizers should look to cities like New York that have experienced the growing pains of starting a civic tech competition and learn from their mistakes and successes.

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Chris Bouquet, a research assistant/writer at the Ash Center for Democratic Governance and Innovation at the Harvard Kennedy School, contributed to this column.
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1. How has San Leandro benefited from the fiber partnership with OSIsoft? In that agreement, the city of San Leandro received between 30 and 72 strands of fiber. Five years ago, nobody was really thinking smart cities and data. Today, we’re looking at this thinking, “Oh my goodness, we should be doing something that can benefit our citizens and our businesses.” We have a construction project right now.

Deborah Acosta
Chief Innovation Officer, San Leandro, Calif.

You could call Deborah Acosta a pioneering chief innovation officer. She assumed the role in the Bay Area city of San Leandro in early 2013 when the title was something of a revelation in government. The formerly industrial city lost much of its economic engine when jobs went overseas in the 1980s, so the city vowed to attract technology businesses and hired Acosta to lead the effort. One local entrepreneur wanted to transition his utility software company to the cloud, and partnered with the city to leverage the fiber-optic infrastructure San Leandro used to manage its traffic systems. OSIsoft pulled nearly 300 strands of fiber from the conduit, creating Lit San Leandro, a project that now connects more than 250 local businesses. It’s just the kind of unique partnership that typifies Acosta’s view of innovation. For her, it’s about creating a “tech and innovation ecosystem.”

2. How has that project helped San Leandro on its smart city journey? Once a city is able to taste what can happen with a smart city project like that, they’re like, “What else could we do?” So we’re actually in the process of interviewing several companies to help us form a fiber-optic master plan, aka a smart city strategy. What should we be doing with our fiber assets? We suspect it might have something to do with our light poles. … What should we be doing with our poles that will help our community move into the era of environmental health, of self-driving cars, of better living in cities? We’re on that journey right now to figure out what we can do with that.

3. San Leandro is involved in San Francisco’s Startup in Residence (STIR) program. How does working with startups compare to engaging with legacy tech vendors? There’s a huge difference working with legacy companies and startups. Most cities will feel much more comfortable working with legacy companies because they can provide all of the guarantees, the insurance that’s required, which in a city’s view helps to mitigate the risk. In my experience over 20 years in government, that also means that the city must fit its round peg into the square hole. I’ve seen it happen time and time again: You must conform your needs to the product or service being offered. It’s really different with a startup. They want to create a successful project that they can scale across a number of communities, so they want to make you really happy. They listen to you. They work with you to make sure that the product that they are offering and tailoring on is actually what you’re looking for.

4. As one of the country’s first innovation officers, describe how innovation happens in San Leandro. The innovation internal to the city began to happen after people started to see the excitement that was happening on the outside. The STIR program really brought it home, that innovation is something that belongs to every department, to everybody. The next step is definitely going to be to codify what innovation means throughout the city, and I think we’re finally in a place to do that.

— Noelle Knell, Editor
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BY DAVID RATHS

THE JOB OF THE CIO NEEDS TO TRANSFORM, BUT HOW MUCH AND HOW FAST?
like the leader of an itinerant rock band, Doug Robinson has been traveling the country on what he calls his “Forces of Change” tour. “I don’t have a T-shirt or backup band,” said the executive director of the National Association of State Chief Information Officers (NASCIO), “but disruptive change has been the theme of all my presentations.”

Public-sector CIOs are grappling with a wide range of forces outside their control that are re- shaping how IT interacts with the government agencies they serve and the public. One of the most disruptive changes Robinson sees is a business model shift from an owner/operator model to a hybrid world of shared services, declining mainframe utilization, and the move to cloud services, both public and private. That means the CIO position is morphing from pure technology delivery to a business leader of IT focused on vendor management and enterprise architecture. “Their job is shifting from building things to identifying the best software as a service or commercial service out there and configuring those,” Robinson said. “It is not a reduction in the relevancy of central IT, but rather a natural shift reflective of the marketplace.”

As CIOs come to grips with how their roles are changing, they reach for different metaphors to describe their new responsibilities. Some say it is like being the conductor of an orchestra, others like an air traffic controller. Craig Orgeron, executive director of the Mississippi Department of IT Services, sees himself as pivoting to become more of a broker of solutions. “I think of it as technology as a service,” he said. “It is fundamentally changing the way we do business.”

CIOs used to focus on aggregating demand from agencies to drive prices down. But with cloud services, that value proposition has moved, and it changes the dialog. “You can’t say anymore that if we get a lot of volume, it might drop the price down,” explained Orgeron. “In reality, an individual agency may be able to go to an Amazon or Azure and get the same deal as the state CIO with the entire state in tow. That is the key to talking about this pivot. I have to have a different value proposition. So here is the question: If volume and unit price aren’t key anymore, what is?”

Anne Roest, commissioner of the New York City Department of Information Technology and Telecommunications (DoITT), believes that internal customer expectations are a disruptive force she has to respond to. The ubiquity of the cloud and mobile technologies means that customers expect technology to be easy to use, fast and inexpensive. Government has lost its tolerance for multi-year, high-cost projects, Roest said. “You can no longer tell someone that a software project is going to cost $100 million and take five years,” she explained. “We have started to reorganize DoITT to focus on what I would call higher-value services: consulting and integration as opposed to building a server or setting up a network. There are now services out there that can provide those things — they are commoditized.”

Her team has created a new enterprise architecture and solutions group. “Their job is to figure out exactly what the customer is asking for and find a way to get that for the customer, whether it is a service we provide or an infrastructure we host or a cloud service or something another agency has. It is no longer about owning or building it. In fact, we are seeing that is generally not the answer as we start down this path.”

Teri Takai, senior adviser at the Center for Digital Government (which is part of e.Republic, Government Technology’s parent company), said that for many years CIOs have had to decide what they should do in-house versus what should be outsourced to vendor partners. That part is not new, said Takai, who has served as CIO in Michigan, California and the U.S. Department of Defense. “The challenge CIOs are facing today is how to make those decisions in a thoughtful and measured way and to
recognize that for a period of time, they are going to be running in a hybrid environment, which then brings cybersecurity to the forefront, in terms of how you are going to protect data in that hybrid environment.

The shift from provisioning technology to becoming a broker of a much broader array of solutions requires a different skill set from the CIO and from the IT staff who work for them. “We need to take a two-pronged approach to get the organization ready to be the kind of service provider we want it to be,” Roest said. “I need people who are architecturally smart and who know the technology landscape outside of my agency, like what services Amazon and Google provide.”

Second, there has to be a change in how IT team members communicate with customers, she said. “Customer service and creativity are not something you generally look for when you build out infrastructure support organizations. So those two shifts – a cultural change in how we view our customers and the technology skills mix – are things that have to be done at the same time, or this won’t work.”

To find people with those new kinds of skill sets, CIOs must adjust their hiring to what their organizations and what skill sets they need in their organization. You need to find people who can blend business and technology skills. “You need data analytics skills within your organization. Not only are those people hard to come by, but they are expensive and hard to justify,” Roest said.

So has the reorganization she has begun changed what Roest spends her time on day to day as CIO? “Absolutely,” she said. “I am doing a lot more organizational change management than I used to do. I spend a lot of time thinking about organizational capacity, training plans, and a lot less time managing infrastructure. I spend time thinking about how we implement a vendor management plan.

My job has become much more about change and much less about stability.”

CIOs are also under pressure to up their games in the realm of governance, data quality and analytics. You can see that increased focus reflected in detailed IT strategic plans, Robinson noted. “Data as a strategic asset was not previously mentioned in the CIO’s plan because they were focused on networks and infrastructure, maybe architecture to a degree, but we are seeing more of them focusing on data now.”

Missouri Acting Chief Information Officer Richard Kliethermes agreed that the shift from provisioning technology to becoming a broker of technology to becoming a broker of technology is eliminating unnecessary silos, he said. “We are trying to use technology and data governance so that if a significant change is made to an entity, all the programs regulating it would know,” Kliethermes said.

Part of that is helping the agency understand committee structures, and data steward roles and responsibilities. “You have to have a solid governance structure,” he added, “or it all falls apart.”

Making the job transformation more complex is the fact that CIOs are learning how to collaborate with myriad new “chief” titles related to information technology – chief information security officers, chief technology officers, chief data officers and chief innovation officers, some of whom report directly to a governor or mayor. “One person might have a different role and responsibilities,” Kliethermes noted. “The growth in these titles is in response to the increasing digitization of society and business, said Rick Howard, a research vice president at Gartner, where he focuses on public-sector IT solutions, management practices and technology trends. “CIOs have moved to unlock business value with an understanding of analytics, of making their organization more citizen-centric. Someone like a chief technology officer is often in charge.”

Howard said. Sometimes, however, the roles and responsibilities are fuzzy. “You just have to get clarity on where the duties overlap and where they are distinct and have different mandates. Who is going to take the fall when a huge data breach happens? It depends.
If your open data program has unwittingly not redacted some sensitive information, the chief data officer would. But if somebody has hacked into your servers at the state-owned data centers, then the chances are it will be the state CIO.”

During Tony Encinias’ tenure as CIO of Pennsylvania, the governor created an innovation office and a chief innovation officer who reported directly to the governor. “I had a good relationship with him. He would come to my office and ask about ideas he heard from agency-level people that touched on IT, and I would support him in any way I could,” recalled Encinias, who is now vice president of public-sector strategy for cloud solution provider ViON. “The metaphor I use is that the CIO has to be the conductor of an orchestra when it comes to the chief data officer, chief innovation officer, chief information security officer and chief privacy officer. The CIO has to be the conductor because everyone has their own agenda, but at the foundational layer, they all depend on enterprise IT for their success.”

Three years ago, New York City appointed its first chief technology officer, a peer position to the CIO. The current CTO is Miguel Gamito, who came to New York from the CIO position in San Francisco in 2016 to develop a smart city and Internet of Things strategy. Roest said the relationship is working well because the administration made sure the roles are clear and it hires people who understand teamwork. “We CIOs need to learn to let go,” she said. “There is enough work for all of us.”

But there are pros and cons to these new jobs. It is not a bad idea to have someone like a chief innovation officer who has the ear of the front office, said Takai. “The problem is that those individuals tend to be shallow in their understanding of technology. They could make the CIO look bad by oversimplifying what could be done and that could create an adversarial relationship,” she said. CIOs should embrace the new person and try to form some kind of partnership. “But so far I have not seen that happen. I have seen these positions created almost deliberately to cause that conflict, and I think that is unfortunate because it is a missed opportunity to get the best of innovation coupled with the individual who has to make things happen.”

Adding to the challenges that public-sector CIOs face is the fact that the average tenure is less than three years. Gartner’s Howard said one problem is that budget cycles and election cycles are out of phase, so CIOs have very short windows of opportunity in the life cycle of an administration to come in with a mandate to initiate change that is important to the agenda. It becomes a question of timing and the ability of the CIO to deliver value in much shorter time cycles than they used to. Howard said: “The large [capital expenditure] projects that take three or four years to run and require legislative approval and oversight are becoming less and less the norm, and it is more about creating quick, six-month projects and agile development or modular acquisition of these services.” He noted: “Now your skill is how quickly you can come up with a solution that demonstrates some value to the elected or appointed officials and build that credibility to keep moving forward.”

On the other hand, IBM’s Decker said that trying to make quick changes without a solid foundation could be dangerous. “I worry sometimes that CIOs try to come in and make sweeping changes in a hurry, but the building blocks were not in place before they got there,” she explained. “There may be a crumbling underneath it, because they are gone before it can get implemented.”
State and local governments are no strangers to the cloud. In fact, data from the Center for Digital Government’s most recent Digital Cities and Counties Surveys found city and county leaders see a future where more than half of their IT resources are in the cloud. What agencies may be missing out on, however, are new opportunities to leverage the cloud to improve IT flexibility and responsiveness, while also reducing costs. In this Q&A, Aaron Erickson, director of Oracle North American Government Innovation, discusses how Oracle works with agencies to identify new possibilities for service delivery and drive better outcomes for constituents.

Aaron Erickson, Director, North American Government Innovation, Oracle

Q: How can Oracle help government agencies along their cloud transformation journeys?

Oracle is uniquely positioned to help our customers with cloud transformation. In many ways, we’ve helped our customers through similar transformations — from the mainframe to the rise of the internet, and now the cloud. It’s important to us to meet with our customers to understand their needs, discuss the opportunities for cloud adoption and achieve their desired outcomes. We then lay out the best path for them to enhance their cloud technology and achieve their goals.

Q: Does Oracle have the flexibility to help governments implement any type of cloud?

Yes. If you look at most of our customers and their entire portfolio, including all Oracle applications, a hybrid model is most common. Depending on the specific program, however, we have many customers using Oracle solutions to build private clouds, either internally or through partners. In addition, we now have more than 500 public sector customers using Oracle Public Cloud, and continue to expand our Government Cloud, which has the highest security standards.

Q: How does Oracle’s experience in creating the industry-standard database that everyone is familiar with play into its ability to offer cloud services and support?

Our government customers are already familiar with and have implemented our on-premises database, Java software and many of our other technologies, so the transition to the cloud is intuitive — all they experience are the additional benefits of a cloud solution. Even if an agency is using our new cloud services, we can help ensure a simple experience. For instance, we built Oracle Management Cloud to help agencies manage multiple environments, regardless of whether they are hosted in the cloud or on premises. When our customers choose Oracle, they know they are getting industry-leading solutions that are backed by our knowledge and experience.

Q: Can you provide an example of government success with Oracle Cloud?

Yes, we have numerous great stories. The San Francisco Fire Department is using Oracle Cloud to communicate with citizens to increase public safety. The state of Maine is modernizing health and human services with our cloud. We are also working with the U.S. Air Force and Texas to assist with their data center consolidation initiatives.

Q: What are some misconceptions about government agencies moving to the cloud?

I hear less and less about misconceptions related to the actual technology, security or adoption. I worry more about misconceptions or a lack of communication about expected outcomes. The driver for moving to cloud is not the same for everyone, and like any project, the business objective can get lost. I have always been a strong advocate for benchmarking, setting goals and transparently reporting results.
Fifty states don’t necessarily translate into 50 distinct IT organizational structures, but it could be close. While department names and reporting relationships involving technology vary quite a bit from state to state, research from the Center for Digital Government — part of e.Republic, Government Technology’s parent company — reveals that state governance models tend to fall into three buckets: centralized, decentralized (also referred to as federated) or hybrid. Here’s a look at the national landscape and details on how a handful of states are set up.

Washington

**Centralized**

Washington Technology Solutions (WaTech) was created through a 2015-2017 budget request and unified three technology agencies: the Office of the Chief Information Officer, Consolidated Technology Services and the enterprise applications division of the Department of Enterprise Services. WaTech delivers IT services to state agencies, develops policies and standards, manages IT projects, implements enterprise solutions, and sets technology and cybersecurity policy. CIO Michael Cockrill, who advises the governor on IT issues, took the lead on the creation of WaTech as a move toward consolidating state IT services.

Utah

**Centralized**

Utah operates on a relatively straightforward centralized IT model. The Department of Technology Services (DTS) is the central IT service provider for all state agencies, and serves as a systems integrator for new tech projects individual agencies take on. DTS is overseen by CIO Mike Hussey and includes the Division of Enterprise Technology and the Department of Integrated Technology. Chief Technology Officer Dave Fletcher is highly involved in work to keep Utah a forward thinker in terms of citizen engagement, identity and privacy as they increasingly interact with government online.
Illinois
Decentralized

While Illinois is currently decentralized, that is changing. In an effort to move toward a more centralized IT structure, the Illinois Department of Innovation and Technology (DoIT) was established in 2016, replacing the Bureau of Communication and Computer Services. DoIT is headed by CIO Hardik Bhatt, who reports directly to the governor. DoIT provides state agencies with IT services, implements enterprise solutions, and sets privacy and security standards for all. Bhatt works with nine other members of the C-suite, including Chief Technology Officer Mike Weru and Chief Information Security Officer Kirk Lonbom.

New York
Centralized

New York began the process of consolidation into the Office of Information Technology Services (ITS) in 2012, and the state still considers the effort a work in progress. ITS provides strategic direction, policy and centralized services to all state agencies. New York’s unique feature is its additional layer of “cluster CIOs” who oversee groups of agencies and report to the state CIO, Robert Samson, appointed in April.

Kentucky
Hybrid

Kentucky uses a hybrid method of statewide IT, which the Center for Digital Government defines as an organization in which most state agencies have their own IT department, but a central IT agency advises and oversees those individual departments. Kentucky’s consolidated IT is referred to as the Commonwealth Office of Technology (COT) and is overseen by the CIO, currently Jim Barnhart, who is serving in an acting capacity. COT comprises five divisions that provide infrastructure services including application development, storage, device support, enterprise servers, security services, telecom and IT advising. The hybrid aspect comes in the workflow process: Individual agencies create IT project descriptions and identify related business goals for capital projects prior to funding authorization. COT then reviews the project and reports quarterly to the Legislature’s Capital Planning Advisory Board.

Texas
Decentralized

The Department of Information Resources (DIR) is Texas’ governing technology body and operates state IT on a decentralized basis. Each state agency is required by law to have its own information resource manager (IRM) who oversees tech use, acquisition and policy compliance for that agency. DIR provides leadership and solutions for the IRMs, and is headed by Executive Director Stacey Naper. While the DIR’s executive director is traditionally also the state CIO, Naper named Todd Kimbriel the CIO in March 2016.
HOW TO GET TALENT IN THE DOOR, KEEP THEM ENGAGED AND SOFTEN THE BLOW OF THE RETIREMENT WAVE.

BY ADAM STONE
When it comes to workforce management, government technology professionals are getting squeezed on all sides. IT recruiting is famously difficult, with more than 200,000 unfilled jobs just in cybersecurity, according to a Stanford University Peninsula Press study. A survey by Indeed found that 86 percent of employers discover it challenging to hire technical professionals. Tech skills are in high demand, and government’s traditional allure — good benefits, a nice retirement package — don’t always stand up when private industry dangles a fat paycheck and access to cutting-edge technology.

Mid-careerists may be wooed by the private-sector paycheck too, and on the far end of the career trajectory, the so-called silver tsunami looms. Anywhere from 30 to 40 percent of state workers are eligible for retirement, according to the National Association of State Personnel Executives.

Nonetheless, many top IT leaders find cause for hope. They are developing creative recruitment strategies. They’re winning the loyalty of mid-career professionals and successfully tapping the institutional wisdom of those in the later stages of their careers. Here’s how some of the most successful champions are making IT workforce management happen.

RECRUITMENT

On the front end, cities and states are getting increasingly creative in their efforts to on-board new IT talent. For some, a new approach to recruiting starts with a deep dive into the positions themselves. “A lot of the job descriptions in the public sector are old. They reference technology that literally doesn’t exist anymore. It’s not like jobs in accounting, where the job is always the same as it was 15 years ago,” said Michael Coadley, CIO of White Plains, NY.

“I had to work with the personnel department to update those official job descriptions so they would reflect the skill sets we actually needed,” he said. “Then we also had to make sure the hiring exams have the appropriate questions to reflect those descriptions.”

At the state level, Louisiana’s Howze turns to academia for support. He’s partial to university job fairs, where government IT gets a chance to tell its story to a new cadre of potential recruits.

“The public sector has traditionally not done a good job of defining the benefits that come with working for state government,” he said. Many students don’t even have state work on their radar, “so we look at this as a venue where they can start to learn about us.”

For others, successful hiring requires even bolder steps. In Seattle, the consolidation of 15 technology offices into a single citywide IT department has been a boon to recruitment.

“We have an incredible amount of talent, but there were also an incredible amount of competition. We saw departments competing with each other for talent, which was not helping the city,” said CTO Michael Mattmueller. With a single IT organization, the city no longer trips over itself in the scramble to fill positions. The consolidation also has streamlined the workforce, eliminating the need for some duplicate positions.

Virginia Beach, Va., also took a structural approach, working with Gartner to develop a comprehensive Master Technology Plan that has had a big impact on recruiting. “Our findings and recommendations included the creation of the Workforce Team, which includes a workforce coordinator, workforce technician, and two HR/payroll account clerks,” said Susan Salafranca, the city’s IT department workforce manager. The team develops new IT job descriptions, aligning salaries to be competitive in the regional market, and ultimately reducing time to hire.

Social media helps too. Illinois CIO Hardik Bhath is constrained by union rules for much of his hiring, but when a non-union position does open up, he turns to his network of some 5,000 LinkedIn connections.

Susan Salafranca, IT department workforce manager, Virginia Beach, Va.

“It worries me daily,” said Louisiana CIO Dickie Howze — and so it should. For state and local IT executives, the workforce crunch presents a potential operational nightmare. Jobs sit vacant for months; mid-careerists may have to re-train in new areas or else you lose track of recruiting because you are so focused on retention,” he said.

“Thirty percent of the workforce will retire over the next three years, vacancies have run as high as 22 percent in the past,” Bertolini has taken a four-pronged approach to the challenge.

GO PRO: The county engaged a professional recruiting company. “We needed someone who could go national, someone who knew that space and could find the right people,” he said.

GET METRICS: A salary study found the county lagged private-sector IT employees by 30 percent, and so the county neonved the pay scale, adding as much as $450,000 annually to the budget. “That helped
followers. “We have made significant good hires through social media,” he said. “My CTO was hired that way; we have hired a bunch of CEOs across different agency clusters that way.”

RETENTION

For IT leaders, getting talent in the door is only half the battle. Mid-career technologists always have options available and many are enticed by the higher salaries and other advantages available in the private sector.

Ed Blayney recognizes the risk. He’s laying plans to launch an internal hackathon as a way to keep professionals engaged. “We want to identify the potential of people who are already in government,” said Blayney, innovation project manager at Louisville, Ky., Metro Government. “Maybe there is someone who enjoys working in government but who is feeling some inertia. If we can find them and get them engaged, they may be less likely to hop.”

Others seek to bolster retention through technological means. In Keene, N.H., for instance, officials use a talent management system from Halogen Software to give mid-career employees visibility into their career trajectories. Talent management systems can help managers and employees track performance appraisals, organize learning and development activities, illuminate succession plans and personalize career paths. “Employees can enter and log their activities, and supervisors can use it to track activity. It’s a little more robust than just keeping track of dates in an Excel spreadsheet,” said Assistant City Manager Elizabeth Fox. “We create goals and objectives, and this allows you to keep track of what you are doing and what you want to do.”

In the Michigan Department of Technology, Management and Budget, surveys play a key role in ensuring mid-careerists stay on track and satisfied. In a recently conducted employee engagement survey, the fourth since 2011, some 20 percent of employees identified training as a top priority. Among the 1,800-strong IT team this meant not just technical training, although that’s important, but also managerial training to help them further their careers.

To scratch that itch, department leader makes training an explicit priority. “People map out their goals at the beginning of the year. We map the technical proficiencies of that specific job and we put together a curriculum that will satisfy those requirements,” said James McFarlane, the department’s Agency Services director. This approach yields results: From 2013 to 2015, the number of employees who identify themselves as highly engaged and likely to stay increased by 7 percent.

This kind of effort is key to winning hearts and minds among up-and-coming IT professionals who may be tempted by the siren song of private industry. “If the salaries aren’t as high as in the private sector, then you need to continually find new and innovative ways to keep and attract talent,” McFarlane said. “You want to have an engaged workforce; you want to have people who are excited to come to work. Promoting professional development excites people.”

Many government IT leaders talk about selling the mission. You keep mid-career IT people engaged by reminding them about the tangible good that they do. Illinois CIO Bhatt is big on this. He tours IT wins in monthly meetings with agency CIOs. He hosts town halls and webcasts for the IT crew, and blogs ardently about tech achievements.

In addition to talking up success stories, he also uses these communications to promote all the ways in which state IT efforts stand on the technological cutting edge. “We are talking smart state, we are talking about blockchain, talking about mobility and predictive analytics,” Bhatt said. “This motivates people inside government to start stepping up.”

Still, some caution that selling employees on the latest-and-best technologies can be a double-edged sword. “That increases employee morale but it also cuts both ways,” Mattmiller said. “People gain incredible new skills and then they take those and go looking for new opportunities. So we want to give people access to this modern technology, and then show them there is a path to stay and use those new skills in the city.”

Consolidation of the city’s IT structure has helped Mattmiller make that case. With all tech jobs under one roof these days, it’s "Today, the city can put together a curriculum that will satisfy training needs.
ONE MORE TIME

In its efforts to extend the scope of its IT workforce, San Jose, Calif., has tapped into a sometimes overlooked source of skills. In October 2016 the city teamed up with Encore.org, an organization that brings retirees back to the workplace to share their unique expertise.

“The move has been a boon for a city looking to leverage the wisdom of the private sector to enhance IT operations,” said Chief Innovation Officer Shireen Santosham. “They help us to rebuid our IT infrastructure, to think about our service strategy. It’s also an engagement tool: By having these folks do a year in government, they then can go back into the community and talk about their experiences and hopefully inspire more folks to come back and work in government.”

A 28-year veteran of Intel, Sing-Man Yuan came to San Jose as an Encore fellow looking to address issues of digital innovation. He said his private-sector mindset helps to drive a more pragmatic approach among his public-sector peers.

“We see some of the low-hanging fruit, and I am the one who keeps pushing, who keeps saying we should start doing something. Even the small wins are important,” he said. “In the private sector, it is very clear: Making money is the bottom line. In the public sector, there is the mission, but the specific things are more negotiable. I think I bring a higher level of focus to the effort.”

STAFFING UP

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“Suppose we look at things like how to use dashboards to be more accountable,” said Khanh Russo, director of strategic partnerships and innovation for San Jose Mayor Sam Liccardo’s office. Private-sector retirees “understand product development and product management in a way that is very different from how government might approach this kind of effort. They know how to make it scalable and repeatable. User testing and surveys just come naturally.”

The program has attracted half a dozen former Silicon Valley executives, people whose deep expertise brings a new dimension to the government workforce.

“We have ex-executives from Cisco and Intel, people who bring a private-sector lens,” said Chief Innovation Officer Shireen Santosham. “They help us to rebuild our IT infrastructure, to think about our service strategy. It’s also an engagement tool: By having these folks do a year in government, they then can go back into the community and talk about their experiences and hopefully inspire more folks to come back and work in government.”

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“One quarter of the workforce eligible to retire, now we have supervisory positions and managerial positions that open up practically weekly. For so many people who get the big picture, they see opportunity after opportunity,” he said. “Mid-range employees can step up and take supervisory positions and managerial positions that open up practically weekly. There’s a feedback loop here. By preserving that institutional knowledge, management sets up mid-careerists to transition someone in, time to properly plan for the modernization of that product.”

At the same time, some are looking to capture that institutional knowledge pre-retirement, to codify and transfer the long-termers’ insights before they leave the workforce.

“Our IT department is in the process of building a knowledge base that details our systems and services. The knowledge base is a good place to capture how systems are configured and supported and aids in troubleshooting issues that arise by including incidents and their resolution,” Salafranca said.

In White Plains, Coakley takes a hands-on approach to this. As often as possible, he wants his mid-career people working side-by-side with his senior players.

“Some of the younger people have never seen some of that legacy technology, so it’s important for them to learn it from someone who understands it well,” he said. “It also helps to have the tacit knowledge that comes with having been there at the time the decisions were made. Knowing why things were done the way they were done represents an important dynamic.”

“There’s a feedback loop here. By preserving that institutional knowledge, management sets up mid-careerists to achieve success, and this in turn builds the kind of workplace that attracts new recruits. In this sense, IT workforce management is by necessity a holistic endeavor. Investments made at any point in the chain inevitably ripple backward and forward, boosting recruiting, driving retention and ensuring those at the end of their career can make the maximum contribution, thus fueling future cycles.”
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A new attitude is gaining ground as CIOs grapple with shadow IT.

By Eyragon Eidam
In recent years, especially as cloud has blossomed up over the tech landscape, IT professionals have started to talk realistically about the threat that is shadow IT. The name alone conjures images of clandestine activity in the dark recesses of otherwise secure networks. Scary name aside, unsanctioned applications and tech are widespread in government, threatening even the most security-conscious organizations.

And while some employees may be willfully trying to outmaneuver their agency’s policies, many more are probably unaware that by signing up for a seemingly harmless Web-based application, they are inadvertently opening the door to any number of nightmare scenarios — the type CIOs and chief information security officers (CISOs) lose sleep over.

A storage solution based out of an unfriendly country, the loss of intellectual property rights in a sketchy set of terms and conditions, or just generally weak applications and tech are widespread in networks. Scary name aside, unsanctioned shadow IT. The name alone conjures images of clandestine activity in the dark recesses of otherwise secure networks. Scary name aside, unsanctioned applications and tech are widespread in government, threatening even the most security-conscious organizations.

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The prevalence of cloud solutions across the public and private sectors has given rise to a vendor category called cloud access security brokers, or CASBs. Search online for any of these companies and the first thing you are likely to notice is buy-ups by much larger tech companies. Here are some of the other players permeating the government market.

**Information and Education on the Front Lines**

In the nation’s capital, Chief Technology Officer (CTO) Archana Vemulapalli takes a realistic and measured approach to dealing with the complicated issue of shadow IT. She isn’t eager to punish violators or point fingers at offending departments because, as she sees it, much of the unsanctioned tech within her jurisdiction arises not out of ignorance or spite for the foundational IT rules, but rather as the result of unmet business needs.

“The way I look at it, is, I don’t assume that anybody that has enrolled in any potential what you would call ‘shadow IT project’ has done it because they just want to be defiant or they want to go do something on their own. I think there is a true business need.”

She will openly admit that government moves slowly in some cases, but explains that it isn’t out of sloth. It’s due to the fact that new technologies need to be vetted before being plugged into the greater network. And the situation is further complicated by the diverse needs of government.

“Most companies have one business goal. The city has a dozen-plus business goals,” said Vemulapalli. “When you are that complex, there are a lot of moving parts. Some of this happens naturally as part of these moving parts.”

There is a certain measure of understanding required when looking at this issue, she added. What might not line up with policy could serve a very real business need that is not being met by the technologies at hand.

To fill in communications gaps and stay on top of pressing issues, the CTO and her technology counterparts meet monthly to outline new policies, departmental needs and the next steps in Washington, D.C.’s organizational evolution. She refers to the group as the jurisdiction’s “collective brain trust.”

“Anytime there is a policy change, we discuss the policy with everybody present so that they understand the impact to their business,” Vemulapalli said. “The technical people get it, but you want to make sure the business people understand the potential risks they are running with. Sometimes they are OK with that.”

To help measure and monitor the overall environment, agency officials are working to create an IT dashboard — a reference point for the technology shops to work from, but also a way to standardize the information they need to be
Archana Vemulapalli, chief technology officer, Washington, D.C.

Archana Vemulapalli, chief technology officer, Washington, D.C.

effective. “The way you handle this beast called shadow IT, and IT in general, is you come up with tools that help you in the standardization of information,” she said.

Despite her acknowledgment that government is often slower to respond to business needs than its private industry counterparts, the CTO said technologists in the public sector need to work to meet the needs of their organizations on their timetable.

“If the business need is for a service and I am two years in and not delivering the service, then there is something we are not setting up right,” Vemulapalli contended. “You want to make sure you are meeting people’s requirements in a timely manner. You can be slow, but not slow to the point where you are crawling to get people the service that they want.”

To Innovate or Not to Innovate

Oregon is also grappling with how various unknown technologies affect the larger patchwork of the state’s system. CIO Alex Pettit has no illusions about the fact that state agencies are dealing with the same challenges as other state and local governments.

CLOUD SECURITY ENFORCER: Though not a standalone company per se, Cloud Security Enforcer is IBM’s dashboard-driven CASB solution. The software as a service was initially launched in late 2015.

PALERRA: In keeping with the trend of acquisitions, international IT titan Oracle signed an agreement to envelope Palerra in late 2016. Under the terms of the agreement, Palerra became Oracle CASB Cloud Service. Santa Clara, Calif.-based Palerra was founded in 2013.

SKYFENCE: Prior to being acquired by Forcepoint in February 2017, Skyfence had established a name for itself as one of the leading cloud security companies. Founded in 2012 in Palo Alto, Calif., the company provides controls for applications like Microsoft Office 365, Salesforce, Workday and Dropbox.

SKYHIGH NETWORKS: Since coming to the marketplace five years ago, Skyhigh has worked with the likes of Maricopa County, Ariz., and the state of Missouri to secure cloud assets. In May, the company announced it had achieved Federal Risk and Authorization Management Program certification.
The typical public-sector organization uses nearly 750 cloud services, 10x the number IT departments expect to find.

SOURCE: SKYHIGH NETWORKS

from doing the things that make them more efficient. We don't want to inhibit efficiency, but at the same time, that puts the burden upon us as the technologists to articulate solutions that do that."

In Oregon, this articulation comes in the form of Basecamp, an IT services catalog for agencies to draw from. Agencies are able to locate services that meet their business need from approved vendors that meet the state's data management criteria, as opposed to pulling randomly from the marketplace.

Hunting in the Shadows
Not surprisingly, the need to identify shadow IT where it lives has created business opportunities for companies like Skyhigh Networks, a third-party cloud access security broker.

As the minds that spend their time shining light into the shadowy realm see it, one of the most serious issues is the fact that IT shops know these third-party add-ons exist within their cyberjurisdictions—they just can't see them, Skyhigh's Jon Fyffe explained. "It's really an eye-opener when governments go from knowing they have a problem to being dark to really discovering, 'Oh, now I see how many are being used.'"

According to the company's figures, the average government organization has 5 to 8 percent of exposure throughout its enterprise. These vulnerabilities potentially open organizations up to threats to everything from foreign exposure to the loss of intellectual property. Fyffe ties the prevalence of unsanctioned applications and services back to the ever-increasing expectation of immediacy created by the Internet and industry.

"Cloud and the Internet made the ability for everyone to become their own IT department, not waiting for IT and their corporate provisioning," he said. "So, it's like, 'Oh, we want to share files, we want to store information, we want to collaborate, there's an app.'"

But government faces unique constraints in how it operates. Where some have made the argument that a foreboding central IT authority creates a breeding ground for off-the-books solutions to take root, Fyffe again points to the modern online consumer mentality and the changing technology dynamic as the primary causes. It's easy to see how these expectations might extrapolate into issues for slower-moving government agencies and frustrations for their employees, but meeting the speed of industry isn't so much the charge of government. "I don't think it's irresponsibility—or authority-driven, it's just that bureaucratic structures of government that were designed to be fair and equal and not promote bias are not as agile as some of the organizational structures that are not constrained by public policy," Fyffe said.

but the Oregon case is complicated by its federated governance model, he said. In 2016, Executive Order 16-13 gave the CISO authority over all things touching the state's digital perimeter, allowing officials more insight into agency traffic. "Prior to that point, there simply was no way for us to have either a control or even knowledge of the ability to identify or discern what things were going through the firewalls, what services were being subscribed to and what have you," said Pettit.

Since November, more attention has been turned to what kind of exposure each agency is bringing to the network. One area Pettit sees immediate need for review is around the use of third-party storage and file-sharing solutions.

"Our biggest concern is the storage being used right now," he said. "We haven't as much visibility on what is being taken up there and being taken down." Pettit's fear, shared by so many of his peers, is that a breach brought about by an unsanctioned tool could degrade constituent trust.

While Pettit understands the need to work efficiently in government, he agreed with Venmulpalle's assessment that speed must be balanced against security considerations and the safety of the data citizens entrust the state with.

He contends that more important than having a government that innovate is people feeling comfortable knowing their data is well cared for.

"People want a lot from their government, but generally speaking, they don't want innovation. They look to the government to be secure, they look to government to be efficient, they look to government to be reliable and all-inclusive ... but by and large, you don't associate government with being innovative or risk-taking," he said. "The desire for most people is they want convenience and they want it to be efficient."

Rather than standing between state employees and the use of more productive tools, Pettit said the burden of meeting their needs falls back to the technologists to figure out better ways to vet and supply the applications and services.

"You're not going to prevent people, and you don't want to inhibit them from doing the things that make them more efficient. We don't want to inhibit efficiency, but at the same time, that puts the burden upon us as the technologists to articulate solutions that do that."
Since 1978, the National Association of State Technology Directors (NASTD) has provided a forum for public and private sector technology professionals to share ideas, concepts and practices pertaining to the efficient provisioning and effective management of technology facilities and services for state government.

Rapid technological change has been the dominant theme during this 40-year period and the opportunities and challenges presented by this momentous transformation are boundless.

At its 40th Annual Conference, NASTD will continue its exploration of this technology transformation with thought leaders from government, industry, the media and non-profit associations. You are invited to join us August 27 - 31, in Memphis, Tennessee on this exciting journey.

Visit www.nastd.org or contact Pam Johnson at 859-244-8184 for more information.
Gender equity in IT has been heading in the wrong direction. Despite all the discussion of increasing the numbers of women in tech, the percentage of women in computing occupations declined over the last 25 years, from 36 percent in 1991 to 25 percent in 2015, according to a 2016 report by the National Center for Women and Information Technology. And even if they start their careers in IT, most women don’t stay — some 56 percent leave the profession after 10 to 20 years. The situation limits the opportunities not only for women, but also for their employers. Diversity leads to better organizational performance, according to the 2015 report Diversity Matters by McKinsey and Co. The study found that gender-diverse companies are 35 percent more likely to outperform. More recently, a 2016 survey of data from 22,000 companies around the world by the Peterson Institute for International Economics found that having more women in corporate leadership correlates with increased profitability.

Gender equity was already top of mind for Los Angeles Mayor Eric Garcetti, as well as Ted Ross, general manager and CIO of the city’s Information Technology Agency (ITA). Meanwhile, Ross faced a looming personnel shortage: Nearly half of his IT staff would become eligible for retirement within the next few years. Ross saw a way to address both problems. “We had an opportunity to create a workforce that is representative of L.A. itself, which is a very diverse city,” he said.

He started some informal efforts in early 2014 by discussing the topic with female IT employees, from senior managers to entry-level staff members. He also spoke with local and national leaders promoting women in technology. Partly inspired by Tracy Chou, an engineer who challenged companies to post their percent of women in particular tech positions on GitHub, Ross analyzed his department’s employment data. The numbers told him that as of late 2014, zero percent of ITA’s executives, 40 percent of its managers and 38 percent of its programmers were female.

Then, Garcetti issued an official directive in August 2015 that created a Gender Equity Coalition to ensure equity across all city departments. That spurred Ross to set a target of 50 percent females in IT management by the end of 2016. He took several steps to achieve this target. Informally, Ross began a concerted outreach effort to recruit women. He spoke about supporting women in technology at public forums, such as the mayor’s diversity day. Formally, he launched leadership training seminars specifically for women and pushed for greater female representation on panels that interviewed job candidates. He concentrated on recruiting more women interns using social media, the department’s website and even TV.

“We've found that specialized recruitment, specialized and diverse representation on interview panels, and
building leadership skills in our organization is very powerful,” said Ross. “It yields an iterative benefit over time.”

One benefit was identifying and promoting talent from within the department. Joyce Edson had worked in technology for years, most of it in support of the city’s public safety division. Although public safety agencies such as police and fire departments tend to be dominated by men, Edson didn’t let any bias intimidate her. “I’m usually pretty vocal and will call people on it,” she said. “And when you call people on it, that usually takes it off the table.” Nevertheless, she had made little headway in promoting her idea for an open data project.

“I had been watching the open data movement for a couple of years and knew that L.A. should be doing this,” Edson said. “It was an alignment of the planets when the mayor [then Councilman Garcetti] expressed an interest in it. Ted came in as assistant general manager and I pitched [again] the open data project to him. He said, ‘Go for it,’ and we got it done.”

Ross’s efforts to improve gender equity also attracted new talent to the city. After a 32-year career at NASA’s Jet Propulsion Laboratory (JPL), with a couple of detours into national and international projects including helping launch President Obama’s Open Data Initiative, Jeanne Holm was ready to do something in L.A., her hometown. Her departure from JPL was “partly as a result of my frustration about equity for women in technology,” she said.

In 2016, only 4 percent of JPL’s IT managers were women, and of the two top female managers, one reported to the other, she said. In contrast, “when I looked at Ted’s organization chart, the faces were as diverse as the faces I see every day in my city,” Holm said. “People of all different ages, just as many women as men, people of all different ethnicities.” It was a deciding factor in her choice to work at ITA. She is now senior technology adviser to the mayor and assistant general manager and deputy CIO for ITA.

Ross is proud of the progress ITA has made so far. As of mid-2016, 60 percent of IT executives, 54 percent of managers and 42 percent of programmers in the agency were female. In March 2017, ITA received an award for its efforts at Garcetti’s Inaugural Los Angeles State of Women and Girls Address and Young Women’s Assembly.

The increased diversity of backgrounds and genders at ITA translates to a greater diversity of thought, which in turn stimulates creative thinking and innovation, said Ross. Without such diversity, “we may not have the next breakthrough, because we would be limited to viewing problems and potential solutions in only a certain way,” he said.

Holm couldn’t agree more. “It’s ridiculous to think that organizations are working on these amazing, tough, innovative, leading-edge technologies, and yet some are using only half of the brain power available to them.”

“Tam@tamharbert.com

Percentage of computing occupations held by women has been declining since 1991

20% 25% 30% 35% 40%

NATIONAL CENTER FOR WOMEN & TECHNOLOGY, WOMEN IN TECH 2016 UPDATE

DIVERSIFYING YOUR DEPARTMENT

L.A. CIO Ted Ross suggests taking these steps to increase gender equity and bring more diversity into the workplace:

✓ Educate yourself on the issues. Don’t assume you know everything about gender bias. Talk with women in technology, both inside and outside of your organization.

✓ Assess your organization based on data. Identify the numbers of women you have in various job categories. Are they proportional? The numbers can help you home in on specific problem areas. For example, you might have many women in mid-management, but none who have risen any higher in the organization. In that case, you need to investigate why.

✓ Review your recruiting operations to make sure you are targeting women and other under-represented groups.

✓ Review your hiring processes to make sure they reflect a diversity of outlooks. How many women are on your typical interview panel, for example?

✓ Offer leadership and management training for women.

✓ When hiring outside contractors, make an effort to include women freelancers and women-owned small businesses in your search.
POWERED BY SALESFORCE, the PEAK portal allows up to 2.5 million Colorado citizens to apply for medical, food and cash assistance programs online, via mobile app or through portal-connected contact centers.

ADOPTING A CLOUD-FIRST PHILOSOPHY

How Salesforce Helped Colorado Become a Leader in Cloud Computing and the Citizen Experience

With Salesforce as its foundation, several years ago Colorado adopted a “cloud-first” philosophy — with the goal of improving the citizen experience — in which cloud computing is the default option for all IT modernization efforts. Flash forward to present day and nearly 80 cloud apps later and it’s no surprise the state is now a recognized leader among governments when it comes to cloud computing. Here’s how Colorado has found cloud success.

From Humble Beginnings

The cloud-first philosophy started in 2011 when the governor’s office began working with Salesforce on a cloud-based constituent management solution.

“We had an old legacy system with multiple servers in different locations — it was outdated and unsustainable,” explains Chief Information Officer Suma Nallapati of the Colorado Office of Information Technology (OIT). “There were also problems with data inconsistency and centralization, and we couldn’t get the real-time data updates we needed.”

Nallapati stresses that Colorado is laser focused on providing the best possible experience and highest levels of satisfaction for its citizens whenever they interact with state government agencies.

“Our old system didn’t allow us to consistently provide the kind of citizen experience we were committed to delivering,” she says.

The cloud-based constituent management solution delivered by Salesforce was an immediate success. It created a unified solution that streamlined the entire Board and Commission appointment process, eliminating candidate data entry, automating correspondence and allowing for easy tracking of key metrics. It also automated the process of managing requests for assistance and invitations to the governor’s office to ensure none fell through the cracks.
"We needed a technology solution that supported the long-term vision of Colorado OIT to be a state and national leader in providing a robust technology service built on the principles of speed, flexibility, availability and transparency that our customers have come to expect via modern technology," says Nallapati. "None of the other solutions we looked at provided the power, flexibility and speed to market of Salesforce."

Diving in Head-First

With a small taste of the benefits that cloud-based computing solutions from Salesforce could provide, OIT dove into cloud computing head-first. "Colorado is a pioneer in cloud computing for state governments," says Salesforce Senior Account Executive Chris LeBaron. OIT has now added nearly 80 more Salesforce cloud-based applications to the governor’s office constituent management solution that was implemented just six years ago. These applications run all across the state, from the Department of Transportation, Aeronautics Division; to the Department of Human Services, the Office of Early Childhood Development and the Department of Public Safety.

Of all the applications OIT has implemented, Nallapati says she is especially proud of PEAK, the web-based Program Eligibility and Application Kit portal powered by Salesforce that provides citizens with a self-service delivery model for determining eligibility for social services benefits. The portal was critical in enabling the state to handle the expansion of Medicaid coverage that accompanied the establishment of Colorado’s own health insurance marketplace in 2015.

But PEAK, it took up to 45 days to determine citizen eligibility for public assistance programs using the manual, paper-based system.

“We needed to build a modern platform to streamline the eligibility process and scale our benefits management system,” says Nallapati.

With PEAK, up to 2.5 million Colorado citizens can apply for medical, food and cash assistance programs online using mobile app or through portal-connected contact centers. The mobile app alone attracts more than 100,000 logins per month. "PEAK has performed beyond our expectations," says Nallapati. "Now more than 80 percent of applications are screened and approved in real time. We’re processing twice as many applications per month with the same number of employees and the same budget."

Nallapati also points to an application built on the Force.com platform through Authenticated Sites for the Colorado Department of Transportation, Aeronautics Division. This app provides a one-stop portal for airports to manage and monitor capital planning, grant applications, spending and tax funds in real time. The application — which eliminates much of the manual communication that was required between local airport officials and DOT employees once grant applications had been submitted — has been nominated for an award by the National Association of State Aeronautics Officials.

A Salesforce application has also streamlined the grant process for the Colorado Creative Industries, a state government initiative that provides grants to support creative talent. Artists apply online via a secure site and grant evaluators use the portal to review funding requests and make grant decisions. The result has been reduced administrative expenses and improved reporting to the National Endowment of the Arts.

According to LeBaron, Colorado OIT has created a Center of Excellence to help qualify, build and grow Salesforce across the state. “They’ve essentially built a Salesforce practice that includes developers, business analysts, project managers, etc.,” he says. "They saw what Salesforce could do to transform the way they deliver services to their citizens and are completely committed to this ‘Force First’ strategy and vision."

A Deliberate Approach

According to Nallapati, OIT has virtualized 900 servers since it adopted its cloud-first philosophy a little over six years ago. "That’s a lot of computer storage space and maintenance expense that we’ve eliminated," she says.

OIT remains deliberate about its cloud-first approach to computing. "We’re not in the business of building big data centers or a huge IT infrastructure," says Nallapati. "We want to stay focused on enhancing our citizens’ experiences every time they come in contact with their state government. Utilizing Salesforce cloud computing solutions is the best way for us to accomplish this."

Salesforce demonstrates how trusted, agile, proven Cloud applications on a user-friendly development platform deliver better government services and empower modern missions.

For more information, visit: www.salesforce.com/solutions/industries/government/state/
Help Wanted

Millennials need jobs and government needs talent, but do young tech professionals want to work in government?

Government CIOs across the board are being forced to confront the retirement wave that’s about to decimate their ranks. But does the next generation of IT pros want the jobs their parents and grandparents are leaving behind? We took to the streets of Sacramento, Calif., to ask young tech talents poised to take over the workforce whether they would go to work for government. Here’s a sampling of what they said:

There is something that is very patriotic to me about civil service. What is incredibly frustrating is that civil service seems to be stuck in the ‘60s and ‘70s in terms of its policies. The company I work for is 500 miles away, but I can do the exact same work as if I was sitting at that desk.

Public systems, in technology specifically, are a little bit slower; it’s kind of behind. Having to go into the government sector means I have to go back 10 years, and that’s a learning curve.

I get the impression that I could go to Google, throw out an idea and they’ll actually listen to it and maybe even vet it out and examine it, whereas the government, not so much.

We took this feedback to state CIOs gathered in Virginia in late April for the NASCIO Midyear Conference for their reaction. Most agreed that government has some work to do in changing the perceptions and realities of tech work in the public sector.

— Editorial Staff

I certainly can understand why those perceptions exist and that’s the perception of government — if you saw the movie Zootopia recently, you saw the sloth at the DMV, and that’s the perception of what we do at state government. I’d like to think that we’re different. We look at some of the things that we’re pushing the envelope on, and I think we are not working with the private sector and understanding technologies that are coming out, and we’re right up there in lockstep with them.

Mike Hussey, CIO, Utah

I think what we do have for them is a kick-ass mission. It’s basically public service at the ultimate level, and it makes a difference in peoples’ lives. In civil service, we don’t really work for money because they don’t pay us much, but we do get to make a difference.

Paul Sandlin, Deputy CIO, Maine
It’s easy to say those things, but the more people that we get on the inside speaking the same message, the faster we’re going to change and make those things happen in state government. So I would say it’s OK to feel like that — go ahead and bring it in and get into state government and find those like-minded individuals like yourself and create a broader voice and help to push those changes because they will eventually happen.

I tell folks, “Just give me a shot, give me one or two years and if nothing else, you’re going to get to touch some big systems, you’re going to learn a lot of great things that you can take anywhere you want.” Then hopefully within that time frame I can change their minds and get them to stay.

Dewand Neely,
CIO, Indiana

Government is a great place to make a difference, and I think that’s really [it] if you talk to people about why they got attracted to it. As lucrative as the private sector can be, you’re typically very, very siloed. … In my career, I’ve worked on GIS, I’ve worked on health care, I’ve worked on ERP. … I think IT and government is the most exciting place to work. I’m biased, but I think that. Really! I mean, where else can you bring those ideas to bear that can impact policy, that can change peoples’ lives?

Craig Orgeron, CIO, Mississippi

I think working for government is cool. It’s the only place where I think you get the breadth of experience that no one else can offer, just in the types of things that you can work on. I work on things from social services programs to driver’s license to unemployment to agriculture branding applications.

Brenda Berlin, Deputy CIO, Colorado

We’re working with some of the most modern technology that’s out there. So if you come work with us, you’re working with mobile-enabled platforms, you’re working with commercial cloud, you’re working with infrastructure as code, you’re working with the most up-to-date infrastructure from a networking or compute standpoint. So yeah, we do still have mainframe and other things like that, but we’re at the other end of the spectrum as well.

James Collins, CIO, Delaware

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I think that perception is out there, but if you come and give government a chance to let us show you, you’ll see that we are being innovative in trying to improve our interaction with the public and providing the services that we’re now used to in the private sector. We’ve been able to do some very interesting things and do them quickly, but to the individual in this space who wants to come in and work in an area and accomplish something: We have the ability to move you around between agencies so you can experience many different things and take your skills and actually truly make a difference.

Calvin Rhodes, CIO, Georgia
In talking to these same state CIOs, we found that many had already implemented programs that would probably happily surprise our young interviewees. Better yet, maybe they’d even convince some to give government work a try.

**Agile in Action**

Montana CIO Ron Baldwin has a son who’s a millennial. “He had a stint in government for a little over a year and then moved on,” Baldwin said. “He has some of the same comments, some of the same frustrations, so I understand it from a personal perspective.”

In Montana, at least part of the solution lies in agile development methodologies, used by Baldwin’s 50-strong team of application developers. “You’re not just a programmer that’s sitting in a cubicle in a dark area somewhere, never talking to someone all day, but rather you’re in a team environment, you’re exchanging ideas. It’s dynamic; it’s inspiring,” he said.

Nebraska CIO Ed Toner also pointed to agile as a powerful tool in millennial recruitment. He’s got a partnership with a local community college that’s bringing in interns who are learning agile in school and using it to run the state’s enterprise content management (ECM) system. And they’ve never used agile’s forefather — waterfall development. These same interns go back to their campuses to spread the word and bring in the next wave of talent for the ECM and other areas.

“They just sit down with their peers and they say, ‘This is what I enjoy about working for the state, this is the freedom I’m being given at the state. Here’s some of the applications we use at the state, here’s some of the things that we’re actually doing,’” Toner explained. The group, just down a flight of stairs from Toner’s fourth-floor office, has logged more than 20,000 development hours to date.

CIOs embracing agile seem to have instilled a culture of flexibility in their organizations — a quality young tech workers would likely appreciate.

“Let’s all be flexible here. Let’s know that this is the 21st century, we have the ability to be a virtual team. We can Skype into a meeting, we can participate effectively that way,” Baldwin said. “If we bring those things together, I think we will continue to advance the workforce in government where it can attract — it will attract — a more modern workforce.”

**Leaving 8 to 5 Behind**

In Wyoming, CIO Tony Young (formerly deputy chief of staff to Gov. Matt Mead) said he’d recently lost a handful of staff members to companies with remote work policies. While the state does offer telecommuting in some cases, he acknowledges that there’s room for improvement. Personnel policies need to adapt to enable government to be more competitive with what the private sector can offer; he said. “We’re doing the best we can to move that forward.”

Telework proved to be the solution to space constraints faced by CIO James Collins in Delaware. Rather than augment office space to accommodate more staff, they carefully reviewed job classifications to see which duties didn’t necessarily need to be done in the office. “If anybody should be moving forward with enabling employees to work from anywhere, anytime, from any device, it’s us,” he said. Now certain employees work remotely on a part- or full-time basis. Space problems? Solved.

Many other states offer telework as well — staff who work from their home base in another state, even. Georgia has an entire group within IT that works remotely. Missouri’s had a remote work pilot in place for several years, according to Acting CIO Rich Kliethermes. “We try to use it strategically where we can,” he said. “It’s not just about seeing the back of our employees’ heads.”

**Help Wanted**

Washington CIO Michael Cockrill has to contend with the fact that all the major players in Silicon Valley also have offices in Seattle, a mere 60 miles from the state capital in Olympia.

“My competition is all using the same language and my job descriptions are: Come and be an ITS4,” he said. To say that traditional government job classifications cater to an insider audience is an understatement.

“We’ve spent a lot of time rewriting all of our job descriptions and our job roles and re-baselining those so that we can actually recruit in a way that makes sense to the
people that are reading the recruitment,” Cockrill added. He’s on the right track. After all, a jobs website is often a prospect’s first exposure to a potential employer.

And once a millennial is entertaining the idea of government work, nothing can kill the idea more quickly than requirements they can’t meet. For example, what if they have the necessary education but don’t yet have the experience?

“They would go through some education or training program, and then they couldn’t meet our requirements so they couldn’t work for us,” explained Delaware’s Collins. His solution was to create a new level of IT position — associate level — that would get those skilled employees in the door to do hands-on work alongside more senior staff.

“We’re growing some talent, and I’ll tell you, we have had great results,” he said.

**Location, Location, Location**

Something as simple as the physical environment in which work is done can have a profound impact on how employees feel about their job. Some CIOs told us it turns off candidates who visit state IT shops for interviews. The days of the quiet beige cubicle farm may be dwindling. Many state IT leaders have established relationships with local colleges and universities in which students can get in on the ground floor of new government initiatives. In Kansas, CITO Phil Wittmer is building a consolidated, cloud-based help desk and he’s looking to local institutions to help staff it. He’s hopeful, too, that new transparency and mobile initiatives will help entice the younger generation to consider state government IT work.

“We think that will be very attractive for some of those folks to come work for government doing some leading-edge things in Kansas,” he said.

**Prepping the Pipeline**

Maine CIO Jim Smith is realistic about the changing nature of the workforce. Young people don’t tend to remain too long at the organization where they started their career. But the state has an internship program that’s helping fill the gaps left by retiring baby boomers — 70 percent of interns end up with full-time positions.

“The era of the lifelong IT career employee is probably over. We think interns will come in and stay for three or four years, but … they’ll get such a breadth of experience that they’ll get a wonderful jumping off point,” Smith said. But even with the shorter tenure, there’s value to be gained on both sides. “We’re learning from them and they’re learning from us, and it’s actually kind of exciting.”

**The Door Is Open**

State CIOs bristle a bit at the accusation that there’s no place for new ideas in government. In fact, most are actively working against the stereotype. Colorado Deputy CIO Brenda Berlin described “rapid innovation projects” in the state, where a contest encourages staff to bring forward ideas for improvements.

As for innovation, Utah’s Mike Hussey offers an open invitation. “If they have some thoughts on how we might improve, I would always be a listening ear to hear what people have to say,” he said. “Come on in sometime and we’ll show you around and show you the great things we’re doing.”

--- Nicole Krell, Editor

**We’ve spent a lot of time rewriting all of our job descriptions and our job roles and re-baselining those so that we can actually recruit in a way that makes sense to the people that are reading the recruitment.**
Michigan Streamlines Secure Online Services for Citizens

State and local government leaders have a common question: “How can we keep our applications and private data safe?” In the past, the answer has been complicated by the various applications government agencies use — and their differing security measures and requirements.

Today, it’s critical to make online security simple for citizens while maintaining strong protections for their private data. In Michigan, the Department of Technology, Management and Budget (DTMB) found an answer to these requirements with the MILogin solution for user identity management.

MILogin emerged from the department’s focus on delivering secure online services. “Everything we’ve done in terms of next-generation digital infrastructure and cybersecurity programs is designed to deliver better services for our 50,000 employees and 9.4 million citizens,” says David Behen, former DTMB director and Michigan state CIO. The department provides centralized IT services, including cybersecurity, across the state government.

ELIMINATING THE HEADACHES OF MULTIPLE LOGINS

By creating a MILogin account, users can access many state applications with a single sign-on. For example, by using MiPage — an app for smartphone and tablets developed by DTMB — a citizen gains personalized, secure access to state information and online services, including private data.

As determined by the agency that owns each application, MILogin can use tools such as credentials verified by a third party, strong passwords and multifactor authentication to further protect the user’s identity. These tools also help agencies avoid sending password letters or asking users to come into an office to set up their accounts.

The state benefits from the simplicity of managing a single, secure and integrated identity for each user — whether it’s a citizen, business owner or state employee. MILogin further improves security by giving DTMB centralized capabilities for access management and fraud prevention across applications and agencies. In the future, MILogin will provide the secure access necessary to allow users to view a state data profile they create, which will hold the information they have on file with Michigan agencies.

User can then receive alerts about deadlines, potential eligibility for certain benefits and other useful services.

As Michigan offers more services online, especially through MiPage, citizens will be able to access more of their sensitive and regulated personal data.

CENTRALIZING MANAGEMENT OF USER IDENTITY AND ACCESS

“It was clear that we needed to wrap strong cybersecurity measures around online services to maintain citizen confidence,” says Behen. Working with Deloitte, DTMB developers built on the state’s already extensive cybersecurity measures to develop the MILogin solution.

MILogin was successful early on due to the Michigan Department of Health and Human Services’ (MDHHS) request to manage user identities in a single location. Realizing the potential value for all state agencies, DTMB turned the MDHHS request into an enterprise-wide project.

In collaboration with Deloitte, MILogin is now a single, comprehensive system that centralizes user identity and access management across agencies, applications and services.
applications and services. As adoption continues, MILogin can expand the identity components to accommodate more state services with different security requirements.

MILogin is currently deployed in DTMB’s on-premises infrastructure, but the state can move to the cloud if it chooses to do so. Funding for development of MILogin was provided in part through a request from the governor’s office and by federal funds through the Medicaid program administered by MDHHS.

HIGH LEVELS OF ADOPTION
MILogin has achieved positive adoption rates by both agencies and users. As of late 2016, more than 25,000 state employees and contractors, as well as 45,000 Michigan citizens and 300,000 business entities, have registered for a user account to access 156 state applications from multiple agencies. This count includes approximately 20 Medicaid software applications that contain regulated and highly sensitive personal health information. Once the MI Bridges application – which provides access to MDHHS benefits applications — is behind MILogin, more than 2 million citizens will have access to the solution.

BUILDING A NEW VISION FOR CITIZEN ACCESS TO SERVICES
The broad scope of MILogin is possible in part because the state has centralized its IT functions in DTMB. Another factor has been Gov. Rick Snyder’s vision for using technology to deliver a citizen-centric state government.

To support this vision, DTMB was tasked with enhancing its IT infrastructure in four key areas:

- Mobility to support easier access to state services and information for citizens, businesses, visitors and state employees
- Cloud to provide the modern, flexible infrastructure and tools necessary for IT innovation
- Data collaboration to help agencies discover new insights and solutions for problems through data sharing and analytics
- Cybersecurity to support a unified user identity while maintaining regulatory compliance and privacy protections

“Our IT infrastructure, including our cybersecurity measures, is designed to take our services to citizens instead of citizens coming to us,” says Behen.

EXTENDING CITIZEN-CENTRIC TECHNOLOGY TO OTHER STATES
The MILogin solution is available as a hosted-service offering and is being worked on by other states to bring the MILogin identity management solution to their constituents. For example, Illinois shares Michigan’s Medicaid Management Information System (MMIS). As part of that arrangement, more than 25,000 Medicaid providers in Illinois use MILogin to securely access their state’s applications and data.

Cybersecurity on Many Fronts
MILogin is one of several innovative cybersecurity efforts managed in whole or in partnership by Michigan DTMB, which include:

- The Michigan Cyber Civilian Corps (MiC3), a volunteer group of cyber professionals who provide rapid assistance to the state for response to cyber incidents
- The Michigan Cyber Range (MCR), an unclassified, private cloud network that provides a secure environment for cybersecurity research, education, training and testing; MCR is operated by Merit Network, a regional research and education network that is owned and governed by Michigan’s research universities
- Co-located cybersecurity facilities, operated in partnership with the Michigan State Police and Michigan National Guard, to allow for greater collaboration among partners from the public and private sectors

SIMPLER LOGIN WITH STRONGER ACCESS CONTROL
“ Citizens expect to use more services online, without hassle but with confidence that their private data is protected by strong authentication,” says Mark Ford, Principal, Deloitte & Touche LLP, Cyber Risk Services. “For governments, meeting this expectation is not so easy, given the potentially hundreds of systems — each with their own data, logins and security measures — that are involved in delivering citizen service.”

Yet this challenge can be solved with a strategic vision and collaborative execution, as Michigan has found with its MILogin user identity management solution. By delivering the simplicity of a single, verified and optionally authenticated identity for users that is available across applications enterprise wide, MILogin strengthens online security while also improving the state’s ability to deliver online services efficiently and effectively.

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Michigan CIO Behen Leaves for Private Sector

After serving for six years as Michigan’s CIO, David Behen stepped down June 16 to pursue an opportunity with a global company headquartered in Michigan. Behen, who became director of the state’s Department of Technology, Management and Budget in 2014 upon then-director John Nixon’s departure, made a significant impact on Michigan IT.

When he took the CIO post in February 2011, a decade of economic turmoil left the state with many ancient systems in need of upgrade, so his first few years were spent creating a new strategic technology plan and identifying nearly 20 projects in need of replacement and enhanced automation — needs that were matched to multiyear tech funding in the state budget. Over the years, Behen has led efforts to move email into the cloud, embark upon data center modernization, overhaul procurement and deploy a new statewide ERP system.

Chief Deputy Director Brom Stibitz will serve as interim director until a permanent replacement is named.

Florida Searches for New CISO

Florida Chief Information Security Officer Danielle Alvarez left state employment in May to join Tallahassee-based Hayes e-Government Resources Inc., as a cybersecurity strategist. Agency for State Technology Spokeswoman Erin Choy praised Alvarez’s work in strengthening Florida’s security posture, helping the state adopt a cybersecurity framework designed to National Institute of Standards and Technology specs, and coordinating a week of onsite SANS Institute cybersecurity training for about 150 officials in three states. The state planned to undertake a nationwide search to fill the position and not appoint an interim CISO.

Amid Tech Re-org, NYC IT Chiefs Resign

After less than one year in the post, Chief Digital Officer Sree Sreenivasan departed Mayor Bill de Blasio’s administration in the midst of a tech team reorganization. According to the mayor’s office, the change comes as part of a larger restructuring meant to bring the digital strategy under the umbrella of recently appointed CTO Miguel Gamino.

The mid-May announcement was followed by news that the city’s chief analytics officer, Amen Ra Mashariki (pictured at left), accepted a job with mapping and data company Esri. Mashariki was tapped to lead the Mayor’s Office of Data and Analytics in November 2014 after serving as the chief technology officer for the U.S. Office of Personnel Management and as a White House fellow. The office was created in 2013 as part of Executive Order 306 by then-Mayor Michael Bloomberg, to help better analyze the wealth of data available to the local government and ultimately improve the services it offers to constituents.

Montgomery County, MD’s Innovation Officer Departs

Dan Hoffman, the first chief innovation officer of Montgomery County, Md., left his position in June to become an assistant city manager in Gainesville, Fla. Hoffman had served in the role since 2012 and was instrumental in carving out what the position does for the county, including work related to open data, emerging technologies and smart cities.

MONTGOMERY COUNTY, MD’S INNOVATION OFFICER DEPARTS

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MONTGOMERY COUNTY, MD’S INNOVATION OFFICER DEPARTS

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Gerull Named San Francisco’s New CIO

The search is over for San Francisco’s next technology leader. Linda Gerull was appointed by Mayor Ed Lee on June 7 to serve as the city’s CIO and director of the Department of Technology. Gerull, who most recently served as the IT director for Pierce County, Wash., will begin working with the city on July 17. She will be taking over for Interim CIO Kenneth Bukowski, who served in the CIO capacity since October 2016.

Describing San Francisco as a hub for leading technologies, Gerull said she is thankful for the opportunity and excited to be in “such a vibrant and innovative city.” And she is eager to work with local technology businesses to provide residents the best services possible.

FCC CIO MOVES INTO FIRST-EVER INNOVATION POSITION

The FCC’s CIO announced in June he would be joining the National Geospatial-Intelligence Agency as its first chief ventures officer. David Bray, who led the FCC’s transition from legacy IT to cloud-based systems since August 2013, will begin the new role in July. At the National Geospatial-Intelligence Agency, Bray will lead the new Office of Ventures and Innovation and be charged with advising the agency on acquiring emerging tech and improving business processes.

A top official working on innovation initiatives for California stepped down in May to become Sacramento’s chief innovation officer. Louis Stewart, the deputy director for innovation and entrepreneurship in the Governor’s Office of Business and Economic Development, made the announcement on Twitter, after spending seven years in the state role. Stewart took over for Abhi Nemani, who was the city’s interim innovation officer.

Boston’s Digital Officer Pivots to Civic Tech

Lauren Lockwood, the former Morgan Stanley investment banker who became Boston’s first-ever chief digital officer (CDO), left the job May 16. In a tweet that linked to a Medium post, the trailblazing CDO who came to work for Boston in December 2014 said she’s not leaving the civic tech community and will instead “be working to scale what we (and others) have learned to other cities.” Lockwood was recognized as one of Government Technology’s Top 25 Doers, Dreamers and Drivers of 2017 for her work to improve Boston’s digital services. An online post from the city about filling the position said the next CDO will be responsible for continuing to develop internal and public road maps for digital services through both short-term projects and a long-term strategic vision.

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Scammers Target Legacy Tech

Three ways to stop business email compromise.

Once again, the FBI is warning enterprises to be on the lookout for sophisticated online scams involving the most popular of legacy technologies - email. The term "business email compromise" (BEC) has led to more than $5.3 billion of documented fraud between October 2013 and December 2016, according to a May 2017 FBI alert. More shocking, "between January 2015 and December 2016, there was a 2,370 percent increase in identified exposed losses. The scam has been reported in all 50 states and in 131 countries."

What I find most troubling is that these sophisticated online attacks are rarely high tech. Rather, social engineering of human weaknesses is evolving. After fraudsters conduct surveillance and learn the details of your office business process, they use a mix of compromised email accounts, impersonation, legitimate communication channels and real business contacts to trick staff into high-dollar fraud.

In simple terms, this is a remake of the 1973 classic movie The Sting with a 21st-century, tech-savvy twist. The bad guys are using a mixture of online messages in cyberspace, along with phone calls, faxes and more to earn your team's trust. But before we get to solutions, let's look at how we got into this mess in the first place.

A Brief History

For decades, enterprises have been fighting external threats delivered by email. Remember the Melissa virus, which first appeared in March 1999 and was triggered by opening Microsoft Word documents? Once a PC was infected, the virus would send the document (and therefore itself) in an email message to the first 50 people in the person's address book.

In 2000 came the ILOVEYOU virus, which was triggered when people clicked on email attachments. ILOVEYOU sent copies of itself to everyone in the victim's address book and started corrupting files on the victim's machine.

When more and more enterprises started scanning email attachments for viruses and not allowing infected files through, Internet attacks evolved and started delivering malware via emails with hyperlinks that led to bad things. These email phishing scams arrived into millions of inboxes looking like they were sent by trusted brands like PayPal.

Moving on, phishing attacks continued to evolve into spear-phishing, which further refined online attacks by using targeted information and specific data about a company or organization. The latest version of phishing 3.0 is sometimes called "whaling" since it goes after the biggest fish with hyper-targeted attacks, like the FBI alert scenarios. Remember that ransomware and other cyberattacks are still delivered via email attachments and links.

Tips for Stopping BEC

So how can we learn from history and stop BEC before it affects a government near you?

First, constantly educate staff about cutting-edge fraud techniques like BEC. Don't keep rehashing old security awareness materials and expect to stop online fraud. Update your training as often as you update your smartphone.

The best training is brief, frequent and focused on the issue at hand. Enterprises need to constantly retrain and keep security awareness messages front and center via multiple channels, including newsletters, posters and lessons using gamification.

Second, review existing processes, procedures and separation of duties for financial transfers and other important transactions such as sending sensitive data in bulk to outside entities. Add extra controls, if needed. Remember that separation of duties and other protections may be compromised at some point by insider threats, so risk reviews may need to be redone.

Consider new policies related to “out of band” transactions or urgent executive requests. An email from an executive’s Gmail or Yahoo account should automatically raise a red flag to staff members, but they need to understand the latest techniques being deployed by the dark side. You need authorized emergency procedures that are well understood by all.

Finally, review, refine and test your incident management and phishing reporting systems. After business process expectations are clear, test staff with simulations of incident scenarios. Conduct a tabletop exercise with management, including key personnel, on a regular basis. Test controls and encourage staff recommendations.

Remember, online criminals are always changing and adapting their sophisticated attacks. Are you ready?
Recharge Your Wallet

A supermarket chain in Norway is hoping to increase the number of batteries recycled in the country by testing a reverse vending machine that gives customers coupons in exchange for their used batteries. The machine, made by Refind Technologies, identifies the size of the battery and how many have been deposited, and then prints a coupon crediting users 15 cents (or 1 krone) for each battery. After an initial test of the machine, Coop Norway may roll them out to all locations. SOURCE: TREEHUGGER.COM

DO NOT DISTURB

Essentially a traffic light for the workplace, FlowLight tracks keyboard and mouse activity to automatically switch between red and green, indicating to co-workers when you’re available to chat or in the zone. Developed by a computer scientist at the University of British Columbia, the LED-touting device was tested by 449 employees at international engineering company ABB Inc.—where road safety cones have been used to indicate when someone should not be disturbed— with reports indicating fewer interruptions and even creating a more respectful workplace. The next version may use biometric sensors to detect users’ heart rate variation and pupil dilation as other indicators of when they’re hard at work. SOURCE: UNIVERSITY OF BRITISH COLUMBIA

50 mph

The maximum speed a robotic falcon, aka Robird, can reach as it flies around Canada’s Edmonton International Airport to keep birds out of the area—preventing them from getting sucked into aircraft engines. Daily use of Robird was planned to begin in June, meant to complement the airport’s other efforts like lasers and recordings of predator bird calls, all aimed at keeping the area safe for people and wildlife. SOURCE: NEWATLAS.COM

3+ Million

people are actively using cryptocurrencies. A report by the Cambridge Centre for Alternative Finance gathered data from 144 companies and individuals in 38 countries, and determined that the cryptocurrency market has more than tripled since early 2016, reaching $25 billion in March. Bitcoin remains the most popular platform, but other large players are Ethereum, Dash, Monero, Ripple and Litecoin. SOURCE: PHYS.ORG
Attracting, Retaining, and Engaging Government Employees

The state of Nebraska uses online learning leader Lynda.com from LinkedIn to close employee skill gaps and enhance hiring.

Aging baby boomers are increasingly leaving the workforce as a significantly smaller number of younger people are entering it—challenging state and local governments to find new and competitive ways to attract, retain, and engage talent. To do this, government agencies must energetically market their organizations and the communities they serve as desirable places to live and work. Providing employees with access to the latest workplace technologies is a key strategy.

Nebraska: Meeting Staff Needs with Lynda.com from LinkedIn

Nebraska state government faced its recruitment and retention challenges by using Lynda.com from LinkedIn to provide 18,000 employees statewide with on-demand technology, business, and professional development opportunities.

The Interplay of Retirement and Recruitment

According to a 2016 member survey by the Center for State and Local Government Excellence:

54% of respondents reported retirements increased from 2014 to 2015. Recruiting and retaining was the No. 1 priority.
With Lynda.com, we can give new hires the management and technology skills they may not come in with but need in order to advance within government.

Dovi Mueller, Training and Development Administrator, Nebraska Department of Administrative Services, State Personnel Division

Lynda.com provides creative skills training. Impressed by the vast and high-quality Lynda.com content library, the state replaced a much smaller online education program, increasing the number of courses available to staff from 300 to more than 5,000.

Nebraska uses Lynda.com for customer service training by aligning Lynda.com courses with training programs and initiatives created in house. And as an incentive for signing up for the state’s year-long leadership program, participants get 12 months of access to all Lynda.com tutorials. These include leadership, management, creative, and technical courses, as well as courses that are not necessarily work related such as photography and interior design to inspire ongoing training and development.

“We encourage employees to take just 15 minutes every day to learn something new, and in doing so, we hope learning will become something that’s embedded in their everyday activities. We want our staff members to make learning a habit,” said Dovi Mueller, training and development administrator with the Nebraska Department of Administrative Services, State Personnel Division.

Engaged Employees, Improved Retention

Engaged employees are five times more likely to be very satisfied with their jobs, five times more likely to recommend their places of employment to others, and four times less likely to leave, according to the International Public Management Association for Human Resources (IPMA-HR).2

“Lynda.com helps us create employee development plans, in turn helping employees build career paths in state government and stay engaged,” said Mueller.

For administrators like Mueller, Lynda.com reporting features are critical for tracking and ensuring learner engagement. An easily accessible dashboard shows statistics for active users, total hours of video viewed, the number of videos viewed, and more. Last year, Nebraska state employees viewed more than 137,000 Lynda.com videos. Of those who signed up for Lynda.com, 97 percent logged in to watch a course.

“Two-thirds of our employees can retire within 5 to 10 years, so we’re going to have this great need for succession planning,” Mueller said. “With Lynda.com, we can give new hires the management and technology skills they may not come in with but need in order to advance within government. Offering 24/7 learning content is one of the best ways we can assist in the development of our employees.”

ENDNOTES


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Banning the Sharing Economy

Why can’t more government employees use Airbnb for business travel?

Recently, some state and local governments, often at the urging of the hotel industry, have passed laws aimed directly at short-term rental sites like Airbnb. Most notably, New York passed a law last year to fine apartment owners between $1,000 and $7,500 for advertising their homes on sites like Airbnb for durations of less than 30 days (the law allows long-term rentals of entire homes and rentals of any duration of spare bedrooms), even though these rentals generate hundreds of millions of dollars in economic impact annually. The impact of these laws is substantial. At the time Gov. Andrew Cuomo signed the bill into law, more than half of the listings in New York City violated the new rules.

But while laws affecting the supply side of the short-term rental market have received quite a bit of attention, the policies impacting demand for these rentals often goes unnoticed. However, many state and local governments have rules limiting public employees from using these options — even though doing so means they end up paying more for lodging or staying in a less convenient location. Sometimes these limitations are explicit prohibitions on using these types of services, while at other times government agencies make the process to do so too cumbersome or the rules so vague that their employees simply give up.

In Georgia, for example, the state government bans services like Airbnb indirectly by not allowing its workers to stay in private residences. The travel policy for government employees states, “All lodging claims must be documented with receipts and must be at a business that offers lodging to the general public, such as a hotel or motel, and not a private residence.” In North Carolina, the state discourages, but does not prohibit, government workers from obtaining short-term rentals. The policy reads, “Note that under this section of the State Travel Policy, obtaining lodging through Airbnb, VRBO.com or other home-sharing services requires prior approval by the State Office of Budget and Management. Therefore, these home-sharing services are discouraged.” So basically, the state creates just enough red tape to dissuade all but the most determined users.

Illinois has one of the most explicit state bans. Its policy states: “The State of Illinois requires employees who are traveling on official State of Illinois business travel to contact hotels listed in the Preferred Hotel listing first when seeking overnight accommodations. While the online marketing site Airbnb may at times offer lodging within or lower than the maximum lodging rate in certain areas, the State of Illinois will not reimburse employees who choose to obtain lodging through Airbnb while traveling on State of Illinois business.” There is a certain tragic irony that the policy itself acknowledges that this restriction is costing the state money. Hopefully, the current administration will consider the impact these types of restrictions have on their internal culture. Past research has shown that organizational culture can support or hinder innovation, and government agencies that limit their workers from using the latest digital tools and technologies will surely fall behind the curve. States, especially those that want to be digital trailblazers, should eliminate these types of policies and back up their ostensibly pro-innovation rhetoric with meaningful action to ensure their staff are not restricted from participating in the sharing economy.
Video Conference Sharing
The Polycom Pano connects to any display to enable wireless content sharing from PCs, Macs, tablets and smartphones — even live video. Anyone in a meeting can share up to four streams of simultaneous content side by side, from any device, without the hassle of juggling cables, pucks or dongles. Pano’s built-in security safeguards limit sharing to the target monitor and protect content once a meeting is concluded. Add a Pano to a touch monitor and an expanded set of capabilities are available, with annotation and interactive whiteboarding features. Pano works with existing video equipment, making it easy to add on to current conference room technology. polycom.com

Power Tablet
The Apple 12.9-inch iPad Pro tablet is available in 64 GB, 256 GB or 512 GB capacity. The LED-backlit multitouch display offers 2732 x 2048 resolution at 264 pixels per inch. The tablet contains a 12-megapixel camera with optical image stabilization; Wi-Fi (802.11 a/b/g/n/ac); dual band (2.4 GHz and 5 GHz); HT80 with MIMO; and Bluetooth 4.2 technology. Users have up to 10 hours of surfing the Web on Wi-Fi, watching video or listening to music, or up to nine hours of surfing the Web using a cellular data network. The iPad Pro also comes in a 10.5-inch version. apple.com

Mighty Thin Client
Dell announces its light, small and power-efficient Wyse 3040 thin client. Compatible with Citrix, Microsoft and VMware virtual workspace environments, the 3040 provides a cost-effective thin client that is highly secure, yet easy to deploy and manage. The entry-level unit features an Intel Atom x5 1.44GHz quad-core processor that supports up to 2 GB DDR3 RAM and 8 GB flash. It contains the following ports: three USB 2.0; one USB 3.0; one audio-mic combo jack; two DisplayPorts; and one RJ45. dell.com

For more product news, log on to explore Government Technology’s Product Source. govttech.com/products
You may already know that keeping an updated content calendar is a good way to manage content for your agency’s social media profiles, but what are some of the best methods for actually doing it? While the technology platform you select for your content calendar is important, having a solid strategy behind it and making a commitment to regularly update it are equally critical.

**Method: General Themes**

One approach is to create a general theme calendar that identifies the months, days and weeks of important content. Some agencies include upcoming events, holidays (don’t forget hashtag holidays), preparedness dates, major agency meetings (please try to find a unique angle), etc. The general theme calendar guides content so you don’t have to think about what is important to focus on every day. It provides a general reminder about what content is relevant for the coming month or week.

**Method: Specific Posts**

Many social media managers have more involved calendars that include a bank of actual posts to pull from. This content calendar includes posts, identifies the social network and includes dates and times. It may focus on the type of content needed as well (photo, video, etc.) to help prepare for specific styles of content. With either content calendar method, it is important to meet with your team and review it regularly. Don’t have a social media team? Consider including department leads who can provide insight on what upcoming events or activities are valuable to the public.

Some government social media managers meet once a month for brainstorming sessions with the larger team in order to identify upcoming initiatives for the calendar. Then, review the calendar weekly to develop post language and gather graphics. Monitor the calendar and scheduled posts daily in case something changes. Sometimes breaking news needs to take precedence over preplanned content. Remember to pause scheduled posts immediately during a crisis or emergency. Cheerful messaging that is off-topic during those situations sends the wrong vibe.

**Consider the Big Picture**

The best of both methods would be a system that combines general themes along with specific posts. You can get old school on your platform — even if your content calendar is a shared spreadsheet with a tab for themes and another one for specific posts.

Many content calendars stop at just the content and don’t integrate with big-picture goals. This is a missed opportunity to have your social media program come full circle to encompass big-picture short- and long-term goals.

With that in mind, you get bonus points if you develop a method for formally integrating the content calendar with your agency’s social media goals and overall business goals. At the basic level, this might simply be color-coding or adding a symbol next to each theme or post that ties it in with these bigger-picture goals. On a more robust platform, this might involve adding tags that relate the content to goals.

Matching content calendars to goals becomes most valuable when you regularly quantify and evaluate the application of the content to the goals. While you’re at it, send a quick report to leadership to remind them that what you’re doing matters and directly supports the overall mission of the agency.

Kristy is known as “GovGirl” in the government technology industry. A former city government Web manager with a passion for social media, technology and the lighter side of government life, Kristy is the CEO of Government Social Media.
Cloud environment quickly getting out of control?

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