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APRIL/MAY 2021

Top

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Doers,
Dreamers
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SECRETARY, MARYLAND
DEPARTMENT OF INFORMATION
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Two Decades of Top 25

Nimble. Flexible. Creative. These might not be words readily used to describe the people that populate the government workforce. But the pages that follow offer many examples of why they should.

This issue marks the 20th year of *Government Technology's* Top 25 Doers, Dreamers and Drivers. Conceived as a forum to celebrate the largely unseen and unsung work of innovative and visionary government leaders, we've honored more than 500 people since that inaugural set of winners in 2002.

In a most unconventional year, there was no shortage of inspiring work taking place in state and local government — work that underscored to so many why they got into public service in the first place. Fundamentally, it was to help people. After all, when it comes to organizational mis- sion, public-sector work can't be beat.

This year's honorees were tested in ways they likely never anticipated, and their work sustained the capacity of their organizations to serve their vast constituencies. Here are a few characteristics that stand out to me about this group.

They're creative. New problems call for new solutions, and our 2021 cohort was challenged like never before. We chose this year to acknowledge the accomplishments of all state and local government chief information officers with a group award for solving the problems before them by quickly shifting entire workforces to remote work and equipping them with the necessary tools to keep government running.

They were also on the front lines of moving as many services as possible online. They did this to keep these services available during a pandemic with an uncertain end date. In many cases, their work accelerated their agency's planned digital transformation by several years.

They're great communicators. Once upon a time, IT staff were relegated to dark data centers, plying their trade outside of the public eye. But today's CIO has to mirror strong technical skills with the ability to translate tech issues into terms non-technical staff and policymakers can understand and identify with. Many CIOs talk about the need to understand the business needs of their organization, and let those business needs drive tech deployments. Our honorees are very good at it.

They're citizen-focused. While many on this year's list have considerable technical expertise, they're not interested in wowing you with technology that's ahead of its time. They understand that tech needs to solve problems and offer better, more convenient services. These themes came through time and again as we interviewed them about their work.

James Weaver, former CIO of Washington (who earned the same job in North Carolina after he'd made this year's list), spoke about his citizen-focused mindset: "It's great we had digital services, but if people can't connect and avail themselves of it, we're failing in our mission," he said.

They're collaborative. Maricopa County, Ariz., Chief Information Security Officer Lester Godsey works in an organization that is largely, but not completely, centralized. He focuses on building relationships with other IT leaders in order to build trust and consensus among county agencies as well as with external partners. Further, he shares best practices broadly, empowering stakeholders to achieve the high security standards he sets for the county.

"We frankly try to remove any excuse not to work with us," Godsey said.

If the past year has taught us anything, it's that technology is a foundational underpinning of a successful government enterprise. But it needs smart, committed people behind it to make sure it delivers on government's mission. Here's to this year's Top 25. 



Publisher: Alan Cox, alanc@erepublic.com

EDITORIAL

Editor: Noelle Knell, nknell@govtech.com
 Managing Editor: Lauren Harrison, lharrison@govtech.com
 Web Editor & Photographer: Eyraron Eidam, eedam@govtech.com
 Senior Copy Editor: Kate Albrecht, kalbrecht@govtech.com
 Copy Editor: Kali Tedrow, ktedrow@govtech.com
 Associate Editor: Zack Quaintance, zquaintance@govtech.com
 Associate Editor, Data & Business: Ben Miller, bmiller@govtech.com
 Education: Andrew Westrope, awestrope@govtech.com
 Assistant News Editor: Jed Pressgrove, jpressgrove@govtech.com
 Staff Writers: Skip Descant, sdescant@govtech.com
 Julia Edinger, jedinger@govtech.com
 Katya Maruri, kmururi@govtech.com
 Brandon Paykaman, bpaykaman@govtech.com
 Andi Wong, awong@govtech.com

Web Producer: Andi Wong, awong@govtech.com

DESIGN

Chief Design Officer: Kelly Martinelli, kmartinelli@govtech.com
 Senior Designer: Crystal Hopson, chopson@govtech.com
 Production Director: Stephan Widmaier, swidm@govtech.com

PUBLISHING

Senior Vice Presidents: Shelley Ballard, sballard@govtech.com
 Kim Frame, kframe@govtech.com

Sales Directors: Mark Androvich, mandrovich@govtech.com
 Carmen Besirevic, cbesirevic@govtech.com
 Lynn Gallagher, lgallagher@govtech.com
 Karen Hardison, khardison@govtech.com
 Kristi Leko, kleko@govtech.com
 Rebecca Regrut, rregrut@govtech.com
 Lara Roebbelen, lroebbelen@govtech.com
 Kelly Schieding, kschieding@govtech.com
 Melissa Sellers, msellers@govtech.com
 Joelle Tell, jtell@govtech.com

Bus. Dev. Manager: Sheryl Winter, swinter@govtech.com

Inside Sales: Dana Kansa, dkansa@govtech.com
 Brittany Hopkins Siebel, bsiebel@govtech.com
 Katrina Wheeler, kwheeler@govtech.com

Sales Administrators: Janaya Day, jday@erepublic.com
 Tara Holm, tholm@erepublic.com
 Lien Largent, llargent@govtech.com
 Jane Mandel, jmandel@govtech.com
 Sharon Penny, spenny@govtech.com

Chief Customer Success Officer: Arlene Boeger, aboeger@govtech.com
 Dir. of Content Studio: Jeana Bigham, jbigham@govtech.com
 Dir. of Digital Marketing: Zach Presnall, zpresnall@govtech.com
 Subscription Coord.: Ennie Yang, subscriptions@govtech.com

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 Chief Innovation Officer: Dustin Haisler, dhaisler@govtech.com

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KANSAS CHOOSES CLOUD TO PUT CITIZEN SERVICES FIRST

The state's new integrated eligibility cloud environment ensures its most vulnerable get the help they need.

When the COVID-19 pandemic sparked an economic crisis, it generated an extraordinary demand for social services like food assistance, childcare assistance and Medicaid. In response, the federal government passed the emergency Families

First Coronavirus Response Act, which gave states authority to expand Supplemental Nutrition Assistance Program (SNAP) benefits to eligible citizens and to be more creative in how they support family and childcare provider needs. While the increased assistance was welcomed by families in need, adjusting to the change created challenges for many states. From a technology perspective, it meant reconfiguring the legacy IT systems many states rely on to manage SNAP, Temporary Assistance for Needy Families (TANF), the Low Income Home Energy Assistance Program (LIHEAP) and childcare assistance.

For Kansas IT decision-makers, making the adjustment was simple. The state recently migrated its integrated eligibility system to a cloud-based architecture. Because the new architecture provides the flexibility and scalability the state needs to react to new federal mandates, Kansas Health and Human Services (HHS) leaders issued an additional \$11 million in SNAP benefits to approximately 60,000 citizens over the course of one night. Kansas was also able to re-open the LIHEAP season and issue mass supplemental childcare assistance benefits to families impacted by changes to school structure.

The Road to Modernization

In Kansas, health and human services are managed by two agencies: the Kansas Department of Health and Environment, which handles medical-related benefits such as Medicaid and the Children's Health Insurance Program (CHIP), and the Department for Children and Families, which handles food, cash, energy and childcare assistance.

Years ago, Kansas leaders realized the legacy infrastructure supporting both agencies was failing. The physical IT infrastructure was no longer supported by its respective manufacturers.

Upgrading operating systems to support constantly changing security requirements was becoming more difficult. Scaling to support a growing number of citizens in need was nearly impossible. State leaders needed a new infrastructure solution to help them meet federal and state requirements aligned to citizen services and benefits such as health care, food assistance, childcare assistance and employment services. They also needed a system that was scalable and would allow them to integrate HHS to better serve citizens.

To address these challenges, Kansas leaders engaged Accenture, which was already supporting its integrated eligibility system called the Kansas Eligibility Enforcement System (KEES). As part of a process to modernize and improve operations, the state moved away from private cloud and shifted operations to the public cloud.

"We knew the infrastructure we were running KEES on needed to be replaced so we embarked on identifying a solution before it became a problem," says Glen Yancey, chief information officer for the Kansas Department of Health and Environment. "Working with Accenture, we tested a technology solution leveraging cloud and proved that the Oracle Cloud could be a long-term solution for us."

The state eventually settled on a hybrid approach leveraging Oracle Government Cloud, Oracle Cloud Infrastructure (OCI) and Oracle Exadata to support KEES.

Meeting Government Standards

As the state began to transition KEES, it became clear the three-way partnership between Accenture, Oracle and the state would be critical to success.

"There are always challenges with a big HHS IT implementation. It's how the team pulls together to resolve them that makes a difference," says Elizabeth Wolff, enterprise systems director for the Kansas Department of Health and Environment. "I'm incredibly proud of the team — especially the state workers — and the endless hours they put into the project to learn new technologies and make it successful."

Use of Oracle Government Cloud allowed Accenture to refresh and improve the security posture of KEES by running in a Minimum Acceptable Risk Standards for Exchanges (MARS-E) 2.0 environment and leveraging Oracle's FedRAMP-ready infrastructure and third-party solutions like Fortinet and MegaPort.

"States can't just ask a cloud provider to be FedRAMP ready, they also need to ensure their application is appropriately certified and protected through application design, access controls and separation of duties," says Raymond Han, managing director at Accenture.

"States need a vendor that can help them do that, because it's not just FedRAMP, it's a combination of things that drives success. The rules and the threats change every day. You have to have a flexible infrastructure so you can constantly adjust your security posture."

A Three-Day Cloud Migration

KEES on Oracle Cloud went live over a three-day holiday weekend in January 2020. A quick migration was critical to ensure as little disruption as possible.

"Life goes on for citizens — they need emergency food assistance, medical coverage, health care," says Han. "It was important to keep that in mind as we shifted to the new cloud architecture."

A fast migration was also critical for state HHS employees, because the longer the system was down the bigger their backlogs would grow.

"By keeping the system implementation and transition time low, we reduced the snowball effect of workload for the state employees," says Han.

Yancey notes, "This was the smoothest technology transition that I have seen in my career."

As the new KEES cloud architecture rolled out, the state saw immediate performance improvements. Going forward, the state also expects to see substantial annual cost savings due to the elimination or reduction of licensing fees, patching costs and hardware expenditures.

Perhaps most importantly, the new cloud architecture provides the state with more dynamic and responsive services, and it didn't take long for those benefits to be put to the test. When the COVID-19 pandemic prompted a state lockdown and high numbers of job losses shortly after the new infrastructure launched, the state saw a dramatic rise in food, cash and medical assistance applications.

"The ability of cloud to scale to support the needs of citizens is critically important," says Han. "When COVID-19 hit and activity on

the state's website spiked, the new system didn't skip a beat. The state now has the flexibility, scalability and computing power it needs to adjust to unexpected circumstances and serve citizens faster."

"Program managers have high expectations for their IT departments and vendors," says Sandra Kimmons, director of Economic and Employment Services, Kansas Department for Children and Families. "They expect changes to occur quickly and accurately to respond to public needs. As changes and new program requirements came from FNS (Food and Nutrition Services) around Pandemic EBT and other programs, KEES allowed the state to react and respond to those changes very quickly."

That flexibility and scalability will continue to be critical as COVID-19 prompts additional changes and new federal mandates.

"Implementation of KEES on Oracle Cloud means the state can manage increased volumes and new programs that weren't even on the horizon four weeks ago," says Han.

Balancing Risk and Reward

Today, KEES serves more than 400,000 Kansans annually, and that number is likely to rise in the wake of COVID-19. For Kansas, the timing was fortuitous. KEES will allow the state to adjust and scale as citizen needs change and enable citizens to benefit from a more integrated health and human services system.

KEES was also a lesson in balancing risk and reward.

"Risk is the ultimate decider for a lot of state agencies," says Han. "Kansas had a variety of options when this all started. The simplest and least risky solution would have been to go back to a converged infrastructure solution and buy more hardware."

But because Kansas HHS leaders took a long-range view, the state is now benefitting from a new infrastructure faster than anticipated.

"State leaders thought they would see the rewards of the new cloud-based integrated eligibility system in a year," says Han. "They ended up seeing rewards in two or three months."

Meanwhile, the three-way partnership between the state, Accenture and Oracle continues to flourish post-implementation.

"We continue to collaborate and adopt new technologies to improve KEES," says Lee A. Norman, MD, secretary of the Kansas Department of Health and Environment. "The partnership with Accenture has been critical to helping us find a sweet spot of technology implementation, business improvement and improved outcomes we're all striving for."

This paper was produced by the Government Technology Content Studio, with input from Oracle & Accenture.

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Tax Act

In February, the Maryland Legislature enacted a bill that would allow the state to be the first in the nation to collect taxes on digital advertising. The legislation is aimed at companies like Facebook and Google that take in more than \$100 million in digital ads. Opposition to the bill comes from Gov. Larry Hogan as well as business groups that worry small businesses and consumers will end up paying more than they currently do. Experts told *GT* that while states do need to rethink their tax structures to reflect the growth in online commerce, it will not be an easy path forward.

FULL BORE

The San Bernardino County Transportation Authority will contract with The Boring Company to construct a four-mile tunnel to serve a commuter rail station and Ontario International Airport in Southern California. The four-year, \$85 billion project will use zero-emission, and possibly autonomous, vehicles to ferry passengers between the airport and a Metrolink station in Rancho Cucamonga.

500

The square acreage of The Curiosity Lab, a smart city testbed in Peachtree Corners, Ga.

7%

Projected growth in state and local government IT spending in 2021, according to the Center for Digital Government.*

Biz Beat

In what is likely the biggest gov tech deal ever, Tyler Technologies announced it plans to buy NIC for a staggering \$2.3 billion. The acquisition brings together Tyler's local government platform with NIC's state digital services, and market experts believe it points to a bright future for the industry, as such moves often trigger cycles of investment and growth in the ecosystem as a whole.

120_K

The number of rideshare drivers who voted for California's Proposition 22 last November; in February, the state Supreme Court dismissed a claim that it limits gig workers' ability to advocate for better pay and working conditions.

WHO SAYS?

"If it's a carrier pigeon we need, we'll wire up that carrier pigeon."

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*The Center for Digital Government is part of e.Republic, Government Technology's parent company.

\$3_M

The value of a funding round raised by Camino, a startup that makes permitting and licensing software for government.



Mapping the Data

Philadelphia's unique model for data and GIS governance offers an example for other cities.

In many ways, “doing more with less” is the mantra of city government, and in the modern smart city, more cities are trying to pull more analytic power and utility out of existing systems. One solution is the evolving and broadening role of the chief data officer. In Philadelphia, CDO and Geographical Information Officer Henry (Hank) Garie demonstrates a path toward doing more within existing structures and systems.

Philadelphia's comprehensive approach is even reflected in Garie's unique title. A member of the Civic Analytics Network, a group of city CDOs we facilitate at the Harvard Kennedy School, he is the only one who occupies the dual position of CDO and geographical information officer. Garie's joint appointment elevates a new model of structuring organizations to accelerate the use and adoption of analytics.

For years, many cities buried the GIS functions down below management levels, tucked inside other agencies. Typically, a GIS technician would respond to a request (generally from an official) asking them to map some city service.

Of course, it wasn't until six years ago that the CDO job widely existed. The huge amounts of data hidden away in city digital file cabinets were generally viewed as transactional — a software system designed to help fill a pothole or clean out a sewer. Increasingly, however, cities

are recognizing that data is an asset, and that the analysis of that data will help the city operate more effectively. It's time for the same maturation and development of the GIS role.

Together with Philadelphia CIO Mark Wheeler, Garie deepens the city's use of data. Even the consolidation of functions into a single position like Garie's demonstrates a commitment to pulling more capacity out of the existing software and data.

Many of us who have worked in city hall are familiar with the constant consideration of what functions should be housed in the agencies and which capacities should be in the CIO's office. Philadelphia's answer is both. GIS talent in the IT department supports the agency, but individuals familiar with applying GIS also exist in other departments. Garie established the GeXchange, a geo-exchange governance structure that meets monthly so that GIS managers and data leads can come together across departments and share success stories and challenges. Just a few years ago, there were fewer than 10 attendees; by 2020, there were consistently 65 attendees each month. This hybrid model facilitates not only talent sharing but also availability and responsiveness to agency needs.

Given the unique model, managing up as well as down is part of the Philadelphia story. A major component of the city's data success is the role that Wheeler plays by staying involved at the mayoral

level and consistently demonstrating how analytics can support policymaking. This provides Garie with an avenue to directly demonstrate the power of spatial analysis and show how GIS can integrate with programmatic tabular data to help solve real problems.

All too often, custom and habit thwart imagination. Understanding the power of analytics — especially as it relates to new approaches and business process re-engineering — is often triggered by an experience in another area. For example, by demonstrating how GIS could aid licenses and inspections by improving customer service, Wheeler built relationships with those departments and showed the power of analytics to senior officials.

This creativity extends to the current pandemic as well. Wheeler explained that the GIS component of the COVID-19 economic recovery task force was developed by cross-agency brainstorming. “It was just a great example of opening the eyes of a whole new group of agency officials about the ways we can help them,” he said.

Philadelphia is constantly mentoring and making sure that individuals with data responsibility that are spread around the departments feel connected, have a professional growth pattern and see the central vision. This powerful work is a model for other cities that want to do more — for marginalized communities, for residents during economic recoveries and for fellow city employees. **91**

Stephen Goldsmith is a professor at Harvard Kennedy School and director of the Innovations in Government Program and Data-Smart City Solutions. The former mayor of Indianapolis, his latest book is *The Responsive City: Engaging Communities through Data-Smart Governance*.



Stacy Mill

Chief Technology Officer and Deputy Chief Information Technology Officer, Kansas

When *Stacy Mill* came to state government from the private sector in 2019, she brought years of experience. Her skills in addressing IT risk management and enhancing operational excellence are serving her and Kansas well as the state works to address common challenges like bolstering security, modernizing legacy systems and supporting broadband accessibility.

1 Can you describe your role with the state? In the CTO role, I lead the Office of Information Technology Services, which is the centralized services agency for the state of Kansas. That's everything from operations of IT to all the different data services, as well as all the professional services we provide. Secondly, I partner with all the CIOs in the various agencies, as well as non-cabinet agencies like highway patrol and others. Lastly, I'm in a dual role. As the deputy chief information technology officer, I also oversee a lot of the security functions along with the CISO, the chief architect and the chief operating officer.

I started when we had the change of administration. Our secretary of administration, DeAngela Burns-Wallace, approached me. She was new to the CITO role and brand-new to the secretary of administration role. A great conversation ensued, and long story short, I just fell in love. The main pillars I'm focused on are operational excellence, IT risk management, technology modernization and IT service management.

2 How do you work with agency CIOs to balance their needs and champion innovation? My background has served me well, having worked in health care, food service with Yum! Brands, automotives and manufacturing. Each agency is like a different ecosystem. Their services are different, their customers have different needs and it's not a one-size-fits-all situation. The main thing is to build relationships to understand what needs are. We're here to provide service, not to dictate service. That takes trust. I've never worked in government before and have grown up in corporate America. What I saw when I started was that agencies were paying premium dollars for great tools, for example, but were either not getting the service they were paying for or not having the training needed to use it.

That's been a big thing — getting the lay of the land, seeing what we're offering and understanding the technical debt of a state that had literally not refreshed hardware in more than eight years when I arrived. We're asking, "What are your needs? And what do

I have to serve your needs?" I sat down with every single person on my team and every CIO. I organized all the feedback and worked to present a simple strategy around how can I help. I am not here to own anything; I am here to make sure you have what you need.

3 Is your office involved in Kansas' broadband efforts? We have an Office of Broadband Development under our Department of Commerce. That happened last year. The big thing for me with lack of broadband is that it relates to innovation. Software-defined wide area network, for example, leverages as a main core component virtualization of security, and it brings that all together in a solid layer that takes advantage of broadband. Broadband is really a larger input at a cheaper price.

It's not anything new, but what I saw here was an outdated circuit-to-circuit network. We're still there. Nothing's changed yet, but that's next: How do we modernize our own infrastructure to meet needs? Meanwhile, I've partnered on broadband because our work is not just about providing services, it's also about constituents' access to those services and it's also about our employees. During this pandemic, it was revolutionary for them to be working from home, and they need broadband. We need broadband to enable industry, commerce and growth, but also to enable our constituency to digitally connect to a bigger world.

4 What are some of your new projects for 2021? My big thing this year is having our team working on operational excellence. We have a great team. We staffed a new COO and an enterprise architect. The COO has an IT service management background, and she's building on our service desk, modernizing and leveraging the tools we have.

We're also working hard on modernization. That's job one for me: What does our network of the future look like and how do we get there? No. 2 is working with the CISO on IT risk management and helping provide what we need for that next layer of cybersecurity. The last thing is working with the CITO to enable our leaders and make sure every level of our organization is set for success. 

— Zack Quaintance, Associate Editor

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The Top 25 of 2

There are countless ways to break down the 2021 Top 25 Doers, Dreamers and Drivers. This group caught our attention for their commitment to smart technology use that solves real problems, helps government run more smoothly and serves citizens better. Here are a few hints as to who makes up the 2021 cohort. Read their full profiles on the pages that follow.

Who They Are

Longest-serving state chief information officer

Digital inclusion pioneer

Leader of an award-winning digital county for more than two decades

Effective cybersecurity advocate cultivating a whole-of-state approach

Network of experts connecting volunteer technologists with tech-related COVID-19 needs

Customer experience-focused transit official

Advocate for equitable tech work that improves quality of life

Dual holder of statewide innovation officer title and second-ranked statewide elected official

Academic leader working on meaningful ways to evaluate the ethics of police technologies

Holder of top technology titles in three different states

What They Did

Introduced virtual building inspections

Formed a specialized election security unit to combat disinformation

Launched a new website on an open source platform

Enabled continuity of operations and facilitated large-scale telework amid a global pandemic

Fostered contactless connections to city government

Leveraged an existing one-stop portal to meet pandemic-related grant needs

Implemented virtual reality training and screening for caseworkers

Oversaw the transition to a multi-supplier model

Developed a lifesaving app to track people and resources at fire scenes

Instituted new means of communication to keep IT groups connected

021

Where They Work

Why It Matters

Washington, D.C.



Accelerated digital transformation to ensure safe citizen access to government services

Protected democratic institutions by securing America's elections and challenging unfounded fraud allegations

Prioritized user-focused technology work that is accessible to all

Advanced the practice of cybersecurity by forming trust-based relationships that build momentum for best practices

Recognized equalizing power of technology for agency clients

Kept focus on cybersecurity, enabling it to remain a funding priority

Created a foundation for state data efforts by working to institute a new data platform

Supported a citizen-centric approach to technology, connecting investment to impact

Championed an innovation culture that enables nimble responses to ever-changing challenges

Consolidated IT infrastructure and staff to save money and maximize efficiencies

Jeff Baer, CTO, Portland, Ore.

Jonathan Behnke, CIO, San Diego

Brian Benn, CIO, Atlanta Housing Authority

Jack Belcher, CIO, Arlington County, Va.

Deborah Blyth, CISO, Colorado

Annette Dunn, CIO, Iowa

Joshua Edmonds, Director of Digital Inclusion, Detroit

Lookman Fazal, Chief Information and Digital Officer, New Jersey Transit

Kevin Ford, CISO, North Dakota

Lester Godsey, CIO, Maricopa County, Ariz.

Jena Griswold, Secretary of State, Colorado

Tanya Hannah, CIO, King County, Wash.

Farhang Heydari, Executive Director, Policing Project at NYU School of Law

Jeanne Holm, Deputy Mayor, Los Angeles

Kevin Jones, CIO, Indiana Department of Child Services

Adita Karkera, Deputy State CDO, Arkansas

Christopher Krebs, Former Director, CISA

Michael Leahy, Secretary, Maryland Department of Information Technology

Nelson Moe, CIO, Virginia

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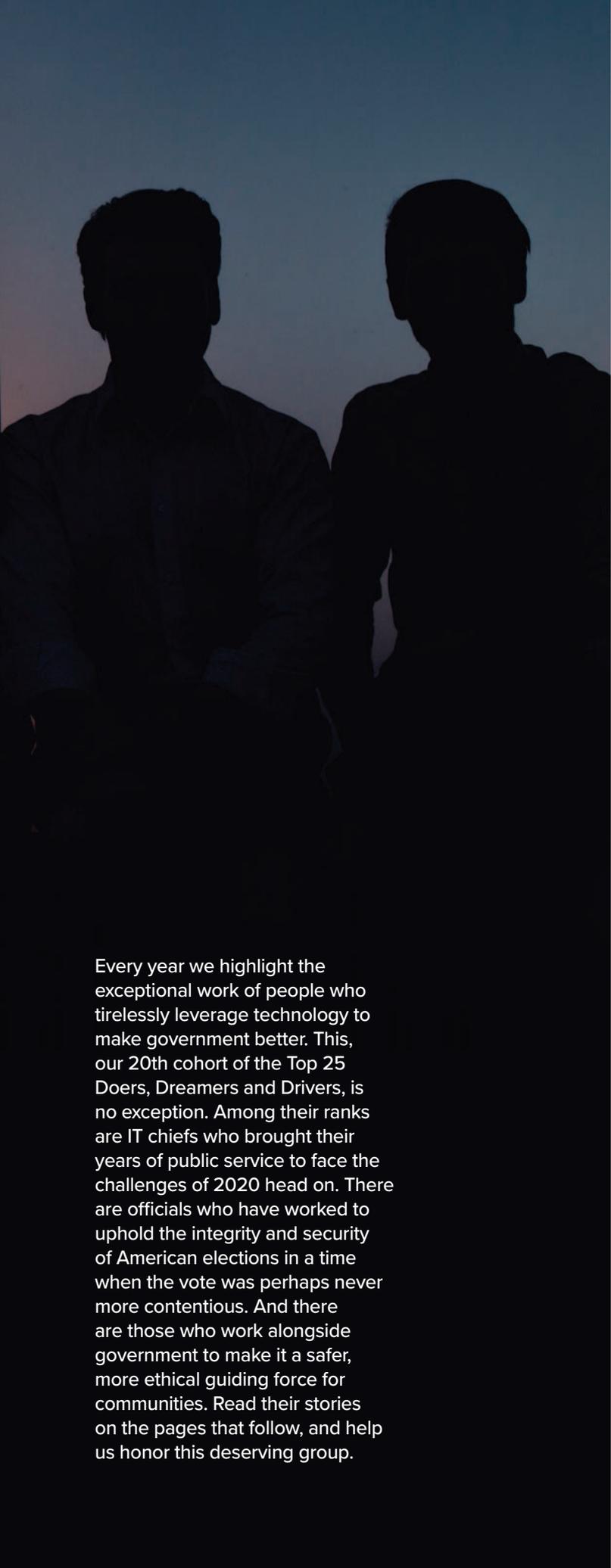
Andy Bozzo, Founder and CDO
Will Pigeon, Founder and CTO



TOP 25

2021

Doers,
Dreamers
& Drivers



Every year we highlight the exceptional work of people who tirelessly leverage technology to make government better. This, our 20th cohort of the Top 25 Doers, Dreamers and Drivers, is no exception. Among their ranks are IT chiefs who brought their years of public service to face the challenges of 2020 head on. There are officials who have worked to uphold the integrity and security of American elections in a time when the vote was perhaps never more contentious. And there are those who work alongside government to make it a safer, more ethical guiding force for communities. Read their stories on the pages that follow, and help us honor this deserving group.

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State and Local Government CIOs and Technology Staff

What would have happened if the COVID-19 pandemic had hit in the 1980s?

Think about it: The world is now in a recession because the coronavirus has created so many obstacles to normal economic function. But despite that, a large chunk of the workforce — about one-quarter as of December, according to the Bureau of Labor Statistics — has been able to continue working remotely, hampering the disease's spread while keeping the wheels turning.

In government, the percentage of people teleworking has been even higher than that. And it wouldn't have been possible without technology.

CIOs, take a bow.

In a time when government has been under immense strain to serve the public with fewer resources and less time, the IT shops stepped up. Thanks to the investments CIOs have made over the years, as well as their quick thinking and bold action in 2020, government has been able to keep serving the public while minimizing the risks of the deadly virus.

It wasn't just telework, either. In our Digital States,

Digital Counties and Digital Cities surveys this year, as well as countless interviews and news reports, *Government Technology* has seen examples of state and local IT getting it done everywhere we look. They scrounged up laptops for workers to use from home. They deployed thousands of Wi-Fi hot spots to help students take classes online. They rapidly expanded call center capacity to handle the flood of questions coming in from the public. They helped unemployment insurance systems handle an unprecedented level of demand. They helped move government services online. To support it all, they expanded networks, beefed up cybersecurity and deployed new technology in record time.

Has it been flawless? No, of course not. There have been hiccups, mistakes and even failures that carried real costs. But in these times, that was to be expected. Given popular perception of government ineptitude, perhaps many will be surprised that more didn't go wrong.

From our view, CIOs at every level of government deserve a massive round of applause for their work supporting our public institutions during a historic test of the nation's mettle. Thank you.

—BEN MILLER



Jonathan Behnke

CIO, San Diego

Jonathan Behnke, San Diego's CIO of nearly seven years, is helping steer California's second largest city by population through the rough waters of the COVID-19 pandemic by listening closely to staffers and residents alike.

Behnke has focused the rollout of digital services during the pandemic on engaging residents and city employees in smarter, more innovative ways. The city's Development Services Department moved all permitting online last year and uses Google Meet to conduct virtual building inspections. Officials expanded Internet access at city facilities during COVID-19, opening outdoor community computer labs at 10

libraries with laptops available for checkout, and expanded the San Diego Access 4 All digital equity program with more Internet service in parks. A plan to deploy more than 200 street-based Wi-Fi hot spots is also in the works.

Four areas of internal progress are helping San Diego move forward on its digital transformation. The city has adopted ITIL best practices, and more than 90 percent of its service delivery staff are certified in ITIL — which is also incorporated into IT service contracts. Officials have also created a strategic technology advisory committee with directors of all departments among its members to provide feedback on priorities, tech initiatives and

tools. In 2019, the city created a digital strategy group located in IT that works with all departments; it has also created a group within IT that focuses on IT contracts, manages large RFPs and works with other departments on their procurements.

Behnke recommends making time to celebrate IT's successes, even as teams move swiftly from project to project, and is optimistic that there are many more successes ahead. "I think COVID has really helped us accelerate digital transformation, and as an IT organization, we're excited to keep it rolling," he said.

— THEO DOUGLAS

James Weaver isn't into some of the flashier aspects of gov tech. He doesn't talk about cryptocurrency or machine learning. What he does care about is how his teams can use technology to improve government and better serve citizens.

Weaver was CIO of Washington from late 2018 to early 2021, but he's a public-sector IT veteran. He started as a part-time clerk in the Pennsylvania Department of

DAVID KIDD



James Weaver

Former CIO, Washington

Public Welfare, where he stayed for nearly 30 years, which included time as deputy CIO. That showed him what it's like to be on the front lines of government. "When you think about the gratification that is derived from public service," Weaver said, "human services is one of those areas where you are making profound differences in people's lives."

After several years as chief technology officer in the Pennsylvania Office of

Administration, he made the move to Washington, which had been without a permanent CIO for a year. Weaver came in with a strong belief that business drives IT, rather than the other way around, which made a big impact on the decentralized environment in Washington. While everyone has a little "techno geek" in them, he said, that doesn't matter if IT doesn't understand what agencies do and what they need to do that well.

Even before COVID-19, Weaver had Washington working on moving to the cloud to enable more and better digital government services, built on the fundamentals of broadband, cybersecurity and privacy. Broadband, of course, helps close the state's digital divide, which is prevalent not only in Washington's more rural Eastern areas, but also in urban Seattle.

"It's great we had digital services, but if people can't

connect and avail themselves of it, we're failing in our mission," Weaver explained. "I want to change the paradigm of digital government from a push from the agencies — 'here's what I have' — to turn the conversation toward the Washingtonian — 'here's what I need.'"

Editor's note: Just before this issue went to press, Weaver was named CIO of North Carolina.

— LAUREN HARRISON



Lookman Fazal

Chief Information and Digital Officer,
New Jersey Transit

DAVID KIDD

Lookman Fazal arrived at New Jersey Transit two years ago with a plan to modernize the large and aging transit organization.

He came just in time.

“Had we not done that, there would have been a lot more COVID-positive cases within New Jersey Transit, which may have translated to a lot more deaths,” Fazal said recently.

“When I joined in 2019, we were still giving out wired

desktops, wired phones, no collaboration tools, everybody comes into the office, sits around the table with a notepad and a pen,” Fazal recalled, noting the kinds of tech modernization upgrades the private sector had made at least a decade ago.

“If the private sector is able to do that, why are we behind?” he wondered. “It wasn’t rocket science.”

Fazal joined New Jersey Transit in March 2019 as chief

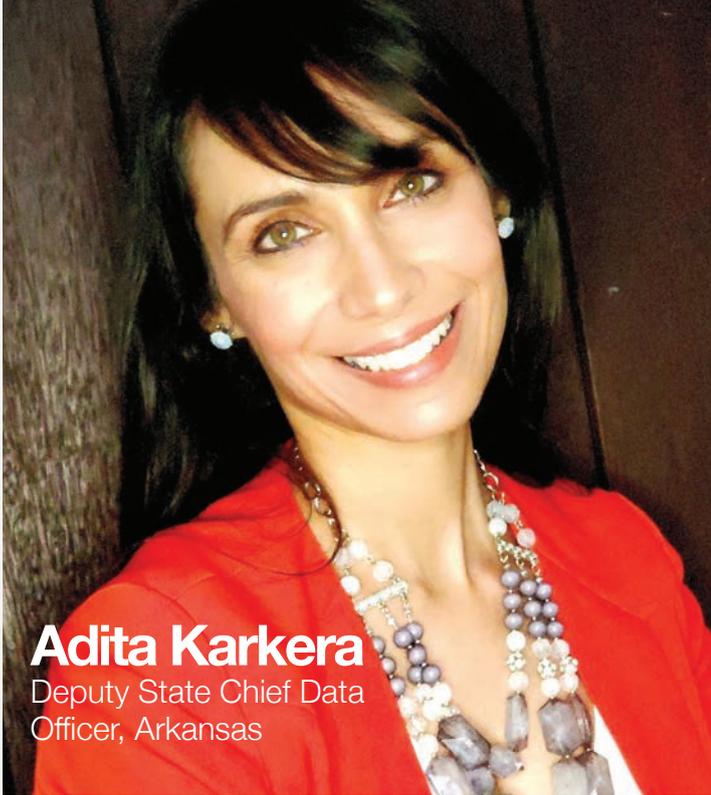
information and digital officer. Before that, he was the CIO and CISO for Argo Turboserve Corp., a private logistics and transportation company.

New Jersey Transit is a state-wide public corporation covering some 5,325 square miles, transporting more than 900,000 riders daily in a vast fleet of buses and trains. The ethos around innovation that Fazal brought to the internal workings of the organization he also brought

to the customer experience, introducing upgrades to the mobile app and its ability to send alerts and notifications to riders. Today, more riders purchase a digital train ticket than stand at vending kiosks for a paper ticket.

“If people are used to Uber-like notifications, how can we provide the same, or better, experience to our riders,” said Fazal, offering a snapshot into how he thinks about innovation.

— SKIP DESCANT



Adita Karkera
Deputy State Chief Data
Officer, Arkansas

Whether it comes from human services, criminal justice or corrections, Adita Karkera wants to find out how data can best be used to drive policymaking in Arkansas. She began work with the state Division of Information Systems, which houses the IT agency, in 2000 on a three-month contract, and more than two decades later she's still there. A major turning point came in 2017 when the Legislature created the Office of the Chief Data Officer — when Karkera was also named deputy state CDO — and the Data and Transparency Panel (DTP). Both moves formalized the state's data work and established a governance structure. The CDO heads the DTP, which includes appointees from the House, Senate and governor's office as well as each of the state agencies. Karkera pushed to take that a step further by creating agency data officers, and brought them together in a state data governance steering committee.

"You cannot just create policies and procedures from the top and think that that's going to work for every agency," Karkera said, "but

there needs to be some sort of standardization across the state." This created a culture of positive collaboration that continues to gain momentum over time.

Another initiative that is still paying dividends was the 2017 creation of an inventory of data assets across all agencies, which formed a foundation for the data governance structure. The catalog's value was further solidified by the arrival of COVID-19. In May 2020, Karkera was appointed to a COVID-19 tech advisory board that looks at how tech and data can help combat the virus, such as via contact tracing, vaccine distribution management and administration. Looking ahead, their work will shift toward developing a longer-term strategy that will include data sharing agreements that are secure, ethical and truly useful.

"As public data leaders," Karkera said, "it's our responsibility to provide guidance to the systems that are in use today to be sure agencies are creating the right ethical frameworks when they are looking to deploy new technologies."

— LAUREN HARRISON



Brian Benn

CIO, Atlanta Housing Authority

It's not enough to bring technology upgrades into the central workings of the Atlanta Housing Authority. Residents living in publicly supported housing also need access to broadband, devices and even technical job training.

"Our mission is to provide affordable housing. But what we want to make sure we provide is *quality* affordable housing," said Brian Benn, senior vice president and chief information officer for the Atlanta Housing Authority. Benn laid out initiatives to expand technology and equity among the organization's 55,000 residents in an initiative known as ACCESS (Achieving Connectivity to Create Equity and Self-Sufficiency), a three-pronged approach "to leveling that playing field."

Benn has been CIO for the housing authority for the last two years, but he was no stranger to the agency when starting that position. Prior to a brief stint working in the private sector with a medical insurance firm, Benn

served as the housing authority's senior director of IT business solutions, starting in 2012.

"I already had a good rapport with the senior leadership team, and the board ... So coming back as the CIO was almost like coming home," said Benn.

Since then, he's worked on developing an enterprise information management strategy and also prioritized getting connectivity and devices into the hands of residents.

"We're trying to promote digital inclusion, digital equity, and to just kind of level that playing field," said Benn. "What this pandemic has reminded us is that along with education being the great equalizer, technology is [also] a great equalizer."

"So in a nutshell, the digital transformation that we're on top of internally, we want to make sure that we're looking outwardly, and with intentionality," he said, "so that digital transformation extends to our participants."

— SKIP DESCANT





Greg Zickau

CIO, Idaho

Idaho Chief Information Officer Greg Zickau has been working with technology for close to 40 years. Prior to taking on his current role, Zickau served in the United States Air Force, where he was responsible for “just about all information technology on an airbase.”

When Zickau retired from the Air Force in 2004, he began work as a state policy analyst, climbing the ranks to become Idaho’s IT leader in 2008.

Today, he holds the distinction of the longest-serving state chief information officer.

As CIO, Zickau has set out to consolidate Idaho’s IT apparatus by absorbing other state agencies’ staff and infrastructure. Through that process, he’s quadrupled his staff and centralized several IT services.

The consolidation has progressed alongside some significant modernization initiatives in which legacy systems have been upgraded and practices have been standardized. Case in point is a centralized data center brought online in 2019, which united backups from five agencies in one place and offered full redundancy.

Most new hires for the consolidated organization came from the agencies that were absorbed. The overall goal was to make state IT more efficient, but central IT also added capabilities: Zickau’s department now has data analysts who will help the state use data to make better policy decisions. The state CTO takes an enterprise view of technology architecture, Zickau added.

“We’re no longer operating as a series of small businesses; we’re now operating like a state government,” he said,

adding that they have also enhanced security oversight.

Zickau points to the importance of relationship building as consolidation continues, with about 14 agencies to go.

“We want to continue to look at where we can find efficiency and how we can translate those efficiencies into increased value,” he said. “We are still in the process of building relationships with those agencies so that they see us as a trusted partner. That’s definitely a goal for us.”

— BRANDON PAYKAMIAN

Jack Belcher

CIO
Arlington County, Va.



Always looking to push technological boundaries, Jack Belcher is one of the longest-serving public-sector CIOs, appointed CIO and director of the Arlington County, Va., Department of Technology Services in August 2000. Since then, he has been out ahead of trends like building fiber networks, instituting bring-your-own-device policies and the Internet of Things. His longstanding commitment to the people of Arlington County and investment in that community meant that while no one could have predicted the impact of the pandemic, Belcher had Arlington in a good position to tackle it head-on. Looking ahead to a remote, mobile workforce and prioritizing digital equity — elements that were built into Arlington's Digital Services Master Plan for "2020 and beyond" — meant that the county didn't need to reinvent the wheel when the challenges of 2020 arose.

Belcher points to providing widespread broadband as being

the future of government's role in expanding technology. One way he is working to make sure reliable Internet reaches all corners of his county is through an effort to implement the Federal Communications Commission's Citizens Broadband Radio Service (CBRS). The system allows the county to broadcast a signal for 10 to 12 kilometers, and families and students who were not connected before can plug a small device into any laptop or tablet at home to get online. The goal moving forward, he said, is to use this technology to better serve the community and find out how it can be used to meet the community's needs.

As for how Belcher and his team plan to go about accomplishing this, he said, "We are an information technology company in the business of government. It's what distinguishes us from the rest and lets us be innovative in coming up with solutions to different problems affecting the community."

— KATYA MARURI

Annette Dunn

CIO, Iowa

Annette Dunn wants to embrace innovation when it comes to how technology is deployed in Iowa, and she's not easily dissuaded. Undaunted by many of the traditional stumbling blocks to government modernization, she said last year, "I refuse to have the right thing shut down because of politics."

As it happens, Dunn has an ally in Gov. Kim Reynolds, who supported Dunn's pitch to move to a statewide ERP system, bringing new visibility and transparency into the state's full budget picture by uniting data across agencies on a common system. The HR system will be added this year, and mid-2022 is the target date to add financial system functionality. The upgrade mirrors one Dunn undertook while CIO at the state Department of Transportation, her last stop before the CIO's office.

The project was underway when the pandemic struck, and it has continued during the many months of largely remote work for Dunn's team. Like so many IT organizations across the country, most technical staff in Iowa have made the switch to home offices, waiting for updates each month on when they might return to in-office work. In mid-November 2020, she decided to table the question until at least June. "Nothing was broken by working remotely," she explained. "I wanted to give people just a piece of certainty."

The pandemic has also changed her management approach. She's pivoted to new ways of connecting with the workforce, like regular question-and-answer sessions to share information and keep people connected.

Looking ahead, Dunn is working on building a new e-government portal where citizens can access multiple government services in one place. Now in the pilot stage with three different agencies, she's hopeful this proof of concept will grow into a smart system that citizens can move seamlessly through with a single identity, using a single payment system, suggesting additional services to citizens along the way.

Her approach inspires optimism that ambitious endeavors like this will come to fruition. "We don't have to be in these antiquated old processes and systems," she said. "We really can be innovative and our state can be customer-centric."

— NOELLE KNELL





Tanya Hannah

CIO,
King County, Wash.

Approaching her third year as chief information officer of Washington's largest county, Tanya Hannah has put her local government on *GovTech's* Digital Counties map year after year, most recently for promoting equity and adapting to COVID-19.

Last year, King County Information Technology (KCIT) implemented a strategic plan requiring an equity impact review of all technology initiatives, as well as further data collection on how different communities are being served by the county. She also oversaw the transition to telework of more than 5,500 employees, helped set up several testing sites and field hospitals for COVID-19 patients, and implemented chatbots to handle questions from the public, thus affording nursing staff 35 percent more time to focus on patients.

In addition to featuring in *GovTech's* Digital Counties list, Hannah has helped King County win multiple mentions as a top IT county by the National Association of Counties, plus consecutive

CIO 100 awards, national Government Experience awards and a FutureEdge 50 award. She did this in part with modernization projects, such as launching the King County Connect mobile app for county data and digital services, planning workshops and focus groups around it, and starting a first-of-its-kind online reporting program to collect performance data from service providers.

Taken altogether, Hannah's work demonstrates not only a keen understanding of technology and its potential within a large government enterprise, but also a focus on serving residents and lifting up the whole community.

She summed up this focus in a message on the KCIT website: "Although the latest in artificial intelligence, mixed and virtual reality, natural language processing, geo-spatial data, and IoT is incubating here, at its core, KCIT's work is about making life better and creating opportunities for county residents to thrive."

— ANDREW WESTROPE

Farhang Heydari

Executive Director
The Policing
Project at the New
York University
School of Law

Farhang Heydari feels a desire for change in the air. After police killed George Floyd in Minneapolis — to name just one video of a Black person's death at the hands of uniformed officers — he said the attitude of much of the country seems different.

"Now, more than any time in my lifetime, the part of society that never interacts with police is starting to understand the problems, and that's

DAVID KIDD



why I think there's more of a chance for change," he said.

Heydari is in a unique position to advance that change. He is the first executive director of the Policing Project, a team founded in 2015 at the New York University School of Law. The project, which includes experts and advocates such as Barry Friedman, Maria Ponomarenko and Mecole Jordan-McBride, aims to improve policing by working with departments, the

communities they serve and the companies that sell to them.

A lot of that work involves making police decisions more transparent, and amplifying the voices of policed communities when it comes to making those decisions.

Although it's not focused only on technology, the project has made some important strides in that area. It staffed Axon's AI ethics board, which was instrumental in persuading the company

not to include facial recognition in its body-worn cameras. It's also conducting audits for tech companies to help them address their problems proactively, with an attitude that a "yes or no" approach to new tools is not helpful.

The idea is to push the corporate ecosystem toward an ethos of responsibility — where profit and impact are either entwined or equally important.

"Imagine if, when you're thinking, 'Which face recognition

vendor do I go with?' one of the key questions was, what are the biases of the algorithm? What are their data privacy practices? Do they mine photos from social media? Do they keep my photos on the back end to improve their algorithm? If policymakers started asking those questions, if communities started asking those questions, we might be able to get companies to actually compete over being the most ethical."

— BEN MILLER



Lester Godsey

Chief Information Security Officer
Maricopa County, Ariz.

As the cybersecurity leader of Maricopa County, Ariz., the fourth most populous county in the country, Lester Godsey understands that a good cyberdefense hinges on one's ability to gather and incorporate new information.

This principle of cybersecurity was perhaps no more apparent than during 2020, when his county protected the integrity of three different elections. With each election cycle last

year, Godsey's team looked at what worked and what didn't to further refine its election incident response plan, which was partially based on observations made during the 2018 midterms.

If 2018 taught Godsey anything, it was that misinformation could be as big of a problem as attempts to intrude into the county's election systems. In fact, by the time the September 2020 primary began, Godsey had to dedicate more staff to social media monitoring.

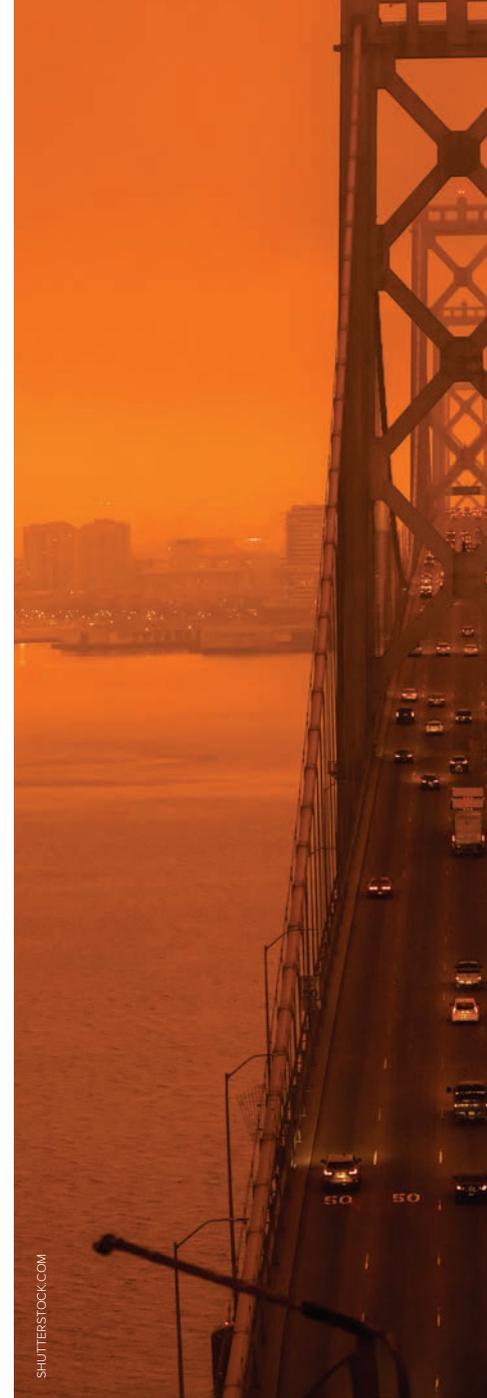
Thanks to these efforts, the county had an extremely mature process in place for the 2020 general election, which was fraught with misinformation and disinformation. Godsey's team was reporting new information every hour to keep up with ever-evolving threats.

"I've never experienced anything like that in my 25-plus years of public service, short of responding to a natural disaster," Godsey said.

Building trust-based relationships is at the heart of Godsey's cybersecurity approach. Maricopa County has a central IT organization, but there are also pockets of decentralization, with individual agencies relying on their own IT shops to different degrees. This adds complexity to Godsey's role in promoting high security standards across the board.

Rather than take an authoritative approach, Godsey strives for consensus. He shares all of his organization's frameworks, controls and applications; he develops formal relationships with IT leaders across county agencies; and he offers consultative services to agencies that need help meeting unique cybersecurity needs. "We frankly try to remove any excuse not to work with us," he said.

— JED PRESSGROVE



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Andy Bozzo and Will Pigeon are two firefighters in Contra Costa County, Calif., who knew the most pressing need for firefighters was the ability to track resources, especially human resources, when in a firefight. So they set out to do something about it.

In 2007, they put their heads together and developed Tablet Command, a software-as-a-service tool that helps first responders manage resources



Team Tablet Command

Andy Bozzo, Founder and CDO (left)

Will Pigeon, Founder and CTO (right)

and staff at the scene of a disaster. It's been a staple at fire departments in the San Francisco Bay Area for years, providing the situational awareness that can mean the difference between life and death.

Bozzo and Pigeon have been sharing their technology ever since and continue to run Tablet Command, the business. But 2020 was a breakthrough year and the company expanded into San Bernardino County, which thought so highly

of the software it replaced its Mobile Data Terminals with it.

"San Bernardino County Fire uses it in every frontline response unit to include our fire engines, squads, ambulances, chief officers, snow cat, boats and helicopter," Jeff Birchfield, assistant chief for Division 1 of the San Bernardino Fire Department, told *Emergency Management* magazine.* "We have found it to be a very effective tool with use of map layers and CAD notes, while en route to incidents,

providing situational awareness for our battalion chiefs to monitor unit status within their battalions."

"We continually strive to enhance our platform based on feedback from our users in the field, so they can have access to the most timely, appropriate and comprehensive information possible in a user interface that is easy to interpret in high-stress environments," Bozzo said. "Our purpose is rooted in our commitment to the safety of emergency

response personnel and the citizens they serve."

Tablet Command will continue to make improvements, and the next iteration will give commanders in neighboring counties the ability to share each other's communications, said Van Riviere, president and CEO of Tablet Command and a former battalion chief in Stockton, Calif. "It's only limited by the imagination and bandwidth."

— JIM MCKAY



Michael Leahy

Secretary, Department of Information Technology, Maryland

A self-proclaimed advocate of technology, Maryland Chief Information Officer Michael Leahy credits listening to others and making technology accessible as critical to creating innovation.

Appointed acting secretary of information technology in 2017 and made permanent the following year, Leahy has been at the helm of several efforts to improve how state government operates and increase engagement among Maryland's citizens

DAVID KIDD

using technology. Among them is a robust transparency portal, offering easy-to-understand data about the state's budget picture.

Leahy was among the first voices in government IT to suggest that remote work may be permanently viable for most Maryland technical staff, extending the possibility to other agencies whose work could be accomplished virtually or with smaller physical footprints.

"I'm giving serious thought to turning my agency practically,

except for our NOC [network operations center], SOC [security operations center], things of that sort, into a virtual agency," he said last May, pointing to how such a strategy could help close revenue shortfalls from the pandemic.

Having recently completed a OneStop portal to meet the licensing, permitting and certification needs of multiple agencies, Leahy's IT organization proved nimble in adding functionality to the system

to serve pandemic-related needs. DoIT worked with the Department of Commerce to enable the portal to also distribute aid for small businesses impacted by COVID-19 — and they did it in hours.

Another recent change is a "plain English" policy implemented in 2019, intended to help agencies clearly convey their challenges so that technology can be leveraged to help. He also created a new intake process, which gives

Deborah Blyth

Chief Information
Security Officer, Colorado



Deborah Blyth already had nearly 15 years of information technology experience under her belt when she took on her current role as Colorado's chief information security officer in 2014. It was in the private sector where Blyth first learned what it takes to lead information technology security initiatives with limited resources. She previously led the Information Technology Security and Compliance programs at TeleTech for five years and Travelport for four years, and also worked for five years as an information security network engineer at Galileo International.

"I feel like cybersecurity is my career calling, so the opportunity to be able to do my calling in service to the residents of the state that I love," she said, "I couldn't think of anything more rewarding than that."

When Blyth first took the helm in Colorado, she set out to identify security weaknesses that would put residents' data at risk and modernize state agency systems with the personnel and funds she had at her disposal.

"There are not enough resources, there's not enough money, there are competing priorities, and you have to sit down and create those relationships and articulate priorities," she said, drawing connections between her work in the private and public sectors.

A major ransomware attack on the Colorado Department of Transportation hit when officials were working to rapidly adopt public cloud computing infrastructure in 2018. Blyth said the attack, which affected approximately 400 servers, all databases and 1,300 workstations, showed that innovation doesn't

come without risk. She was reminded of the importance of cooperation when she reached out to the Office of Emergency Management and the National Guard for logistical assistance. This allowed her department to focus on getting the agency's systems back up and running.

Three years later, technology has played an increasingly important role in the day-to-day functions of government amid the COVID-19 pandemic. Colorado recently streamlined its unemployment insurance system and has made extra efforts to bolster cybersecurity moving forward.

Blyth said the pandemic forced the state to speed up its modernization process.

"I think agencies really are understanding, with even more awareness, the value of technology," she said.

— BRANDON PAYKAMIAN

agencies a central entry point to get IT support, essentially a "no wrong door approach."

These moves are indicative of Leahy's practical style that focuses on communication and a keen understanding of business needs. "It's important to talk to folks about how things should proceed and how their insights and experience can play a role in how technology affects government," he said.

— KATYA MARURI



Jeanne Holm
Deputy Mayor, Los Angeles

Third-generation Angeleno Jeanne Holm was Los Angeles' deputy chief information officer and assistant general manager when COVID-19 hit. She navigated a sea of new work assignments last year while simultaneously guiding the city through the unprecedented challenges the pandemic placed on municipal services.

In May, Holm — who was concurrently senior technology adviser to Mayor Eric Garcetti — was named the city's chief data officer. She served as adviser and CDO until November, when she was named deputy mayor for budget and innovation, overseeing the city's annual budgeting process as well as the mayor's plans to bridge the digital divide and engineer the city's fiscal recovery from the pandemic.

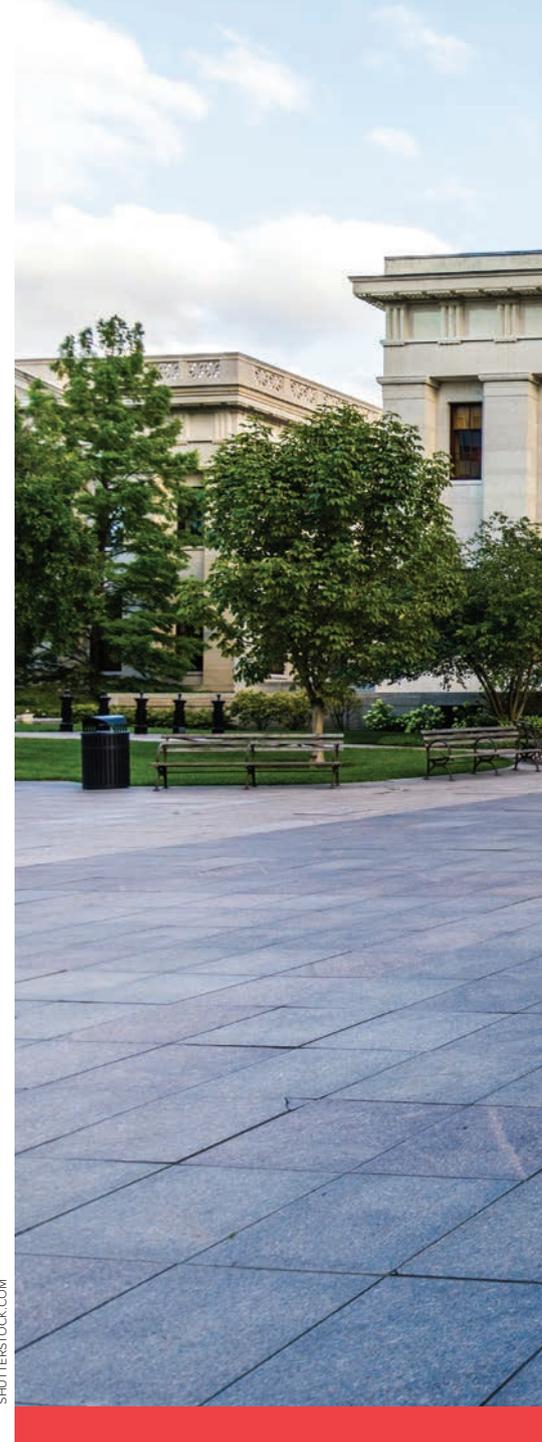
"The work has been around trying to build a better understanding of how to create technologies that are focused on all of our residents and businesses; are useable and accessible to people across a lot of different spectrums; and that provide meaningful support and services in a way

that lets lots of people have a hand in how the government is run," said Holm.

A key initiative is the Angeleno Card, designed to aid COVID-impacted households but also offering a single sign-on across city services that enables contactless connections to city government and even includes a banking component. A bellwether project was the option of remote work for agents at the city's 311 call center; Holm ran, effectively, a pilot of the strategy in 2019, which helped ease the challenge of going remote en masse last spring. The city is also working to increase its network capacity and bring high-speed broadband into public housing, free for six months and discounted afterward.

The pandemic, Holm said, has hastened roughly "five or six years of IT acceleration" in a year — prompting a re-examination of online services, an e-payment consolidation and partnering with governments including San Jose, Calif., on issues like an eviction moratorium. The city's Digital Bill of Rights and its Code of Ethics are due to be released this winter.

— THEO DOUGLAS



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“This is not your grandfather's government,” CIO Ervan Rodgers said in reference to the impact of the InnovateOhio Platform (IOP), which has changed how state departments in Ohio share, present and act on data. By Gov. Mike DeWine's 2019 executive order, agencies have been moving their websites and data sets to IOP and transitioning their IT systems to the cloud.



Team Ohio

Jon Husted,
Lieutenant Governor (left)
Ervan Rodgers, CIO (right)



The culture-changing, service-transforming charge has been led by Lt. Gov. Jon Husted, who, in a unique departure from tradition, also serves as Ohio's chief innovation officer.

The fruits of this center-led approach became apparent as early as last year, when the Ohio Department of Health launched a coronavirus dashboard before COVID-19 had even started forcing shutdowns.

Then in April 2020, IOP allowed for the creation of an essential jobs website that connected job seekers to businesses during the unprecedented crisis.

The state has identified myriad challenges that its new data platform can help address, from background checks for firearms to opioid abuse. As such initiatives advance, agencies continue to forge a uniform brand for their public-facing

components and work toward a single statewide identity system.

"Make people's lives better. Save people time and money. That's what we should be doing. That's what the InnovateOhio Platform allows us to do," Husted told *Government Technology* last fall.

While supporting Ohio's top-down vision, Rodgers has put in the work to build a strong IT shop. His achievements include consolidating

1,600 servers into a cloud environment and crafting a strategic plan for IT innovation. He has also exhibited a passion for staff recruiting and development, having hired more than 20 diverse agency CIOs.

These efforts and more point to a simple observation: As long as Husted and Rodgers remain in their positions, the use of technology in Ohio government will likely stay on the national radar.

— JED PRESSGROVE



Jena Griswold

Secretary of State
Colorado

Colorado Secretary of State Jena Griswold was confident about election security headed into 2020, and she's even more confident about it now. The youngest elected secretary of state in the U.S. and a strong proponent of technology, she said innovation is an important part of addressing new problems, as long as it doesn't tread on basic security requirements: paper ballots, no voting devices that connect to the Internet and risk-limiting audits afterward.

An outspoken public advocate for federal or cooperative improvements to election security, her office helped push the Department of Homeland Security to change its policy of not alerting statewide officials of attacks on county election infrastructure. After that, her focus turned to disinformation, which she described as the No. 1 threat facing U.S. elections — a new form of voter suppression in which foreign and domestic

actors use social media to trick citizens out of their votes, or lie to convince them to vote a certain way. Last summer, Griswold spearheaded a new Rapid Response Election Security Cyber Unit (RESCU), a team of cybersecurity and national security experts headed by Nate Blumenthal, a former senior adviser at CISA with a background in counterterrorism. Much of RESCU's job was to look for disinformation, respond to it, alert citizens to it and tell them where to find accurate information.

In hindsight, Griswold thinks 2020 was Colorado's most secure election to date, and at least its most prepared-for. She said RESCU is here to stay and was "incredibly successful," and now her attention is turning to advocacy at the national level: for federal legislation, a plan for DHS to combat foreign disinformation and sustained attention on cybersecurity.

— ANDREW WESTROPE



Jeff Baer

Chief Technology Officer and Director of
the Bureau of Technology Services
Portland, Ore.

Jeff Baer is a longtime public servant with more than 25 years of experience, over half of it with Portland. Before coming to his current role in 2015, Baer served as director of the city's Public Safety Systems Revitalization Program. This is notable because one of Baer's key successes with the city has been helping to facilitate better use of technology in Portland to more effectively serve public safety agencies.

Indeed, two years ago Baer and his team worked to realign public safety-related groups and divisions within the Bureau of Technology Services under one division manager, creating what Baer describes as "a cohesive view of all things tech-related to public safety." These divisions included emergency management, the fire department, police and 911 dispatch. It sounds perhaps self-evident, but in most American cities, tech use in those separate channels remains disparate and decentralized.

In addition, in 2020 Baer and his bureau were able to remain productive with tech and innovation work while also transitioning to a fully remote work environment in response to the pandemic. This, of course, was a common challenge for local government technologists. Baer, for example, had to rapidly adapt to supporting thousands of work-from-home employees in a matter of days and weeks. This involved preparing a massive amount of technology, including more than 1,300 laptops and 1,100 cellphones. Despite this backdrop, Baer and his team were still able to launch a new portland.gov website that uses an open source Drupal operating system and outwardly makes it easier for residents to search for and find information and services from the city online.

— ZACK QUAINANCE



Joshua Edmonds

Director of Digital Inclusion
City of Detroit

Joshua Edmonds works to implement digital equity strategies in a city where more than 100,000 residents, almost one-third of the population, lack fixed broadband access in their homes. He has been Detroit's director of digital inclusion for two years, making him one of the longest-serving full-time digital inclusion municipal staffers in any city hall in the country. Edmonds' work, however, has perhaps

never been as relevant as it was in 2020 following the outbreak of COVID-19.

As is the case for most local gov digital inclusion advocates, one of Edmonds' primary roles is facilitating relationships and coordinating partnerships between public agencies, private-sector companies and adjacent community groups. Edmonds told *Government Technology* last year that the pandemic had exacerbated existing digital equity

challenges in the community, challenges such as public school students lacking Internet access, devices to use the Internet and skills to use the Internet in meaningful ways. Amid the pandemic, Edmonds was inundated with calls from community stakeholders wanting to help.

This manifested in a number of ways in Detroit throughout the year. One prominent act of digital inclusion came in April. Detroit announced a \$23 million

digital inclusion investment aimed primarily at helping more students in the city access technology and the Internet. The donation was made by a coalition of the city's leading business and philanthropic groups. Simply put, that kind of swift digital equity action likely doesn't happen in a moment of crisis if a city doesn't have a clear digital inclusion advocate in city hall to facilitate the work.

— ZACK QUAINANCE



Nelson Moe

CIO, Virginia

To hear Nelson Moe talk about his work at the Virginia Information Technologies Agency (VITA) is to hear a man who is proud of not only what he does, but the people he works with. The agency is one of the most consolidated in the country and by many accounts an example of how state IT should work, but Moe shrugs off

that praise, saying he is simply “standing on the shoulders of the people in front of me.”

In the nearly six years he’s been on the job, he has presided over the death of the mega-contract and ushered in a “best of breed” brokerage model that helps VITA and its customer agencies more easily adapt to evolving needs — most recently

to the sudden changes forced by the pandemic. The ability to bolt on new services from multiple providers “like Legos” has allowed VITA to respond in short order to the needs of the 63 agencies and the 60,000 state employees that rely on VITA for their daily operational needs.

And Moe’s tenure has stretched across two governors,

during which his team has streamlined procurement with a one-stop portal and established performance metrics to measure the IT agency’s service against.

Asked how he navigates the political and technical challenges of his job, the Navy man simply says, “we’ve chewed harder concrete” and defers to the words of his servicemember



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Christopher Krebs

Former Director
Department of Homeland Security's Cybersecurity
and Infrastructure Security Agency

When Christopher Krebs became the inaugural director of the Department of Homeland Security's Cybersecurity and Infrastructure Security Agency in November 2018, he probably didn't anticipate becoming a household name — even outside of cybersecurity circles. But that was before the uniquely contentious election of November 2020.

Unfounded charges of rampant voter fraud and faulty election systems were made and amplified from people in positions of power who didn't like the results, including, significantly, the Oval Office. Krebs spoke publicly against the baseless conspiracy theories of a rigged election, while honoring the tireless work of elections officials and their private-sector partners across the country who upheld the integrity of the elections, and by extension, our democracy.

"The November 3rd election was the most secure in American history. There is no evidence that any voting system deleted or lost votes or changed votes or was in any way compromised," read a statement put out by CISA on Nov. 12.

Days later, this assertion cost Krebs his job. But it's a stance he continued to forcefully

defend in front of Congress and in countless media interviews. It was, after all, the truth.

An attorney, Krebs joined the Department of Homeland Security for the second time in March 2017, appointed as a senior counselor on topics including cybersecurity and critical infrastructure. He has also done other consulting work and served for a time as cybersecurity policy director for the U.S. Government Affairs team at Microsoft.

While leading CISA, Krebs helped to elevate the national conversation around the importance of cybersecurity, leading to increased public-private collaboration and, importantly, more federal support to fortify the posture of state and local governments. Since his dismissal from CISA, Krebs has formed a consultancy with Facebook and Yahoo security veteran Alex Stamos. Their first high-profile client is SolarWinds, at the heart of the massive hack credited to foreign governments. While the specifics of that complex intrusion are still being unraveled, Krebs will undoubtedly be an asset to the company, as he was to the nation and the practice of cybersecurity at CISA.

— NOELLE KNELL

comrades, some of whom were prisoners of war: "Any day you have a doorknob on the inside is a good day." His own time in the service with the U.S. Submarine Force — nearly 18 years — and another 14 years in IT roles with the U.S. House of Representatives has clearly given Moe the tools he needs to lead VITA toward future successes.

— EYRAGON EIDAM



U.S. Digital Response

Volunteer Civic Tech Organization

One of the uplifting stories of 2020 was the formation of the U.S. Digital Response (USDR). The nonprofit, nonpartisan group took shape early in the pandemic, aiming to connect volunteer technologists with government agencies. The idea was relatively simple: Private-sector workers were confined to their homes, with time and desire to help; USDR sought to connect them with government.

The response was immense, with more than 6,500 volunteers signing up to help. USDR helped partner volunteers with more than 180 public agencies across 36 states and territories, totaling more than 250 projects. Work covered a wide range of needs, including vaccine dispersal, COVID-19 testing, unemployment insurance, food security and access to voting. The group estimates that its work has impacted more than 13 million

people. In Seattle alone, USDR helped the city launch two free COVID-19 testing sites. Within six months, 450,000 people had been tested there. Perhaps most encouraging is that often the work lends itself to scaling. "It first felt like we'd get one-off requests," said Jessica Cole, a member of the USDR executive team and one of its co-founders. "Now we're finding we're almost able to see a little into the future about what the

core needs are becoming. One government or one partner might have a solution that might then be applicable to all 50 states." There are no plans to stop. In fact, the partnerships USDR formed with local government amid the crisis are evolving. In New York City, for example, the second cohort of the NYC[x] Innovation Fellows Program just graduated. That program is a direct result of USDR working with the NYC Mayor's Office of the Chief



Demos Not Memos

Technology Officer. Work done there includes helping to manage crisis response equipment, using AI to translate government websites into different languages and building a hate crimes prevention map.

“What we’ve found is that while USDR was founded in the pandemic,” said Raylene Yung, USDR CEO and co-founder, “ultimately we’re growing because it was the right time across a number of different trends.”

— ZACK QUAINANCE



ERIC LERNER

Kevin Jones

CIO, Indiana Department of Child Services

Within the laundry list of agencies that make up any state government, few could argue against the critical and life-changing work done by the men and women of the child services department. In Indiana, Kevin Jones is responsible for overseeing the technological infrastructure that enables this important work for the state’s Department of Child Services. With more than 25,000 children and families dependent on the agency’s 4,000 employees, the technology just has to work.

Jones has served in this role since 2017, spearheading the development of innovative and integrated technologies, like virtual reality training for caseworkers and caseworker candidates. Through use of the cutting-edge technology, caseworkers could be exposed to real-world child welfare situations without ever leaving the office. This allows the department to navigate not only steep training requirements for these positions, but also helps to gauge whether a

candidate is cut out for the essential work. According to figures from the National Association of State Chief Information Officers (NASCIO), this work helped the department reduce caseworker turnover by just under 18 percent.

“We discovered that about 40 percent of our staff turnover was due to either caseload- and/or paperwork-related issues,” Jones said during a webinar hosted by *Government Technology*. By digitizing processes, he explained, the agency was able to retain staff, cut down on time spent processing information, and maximize time with children and families who need it.

In an equally important undertaking, Jones and his team worked to streamline the background check process with a new portal. It is estimated that the new tool increased productivity by 27 percent. Similarly, the department stood up a portal to better connect foster parents and children through an easy-to-follow step-by-step process.

— EYRAGON EIDAM



Kevin Ford

Chief Information Security Officer
North Dakota

During his time as North Dakota's chief information security officer (CISO), Kevin Ford has pushed the envelope to make the state a leader in cybersecurity, dramatically improving the state's ability to combat ever-growing threats.

Efforts include legislation signed into law last year that creates a unified cybersecurity strategy for all sectors of state government and K-12 and higher education, as well as an initiative that increases cybersecurity training and

resources for teachers, administrators and students.

Ford has been on the leading edge of a trend in states to serve as a resource to institutions inside and outside of government on cybersecurity matters, and a couple recent efforts provide evidence that he's on the right track. Last year, he announced that K-12 schools were eligible for anti-malware software at no cost, with installation, licenses and self-service access provided by the state. The software was a key deployment during the pandemic as malware attacks were on the rise, and the protection covered students whether they learned in the classroom or at home.

North Dakota developed several strategies last year

to help secure the public sector during the pandemic and in October launched DefeND, a statewide awareness campaign to educate North Dakotans about the dangers in cyberspace.

"North Dakota is leading an effort to establish automated cybersecurity threat information-sharing and operations that include state, local and tribal partners across the United States," Ford said in an email. "We are focusing on increasing the sharing of immediately actionable threat intelligence sourced from partners across the nation."

Ford was recruited by the state in 2019 to take over the role of CISO. He previously served as CISO at CyberGRX, a Denver-based cyber-risk management company.

— JIM MCKAY

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The Big Shift

The pandemic created a new set of priorities for legacy modernization.

Prior to the pandemic, state and local government CIOs had created orderly multi-year plans to push toward modern technologies.

They prioritized system replacement based on factors like age, cost of ownership, and ability to comply with changing security and privacy regulations. They tried to secure funding for modernization projects from public officials who may have wondered why old technology needed replacement at all, as long as it was still chugging along.

A year later, the modernization of legacy technology is seen through a new lens.

Security and compliance remain important. But remote work, almost non-existent in the public sector before COVID-19, became a top driver for new systems and capabilities. So did rolling out user-friendly digital services — an issue that was gaining traction before coronavirus hit, but wasn't seen as an imperative by most. And making these moves has taken on greater urgency across the board.

Ultimately, the pandemic changed the risk equation for state and local governments around technology upgrades, says Phil Bertolini, co-director of the Center for Digital Government (CDG). For government leaders,

the potential liabilities associated with old systems have begun to outweigh the risks of implementing something new.

"They may have gotten a pass on legacy technology that failed during the pandemic because it was such an unexpected event — but they won't get that same pass going forward," Bertolini says. "So the shift in thought is anything that touches the public or has an impact on the public is going to rise up the priority list."

A Stark Example

State unemployment insurance (UI) systems became poster children for how legacy technologies struggled to meet spiking demand and changing requirements during the pandemic. When statewide lockdowns were instituted across much of the U.S. last spring, these systems were overwhelmed by out-of-work citizens seeking unemployment benefits.

Many systems were still staggering as 2020 drew to a close. In November, just three state UI systems were meeting the federal standard for timely delivery of benefit payments to citizens, according to a report in Stateline, published by the Pew Charitable Trusts.

Those struggles are driving modernization efforts in multiple states, including Hawaii, where an old mainframe system couldn't keep up with demand and labored to accommodate new federal aid programs launched during the crisis.

"This is a very fragile system, and we wanted to make sure that we balanced being able to service our community as well as get these applications up and running," says Anne Perreira-Eustaquio, director of the Hawaii Department of Labor and Industrial Relations, in an interview with *Government Technology*.

She says Hawaii intends to move toward a new cloud-based system in spite of a budget squeeze triggered by the pandemic's impact on the state's tourism-driven economy.

"Yes, [the] budget's very tight," she says. "The governor announced furloughs here in Hawaii. So we are seeing tough times in Hawaii right now, but I think the legislators understand the importance of upgrading the mainframe."

A New Set of Needs

National surveys conducted by CDG during the second half of 2020 reflect growing attention on modernizing systems that support citizen services. Among the

automate old, often paper-based business processes. They'll also modernize core financial and human resources applications to meet the needs of remote or hybrid workforces.

"A lot of jurisdictions upgraded their ERP systems during the pandemic," says Bertolini. "You need to do that because it's operational. You can't run the business without those systems."

On the other hand, applications that aren't closely related to citizen services and remote work — asset management systems, for example — could get shoved down the modernization priority list.

"Those things are going to get Band-Aids put on them, no matter how important they are," says Bertolini. "The things we're putting Band-Aids on today are going to be different than they were before."

A Faster Journey to the Cloud

Along with turning up the heat on modernization, the pandemic also broke down lingering government resistance to cloud computing.

For the past few years, CDG surveys have shown a wide gap between the amount of state and local government systems that could go to the cloud and the amount of those systems that are in the cloud today. For example, 56 percent of CIOs responding to the 2020 Digital States Survey have less than 10 percent of their systems in the cloud now. Yet 46 percent of those respondents say more than half of their systems ultimately could be cloud-based.

That gap is likely to narrow, thanks to lessons learned during the pandemic. Jurisdictions that may otherwise have agonized over security, financial or cultural issues related to cloud adoption were forced into the cloud because they needed to quickly deploy remote collaboration platforms, expand call center capacity and meet other urgent needs. For the most part, those solutions worked just fine.

Now these experiences will color future legacy modernization efforts.

"I think we'll have a huge push to the cloud," Bertolini says. "This really broke down the barriers."

top five leadership priorities identified in the 2020 Digital States Survey were expanding access to services for citizens and businesses, as well as increasing responsiveness during crises. Results were similar for CDG's 2020 Digital Cities and Digital Counties surveys.

Along with more attention on replacing outdated UI technology and other social safety net systems, Bertolini expects these priorities to translate into greater support for customer relationship management applications, modern web portals, and other solutions that improve digital interactions and strengthen engagement with citizens.

"Before, you might have strung together some sort of kludgy digital service just to say, 'I have that online,'" he says. "But now these things need to be much more robust."

In addition, state and local technology priorities will be driven by a long-term shift toward remote work. Several recent CDG surveys show government agencies expect much of their workforce to continue working remotely — either part time or full time — once the pandemic subsides.

That means agencies will continue to improve virtual collaboration platforms, strengthen network connectivity and

Leadership Priorities for a New Era

State

- 1 /** Expand, simplify and/or improve access to services available to citizens and businesses
- 2 /** Expand economic development opportunities for citizens and businesses
- 3 /** Address or increase responsiveness to crises affecting citizens and businesses
- 4 /** Reduce state business operating and/or long-term costs
- 5 /** Increase citizen privacy and data security protections

City

- 1 /** Address or increase responsiveness to crises affecting citizens and businesses
- 2 /** Expand, simplify and/or improve access to services available to citizens and businesses
- 3 /** Expand economic development opportunities for citizens and businesses
- 4 /** Increase citizen safety
- 5 /** Improve citizen and business engagement with city government

County

- 1 /** Address or increase responsiveness to crises affecting citizens and businesses
- 2 /** Expand, simplify and/or improve access to services available to citizens and businesses
- 3 /** Improve citizen and business engagement with county government
- 4 /** Expand information transparency in government
- 5 /** Expand economic development opportunities for citizens and businesses

Source: 2020 Digital States, Cities and Counties Surveys

Moving Modernization Forward in Spite of Disruption



*The disruptions of the past year have exacerbated the need to modernize legacy apps and infrastructure. While modernization helps organizations remain resilient, improve efficiency and deliver better user experiences, it is also a complex, far-reaching effort. In this Q&A, **Nancy Bohannon**, vice president of state and local government and education at Red Hat, discusses the strategies and technologies that can help government leaders simplify and accelerate modernization even amid the challenges of the pandemic.*

How has the pandemic impacted the concept of modernization?

The events from 2020 exposed the weaknesses and inflexibility of old systems and underscored the relationship between modernization and resilience. At the same time, the pandemic response gave many agencies their first experience with cloud-based solutions. It really proved that governments can embrace newer technologies quickly and get to the cloud.

How can open source technology help address the complexities of modernizing legacy apps and infrastructure?

A good deal of the complexity around modernization comes from culture and processes. Open source is based on a philosophy that champions simplicity, collaboration and transparency. For example, in the open source world, we take very large, complex tasks and break them into smaller, simpler tasks. In addition, many eyes are on development and the processes we put in place. Approaches like this enable work to be accomplished quickly and improved constantly in many small victories that turn into a modernization system.

What tools or strategies can help organizations expand the use of the cloud in legacy modernization?

You want a strategy that ensures workloads are portable and secure

between clouds, without the risk of vendor lock-in. Containerization is a primary way to achieve this. Containers let you package an agency's application and runtime dependency to ensure consistent deployment across any infrastructure. That is huge in our world and is taking IT development to the next level. We see containers being foundational to a more complex, comprehensive application modernization platform that features tooling to deploy, manage and maintain these types of applications across clouds. Containerization really is the future of IT. Automation is another key to government modernization efforts. It lets organizations maintain IT infrastructures consistently and create a very secure environment for their solutions.

What steps can state and local government leaders take to foster innovation and collaboration as they drive modernization?

We tend to focus on technology, but leaders need to focus on people and process changes, too. Most government technology leaders I speak with cite culture changes as their biggest impediment to modernization. Our view is to take an open organization approach, focusing on culture and process changes to foster modernization. Then the technology is there to implement successful solutions.

With revenues and budgets plummeting, how can organizations optimize modernization spending?

In light of these challenges, enterprise open source solutions are a great way to go. These solutions drive innovation, application development, operations and engineering at a fraction of the cost of traditional proprietary offerings. They also put new capabilities into the hands of citizens faster because open source communities leverage millions of developers to drive IT innovation more quickly and effectively than proprietary software development methodology.

What suggestions do you have for government leaders who are dealing with the challenges of the pandemic?

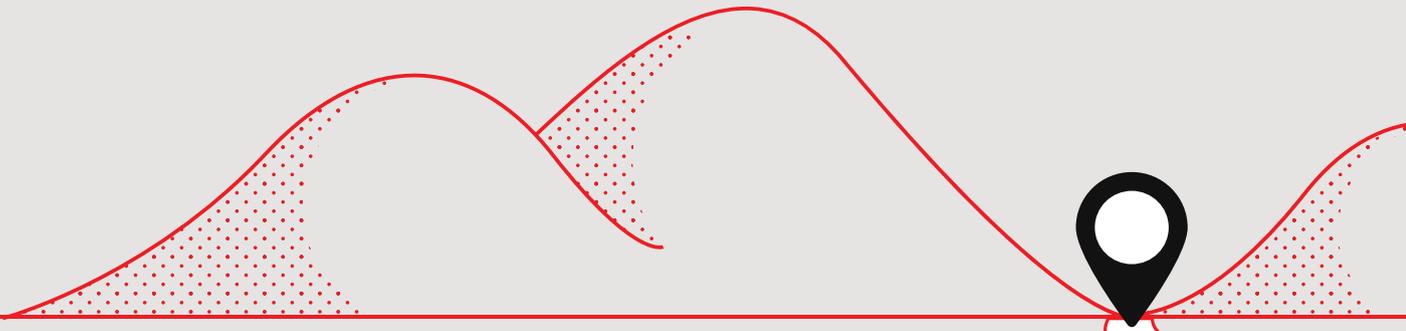
State and local CIOs are dealing with challenges that none of us ever thought they would have to face. The two most important things they can do are to drive automation and focus on hybrid cloud solutions. We all know the cloud is here to stay. We also know that legacy systems will take too long to migrate completely to the cloud. Embracing a hybrid cloud approach around modern solutions, where you can be partly on-prem as well as in the cloud, is going to help drive modernization and help systems become more effective more quickly. The second piece is automation. Automation has come a long way. It allows organizations to re-factor their workforce into their mission while automating simpler tasks. Artificial intelligence and machine learning are part of this and will become increasingly important as state and local leaders look to improve responsiveness and citizen engagement — both now and in the future.



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It All Starts with Collaboration



*Innovation and modernization require a collaborative culture as well as enterprise development tools that accelerate releases, incorporate security and improve quality. In this Q&A, **Shayla Sander**, state and local channel manager for Atlassian, and **Ken Urban**, solutions engineer for Atlassian, share insights into the DevSecOps approach and how organizations can succeed at modernization.*



How has the COVID-19 pandemic influenced legacy modernization?

Sander: The pandemic didn't so much change modernization efforts as much as it hit the gas pedal. Every aspect of modernization has been accelerated. The adoption of cloud technology, for example, has accelerated by 10 years or more since the start of the pandemic.

At a high level, what is a DevSecOps approach, and how does it facilitate legacy modernization efforts, including those focused on cloud-based solutions?

Urban: A DevSecOps approach takes DevOps culture and methodologies and incorporates security from the very beginning. This brings enormous value to legacy modernization efforts. Many legacy systems were built using waterfall methodologies. That means they may not be regularly scanned for vulnerabilities or they were simply not built to handle modern scale. DevSecOps helps you avoid

these issues. First, you will be more agile, as we've seen with DevOps. Second, you will build systems that are inherently more secure. Instead of thinking about security after a system is built and in production, you are doing so from day zero and doing so continuously even after you've "shipped" it. This is especially critical in cloud environments where shared resources and multi-tenancy are the norm rather than the exception.

What best practices should organizations implement to realize the full potential of their modernization efforts?

Urban: There are many, but here are a few: 1) Require your staff to get trained. Developers need cybersecurity training to keep up; testers need to know how to find security vulnerabilities; and so on. 2) Plan early and often, and don't hesitate to change course. Try to be detailed; it's not just about features. 3) Plan for attacks on your systems. 4) Automate where appropriate and feed metrics back to a report that actually gets reviewed. Try running regular security scans against production systems as well as running static code analysis. And do something with the results. 5) Don't hesitate to call in an expert to consult; modernization can be a difficult transition.

How can organizations stay on track, control costs and remain functional as they modernize legacy infrastructure and applications? What are the main capabilities and tools they'll need?

Urban: Start by scanning regularly to identify the vulnerabilities in legacy

systems; in other words, know your threat surface. Shore it up with some development effort — using DevSecOps methodologies. Use a tool like Jira to plan the work. It's important to get everyone to agree on basic things like the definition of "done," how often releases should happen, and so on. Then use a tool like Jira Align to track projects at the agency level to make sure the work is happening in the right order and is on track.

With important data dispersed across the enterprise environment, what do organizations need to keep in mind as they modernize?

Sander: It's important to identify the types of data, systems and tools that are in place. Modernization efforts that don't evaluate process flow are often flawed. It's also important to identify and document the knowledge silos that your agency has created over time. Knowledge silos exist extensively in the public sector, and having them spread throughout the agency wastes time and consumes scarce resources.

How does collaboration support IT modernization and how can organizations foster a team culture?

Sander: Knowledge sharing and opening up your agency culture is a big part of fostering collaboration. By documenting and sharing best practices, the organization can maximize each contributor's expertise. It also helps break down cultural silos to ensure everyone is working toward the same goals.

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Finding Opportunities for Modernization



While modernizing legacy applications is an important goal for digital transformation, many state and local government IT leaders have had more pressing issues on their hands. The pandemic forced many organizations to defer modernization or seek stop-gap solutions. **Tony Powell**, chief strategist and innovation officer at Dell Technologies, discusses the challenges and opportunities in front of IT leaders today.

How did the COVID-19 pandemic impact state and local government IT modernization plans?

The pandemic pushed most organizations into firefighting mode. They don't have the luxury of doing wholesale rewrites of legacy software, which often take years. At the same time, organizations need to make these systems more efficient in order to serve constituents and improve operations — especially during the pandemic. Instead of replacing systems, organizations are augmenting them by putting new technologies on the front end. These efforts solve some of the immediate problems; however, many legacy challenges remain because organizations just haven't had time or resources to do the rewrites.

Other than lengthy and laborious rewrites, what's standing in the way of modernization efforts?

Budget is the core issue — having the necessary resources in terms of dollars and staff. Legislators are currently dealing with budget shortfalls at the state, county and city levels. The question is whether dollars will be put aside for modernization, given the shortfalls. Organizations are waiting to see what legislators will do.

What approaches or tools can help organizations address these obstacles?

Given the budget challenges, I'd recommend focusing on core

inefficiencies of the applications and addressing those first. Organizations can often beef up the support around these applications more quickly than rewriting them. We're also seeing organizations take advantage of federal stimulus funding to expand technologies like 5G and rural broadband that tie into legacy modernization. This is quite exciting in terms of addressing the digital divide and smart city opportunities.

How can organizations stay up to date while minimizing the disruption of constant change?

That's the life of the CIO. You set forth a five-year plan and invariably some sort of disruption arises; so, you've got to plan for the unplanned. That's usually done by having a well-laid five-year strategic plan that addresses the strengths and weaknesses of your organization and where you're likely to run into those weaknesses in the future. Having said that, no one could have predicted the once-in-102-years event of the pandemic. It has thrown serious wrinkles into organizations' strategic goals because they've been diverted to address more pressing needs. What you usually do in that case is put the things that you can't do on the side burner and document them so you can pick them

back up when things settle down. Organizations that are in the heat of the pandemic response have done a lot of that.

How can organizations accelerate modernization in the current environment?

I suggest looking at modern technologies like Kubernetes to change the way your software runs locally and in the cloud, so it's more versatile and you establish an exit strategy for the cloud. Whether that is an on-prem cloud or a public cloud, you want to be able to move things when and where you need and not have lock-in.

What advice do you have for state and local government leaders who are facing legacy modernization?

There's no easy answer when it comes to legacy modernization. I've done many large-scale legacy system replacements. In some cases, the rewrites can take more than 10 years from conception to completion. I would suggest that leaders remain vigilant and carefully choose which opportunities to pursue. You never want a good opportunity to go to waste — especially in government. Even though the pandemic has been difficult from a personal and collective perspective, as a CIO, you're always looking to move the needle in terms of improving citizen services. The pandemic will continue to present opportunities that CIOs have to be ready to take advantage of in terms of meeting that goal.

A woman with dark hair is wearing a white VR headset. She is looking down at a 3D architectural model of a tall skyscraper with many windows, which is placed on a wooden table. The background is a blurred indoor setting with a brick wall and a white bag hanging on a wall.

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Contact Center Modernization: Raising the Bar on Customer Service



Contact centers are the public face of many government organizations and often serve as the first point of contact with an agency. **Chad Cole**, director of solution consulting for North American public sector at Genesys, says modernization can improve the contact center experience for callers and the agents who serve them.

Government contact centers have played a crucial role in serving constituents during the pandemic. What are the main challenges associated with legacy contact center systems?

The pandemic has created unprecedented challenges for contact centers. The safety of personnel became top priority. As a result, many organizations were unprepared to support new requirements quickly — if at all — and maintain business continuity. Perhaps the toughest challenge has been providing the ability to work from home. Many legacy systems were not designed to support remote access to network applications and services such as voice. Many government agencies also must comply with mandates such as HIPAA and PCI. Security measures like multifactor authentication and encryption to address these requirements are often not available in legacy systems. Finally, contact volumes are at record levels as governments deal with the huge demand for information about safety protocols, vaccine rollouts and other services. The only way to effectively respond to all of these requests is to utilize digital channels, self-service and AI. Many legacy systems were designed and deployed long before these modern tools were even commercially available.

What is the ideal experience for callers and contact center agents?

The ideal experience includes support for the caller's contact channel of choice, robust self-service options and proactive notification. Agents need secure access to the tools required to do their jobs, regardless of their location. It's also important to remember that many agents have come from traditional contact center environments that provide social interaction, guidance, recognition and so on. Agents are now at home and possibly alone or dealing with distractions. Their at-home toolset needs to include employee engagement, as well as applications and processes to foster physical and mental health and productivity.

What IT capabilities enable that experience and how can organizations achieve them as rapidly and cost-effectively as possible?

A number of features help deliver a satisfying experience for customers and agents. These features include true omni-channel support so customers can use their preferred communication channel, AI-enabled self-service (voice and chat bots), employee engagement via workforce engagement management (WEM) capabilities, quality assurance, gamification and other approaches. In addition, a true cloud-based platform is required to support rapid deployment, scalability and continuous feature delivery.

Contact centers have been a proving ground for AI — in the form of natural language processing and virtual assistants. Why is AI so important to modernization?

AI connects relevant data across real-time, historical and asynchronous engagements; voice and digital channels; customer

relationship management tools; and other data sources. It empowers citizens to intelligently self-serve in unique and effective ways. And, if AI can't process the request, it can seamlessly transition clients to assisted service when necessary.

What should organizations consider as they move to modernize their contact center operations?

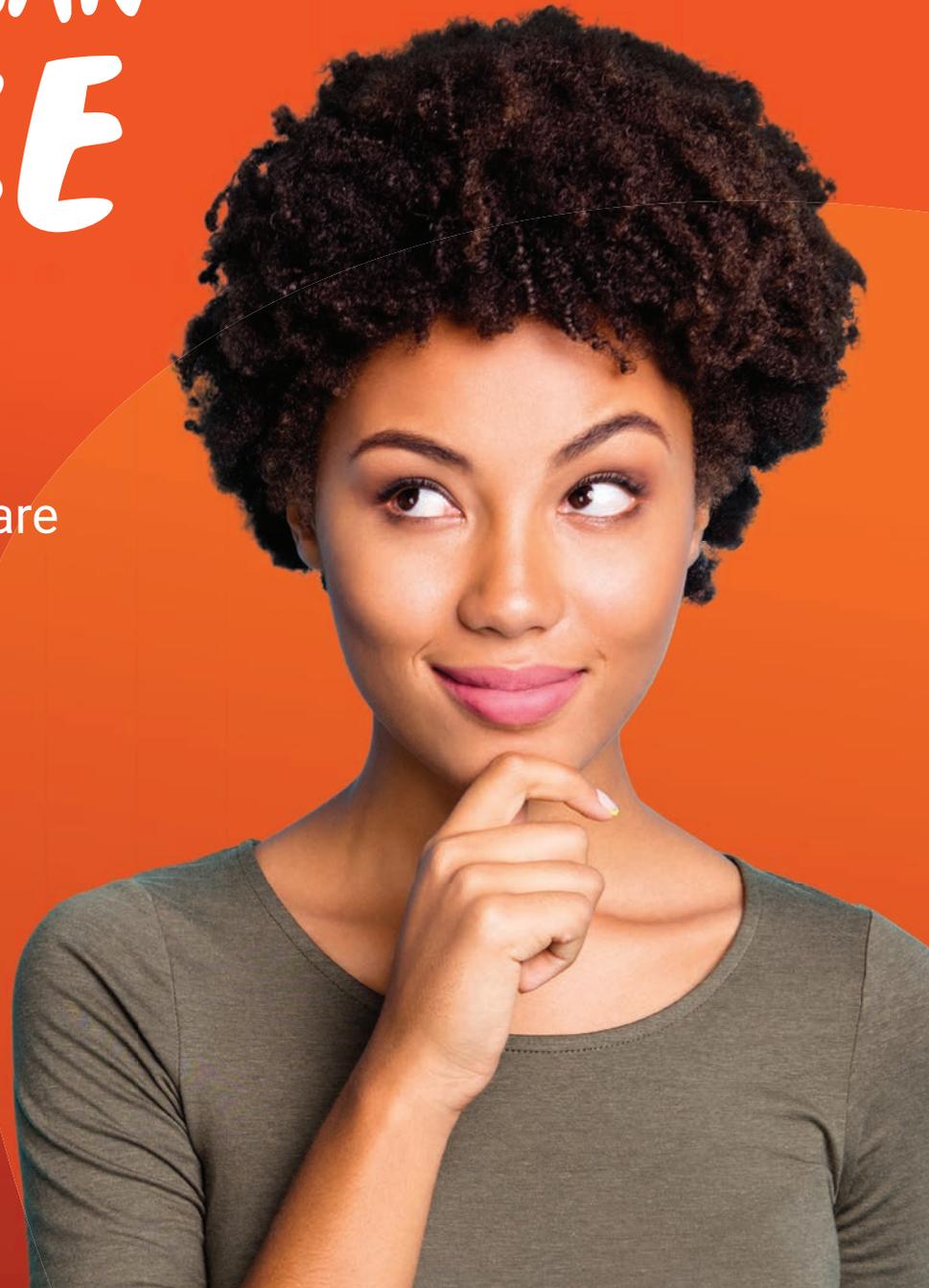
Modernizing how you serve citizens should be a continuous process. Methods of communication change. Technology improves. A pandemic exposes weakness in an entire process. And all of these things must be addressed in the context of resource constraints. Organizations should look across their constituency and current platform and ask questions such as: Are we communicating effectively? Do we have the necessary tools to properly manage resources? Do we have a business continuity plan? Is owning and managing technology the best use of our resources? Regardless of the question, the key is to be proactive in your evaluations.

How can organizations get the most out of their investments in contact center modernization?

The effectiveness of the contact center can be critical to success — so much so that recent federal stimulus packages include funds to help equip organizations to respond to current events. To get the most from their technology investments and modernization projects, organizations should begin with an effective strategy. A thorough examination of their current technologies will allow them to focus on areas that need attention and determine their current IT costs. With this information, they can evaluate against modern technologies, calculate return on investment and so on. Developing effective strategies and evaluating technology can be difficult. This is where a qualified contact center expert can provide technology and expertise to help organizations get the most from their modernization projects.

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Sergio Paneque has led some of the largest government procurement organizations, most recently as the chief procurement officer (CPO) for the state of New York. In that role, Paneque managed a portfolio of more than 1,400 contracts valued at over \$16 billion. Prior to

his tenure in Albany, Paneque was appointed by Mayor Michael Bloomberg as the chief acquisition officer for New York City and served as the director of procurement in Michigan's Department of Technology, Management and Budget.



We recently spoke with

Paneque about how the pandemic created an urgent need for state and local government organizations to upgrade and implement new technologies, which in turn led to faster procurements. Paneque gave his thoughts on the lessons government organizations might learn from that experience and shared the following tips for how technology leaders can make procurement faster and more flexible post-pandemic.

Tip 1 _____
Form a strong relationship with your CPO.

Paneque says one of the most strategic relationships a CIO can form is with their CPO. Given that the average tenure of a CPO is currently about three years, CIOs have a small window to make this happen.

"The CIO should constantly be working on that relationship, setting expectations, and setting boundaries to fit both levels of operations," says Paneque.

Tip 2 _____
Work collaboratively.

CIOs should team up with CPOs early and work together on solutions.

"Go into a governor's office or leadership offices together, especially in times of crisis," suggests Paneque. "When these two roles



4 Tips for Advancing IT Procurement

work together, there's much more flexibility in procurement. If you take something to a lawyer that's already 80 percent baked, you're going to get nowhere. But if you work with your CPO upfront to phrase things the correct way and complete some of the tough work around contracting and standard setting, that can lead you to water."

Tip 3 _____
Conduct a thorough risk assessment.

Identifying and analyzing potential risks upfront can give jurisdictions more options to address urgent IT needs when a crisis hits, Paneque says.

"Through a risk assessment you can delineate potential scenarios you might face in the future and where you can substantiate an emergency procurement to stabilize them," says Paneque. "Later, you can roll that approach into less urgent kinds of requirements that can either be sourced through existing contracts or with typical methods of procurement like an RFP."

Tip 4 _____
Work to make procurement more flexible.

Alternative ways of sourcing IT – prenegotiated backdrop or umbrella contracts, for example – can improve flexibility and enable agencies to source IT more efficiently.

"When I set up umbrella contracts in New York, my idea was to manage the legal requirements on the front end – indemnification, limitations of liability, insurance and things of that nature – then deal with the business side of the equation on the back end," says Paneque. "IT kind of got a pass on some of the tougher procurement rules during the pandemic, but doing that hard work upfront – pre-negotiating contracts, setting standards and having catalogs of approved solutions – are things we need to work on now to make procurement work faster permanently."



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When the nation's governors delivered their annual State of the State addresses in 2020, broadband was on a notable upswing. In fact, our story last year included in its headline "Broadband Is Critical Infrastructure," detailing the increased prevalence of talking about connectivity needs in these speeches — the address each state's top elected official uses to set their policy agenda for the coming year. In 2020, some even included specific plans and budget allocations to support their broadband efforts.

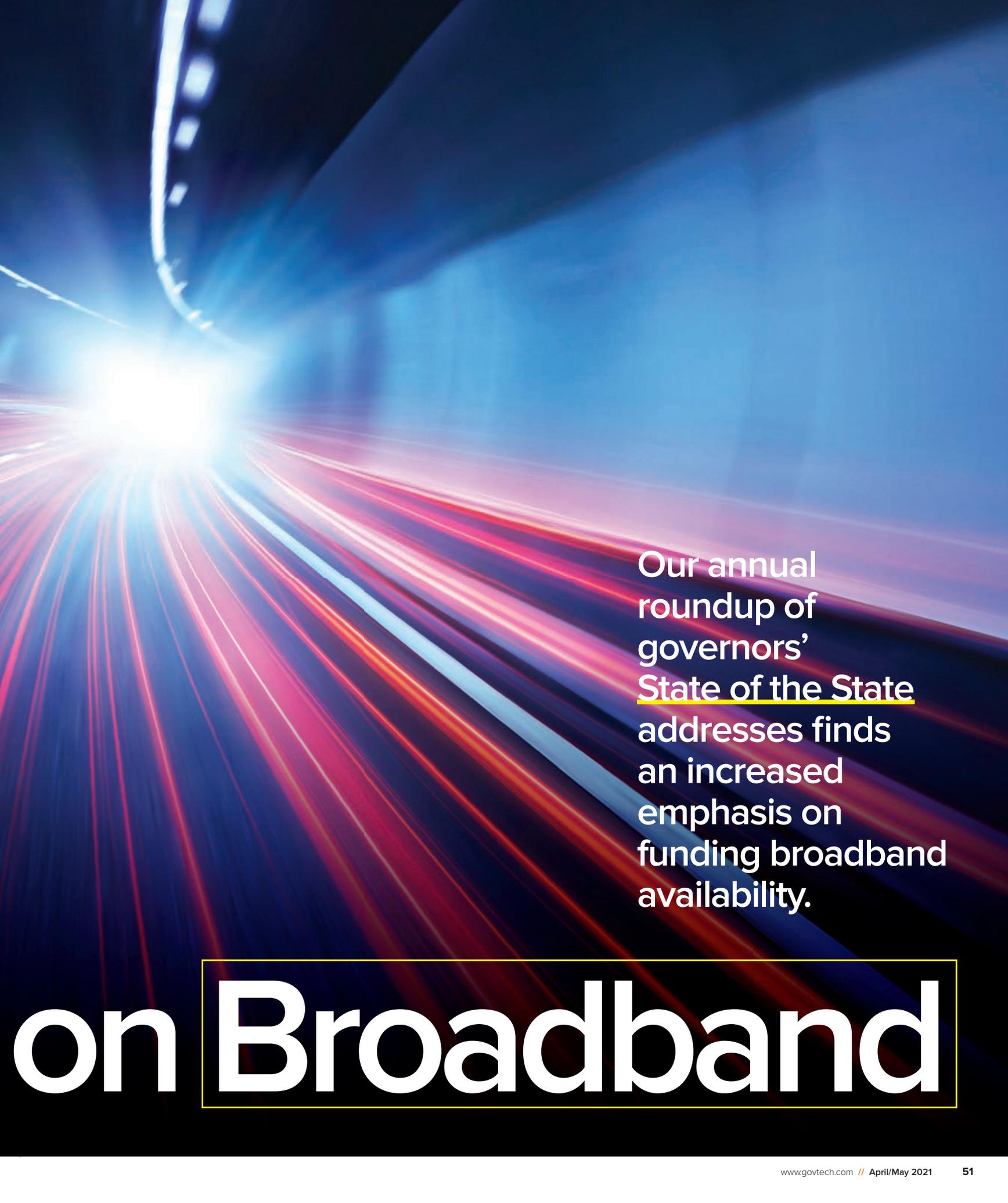
In 2021, the prevalence of broadband references skyrocketed. COVID-19-induced remote everything exposed gaps and disparities in every state in the country. While the connected majority proved they had what they needed to learn and work from home, those without devices and a sufficient Internet connection found their disadvantages multiplied. The editorial team at *Government Technology* read and analyzed these speeches, picking out mentions that reference tech, and this year, it's far more likely for governors to talk about broadband than not.

On a related note, 2021 marks a departure from the last several years in another way: Governors got a closer-than-ever look at how prepared (or not) states were to deliver services to citizens without face-to-face contact. The pressure on digital services and the back-end systems that support them continues to be intense, especially on programs like unemployment insurance, food assistance and other social services. It was technology's time to shine. But did it? Many governors got specific about where their systems fell short, and talked about plans to fix them. Others mentioned swift changes they enacted to deal with the current crisis that will continue to serve them well far beyond it.

Beyond broadband and digital services, governors offered up a third clear tech-enabled priority: telehealth. Turns out medical care delivered virtually can be quite effective in a larger number of cases than people might have believed before the pandemic. In huge numbers, people accessed health care in this way and proved that it can work, leading to long-term support to broaden telehealth access even further.

These are some of the the governors whose 2021 plans include the most tech. For nationwide coverage, visit govtech.com.

Banking



Our annual
roundup of
governors'
State of the State
addresses finds
an increased
emphasis on
funding broadband
availability.

on **Broadband**

Kansas

In her third State of the State address, **Gov. Laura Kelly** explicitly called for investment in technology infrastructure, and she spoke more broadly about having a science-based approach to governing, from vaccines to economic development. Kelly singled out broadband as one of five focus areas for economic growth in Kansas, because it bolsters small businesses, agriculture, remote work, remote learning, higher education and so many other endeavors. She mentioned an executive order in October that established the state's first Office of Broadband Development, which has disbursed \$50 million in grants for underserved communities. Another one of Kelly's five focus areas was infrastructure, for which she mentioned hundreds of projects had been greenlit to build a "more modern transportation infrastructure from top to bottom." She also noted the state had committed \$37.5 million of this year's budget to modernizing legacy IT systems. For small businesses, another one of Kelly's focus areas, the state launched its Main Street program and the Main Street Affiliate Community program, which

includes funding and technical assistance to reinvigorate rural downtowns.

While not an entirely technological enterprise, COVID-19 vaccines factored heavily into Kelly's address. At the time of her speech in early January, she said Kansas was in the "top tier" of vaccinations per capita, with 84,555 Kansans vaccinated. She credited a coordinated effort, though not any specific technology by name, defended the science behind vaccines and warned that Internet conspiracy theories about them are nonsense. Kelly also highlighted access to telehealth as especially critical for rural citizens, and she wants the state Legislature to expand Medicaid to cover another 165,000 Kansans, which will help ensure that rural hospitals stay open.

Delaware

Delaware **Gov. John Carney** touched on tech a number of times in his State of the State address. He highlighted the state's work to extend high-speed Internet coverage over the last year, an effort that grew in importance with the onset of the coronavirus pandemic. He noted that, since the start of the pandemic, 500 Delawareans

have received broadband connections, a number that is still climbing. He also credited the Connect Delaware program for bringing reliable Internet connections to 25,000 low-income students in the past year when they were forced to take their education online. And Carney gave a shoutout to the state's new CIO, Jason Clarke, and his team for all their hard work to make these broadband initiatives happen.

The governor called for increased funding for what he dubbed Graduation Lab Space, an initiative in the state to invest in labs for startup science and tech companies to use to grow their business presence in Delaware. He also announced that the state would be setting a goal to transition 40 percent of the state's energy usage to renewable sources by 2035.

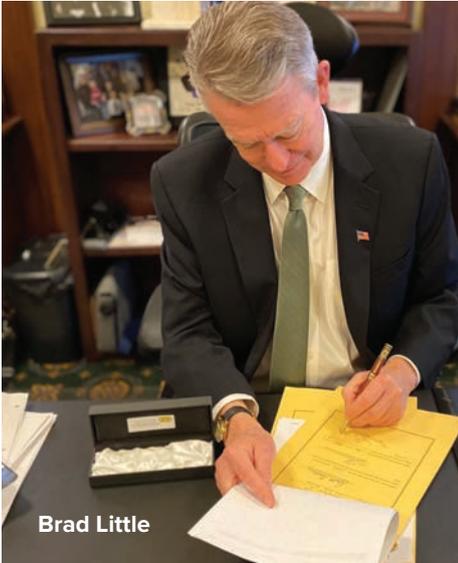
Gov. Carney also pointed to the state's use of technology to keep the public involved in the business of government during the pandemic. He noted that, by using technology to conduct business such as meetings and hearings online, the state government at all levels made its business "more accessible, more transparent and more efficient" for the general public. He therefore called for the state to continue the use of these technologies once the pandemic is over.

Idaho

Idaho **Gov. Brad Little's** State of the State address began on a somber note, taking a moment of silence for the 1,500 Idahoans who died due to COVID-19. However, his speech was also hopeful and featured technology as a main way to move forward in 2021, citing broadband infrastructure as critical to education, commerce and economic growth. In addition to grants for small businesses, reductions in unemployment insurance taxes and refunds for property tax payers as means to help combat the struggles of the pandemic, Idaho invested \$50 million in broadband to support remote work and learning throughout the state. Another \$50 million went to a "Strong Families, Strong Students" initiative aimed to help families in need access the technology necessary to continue education through



John Carney



Brad Little

the pandemic, and education overall saw a 16 percent increase in investment. The governor noted, however, that at the time of the speech on Jan. 11, almost all Idaho school districts had full-time or partial in-person instruction. Little advocated for continued funding for Internet connectivity to make sure students do not fall further behind after this disruptive year, since they are the future of the state's workforce.

As part of Idaho's work to meet increased health-care needs in 2020, the state stood up COVID-only facilities, eased pathways to licensing for nurses and changed regulations to improve access to telehealth. The state saw a 4,000 percent increase in use of telehealth services, a change Little hopes will be permanent. And to boost transparency and citizen engagement, and to make it easier for Idahoans to participate in state government, Little recommended the creation of a one-stop website to easily access all public meetings.

Indiana

Delivered on the eve of the presidential inauguration, Indiana Gov. Eric Holcomb's fifth State of the State address described a state in a strong financial position, with a triple-A credit rating and the expectation of \$2 billion in reserves at the end of the year. The address, while light on details, included several references to online government services, especially important

amid the pandemic. In fact, one website mentioned was associated with the state's vaccination effort, while others connect Hoosiers to jobs and another site, still in the works, will offer a one-stop shop of sorts for housing market information. Holcomb also discussed the \$61 million that has so far been allocated to K-12 and higher education to assist in remote learning, noting how critical broadband is for students as well as farmers, entrepreneurs and other workers. He is asking for an additional \$100 million to make more headway in the push to connect all residents. In a nod to more general government modernization, Holcomb stated a desire to move toward more always-on services that don't require in-person contact — "more touchless, 24/7 and virtual." Concrete examples of upcoming tech investments include body cameras for state police and the continued availability of telehealth services that have proven valuable during the pandemic.

Kentucky

In a speech dominated by Kentucky's response to the COVID-19 pandemic, and how the commonwealth plans to pull itself out of the crisis, **Gov. Andy Beshear** highlighted his Better Kentucky Budget and its proposals for new spending in areas like

school maintenance and construction, and the expansion of broadband to support virtual learning and other aspects of state government, calling it "the most important infrastructure of the future" in his virtual address to the Legislature. The budget includes \$50 million to fund "the last mile of broadband," the first time the state has helped to pay for expanding high-speed Internet.

In his call for innovation in state government, Beshear asked cabinet secretaries "to identify ways to modernize with an eye toward determining what services can remain remote," with an aim of putting more government services online to make it easier for residents to do business with state agencies. He also noted that telehealth services and remote health care have expanded, improving access for Kentucky's rural communities.

Beshear also singled out tech entrepreneurship as a focus for economic development, calling attention to AppHarvest, an ag-tech company known for innovating farming with its indoor grow areas, low water use and an adherence to growing chemical-free produce. The network of indoor greenhouses supports 300 jobs and produces millions of pounds of healthy produce.



Andy Beshear



Steve Sisolak

Nevada

Gov. Steve Sisolak's progress report for Nevada made clear that technological innovation is central to his plans for the state. After a brief rundown of recent achievements that included a comprehensive state climate strategy, intended to expand Nevada's use of renewable energy, Sisolak gave a synopsis of the toll of, and response to, COVID-19. He mentioned the digital divide, and lauded a public-private coalition called ConnectingKidsNV that tracked down every student in the state who was supposed to be doing virtual learning, then made sure they had the necessary devices and Wi-Fi connectivity.

Even beyond the climate strategy, "energy" was a recurring keyword in Sisolak's address. To promote electric vehicles, he said he wants to pass a clean energy bill that would boost related infrastructure, component manufacturing and lithium mining. He also wants to create "innovation zones" to attract emerging technology companies to develop their products in Nevada, mentioning an initiative by Blockchains LLC, which bought more than 67,000 acres east of

Reno in 2018 to create a "smart city" that operates on blockchain technology. Sisolak added that physicists at the University of Nevada, Las Vegas are leading cutting-edge superconductivity research that could be a game-changer for energy efficiency.

In the state's new budget, Sisolak highlighted the fact that \$75 million would go toward launching the new state infrastructure bank to help fund capital improvement projects, including rural broadband and renewable energy.

In terms of IT specifically, he said the demands of the pandemic exposed how out of date some of the state government's systems and services have become. He said the state staffed more people to handle a backlog of unemployment claims, but the government's computer systems still need to be modernized.

Wisconsin

In his third State of the State address, delivered virtually for the first time in state history, Wisconsin **Gov. Tony Evers** declared 2021 the "Year of Broadband Access." He highlighted how the COVID-19 pandemic has underscored, and in some

ways exacerbated, the digital divide, echoing the sentiments of many by stating that it "is no longer a luxury, it's a necessity." He then announced that his 2021-23 biennial budget would allocate \$200 million in broadband investment over the next two years, almost quadrupling the investment from his previous budget.

Evers also announced that he would be calling a special session of the Legislature to create a modernization plan for the state's unemployment system. He noted that the system is so old that it was around when Richard Nixon was president, and that the need for modernization is long overdue and was brought into stark relief during the pandemic.

Technology also came up when the governor addressed his goal to fix the state's gerrymandered congressional district maps. Last year, he created a nonpartisan redistricting committee, the People's Maps Commission, to draw up and recommend new maps from 2020 Census data. He noted that, for the past several months, the commission has been gathering resident feedback on its work through virtual meetings hosted in every congressional district within the state. **BT**

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2030

Ford reports that by the beginning of the next decade it will only sell electric vehicles in Europe, and plans to spend \$1 billion to convert its factory in Cologne, Germany, to produce the cars. The carmaker also recently announced it would more than double its investment in EVs and autonomous vehicles to \$29 billion by 2025.

SOURCE: THE VERGE



Spycraft

In February, Baltimore officials voted to end a contract with Persistent Surveillance Systems, the company that ran the controversial Aerial Investigation Research

program for the city's police department. The pilot program began in 2020 and monitored 90 percent of Baltimore with planes equipped with high-resolution

cameras, intended to help law enforcement target crime. The ACLU challenged the program as unconstitutional and in violation of citizen privacy.

SOURCE: THE VERGE



CUTTING THE CORD:

Soft robots aren't new — more flexible than the word "robot" typically conjures, they can squeeze into tighter spaces than their traditional counterparts. But soft robots have always needed some kind of heavy electronics, like circuit boards, to work, which tie them via cables and cords to other machines. But engineers from the University of California, San Diego have developed a soft robot that doesn't need any electronics at all. Instead it runs on a lightweight pneumatic system that uses pressurized air for movement and power, giving it potential for spots where traditional robots don't work, like mineshafts and MRI machines. SOURCE: ENGADGET



\$8.8M

The Centers for Disease Control and Prevention reports that half the adult U.S. population has diabetes or pre-diabetes, and one startup is taking a high-tech approach to managing the condition. January AI recently raised \$8.8 million for its platform that predicts diabetics' responses to certain foods. Among the funding round's investors were Salesforce CEO Marc Benioff and former Yahoo CEO Marissa Mayer. SOURCE: VENTURE BEAT

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Every day on govtech.com, we explore a question about something new happening in the tech (and tech-adjacent) world. Here's a look at a few recent Questions of the Day. For more, visit govtech.com/ QoD, or subscribe to our newsletter to get them daily in your inbox.



Why is the Internet losing its mind over USPS' new trucks?

Answer: Because the massive windshield makes them look like something out of a cartoon.

The United States Postal Service revealed the designs for its new delivery trucks, and the Internet had a field day. That's because the vehicles have a low, convex hood while the rest of their front is taken up by what is one of the biggest windshields ever seen on a vehicle that's not a bus or a giant motorhome. It makes them look like something out of a Pixar movie.

But before you go too far in teasing these new vehicles, you should know that that funny-looking design is predicted to save lives in the event of a collision. The trucks, which will be built by Wisconsin-based Oshkosh Defense, will also come with a whole slate of safety tech, including backup and 360-degree cameras, blind spot sensors, front and rear bumper sensors, and an automatic parking brake. Additionally, each one will run on either a battery-powered motor or internal combustion engine with increased fuel efficiency. The first ones should hit U.S. streets in 2023, with USPS hoping to replace most of its fleet with them in the next 10 years.



Is it possible for spinach to communicate through email?

Answer: Yes.

A study has recently come to light in which scientists taught spinach — yes, the leafy green vegetable — to send emails. Per *Mashable*, engineers from the Massachusetts Institute of Technology (MIT) found that when spinach roots come into contact with nitroaromatics, a type of compound, the leaves of the plant emit a specific signal. An infrared camera was used to detect that signal and send the scientists an email alert, essentially turning the plants into “infrared communication platforms that can send information to a smartphone.”

The purpose of the study was to use spinach as a non-invasive way of detecting explosive materials in the ground. Nitroaromatics are a compound found in many explosives such as landmines, so if there are any nearby, the plants will encounter the chemicals in the groundwater.

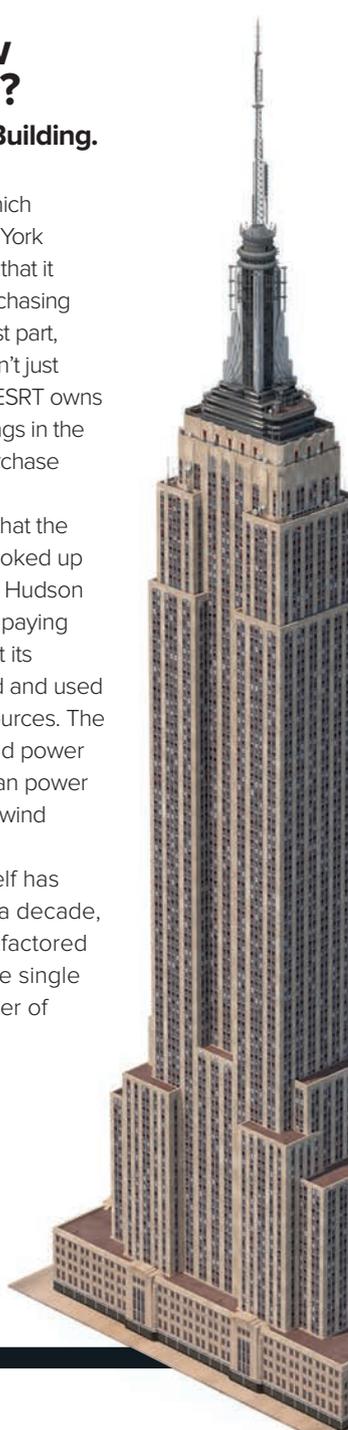
Which New York skyscraper is now powered by wind?

Answer: The Empire State Building.

Empire State Realty Trust (ESRT), which owns and operates the iconic New York City building, announced last week that it had signed a three-year power purchasing agreement for wind power. The best part, though, is that the agreement doesn't just cover the Empire State Building — ESRT owns 13 other high rises and office buildings in the Big Apple, and the clean power purchase covers all of them.

To be clear, this doesn't mean that the Empire State Building has been hooked up directly to a wind turbine out in the Hudson River. Rather, it means that ESRT is paying for the equivalent of the power that its buildings generate to be produced and used somewhere through renewable sources. The buildings may not be using the wind power directly, but the amount of non-clean power that they use is being replaced by wind power in the U.S. at large.

The Empire State Building itself has been running on renewables for a decade, but when the other buildings are factored in this means that ESRT is now the single largest commercial real estate user of renewable energy in the U.S.





Michigan Names Cybersecurity Lead

Michigan named **Laura Clark** as its new chief security officer (CSO) and director of the Department of Technology, Management and Budget Cybersecurity and Infrastructure Protection. Clark served in that same role in an interim capacity dating back to summer 2020. She replaces former CSO Chris DeRusha, who was tapped to lead cybersecurity for the Biden administration.

California Makes 3 Top Tech Appointments

Gov. Gavin Newsom made three key tech appointments in the California Department of Technology (CDT). Longtime state employee **Russell J. Nichols** was named chief deputy director of CDT and deputy state CIO. **Liana Bailey-Crimmins**, formerly CISO for the state's Public Employees' Retirement System, was named chief technology officer. **Richard Klau** was appointed to the chief technology innovation officer role. He was most recently senior operating partner at Google Ventures since 2019.



Anthony
Sean Martinez

Colorado Appoints Broadband Director

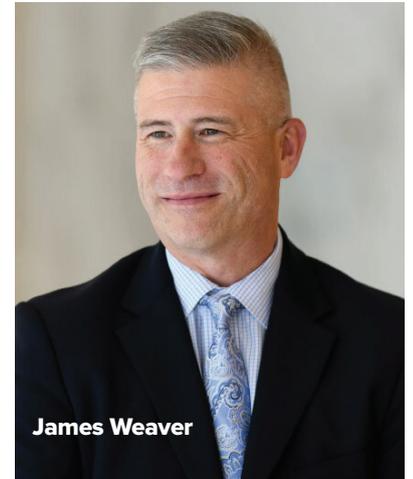
Colorado tapped **Anthony Sean Martinez** as the new executive director of the state's Broadband Office. Martinez is the second person ever to hold that position, replacing Anthony Neal-Graves, who now serves as Colorado's CIO after leading Colorado broadband efforts since 2017.

Local Tech Chief Launches Startup

Rebecca Woodbury, longtime digital services chief for San Rafael, Calif., left city service in December to start a consultancy called the Department of Civic Things. Woodbury is an outspoken advocate for innovation in local government, and her new venture will work with small jurisdictions to help them build out their digital services.

Washington CIO Moves to North Carolina

North Carolina Gov. Roy Cooper in February named **James Weaver**, CIO of Washington Technology Services since 2018, to head the North Carolina Department of Information Technology. Mark Quimby was named acting CIO while Washington seeks a permanent replacement.



James Weaver



Alan Fuller

New CIO Takes Over in Utah

In March, **Alan Fuller** was appointed chief information officer for the Utah Department of Technology Services by newly inaugurated Gov. Spencer Cox. Fuller comes from the private sector, having most recently been senior director of business intelligence for Oracle Application Labs since 2014. He replaces longtime CIO Mike Hussey, who left the post in January.



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Right of Way

Policymakers should make room for sidewalk delivery robots.

Starship Technologies, the U.S.-Estonian maker of autonomous sidewalk delivery robots, announced in January that it had completed 1 million deliveries since its founding in 2014. This is remarkable growth as it was only six months earlier that the company had completed 500,000 deliveries. While much of this growth has been driven by the COVID-19 pandemic and the resulting desire for safe, contactless delivery, it also reflects the rapid evolution of technologies like robotics, computer vision and machine learning that are creating new opportunities for innovation in the use of autonomous robots for last-mile delivery.

Unfortunately, the laws and regulations for these technologies have not always kept pace in the U.S. — in some cases, policymakers are even erecting barriers to the deployment of sidewalk robots. State and local governments have generally taken one of four different approaches to these technologies.

The majority have simply done nothing. Indeed, this is a compelling option for policymakers who want to “do no harm.”

Whether intentional or because lawmakers are focused on other priorities, wait-and-see is a perfectly reasonable option for regulating nascent industries that are still developing and present no obvious severe and irreversible risks.

On the other end of the spectrum, some places are banning the sidewalk

delivery robots. San Francisco is the most prominent example; in 2017 the City Council enacted an effective ban on the devices, prohibiting them in many parts of the city and allowing only limited testing in other areas. It took almost two years before Postmates obtained the city’s first test permit.

Some places have created limited rules for sidewalk delivery robots, such as requiring operators to obtain general liability insurance, establishing speed or weight limits for the devices, or mandating that the operators must retrieve any abandoned equipment. These types of limited rules are generally reasonable as they establish basic operating parameters for companies deploying sidewalk delivery robots to follow and do not present a roadblock to their deployment.

Finally, some places are rolling out a welcome mat for sidewalk delivery robots. For example, Virginia updated its laws in 2020 to expand the weight limit of delivery robots from 50 pounds to 500 pounds, and requires localities to allow their operation on the side of a roadway if a sidewalk is not available. In addition, Virginia’s law notes that delivery robots “operating on a sidewalk or crosswalk shall have all the rights and responsibilities applicable to a pedestrian.” Pennsylvania has passed a similar law.

This last approach is likely to be the most productive as it focuses on making it possible for businesses to

safely deploy the delivery robots while also ensuring the technology does not (literally) tread on humans.

Use of delivery service apps has surged during the pandemic, as consumers go online to order not just meals and groceries, but household goods, prescriptions, laundry and alcohol. In the coming year, delivery robot usage will likely grow substantially to help keep up with demand and become a visible presence in many urban areas.

But as more businesses signal their intentions to deploy delivery robots, certain groups are mobilizing political opposition in an effort to delay their introduction. Some are raising legitimate concerns that policymakers and industry can and should address, such as ensuring these devices do not limit mobility for people with disabilities by blocking sidewalks or knocking over pedestrians who are blind. These are the types of issues addressed by state and local laws.

But most of the opposition is driven by groups worried that these robots will destroy jobs. It is true that delivery robots will reduce demand for certain types of jobs (mostly low-paying ones), but time and again, automation — whether it is digital switches replacing telephone operators or ATMs replacing bank tellers — has shown that it does not lead to changes in overall employment levels, but it does lead to better and higher-paying jobs. If policymakers support better jobs, they should welcome automation. 

Daniel Castro is the vice president of the Information Technology and Innovation Foundation (ITIF) and director of the Center for Data Innovation. Before joining ITIF, he worked at the Government Accountability Office where he audited IT security and management controls.

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Finding Common Ground

Why state auditors and CISOs should be friends — but are often adversaries.

Auditors and chief information security officers are both focused on finding vulnerabilities, fixing security problems and stopping data breaches. So why do they so seldom see eye-to-eye? This story helps explain:

When I was the first chief security officer in Michigan, my team faced our first enterprise-wide cybersecurity performance audit from 2005 to 2007. This effort was led by the Auditor General Office under the Michigan state Legislature. Initially I thought the upcoming “quick review” (my words to our team) would be an easy, six- to eight-week project that would find some minor issues, balanced with lots of praise for the award-winning work that our team was doing to protect state systems.

But I was wrong — very wrong.

I first sensed my assumptions were off when five auditors showed up for the kick-off meeting. We needed a bigger conference room. My two-month project estimate turned out to be the time needed to just determine the audit scope and topics to be covered, including who

needed to be included in upcoming interviews and what documentation was required.

Eighteen months and nine audit findings later, I had learned many valuable lessons. Here are five timeless challenges to address.

1 / **Misunderstandings.**

My initial overconfidence was partially based on the assumption that everyone

had the same goals. We didn’t. Or, at least we measured “a successful audit” in different ways. I was eager to “show off” our leadership and what our team had accomplished, including national awards for cybersecurity projects. They were not interested in our awards; rather, they focused on repeatable processes and proof.

Also, I assumed our 30-person team would not attract much statewide attention. However, they were hearing “audit the Office of Enterprise Security” from other state agencies. Centralizing enterprise security made us a target, and agencies had plenty of concerns.

Tip: Make sure you read and understand previous audit findings and relevant reports prior to starting a new audit process. Assign a well-trained internal audit lead to help track your progress.

2 / Formalities. In almost every area that was discussed, the audit team asked us these questions: What’s the standard? Where’s the policy? Can you prove you are following it? We had many good practices that were not adequately documented, while at the same time fell short with older policies and procedures that had not been updated or formally communicated.

Tip: Just because your team is doing some security functions well, it will not impress auditors if there are not documented standards, policies and procedures to support your efforts.

3 / Pride comes before a fall. My team is smarter than your team — or so I thought as CISO. Sadly, we kept explaining “who, what, when, where and how” to the auditors

during repeated meetings, and kept getting puzzled looks and incorrect draft writeups. In reality, we were doing a poor job of communicating (see item No. 1 above).

Tip: Review detailed minutes at all meetings and document all requested actions. Pay special attention to gaps and weaknesses identified.

4 / Pushback. The initial draft report seemed like a bad nightmare to me, including numerous material findings and no kudos. I called the lead auditor immediately and expressed my dismay. I also followed up with my articulated reasons for disagreeing — even questioning the truth of some statements.

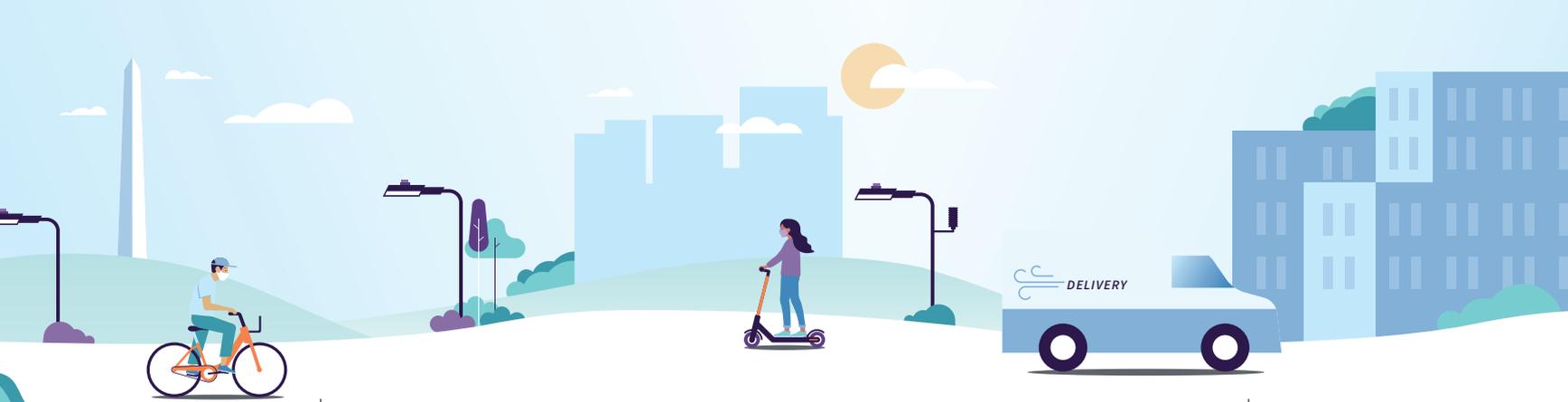
Tip: Be ready to go through the stages of forming, storming, norming and performing. Prepare for tough conversations, but be kind and professional throughout the review process.

5 / Negotiation. Our team offered formal counter-arguments to the final audit report, suggested new language, added awards received, actions taken, additional resources needed and more. It was clear that the auditors wanted us to agree with their findings. Finally, we agreed and offered our road map to close all results.

Tip: While we still ended up with (fewer) material findings, we were able to soften words, and drop the severity of initial findings.

Over time, both sides gained mutual respect, and worked together well to strengthen Michigan’s overall cybersecurity posture. Yes, auditors and CISOs can become friends, but it takes work and time — often years — to get there. **91**

Daniel J. Lohrmann is the chief security officer and chief strategist at Security Mentor. He is an internationally recognized cybersecurity leader, technologist and author. From 2002 to 2014, Lohrmann led Michigan’s award-winning technology and cybersecurity programs, serving as CSO, CTO and CISO.



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