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APRIL/MAY 2022

LEA ERIKSEN, DIRECTOR OF INNOVATION AND TECHNOLOGY/CIO, LONG BEACH, CALIF.



Top 25

Doers, Dreamers & Drivers

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CREDIT: KRISTINA KRUG

COVER IMAGE: FRANK ROGOZIENSKI

Government Technology (ISSN# 1043-9668) is published monthly except February, May, August, and November by e-Republic, Inc. 100 Blue Ravine Rd, Folsom, CA 95630. Periodical Postage Paid at Folsom, CA and additional offices. POSTMASTER: Send address changes to: Government Technology, 100 Blue Ravine Rd, Folsom, CA 95630. Copyright 2022 by e-Republic, Inc. All rights reserved. SUBSCRIPTIONS: Subscription inquiries should be directed to Government Technology, Attn: Circulation Director, 100 Blue Ravine Rd, Folsom, CA 95630, 916-932-1800.



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Subscription Information: Requests for subscriptions may be directed to Subscription Coordinator by phone or fax to the numbers below. You can also subscribe online at www.govtech.com.

100 Blue Ravine Rd. Folsom, CA 95630
 Phone: (916) 932-1300 Fax: (916) 932-1470

Printed in the USA.

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Predictive analytics help stop disasters before they start.

Climate Control
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Remote Hearings Let More Be Heard

You've likely stumbled across the adage "Be stubborn about your goals and flexible about your methods." In government, a primary goal is to serve residents as effectively as possible, but many in-person methods turned dangerous overnight as the pandemic struck more than two years ago. Fast forward to today, when most COVID-19 restrictions have subsided and service delivery in the "after" times has begun to take shape.

A state chief information officer I talked to recently spoke of the impossibility of just pressing rewind and resuming operations as they were in early 2020. "This notion of returning to something is a fallacy," he said, noting how effective remote work has proven to be. Agencies all over the country are now evaluating what pandemic-era practices should continue.

The nonprofit National Center for State Courts (NCSC), in an effort supported by the State Justice Institute, recently published a study that took a detailed look at remote hearings in state courts in Texas. Participating judges from eight counties ranging from small to large recorded details of their work over a three-week period in April 2021. During that time, 85 percent of their hearings were conducted remotely.

One major takeaway offered by the study was the fact that on average, remote court proceedings take about one-third longer than in-person proceedings. There are many reasons for that.

Being able to connect in remotely to a hearing makes the process considerably more convenient for the parties involved,

and as a result, hearings take longer since more people participate. Plaintiffs and defendants, not to mention countless other stakeholders (witnesses, experts, etc.), can participate without huge disruptions to their workday and having to deal with related needs like transportation and child care. Virtual proceedings can also offer more scheduling flexibility, further increasing the likelihood that parties will make their court dates. In addition, judges noted additional advantages in family-related cases where remote hearings reduce emotional distress caused by having adversarial parties gathered under one roof at the courthouse.


Another factor contributing to longer hearing times has to do with technology. Today, about 1,500 trial courts in Texas are using the video conferencing platform Zoom for remote hearings. But not all would-be participants are proficient users, leading to frequent disruptions and delays. In addition, not everyone has sufficient Internet access and there are inequities when it comes to the devices used to access hearings. For example, embedded translation services for non-native English speakers aren't available to people joining via cellphone. Difficulty uploading documents and using visual aids can cause delays as well, forcing current judicial staff into tech support roles that stretch the bounds of their knowledge.

Interestingly, the findings from the NCSC study of Texas judges largely mirror conclusions from court

systems in other states, including a 2020 study from the Nevada Court Improvement Program and a Utah Court Improvement Program study in 2021. But there are plenty of good suggestions for how to make virtual hearings more workable for the long term.

Recommendations include enlisting "technology bailiffs" to shepherd participants through remote hearings. They would reach out beforehand to prep the parties involved on technical requirements for participation, identify and remedy gaps and facilitate and troubleshoot the actual proceeding. Such staff could also offer valuable input on necessary tools and platforms to make things run as smoothly as possible.

"Courts need to be creative in how they solve problems with the digital divide," said Jeffrey Tsunekawa, director of research and court services for the Texas Office of Court Administration, in the NCSC's study press release. "Loaning out computer equipment and setting up remote hearing stations that people can use who may not have personal computer equipment are just two of the creative ways courts in Texas have worked to bridge that gap."

To return to the point I opened with, if the goal is to provide broad access to the justice system, virtual court operations are an example of a pivot that deserves further investment to smooth out the rough spots for the long term. 



Take a Ride

A study from Carnegie Mellon University examined the effect of increased micromobility, specifically e-bikes, on Seattle traffic, and found that if even 10 percent of short car trips were replaced with micromobility trips during peak hours, it would result in a 2.76 percent reduction in greenhouse gas emissions. To make this happen, however, researchers advised that cities will need to focus on building out microtransit infrastructure, like bike lanes.

BY TEXAS FOR TEXAS

At the end of January, the Texas Department of Information Resources (DIR) launched its Texas by Texas (TxT) platform, offering residents access to state services online. The app aims to be a one-stop shop: Currently users can renew driver's licenses and vehicle registrations, and renew a massage therapist or instructor license. DIR Executive Director Amanda Crawford told *GT* last year that she hopes eventually TxT will also allow residents to interact with their local governments.



WHO SAYS?

“If you’re looking out for your constituency, you should build a map.”

govtech.com/quoteapril2022

BIZ BEAT

Gov tech giant **Tyler Technologies** in February acquired **US eDirect** for an undisclosed amount in an effort to boost its recreation management offerings. US eDirect's Recreation Dynamics tool, which handles rentals, licenses and parking, among other functions, will integrate into Tyler's NIC payments platform.

tech/bytes

\$20M

The amount in Canadian dollars on-demand transit tech firm RideCo raised in a Series A funding round.

11

The number of members who will sit on North Carolina's Innovation Council, which will oversee the state's new sandbox for financial and insurance tech companies.

\$7M

The amount New Jersey plans to spend on gunshot detection technology to reduce gun violence.

43%

The increase Portland, Ore., emergency services has seen in 911 calls since 2019, which it plans to at least partially address with AI.

MOST READ STORIES ONLINE:

What Prescott, Ariz., Learned ‘Dodging a [Ransomware] Bullet’

Virginia CIO Phil Wittmer Steps Away After One Month

Oceanside, Calif., Police Combine Drones With Zoom

Michigan Airport to Experiment With More Autonomous Tech

What Is Zero Trust? A Guide to the Cybersecurity Approach

Washington Licensing System Offline After Suspected Breach



Reaching Out

Local leaders must look beyond their existing resources to secure infrastructure.

Traditionally, safeguarding water resources concerned groundwater testing, lead pipe replacement, combined sewer overflows and watershed cleanups. In 2022 though, it also means establishing strong cybersecurity protocols to prevent digital attacks on water systems. The U.S. Environmental Protection Agency announced in January a new action plan to “Accelerate Cyber-Resilience for the Water Sector,” which highlights how important it is to address digital threats to American infrastructure and folds into the broader federal agenda.

The May 2021 ransomware attack on Colonial Pipeline impacted over 5,000 miles of fuel pipelines across the southern and eastern United States, immediately revealing just how vulnerable the outdated and legacy systems are in the age of Internet-connected infrastructure. Later investigations revealed that hackers disrupted Colonial Pipeline and shut down the system with just one stolen password.

Moving forward toward safer infrastructure does not mean moving backward to static, unintelligent systems; the reality is that we must build toward a smarter future that incorporates technology into public works.

The American Rescue Plan Act will direct hundreds of millions of dollars to cities in dire need of infrastructure repairs after decades of deferred maintenance, and the twin solutions of IoT connectivity and cybersecurity will bring this country’s

infrastructure into the current century – and prepare it to last far beyond.

The threshold question for local leaders involves their role not just with the systems they control, but also involving key providers of local services. Some local governments own their utilities; others do not. Privately owned and operated utility service providers generally are monopolies regulated by state, not local, government. Yet mayors or county executives are held responsible for catastrophes like tornadoes or floods. Emergency response to a utility shutdown here is not enough – prevention matters. Certainly, the ransomware attacks on city governments and the Colonial attack raise red flags.


Cyber attacks are highly sophisticated and not many cities have the resources to keep up. Mayors should reach out beyond their authority, directing attention and best practices to preventing utility shutdowns. A first step would be convening all key stakeholders to increase attention on the issue and facilitate a forum of local entities so that best practices can be ensured across all the relevant groups. Elected officials often would be well advised to contact the outside security consultants that many of them utilize for their internal systems concerning best approaches for the convening of service providers. That forum can continue without city management, but officials should be assured that it will be a continuing effort.

Key participants that oversee these industrial control systems (ICS) should begin with a self-assessment that identifies holes in security and implements basic security features like two-factor

authentication. There should also be an immediate review of network security for remote employees, as well as a check on which employees (and former employees) have access to what information. Any lingering computer or software updates should be implemented right away. Local officials should contact state regulators to determine the extent to which these questions are part of regulatory review. And similarly, the federal government is increasingly accepting its role.

The lack of investment in American infrastructure has left the country littered with dangerous and crumbling bridges, pipes and dams, earning the U.S. a C- on the 2021 Infrastructure Report Card. And while this lack of investment has led to very real physical dangers, doing the same with IoT-connected infrastructure means additional broad cybersecurity risks. There is a need for ongoing investment in smart infrastructure, guided by regular audits. Internal or external vulnerability modeling can also help identify where investment and attention should be directed.

One key to long-term safety and security is the human factor. Regular training to enhance cybersecurity skills and awareness will help bridge the gap between cybersecurity experts and industry experts and will transform ICS protection.

Local elected officials need to reach beyond their actual authority, and even their expertise, to call attention to the risk and to create a situation where the very best ICS operators set standards for and educate others. 

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*.

IN PERSON

DIGITAL GOVERNMENT SUMMITS 2022

SPREADING
BEST PRACTICES &
SPURRING INNOVATION

Alabama	Michigan
Arizona	Minnesota
Arkansas	Mississippi
Bay Area	Missouri
California	Nevada
Chicago	New Jersey
Colorado	New York
Connecticut	New York City
Florida	North Carolina
Georgia	Ohio
Hawaii	Oklahoma
Illinois	Oregon
Indiana	Pennsylvania
Iowa	Tennessee
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Kentucky	Utah
Los Angeles	Virginia (COVITS)
Louisiana	Washington
Maine	West Virginia
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John Gonzalez

Communications
Manager, Northeast
Ohio Regional
Sewer District

Public agencies were still figuring out how social media could work for them when John Gonzalez started the Northeast Ohio Regional Sewer District's Twitter account, @NEORS, in 2010. Since then, he has built a strong following of utility customers who keep up with his posts not only for critical information, but for a steady stream of sewer humor. Gonzalez recently talked to GT about how he grew the utility's success online.

1 How do you balance humor and respectability on Twitter?

People can trust that our Twitter content, our personality, is authentic. We're emotional creatures who crave relationships, who laugh at difficult topics. We like to connect with people who share our points of view and look forward to conversations with people who disagree with us, and I think that that's where people come to trust that we're being real. We're not just simply generating this content with an AI behind it. The utility service that we provide is touching people's lives, cleaning their water, managing their streams, and they're interacting with our services whether they know it or not. The more that they can see our content be relevant to them, the more likely they are to come to us when they do have a problem because they recognize that we are aware of the realities that they're facing. It's meeting people where they are, seeing them for the humans they are and recognizing that this engagement might be valuable. Sometimes it is for laughter, but once you hook them to laugh at something that you're offering, the more likely they are to come back and

see that what you're offering them has something else that is much deeper.

2 What advice can you offer other agencies trying to build a social presence?

There's not a one-size-fits-all solution for how a utility or how others in this industry can go about developing a presence because you have to recognize what your resources are and how social media can help you move your communication goals forward. I say to know your leadership team and their expectations, and let them know how you anticipate preparing for risks that come with social media, and that you shouldn't expect to have things happen overnight. I also tell them not to assume that they can be present on all platforms at all times with the same level of investment.

A lot of utilities would be better served by working on responding in the moment and recognizing that responsiveness really does make a huge difference. You don't have to have a pun with every tweet, you don't have to write poetry on your account if you're not used to that, but if you want to show that your customers matter, responsiveness is a great place to start.

3 Do you use other social platforms?

We do of course have a Facebook page. It's not as active, but there is an audience there, and we try to post information about careers or our affordability program because the audience on that page is much more likely to engage on that type of content. We have a LinkedIn account and we certainly post content there to keep followers engaged. We've experimented with TikTok, and that's one we're still trying to figure out. I'll create content there and then cross-promote it on our Twitter; that's where we see the most success.

The same content won't work on all channels. If you have a message that's relevant to all audiences no matter their demographics, you have to vary how you deliver it. The type of thread we can create on Twitter, for example, won't work on other platforms. They don't have the same functionality or feel. It's just a matter of recognizing that the content and the audience work together when it comes to determining how we go about posting content on the various channels.

4 How do you keep your posts relevant and timely?

Especially on Twitter, reading the room is very valuable because there is such a stream of consciousness approach that people expect. If your content is timely and you have an audience who will engage with you, you're going to put yourself in a position to be relevant. When it comes to our communication goals overall, every year we have a plan for outreach, for events, for messages based on the seasons that might be relevant to us based on weather or customer interaction. What we see, however, is while we may plan content for given months, we can't necessarily make people step away from their worlds to come and be relevant in ours. The more we can be aware of what environment we're working in, that ability to tailor the message to the audience in that moment is really where we see the highest return. [gt](#)

— Lauren Harrison, Managing Editor

Here's a sample of the tweets that keep @NEORD's 23,500 followers in and outside of northeast Ohio coming back for more.

 **NE Ohio Regional Sewer District** @neorsd

 **FLOW FORECAST**

Thursday and Friday weather is expected to bring rain, and saturated ground means more runoff and higher flows in sewers and streams.

here's a quick thread of rain-related tips and trends in our region. 1/

4:13 PM · Feb 16, 2022 · Twitter for iPhone

7 Retweets 2 Quote Tweets 40 Likes

 **NE Ohio Regional Sewer District** @neorsd

nothing makes you face your mortality like building a system of infrastructure that will outlive you several times over.

3:33 AM · Mar 3, 2022 · Twitter for iPhone

12 Retweets 3 Quote Tweets 193 Likes

 **NE Ohio Regional Sewer District** @neorsd

NFT just dropped.

Doan Valley becomes our newest finished tunnel
neorsd.medium.com/doan-done-3fb8...



6:06 AM · Feb 28, 2022 · Twitter for iPhone

Groundhog Day is an infrastructure movie.

5:16 AM · Feb 2, 2022 · Twitter for iPhone

35 Retweets 7 Quote Tweets 242 Likes

 **NE Ohio Regional Sewer District** @neorsd · Feb 2

Replying to @neorsd
interstate transportation



3 2 36

 **NE Ohio Regional Sewer District** @neorsd

to our new followers, welcome.

please expect the following content at any time:

- infrastructure news
- don't flush wipes
- cleveland sports memes
- project updates
- job opps neorsd.org/jobs
- customer service
- emotional support
- pop culture
- poop culture

6:26 AM · Feb 11, 2022 · Twitter Web App

12 Retweets 4 Quote Tweets 242 Likes

Top 25 At a Glance

This year's cohort of **Top 25 Doers, Dreamers and Drivers** includes a state CIO that started his career as a help desk temp, an agency leader that founded a professional organization for women in tech, a pioneering privacy policy pro and a county tech leader engineering full-scale modernization of legacy systems. They have many impressive peers on our list too. Read their profiles on the pages that follow once you get a few hints below as to why we're honoring them in 2022.

On the role of the IT office:

"I definitely wanted to shift the discussion from our department as just an internal service provider to a **strategic partner** to our department, and then also a convener and collaborator on issues that are of critical importance to the city and our residents."

On risk:

"We have a risk-averse mindset in government because it's citizens' dollars, and you're always worried, but **you have to take some risks** in order to get the reward."

On the role of the CIO:

"We're not sitting in a dark room anymore."

On culture:

"We are a **people-obsessed, customer-obsessed** culture. All of the tech and all of the data doesn't really mean anything unless you're applying it to a problem that serves people."

On leadership:

"It's about leadership and about **leading with compassion**. That's what's required in these times of uncertainty, and that's what we're going to continue to do."

Top 25 Doers, Dreamers & Drivers 2022

On technical expertise:

“Having a **technical background** can be really beneficial for helping to shape the art of the possible.”

Anushree Bag, Executive Director of Enterprise GRC and Resiliency Services, Indiana

Phil Bates, CISO, Utah

Travis Cutright, CIO, Mesa, Ariz.

Lea Eriksen, Director of Technology & Innovation and CIO, Long Beach, Calif.

Linda Gerull, CIO, San Francisco

Veronica Gilliard, Deputy Director, California Department of Technology Platform Services

Kerry Goode, CIO/Director of Technology Solutions Department, Durham, N.C.

Dessa Gypalo, Chief Data Officer, Illinois

Tom Lynch, CIO, Cook County, Ill.

Lindsey Parker, CTO, District of Columbia

Suzanne Pauley, Director, eMichigan

Joanna M. Pinkerton, President & CEO, Central Ohio Transit Authority

Brandon Presley, Commissioner, Northern District, Mississippi Public Service Commission

John Quinn, CIO, Vermont

Rajiv Rao, CTO & Deputy CIO, New York

Tim Roemer, Director of Homeland Security, Arizona

Mike Shapiro, Former Chief Privacy Officer, Santa Clara County, Calif.

Chris Shealy, Director, IT Strategy and Enterprise Services, Georgia Department of Education

J.R. Sloan, CIO, Arizona

Suresh Soundararajan, CIO, Virginia Department of Health

Mike Timm, Director of Information Technology, Oakland County, Mich.

Tarek Tomes, CIO, Minnesota

Peter Wallace, CIO, Virginia Beach, Va.

TENNESSEE DIVERSITY AND INCLUSION TASK FORCE CHAIRS

Todd Bartine
Lawrence Sanders

TEAM MIAMI

Mike Sarasti, Former CIO

Francis Suarez, Mayor

On success:

“If you have great communications and you have great support and you have a team that’s willing to stand behind you, **anything is possible.**”

On continuous improvement:

“My philosophy is **if it’s not broken, make it better.** You should never be satisfied. Even if you’re doing it really well, you should always look to do it better.”

On innovation:

“I’ve always wanted to be that person who was **thinking a few years ahead** ... what’s out there and where is this going to take us?”

We’re a **business partner** to the organization.”

Top 25

Doers, Dreamers & Drivers 2022

Government that works for everyone, from everywhere, on every device has never been more critical, and our Top 25 Doers, Dreamers and Drivers for 2022 are tireless advocates for ensuring digital services across the country check all those boxes. From county CIOs to agency leaders, state CISOs to diversity advocates, and technologists working behind the scenes to keep the public sector running, this year's honorees embody what it means to be doing the people's business in a world where technology – and our expectations of it – is changing faster than ever. The pages that follow tell the stories of 23 individuals and two teams demonstrating a fierce commitment to pushing state and local government boldly into the future.



Linda Gerull

CIO, San Francisco

“**B**ridging the digital divide” is one of those phrases that always sounds positive but can often signal mere intention over tangible work and actual progress.

That’s not the case for Linda Gerull.

Since 2017, Gerull has served as chief information officer and executive director of the Department of Technology for the consolidated city-county of San Francisco. Noting that San Francisco has 30,000 underserved residents — “the size of a small city” — she has led efforts to bring free Internet to affordable housing, helping to link more people in one of the tech capitals of the world to the global economy, among other programs designed to make tech a meaningful part of civic life.

Her focus on digital transformation also means making city services more accessible via digital tools and making sure that residents are invested and involved in building those tools. The goal? Instead of some top-down approach that can lead to stagnation, she views improvement as an ongoing, 24/7 process that relies on constant feedback to keep civic services — no matter how cutting edge — relevant and useful for those who use them. It also means creating a work culture that values open minds and innovative thinking, where change is welcomed instead of feared. It certainly doesn’t hurt that Gerull holds a degree in civil engineering.

Indeed, during her long career in government technology — Gerull was previously IT director for Pierce County, Wash. — she has earned a reputation as a thought leader among her peers, a professional always willing to engage, teach and learn.

“I have the strongest passion for public service,” she said. “I certainly believe in partnerships, with my peers in other cities and with vendors.”

— THAD RUETER

Anushree Bag

Executive Director, Enterprise GRC and Resiliency, Indiana

An electrical engineer by education, Anushree Bag has led Enterprise GRC (governance, risk and compliance) and Resiliency for the state of Indiana since late 2019. She comes to government work with a long resume of leadership roles in the private sector as well, which likely contributed to her unique view of risk.

“We have a risk-averse mindset in government because

it’s citizens’ dollars, and you’re always worried,” she told *GT* recently. “But you have to take some risks in order to get the reward.”

Her ideal scenario would be to equip every agency in Indiana with risk registers and heat maps to document their top risks. This would bring some of the maturity she aspires to in enterprise risk management (ERM), a priority she advocates for within and outside of the state. She recently initiated a conversation on the practice with officials at NASCIO, for example.

In Indiana, her team completed a cybersecurity risk assessment for all local health departments last year. After all, the health data sharing agreement the state has with localities represents risk. She also oversees a compliance center of excellence, working with various state agencies to ensure their processes observe all relevant regulations. Another major facet of her work is business continuity and recovery, helping agencies craft plans to ensure the stability of critical applications in the event of an emergency.

Despite her many technical responsibilities, among them managing all IT policies for the state, Bag identified a need for a professional group for women in technology, so she founded one. Born in March 2020 right as the pandemic took hold, Government Women In Technology has grown to nearly 150 women who meet each month to talk about both challenges and opportunities they run into in the course of their work. It’s an important avenue of connection and camaraderie that now includes women from dozens of state agencies.

“That has been a huge source of energy for me personally and for all these women who have joined,” she said.

A big supporter throughout her career of diversity, equity and inclusion efforts, the goal for Bag is not to hit specific numbers of people from certain categories. “It’s diversity of perspectives, experiences, backgrounds, learning experiences that I love having on my team,” she said.

— KATYA MARURI



In the five years since John Quinn took over as state CIO and head of Vermont’s Agency of Digital Services (ADS), he’s continued on a trajectory of leadership in state government that was two decades in the making.

Inspired by the recommendation of a family member that government IT might be a good spot for him, Quinn started as a temp worker at the state’s help desk right out of college,



John Quinn

CIO, Vermont

learning what it meant to have a career helping Vermonters. Since then, he's focused on the intersection of business and government, spending time in enterprise project management, enterprise applications, and as the chief innovation officer. Having also served on two local town councils and spent 13 years as a volunteer firefighter, he said, "I've always had this sense of duty to give back, and this job fits right into that model."

As chief innovation officer under Gov. Phil Scott, Quinn helped spearhead a major consolidation of Vermont IT, an initiative he continued when Scott appointed him CIO in 2017. And that consolidation was no small feat. It involved the support of the Legislature as well as IT staff spread across the enterprise. Getting their buy-in was key, Quinn said, so they ended up leaving many of those staff in their existing

agencies, but changing the way IT services were billed; this meant staff could primarily work where they felt a sense of purpose but could also move around as needed.

That trust he had built in ADS was essential again in 2021, when Quinn testified before the Legislature in favor of a dedicated modernization fund to help shift Vermont from a capex to an opex model. Vermont ended up dedicating

\$66 million toward 16 new IT projects across the state. This year Quinn anticipates \$40 million more will get those projects over the finish line.

He cites investment in strong cybersecurity and the unification of IT platforms as other significant accomplishments, but he is also proud of how far he's come in his career. From the help desk to the governor's cabinet, it's been quite a ride.

— LAUREN HARRISON



Dessa Gypalo

Chief Data Officer, Illinois

From taking on the role of Cook County, Ill.'s inaugural chief data officer (CDO) in June 2018 to becoming the CDO for the state within the Department of Innovation and Technology (DOIT) in April 2021, Dessa Gypalo has helped shape the role of chief data officer in Illinois. As CDO, she prioritizes getting beyond the numbers and looking at the work as storytelling, examining what narrative the data is telling stakeholders.

In her time at the state, she has used data to evaluate student outcomes and worked on a master data management initiative with the Health and Human Services Innovation Incubator. These projects were underway prior to Gypalo's involvement, but her goal is to help establish strong data governance for these large,

cross-agency initiatives, ensuring that data security is prioritized at every turn.

At the county level, Gypalo spent her time on coalition-building and data evangelism to spread awareness of the value of data to partners and other stakeholders. Coming to the state, the infrastructure was more mature. But since her State Data Practice team is the newest division of DOIT, she can still shape its foundation with key values that will position it well for future growth.

"Everything we do is going to touch on ethics; everything we do is going to touch on equity," said Gypalo.

Her strategy is to incorporate these values when launching any new

initiative, using a three-pronged strategy: expand data awareness, create an enterprise data management environment and develop a culture of collaboration. Gypalo is focused on the right things when it comes to putting these practices to work in government, as she wrote for *Government Technology* in 2019:

"Government has a duty to be mindful and intentional in its data collection and usage practices. By creating an ethical framework within public institutions, we are poised for a future where government is seen as a trusted innovator when providing services for all residents, including the most vulnerable."

— JULIA EDINGER

FRANK ROGOZIENSKI

Reimagining the Long Beach IT department's role as more than only an office that maintains the smooth running of internal technology to a broader vision that includes civic resiliency, smart city projects, digital services and data privacy is what Lea Eriksen has helped to develop in this Southern California city.

"I definitely wanted to shift the discussion from our department as just an internal service provider to a strategic partner to

Lea Eriksen

Director of Innovation and Technology/CIO, Long Beach, Calif.



our department, and then also a convener and collaborator on issues that are of critical importance to the city and our residents,” Eriksen said.

Eriksen was named director of technology and innovation in 2018, after some 20 years working in local government. She also serves as CIO of the city of Long Beach, in charge of implementing the city’s technology vision, overseeing a staff of 173 and managing a \$57.2 million operating budget.

She has led efforts to foster digital equity with the Digital Inclusion Roadmap and helped to develop a smart city strategy.

“And for me, digital equity is more than just making sure that our residents have access to technology devices and Internet, and know how to use it, but also making sure that our services are designed with equity in mind,” said Eriksen.

Part of Long Beach’s smart city principles revolve around

earning and keeping public trust.

“And I think that’s really important. Data rights, digital privacy, transparency and data all fall into that category,” said Eriksen. Long Beach joined the Cities Coalition for Digital Rights several years ago.

The COVID-19 pandemic necessitated new tools for digital services and resiliency, though many of these tools were already in the planning

stages. And like many cities, the technology clock in Long Beach will not be turned back.

“During the COVID pandemic we had so many opportunities to really take advantage of some of the foundational infrastructure that had been planned before I even got here,” said Eriksen. “That positioned us to use data and technology to really be responsive to the emerging needs that came out of the pandemic.”

— SKIP DESCANT



Tom Lynch

CIO, Cook County, Ill.

When Tom Lynch first came to Cook County, Ill., in 2014, he had his work cut out for him. It's a big jurisdiction — home to more than 5 million people and encompassing the city of Chicago — and for years there was what Lynch called a revolving door for CIOs. Part of the problem was that the various agencies where elected officials sit had set up disparate IT platforms, some of them dating to the 1990s or even the 1970s. Not only were they not operating in a

way that fostered collaboration, but they didn't trust that central IT had their backs.

Lynch has worked hard to change that, first as deputy CIO and then in the top seat starting in 2018. In the beginning he did triage, stabilizing the mainframe and doing a quick upgrade of the existing ERP and time and attendance systems. After that, he started building support for shared applications and investment in technologies that felt expensive to officials but would drive efficiency across the enterprise.

Trust has been key to transitioning county staff who may have been on the same systems for 25 years to new platforms. It's so essential, in fact, that Lynch's office created a dedicated change management position to guide these efforts, leading to continued work modernizing fundamental systems like courts and property taxes.

Lynch has experience in city and state government, as well as time in the private sector serving the Illinois tollway. Along the way he

developed a particular specialty in ERP modernizations. Lynch's career began in budget and finance, which also helped build a practical backbone for his work in tech.

In government, he explained, change often only happens when there's a major crisis or if someone comes in with the energy and drive to fix what's broken. He puts himself firmly in the second category. "It's art and science behind this, and we're here to help you," Lynch said. "We're only here to help you, in fact."

— LAUREN HARRISON

Travis Cutright

CIO, Mesa, Ariz.

Mesa CIO Travis Cutright has made use of leadership skills gained over two decades working in tech to help make smart technologies an everyday part of public life. Under his leadership, the city won first place in the 2021 Government Experience Awards* city category for its use of CARES Act funding to expand connectivity, as well as citizen outreach efforts using social media surveys and online polling apps to gather feedback about the city's most pressing IT needs.

"A lot of what we're doing is looking for innovative ways to serve our citizens and keep them safe, but also to be efficient and minimize the impact on the environment," said Cutright, who's held the role for about five years following his work as Phoenix's deputy CIO.

The city is using civic data, GIS information and smart-screen kiosks located downtown to help residents and visitors navigate the city. Mesa also expanded broadband access for low-income residents

and students amid shifts to telework and remote learning.

As the city's IT team worked swiftly to respond to people's needs during the pandemic, Cutright's staff continued implementing the city's Smart City Strategic Plan and Climate Action Plan to increase efficiency and streamline operations across all 28 departments. As part of those plans, the city is retrofitting facilities with modern HVAC systems that can help control energy costs. Those savings can then be reinvested in other priorities, like smart meters and a real-time public safety operations center.

Cutright is particularly proud of the city's efforts to convert food waste into useable energy in a partnership with local schools and restaurants.

It's not necessarily a traditional role for a CIO to play, but Cutright is embracing a broader interpretation of his position, where communication and coordination are critical.

"We're not sitting in a dark room anymore. We're a business partner to the organization," he said.

— BRANDON PAYKAMIAN



Rajiv Rao
CTO, New York

For about a decade, Rajiv Rao has had his fingerprints on many of the most important IT projects in the state of New York.

He has provided crucial leadership for the state's ongoing IT consolidation. As chief architect in 2012, Rao began building a data center and taking care of other consolidation projects. Within two years of Rao becoming chief technology officer in 2015, most of the heavy lifting — which involved over 50 agencies, 180,000 desktops, 20,000 servers and 1,500 miles of fiber network across the state — was completed.

Rao was also instrumental in the creation of Excelsior Pass, the nation's first vaccine passport, and the New York State COVID-19 Technology SWAT Team, which brought together numerous private partners to address various tech needs brought about by the pandemic.

With the pandemic has come a wave of digitized services.

Rao subscribes to the philosophy that this era is not only about digitization of services but also about modernizing the ecosystem that consumes digital services, citizens and state employees included.

He illustrated this big-picture thinking with an example involving digital driver's licenses. For Rao, such a tool should benefit both citizens and state troopers. He described an interaction in which an officer and citizen could exchange digital information without the officer ever leaving the car, thus eliminating the most dangerous part of a trooper's job: approaching a vehicle.

"How does it make a trooper safer? How does a citizen get to the point where they don't have to carry a wallet along with their phone?" he asks. "That is how I envision technology," Rao explained. "It's not only about making citizens' lives easier. It's also about making information safer and faster to consume."

— JED PRESSGROVE



Joanna M. Pinkerton

CEO, Central Ohio Transit Authority

Technology is enabling new services and improved customer experiences at the Central Ohio Transit Authority (COTA), which is just what Joanna M. Pinkerton intended it to do.

“We are a people-obsessed, customer-obsessed culture. All of the tech and all of the data doesn’t really mean anything unless you’re applying it to a problem that serves people,” said Pinkerton, who has been president and CEO of COTA for four years.

Pinkerton has more than 20 years’ experience in the engineering and transportation industries, including several with Union County, Ohio, and the state’s Department of Transportation. She helped to lead COTA’s first strategic planning process and oversaw the development of a new “customer experience center.” She also hired the agency’s first chief innovation officer.

The COTA system serves metro Columbus, an area covering 562 square miles across five counties with a population of 1.4 million residents. In 2019, COTA served some 19 million riders. And like so many transit agencies, particularly since the start of the COVID-19 pandemic, COTA has been focused on expanding

transportation access, often through new services, partnerships and programs.

“I’m really grateful that I have a very forward-thinking and highly motivated board of trustees,” Pinkerton reflected. “Under their guidance ... we’ve been able to go through strategic planning processes, which are really focused on how rapid shifts in mobility technology can be used to serve people.”

In addition to providing standard fixed-route bus service, COTA offers on-demand microtransit, as well as on-demand and scheduled paratransit services. New systems are also providing on-demand connections, like third-party bike-shares, to the private sector.

Meanwhile, COTA is at work behind the scenes to implement a variety of technologies, largely at the enterprise level — to tie all of the different services together.

“Because we’re focused on a better customer experience, it has to be safer. It has to be greener. It has to be smarter and more equitable,” said Pinkerton.

— SKIP DESCANT





Tim Roemer

Director of Homeland Security, Arizona

In just one month last fall, the Arizona Department of Homeland Security (AZDOHS) detected 68 million cyber threats and shielded state websites from more than 800,000 attacks.

Those numbers illustrate why cybersecurity is one of the most critical issues facing Arizona and why Tim Roemer and the state launched the Cyber Command Center in early 2020. Since then, Roemer, director of AZDOHS in charge of cybersecurity at the time, has been at the center of the effort to combat the growing cyber threat. Last spring he was selected to head up the department's efforts to thwart attacks.

In being tapped to lead AZDOHS, Roemer was the first state chief information security officer to retain cyber duties while directing homeland security. The selection of Roemer to lead the cybersecurity efforts and the command center demonstrate the state's mettle in this battle.

"We can throw tens of millions and even hundreds of millions of dollars at advanced cyber protection technology and it won't make a difference without coalition and partnerships between business leaders in the private sector and government," Roemer recently told the state's chamber of commerce.

He added that annual cybersecurity training is crucial to success, including internal simulated phishing attempts and various efforts at penetration testing to determine weak points in a business's digital security perimeter.

Roemer had previously served as deputy director for AZDOHS and as Gov. Doug Ducey's public safety adviser and, later, deputy director of legislative affairs. He also spent 10 years in the CIA. In his last two years at the CIA, Roemer was assigned to the White House Situation Room, where he provided national security updates to the president, vice president and National Security Council and briefed U.S. policymakers on national security-related matters.

—JIM MCKAY

Veronica Gilliard

Deputy Director, Platform Services,
California Department of Technology

When California residents and government staffers access the state's mission-critical services online — and some from its most populous city, Los Angeles — they're relying on the work of 30-year IT veteran Veronica Gilliard and her team, whether they know it or not.

Gilliard's state career began in 1988 when she joined the California Public Employees' Retirement System, rising from a key data operator to operations and ultimately into systems programming. She is now deputy director for platform services at the California Department of Technology (CDT), where she's been for nearly 14 years; she oversees an annual budget of roughly \$86 million and leads a team of 200-plus employees in ensuring key state services are available around the clock. And in the span of less than 12 months from when the three-year, \$10.5 million contract was announced in late March 2019, Gilliard — then branch manager of the mainframe team — helped guide the city of Los Angeles' migration of its mainframe business applications to CDT's state data center in Rancho Cordova. The project went live seamlessly on Feb. 26, 2020.

"I'm a helper. And I want to help make a difference wherever I go and help improve. And the state sometimes gets a bad rap that the processes and the timelines take a long

time. I'm here to show that that's not necessarily true. That if you have great communications and you have great support and you have a team that's willing to stand behind you, anything is possible," Gilliard said.

A contributing member of the state's Security Governance Workgroup, which helps ensure compliance with state and federal security standards, and of the Technology Operations Advisory Council, a customer-focused cross-agency collaboration group, Gilliard is also a mainframe evangelist.

Her goals here include rebranding the state's mainframe as "Z+" because "it has so much to offer" and improving its negative perception by re-educating customers to understand it runs the latest hardware, industry-leading CPUs, state-of-the-art encryption and data analytics. Plans to bring open source technologies to Z+ to support and attract new applications are now in development.

— THEO DOUGLAS





Lindsey Parker

Chief Technology Officer, Washington, D.C.

As chief technology officer for Washington, D.C., Lindsey Parker guides tech work for more than 90 internal agencies in a truly unique government, one that functions as city, county and state. Parker has held her position for three years, and over that time, many of the agencies she guides have gotten their own internal tech leadership.

“When someone asks me if we have a centralized or decentralized IT structure, I say ‘all,’” Parker said.

In a broad sense, this means that Parker both

works to make sure agencies have what they need in terms of technology, but also that they are free to innovate on their own, directly addressing their specific challenges.

This has been a successful approach for the nation’s capital during Parker’s tenure.

With Parker at the helm, her office has helped the city amid the COVID-19 pandemic, working with the health department on complex tools around vaccinations and testing. Parker has also created a digital services team to facilitate better communication with vendors, making

sure all city purchases function properly and save money in perpetuity. She has also been involved with digital equity work in the district, specifically Tech Together DC, a push to close the digital divide. All of this, Parker says, is possible because of a focus on process and people, on building the best team with strong leadership and support from D.C. Mayor Muriel Bowser, who recently elevated Parker to assistant city administrator as well.

Looking ahead, Parker and her office are building a new business portal, a key platform

for the city to recover from the pandemic efficiently and equitably. This project — almost a holy grail of government tech — aims to create a single easy-to-use access point for business owners to interact with the city on everything from licenses to taxes. It speaks to Parker’s deep commitment to user experience.

“Whether you’re calling on the phone, visiting an office or coming to us digitally,” Parker said, “we need to capture what you need, what you want and what makes sense, and build out that capacity.”

— ZACK QUAINANCE

Mike Timm

CIO, Oakland County, Mich.

Oakland County, Mich., CIO Mike Timm started his career as an engineer in the computer department at the General Motors vehicle assembly plant. At that time, his area was organized underneath the comptroller. IT has come a long way since then, as has Timm, whose technical and organizational abilities led to greater responsibilities as he moved through his career in various, mostly private-sector roles. As for the turn he made toward government more than four years ago, Timm viewed it as another opportunity to satisfy his “disposition toward service ... serving people to help make their lives easier and their jobs more efficient,” he said.

Timm is quick to credit the strong foundation he inherited with Oakland County’s cloud investments for both applications and infrastructure — investments that helped ease the transition to remote work and in general make county IT more agile. He plans to continue that trajectory by moving additional data and services to the cloud, ensuring the stability and security of the county’s complex network along the way.

When the pandemic swept the country, Timm’s experience in manufacturing led to a leadership role on the team charged with distributing CARES Act funding to local businesses

— a complex challenge on an unprecedented scale, injected with an urgency tied to profound community need. Process improvements, bolstered by automation and other workflow tools, helped move resources as efficiently as possible. Technology also came to the rescue to help connect older residents in Oakland County locked down

due to the pandemic with their loved ones using Amazon Echo Show devices.

A people-focused leader, Timm points to many mentors he’s worked with in his career that underscored the importance of putting people at the heart of every decision, especially in IT, where there will always be bugs to fix. This

translates to support for professional development, work-life balance and team building, though that last one has gotten more challenging with a largely remote workforce. “I think once you show people that you care for them, they care for you, they care for the team, they care for their customers,” he said.

— NOELLE KNELL





Mike Shapiro

Former Chief Privacy Officer, Santa Clara, Calif.

Mike Shapiro became Santa Clara's first chief privacy officer (CPO) at a time when few counties had such a role. He brought a background in privacy consulting for corporate, federal, civilian and state government clients. With the county, he helped its 40-odd departments maintain the privacy of sensitive data, ranging from voting rolls to information on domestic violence victims.

A CPO needs to both safeguard privacy rights and understand which privacy concerns matter to residents.

"That trust component is essential, because if you don't have that, the rest of it really isn't going to matter too much," Shapiro said.

Resident worries have led to outreach about contact tracing

apps' privacy features and discussions over facial recognition technology, for example.

Shapiro joined Santa Clara in 2017, when the county was amending its surveillance technology ordinance. As part of that, all 80 existing surveillance-use policies needed privacy vetting – which, given Shapiro was still a team of one, meant he was soon poring through them. It proved to be a crash course in the array of technology at play, and the county developed a vetting program and user guide.

Another major initiative: creating a Privacy Center of Excellence, which offers training and connects chief data officers, CPOs and others in sharing ideas.

Looking ahead, Shapiro said CPOs will need to focus on

juggling keeping governments' ever-growing data collections private while also finding safe ways to use it to benefit residents, such as by proactively offering relevant services.

"We have an enormous amount of data to where we could make those connections to try to help people out, instead of having people figure out this really large bureaucracy ... but how can we do that responsibly, do it in a way that we're complying with the law, do it in a way that we respect the rights of people who may or may not want to share that data?" Shapiro said. "That's going to be one of the biggest things going into 2022 and beyond."

Shapiro left Santa Clara County in January 2022 for a position in the private sector.

— JULE PATTISON-GORDON

DAVID KIDD

The exponential growth of digital services in government during the pandemic has some big numbers attached to it in Minnesota. As of last October, Minnesota IT Commissioner and state Chief Information Officer Tarek Tames reported that there were 47 million logins to the state's unemployment insurance system, 1.6 million residents opted in to COVID-19 exposure alerts, 90,000 people had downloaded a digital vaccine record and

Tarek Tomes

Commissioner and CIO, Minnesota IT Services

emergency food benefits were distributed to 265,000 kids. These stats validate a couple of Tomes' agency's guiding principles: to view and approach technology with empathy and focus on the customer.

Tomes pairs this customer-centric approach with the deep technical knowledge essential for a state CIO. Prior to assuming his current position in April 2019, Tomes worked for several years in local government, preceded by private-sector work in which he led complex initiatives on

a massive scale. But he was drawn to the "intimacy" of government work, in which technology could bring tangible outcomes in your own community. The move to the state multiplied Tomes' responsibilities, but he leans on his IT knowledge and understanding, serving as a "relentless advocate" for how technology can help government fulfill its mission.

He offered a recent example of this, in which the state used a new collaboration tool to conduct a town hall meeting,

A departure from platforms his team had previously used, some were a bit reluctant to try something new with minimal lead time. Tomes inspired confidence in his staff, communicating faith in their ability to make it a success. "The team did phenomenally ... I mean they knocked it out of the park," he said. "Having a technical background can be really beneficial for helping to shape the art of the possible."

Tomes was named CIO amid a high-profile vehicle

registration project that was ultimately rebid and rebuilt. Launched successfully last fall, Tomes credits communication and collaboration with a talented, multi-agency team for pulling it over the finish line. This respect and admiration for the people he works with radiates through everything Tomes talks about. "We have just an unbelievably incredible, diverse leadership team that really, really cares. And that's what makes the magic happen."

— NOELLE KNELL

Peter Wallace

CIO, Virginia Beach, Va.

Peter Wallace brings an impressive resume to the Virginia Beach, Va., CIO's office. After spending more than 17 years in the private sector, he came to government in 1998 and led IT for a handful of other East Coast jurisdictions before arriving in Virginia Beach in 2017.

Since then, Wallace has primarily focused his efforts on diversifying the city's approach

to technology and innovation. This includes transitioning to a software-defined data center, contributing to a multijurisdictional initiative to develop a dark fiber regional connectivity ring, and deploying dozens of Internet of Things sensors to collect water-level data to prepare for flooding and sea-level rise, a particular threat for coastal cities. He has also improved the city's 311 system

to ensure that citizens can easily connect to city services and information across multiple platforms during the pandemic.

The way that Wallace has kept his agency not only afloat but more productive than ever over the past two years is a testament to his approach. "It's about leadership and about leading with compassion," he told *GT* in an interview last summer. "That's what's required in these times of uncertainty, and that's what we're going to continue to do."

For example, Wallace explained, since transitioning to remote work, he has seen an increase in engagement among employees. But it wasn't his first go at quickly pivoting in reaction to unforeseen circumstances. In May 2019, a tragic shooting at a municipal building that resulted in 30 deaths meant Wallace had to coordinate the needs of 400 city personnel that needed a new place to work to keep city operations moving. As bad as it was, he said the experience prepared them to make the switch quickly during the pandemic.

As for what comes next, Wallace said he and his team anticipate working on mitigating risks for the city's cyber network, implementing a new ERP platform, replacing legacy systems and creating more opportunities for innovation.

— KATYA MARURI



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Team Miami



Mayor Francis Suarez



Former CIO Mike Sarasti

Thanks to the vision of these two leaders, Miami is providing an example for other cities about how to move forward with technology.

Start with Mayor Francis Suarez, re-elected to office with 78 percent of the vote, who famously asked to receive his salary via bitcoin, signaling faith in cryptocurrency, and importantly, a desire for Miami to gain a foothold in the emerging industry. Suarez also has appointed a venture capitalist in chief to further encourage the development of the technology industry.

Efforts like this are attracting attention, with the VC community likening modern-day Miami to Silicon Valley, circa 2000. “Miami is now assembling the dense entrepreneurial spirit found only in Silicon Valley’s history books,” said Eight Sleep CEO Matteo Franceschetti recently on Twitter. Others have chimed in similarly on progress under Suarez: “It’s the only city maybe globally where the government is moving in parallel with fast-growth startups,” said Michael Cassau, CEO of Grover.

Suarez is promoting a plan to offer city space and leases

for charter schools that focus on STEM subjects, which in turn could help Miami gain a larger tech edge for its local economy and help the city retain tech talent. He has also emerged as a champion of micromobility, helping push for the reinstatement of scooters in Miami after a brief pause late last year. His influence looks certain to increase via his new position as president of the U.S. Conference of Mayors.

Mike Sarasti, meanwhile, recently announced he was leaving his position as Miami’s chief information officer and

director of innovation and technology, but he leaves behind a considerable legacy. Under his watch, the city streamlined IT operations; trained hundreds of city employees on lean and agile practices through an innovation academy; did a website redesign to increase accessibility; and advanced the use of remote public meetings in service of more transparency and public participation. Sarasti also pushed smart city concepts while maintaining wider connections and supporting Suarez’s vision for the technology industry in Miami.

— THAD RUETER



J.R. Sloan

CIO, Arizona

Arizona CIO J.R. Sloan has been a hard-charging advocate for making technology pull its weight in state government since taking over in 2019.

The efforts of Sloan and his team at the Arizona Strategic Enterprise Technology (ASET) Office were perhaps most noticeable during the COVID-19 pandemic, when the state's critical investments in cloud technology paid dividends. At the time, Sloan called the move "the single largest transformational initiative" of the last few years. That consolidation — which narrowed the footprint of 90 official and

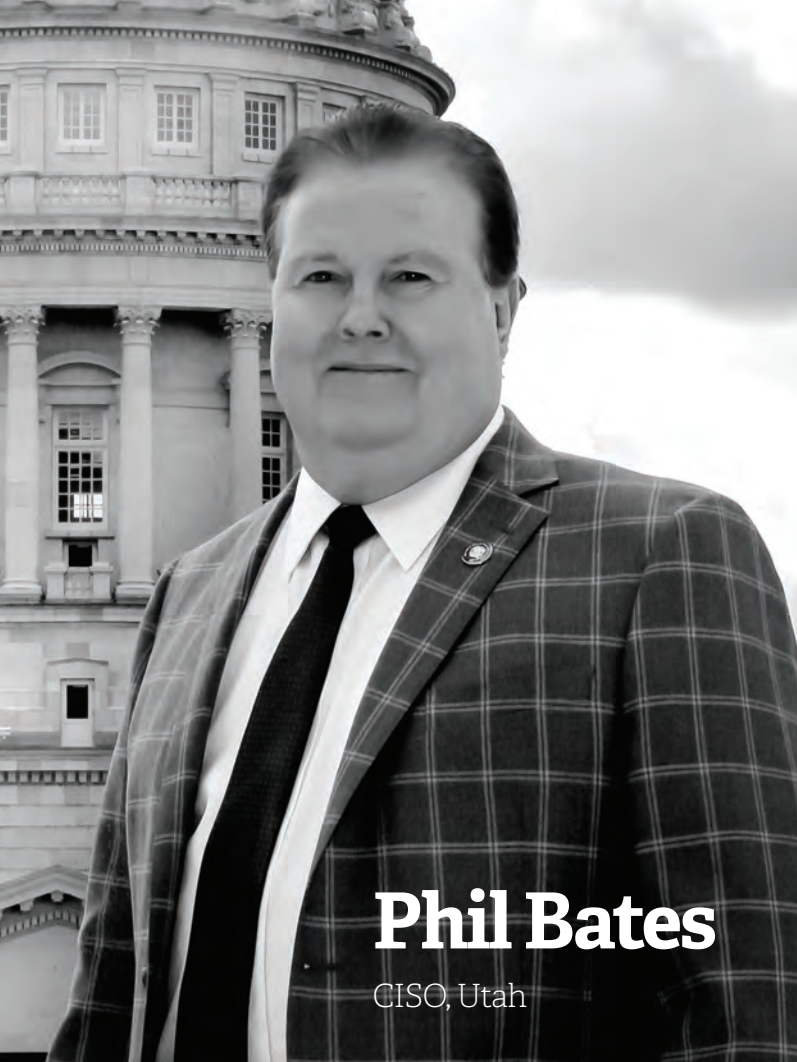
unofficial data centers spread across the state to two major locations and the cloud — enabled a quick transition to the remote work needs of some 90 state agencies. "Everyone had cloud-based tools for collaboration and virtual meetings. Moving quickly on cloud technologies really positioned us well for that transition," he told *GovTech* in October 2020. The state's trust-but-verify approach to IT shows prominently in how it vets cloud vendors through the AzRAMP process and its participation in the larger-scale StateRAMP initiative,

an effort Sloan undertook a leadership role in crafting.

Where government work intersects with the public, Sloan has been a force for progress. In 2021, he reported that the state's resume of digital services had reached 266 — the equivalent of 550,000 transactions worth \$147 million. Similarly, the creation of a new e-licensing platform streamlined access to professional licensing. In 2020, the state earned an A- grade for these efforts in the Digital States Survey* under Sloan's leadership.

— EYRAGON EIDAM

In 2017, the Department of Justice published a study about the Utah Cyber Crimes Unit to share the successful approach with other states. Chief Information Security Officer Phil Bates helped establish that task force in 2012, while IT director for the state Department of Public Safety (DPS). Organizations had been getting hit by doxing and other attacks and had no clear law enforcement entity to which they could report the incidents. At the time, the FBI only got involved if cyber incidents caused roughly \$50 million or more in damages, Bates told *Government Technology*. He helped DPS pull together a collaboration between state police, the state fusion center and the FBI to fill that gap.



Phil Bates

CISO, Utah

This focus on collaboration served Bates again in 2016, when Utah launched its state Cyber Center. Members of the Security Operations Center and fusion center housed at the Cyber Center communicate on cyber investigations and share real-time cybersecurity alerts with federal and local partners.

As they adopt technologies, CISOs need to keep the users in mind and not overload them with tools. For example, Bates said his team learned that an analyst can absorb information from only about five to seven feeds — anything else is overkill. To keep momentum, CISOs also should make choices with five-year plans in mind, Bates said. Fixating too much on short-term wins instead leaves CISOs forced to step back and “refactor and move

into something else” once the particular project is over.

Bates’ next five-year goal calls for helping all Utah’s localities reach a cybersecurity baseline, something that forthcoming federal funding should make possible.

Serving as Utah CISO since 2015, Bates has worked under three CIOs and two governors. One secret to success? Understanding the different priorities and backgrounds of each new leadership team and adjusting security goals and communication approaches to click with them. A CIO with a background in security will be interested in — and able to parse — different metrics than a CIO with a different background, Bates said. Failing to meet them where they’re at risks losing their attention.

— JULE PATTISON-GORDON

Brandon Presley

Commissioner, Northern District,
Mississippi Public Service Commission

In Mississippi, there are now people in remote areas that have better and more affordable Internet than many households in more populated towns and cities. This previously unthinkable reality was made possible by a grass-roots movement sparked by the leadership of Brandon Presley, northern district commissioner of the Mississippi Public Service Commission.

The argument behind the effort is simple and eloquent in its recognition of history. In 1934, the electric cooperative model was born in Mississippi to bring electricity to rural homes. Why not use that same model to bring broadband to people living in the countryside?

As documented in *The Clarion-Ledger*, after 1,310 individuals formed a 33-county task force and after 60 county boards and 70 city councils passed resolutions, then-Gov. Phil Bryant signed the 2019 Broadband Enabling Act, which allows cooperatives to provide broadband — but only if the cooperatives offer it to all of their customers.

Three years later, thanks in part to federal funding,

the majority of the 25 electric cooperatives in Mississippi are building fiber to the home for everyone they serve. Presley said that within another year, the state will likely see a “significant number” of these fiber build-outs completed.

“Once this legislation was signed in 2019, what you saw immediately was an absolute explosion of broadband activity,” he said. “Every one of our projects is ahead of schedule and below budget.”

Ironically enough, Presley belongs to one of those town households that the fiber hasn’t reached yet. He looks forward to purchasing a broadband package that will ultimately benefit his community, rather than a company’s bottom line. It’s something he calls “the most American way of doing things”: neighbor helping neighbor.

“When Tombigbee [Electric Power Association] comes by my house, I will save \$36 and triple my download speed, and my upload speed will go up by 20 times,” Presley shared. “And every dollar I will spend with Tombigbee stays in my community, stays local.”

— JED PRESSGROVE





Kerry Goode

CIO/Director of Technology Solutions Department, Durham, N.C.

Kerry Goode has led tech and innovation work in Durham, N.C., for nearly 12 years. A decade-plus is a long tenure for a municipal government CIO, and for Goode, it has certainly led to a long list of accomplishments and accolades, among them finishing first or second place the past five years in the Center for Digital Government's* Digital Cities Survey.

Looking back on his time with Durham, Goode points to establishing a strong IT governance model as perhaps the single most significant project. Having a model that aligns business, performance and compliance values has enabled consistent and steady progress, primarily ensuring that all IT investments are both effective and strategic.

Goode has also led Durham's cybersecurity — consistently one of the most pressing and difficult challenges for municipal CIOs. He has done so primarily through preparation, taking a "not if but when" position. This served the city well in 2020, when it weathered a ransomware attack. Due to having planned for ransomware as an inevitability, when it actually

happened the city was able to restore core business functions within a week with full recovery coming in less than a month. Not only did the city not pay anything during this attack, the ransomware didn't even come. A big part of this, Goode recalls, was the decision to not only have a robust backup system in place, but to rebuild 150 servers to get back online quickly.

"I figured I'd be the center of attention no matter what," Goode told *Government Technology*. "So I might as well give it my best effort. Give my best effort and then ask for forgiveness."

Looking ahead, Goode's office has many of the priorities other cities share, including closing the digital divide and fostering digital equity. In addition, work is underway to reinvent more core business systems and incorporate data governance and strategy.

"My philosophy is if it's not broken, make it better," Goode said. "You should never be satisfied. Even if you're doing it really well, you should always look to do it better."

— ZACK QUAINANCE

Team Tennessee

Lawrence Sanders and Todd Bartine
Tennessee Diversity and Inclusion
Council Chairs


The Tennessee Diversity and Inclusion Council was created by Lawrence Sanders and Todd Bartine, the project delivery director and IT director, respectively, for Tennessee's Strategic Technology Solutions (STS) agency of the Department of Finance and Administration. The two identified a need to create a more inclusive culture within STS.

Following the May 2020 death of George Floyd at the hands of a now-convicted former police officer, protests in Minneapolis and across the nation drove racial justice conversations within government agencies and the larger society. At STS, the question arose of what the agency could do to create a culture that welcomed people of all backgrounds.

Sanders proposed his idea of a diversity and inclusion council, and executive leadership — with special credit to state CIO Stephanie Dedmon and Deputy CIO J.P. McInnes — embraced the idea.

Establishing the council began with designing a charter. Bartine and Sanders did extensive research to see what has worked for other organizations. Ultimately, they created five teams with distinct missions: data analytics, recruitment, inclusion, outreach and communications.

Data analytics is focused on identifying where the organization is currently to establish a foundation for measuring their effectiveness. Recruitment involves building better pipelines to hire from different minority groups, as well as eliminating bias in performance metrics. The inclusion team works to build a diverse and inclusive culture with awareness campaigns, affinity groups and education. Outreach involves relationship building within the community as well as different state agencies. Finally, the communications team informs people of what is being done and why.



Building this culture, Sanders hopes, will allow individuals within STS to be their authentic selves at work, rather than a persona they believe will help them be successful professionally — “Think about, if you create a culture where people feel free to be themselves and they don’t have that extra burden on them, how much more productive and how much more successful they can be, and therefore, the organization can be,” he said.

As the goals of more diverse and inclusive work environments continue to permeate both government and private-sector priority lists, Tennessee’s council will be one to watch.

— JULIA EDINGER



Chris Shealy

Director of IT and Enterprise Services,
Georgia Department of Education

One of the most urgent jobs in public-sector IT over the course of an unpredictable pandemic has been closing the digital divide so kids could learn from home, and few have been more immersed in that effort than Chris Shealy, director of IT strategy and enterprise services for the Georgia Department of Education.

An Atlanta native with 30 years in education and 26 as a state employee under his belt, Shealy spent much of that time standing up Georgia's entire K-12 statewide network. Little

did he know, he was laying the foundation for a series of technology projects he would lead in 2021: doubling bandwidth for all 222 school districts, installing outdoor Wi-Fi at over 2,000 schools to create alternative learning environments, data modernization to transform how the department collects and uses data, and working with the Georgia Technology Authority to persuade the top telecommunications providers to offer steep discounts to households in need. In August, the Georgia Department of Education took the lead on a contract with

Verizon that allowed not just students but families to apply for discounted devices and plans through any government agency, and within a month, 20 other states plus Washington, D.C., had signed onto it.

Today Shealy's office is focused on cybersecurity, managing the threat exposure that comes with increased bandwidth and connectivity by working with the Consortium for School Networking on a bootcamp training program.

"It's been a huge learning experience, even as long as I've been in government and

in education, to watch what has happened over the past year and a half or two years. We're talking a complete transformation in the instructional delivery model for students and teachers, and watching teachers adapt to this. ... But we know there's still some gaps, so we're doing everything we can ... to help our staff," he told *Government Technology*. "It's really a ground-up approach when it comes to what's happened ... because we know this transformation has happened and we're not going to go back."

— ANDREW WESTROPE



Suzanne Pauley

Director, eMichigan

Things are changing in the way governments interface with the public they serve. Where the modus operandi in the past was to take information that existed on paper and put it on a website, government agencies are now moving entire services online — as well as launching their own mobile apps, publishing raw data and opening two-way dialogs with citizens.

But that’s just the most visible part of what’s happening. On the leading edge of the change, and involved in pretty much every part of how governments interact with citizens, you’ll find Suzanne Pauley, director of the eMichigan program. Pauley is, to paint with broad strokes, responsible for the state’s user experience.

“I don’t know that we necessarily started that way; I think we ended up that way,” she said. “So when I started my position, I had the websites and I had the application development team, and then it kind of grew out of that.”

Her program was responsible for moving every state agency to a single content management system, and she’s currently migrating them all to a modern CMS in batches. In Michigan, all users have the same username and password regardless of which agency they’re interacting with. And her emphasis on “unified branding” means that people are presented with a consistent look and feel across sites.

A career public servant, Pauley began as a student assistant with the state in the early 2000s. Since then she’s worked as an app developer, an analyst and a project manager — and watched as the government’s mindset slowly shifted. Today she sees far more nuance in her job, with more emphasis on engaging users and understanding their needs.

“I always wanted to make products that were usable for the people that were using them, so it wasn’t like there wasn’t thought in mind,” she said. “But I think the practice of it has evolved, meaning that there are techniques and processes that you can leverage to ensure that you’re getting the right information to build the right system, or to offer the right solution. And I think that those are the things that we’re becoming more adept at doing and understanding that it’s a discipline ... make no assumptions, right? Test everything.”

— BEN MILLER

Suresh Soundararajan

CIO, Virginia Department of Health

After 14 years at the Virginia Department of Health, Suresh Soundararajan became the agency’s CIO in November 2019 — one month before the first case of COVID-19 was identified in China. So immediately, Soundararajan found himself charged with helping a major public health agency respond to the worst pandemic in a century.

In the past two years, VDH has been an early mover on helpful technologies several times. It was the first agency in the commonwealth to dive into robotic process automation, using it to speed up processing of paper-based test results from laboratories. Virginia was the first state to launch a COVID-19 exposure app, using the framework built by Google and Apple.

Significantly, it also became one of the first state agencies to try out technology for monitoring the spread of misinformation and disinformation online. Though the state is no longer using the technology now that the pilot phase has concluded, it was working with AlphaVu’s AI to give risk scores to social media posts, sorting through countless online conversations looking for lies. Since those conversations influence public health, the process let the state know what it was up against.

“Initially when COVID started, the biggest thing with the first two months was major misinformation,” Soundararajan said. “Everybody’s saying different things: ‘This is going

to cause that’ and ‘It’s not a big deal, whatever.’ So we wanted to see an appropriate public health message that goes out, but for that ... we just have to know what the sentiment is.”

Using the technology, the state was able to understand who the target of such disinformation was and respond specifically to them with carefully crafted messaging. The usefulness and accuracy of this technology in the long term is yet to be seen, but Soundararajan and the state found it helpful. And he sees a place for it, and other new technologies in the future.

“I’ve always wanted to be that person who was thinking a few years ahead in a way to say what’s out there and where this is going to take us.”

— BEN MILLER 



FUNDING GOV TECH.

The American Rescue Plan Act (ARPA) provides \$350 billion in relief funds for state and local governments. Jurisdictions can use this money to purchase technology to improve their public health response and boost their broadband initiatives. Available funds must be used to cover costs incurred by Dec. 31, 2024, but money is already being allocated to improve access to digital tools, enhance cybersecurity, provide reliable internet connections and much more.

TOTAL ARPA FUNDING: **\$1.9 TRILLION**
use by Dec. 31, 2024

STATE & LOCAL GOVERNMENT FUNDING BREAKDOWN:

\$195 BILLION
States

\$65 BILLION
Counties

\$46 BILLION
Cities

FUNDING CAN BE USED FOR:



Reliable access to the internet and web-based solutions



Flexible public health services and digital interactions



Education and resources to learn more about digital tools



Safe and secure networks

Produced by:



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HOW THE AMERICAN RESCUE PLAN ACT IS IMPROVING INFRASTRUCTURE AND CONNECTING COMMUNITIES

ARPA FUNDING IN ACTION:



\$522 MILLION
California

for last-mile broadband infrastructure projects

\$500 MILLION
Tennessee



to expand broadband access and adoption, including money for a temporary subsidy to qualifying homes and connecting downtown business districts with free public Wi-Fi



\$5 MILLION
Alabama

to facilitate the expansion and use of telemedicine

\$2.2 MILLION
Buffalo, New York



to enhance cybersecurity measures and make the city's digital infrastructure more resilient



\$4 MILLION
Chandler, Arizona

to replace and expand existing fiberoptic cabling

\$1 MILLION

Boston, Massachusetts



to expand the city's "Wicked Free Wi-Fi" initiative

MORE INFORMATION: The Center for Digital Government partnered with the Center for Municipal Finance at the University of Chicago Harris School of Public Policy to produce a comprehensive guide on funding government technology. Download "Funding Gov Tech: A Practical Guide to Financing State and Local Government IT" at govtech.com/fundinggovtech.

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Governors Talk Tech

With elections on their minds, governors' most watched policy speech of the year had some technology highlights, like luring tech companies and remote workers with robust broadband.

Thirty-six states will hold elections for governor this fall, which makes 2022 an interesting year for State of the State addresses. *Government Technology* writers and editors review these speeches annually to see what they foretell for technology — an interesting exercise in a “normal” year. But in a year where more than two-thirds of governors will be voted up or down, politics often took center stage.

If governors have positive economic news to report, the State of the State address is a great place to share it. Budget surpluses and low unemployment rates — equal or almost equal to pre-pandemic levels — were touted by many governors, with many getting specific about their work to support the growth of industry and therefore job numbers within their borders. Manufacturing, technology and clean energy business development are especially coveted, based on these speeches.

As expected, many leaders got specific about the central nature of broadband expansion to their plans for their states to flourish. Interestingly, though, fewer seemed to feel it

necessary to justify these investments — perhaps signaling broad acceptance by Americans of the essential nature of connectivity. Another interesting twist for 2022 was that more governors are pointing to robust connectivity as an integral part of their economic development strategies: Ubiquitous connectivity makes states more competitive in luring both new businesses and new workers. Gov. Polis in Colorado, Gov. Holcomb in Indiana and Gov. Ige in Hawaii were explicit about plans to boost connectivity to ensure remote workers could thrive in their states.

While the COVID-19 pandemic was less of a central theme in speeches this year than the past two, also on the 2022 agenda is continuing to expand access to telehealth, which many governors now see as a critical part of a more accessible health-care system, especially to residents in areas with limited access to doctors and medical facilities. Many policies around the use of telemedicine were relaxed to observe COVID-19 protocols, exposing its benefits to whole new populations.

Following are some of the governors whose 2022 speeches include the most tech. For nationwide coverage, visit govtech.com/StateoftheStates2022.

—NOELLE KNELL

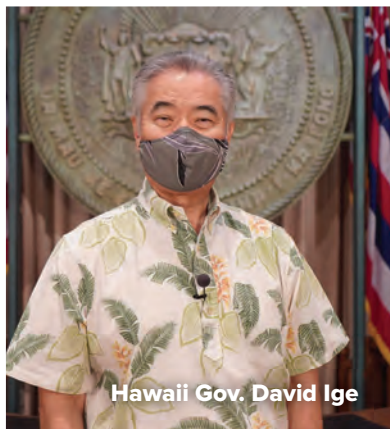
Connecticut

Gov. Ned Lamont called on state lawmakers and residents to make “the Connecticut difference” during his 2022 State of the State address, and he pointed to technology’s role in that a few times. Like many of his counterparts throughout the country, Lamont noted that his state is making concerted efforts to expand broadband access. He cited the new funding coming from the federal level via the Infrastructure Investment and Jobs Act, promising that it would be used to bridge the digital divide throughout the state. He also pointed to Connecticut’s expansion of Wi-Fi connections in parks, schools and libraries “so you can do everything from Brooklyn, Conn., that you can from Brooklyn, N.Y.”

Gov. Lamont also alluded to technology when he outlined his plans for the state’s transportation systems. In addition to clean wind energy, Connecticut is investing in electric buses for its schools and cities to reduce air pollution. The state’s new budget also sets aside funding for hundreds of electric charging stations, in support of a goal of an all-electric state fleet. He also noted that the state will be investing in better security for its electric grid, both physically and on the cyber front.

Hawaii

Hawaii Gov. David Ige opened his State of the State address by commending the state’s expeditious response



Hawaii Gov. David Ige



Connecticut Gov. Lamont noted the state’s expansion of public Wi-Fi, “so you can do everything from Brooklyn, Conn., that you can from Brooklyn, N.Y.”

to another year of the COVID-19 pandemic. He emphasized the importance of having accurate and reliable data and a comprehensive contact tracing network to prevent the spread of the virus. The governor’s speech focused on public health, economic recovery and broadband expansion.

The governor acknowledged the state’s economic dependency on the tourism industry and stressed that, going forward, Hawaii must invest in its digital economy to keep up with the rise in remote work and demand for digital skills. Gov. Ige went on to say that the pivot to a digital economy is necessary for building a foundation for economic resilience. He noted that diversifying the economy through technology will ultimately contribute to higher wages and a higher quality of life.

The pandemic highlighted the digital inequity in Hawaii, and to combat that, the governor announced the creation of a statewide broadband network and outlined how he would direct federal funding toward broadband expansion initiatives. For example, a pilot project to connect Hawaii’s rural communities to a broadband service in Puna, Ka’u, Hana, Nānākuli, Wai’anae, Waimānalo, Kalihi and Kapa’a is just one of myriad initiatives underway. Furthermore, he unveiled a telehealth initiative to connect low-income patients with high medical risks to health-care providers

by leveraging funding from the Federal Communications Commission. Lastly, Gov. Ige announced that his legislative package includes a bill to create a Broadband and Digital Equity Office to oversee all these efforts. The office will play a crucial role in securing Hawaii’s share of \$7 billion in new federal funds for broadband infrastructure and digital equity programs.

Indiana

This year marked Indiana Gov. Eric Holcomb’s sixth State of the State address, and during his remarks, Holcomb worked to strike a tone of optimism and recovery, while also sharing several specific mentions of tech. A main focus of the speech was Indiana’s state budget, with Holcomb sharing information about Indiana’s debt management and budget reserves. That segment of the speech lightly touched on technology, with Holcomb noting that Indiana was well-positioned to be home to future-forward industries, including cybersecurity, quantum computing and drones, among others. Relatedly, Holcomb also stressed the importance of Indiana recruiting more remote workers to the state. One of the most prominent mentions of tech was when he discussed the creation of a new data dashboard to share public data around school performance in the state, as well as

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an online marketplace for teacher job openings. That's part of a wider online employment initiative to proactively connect employers and potential employees, and 240 employers and 16,000 individuals have now created profiles. Like many other states, however, the biggest focus on tech had to do with broadband. Holcomb noted his administration is making the largest broadband investment in Indiana's history through continued support of the Next Level Connections program, which has totaled \$350 million. That program is aimed at connecting more state residents to high-speed Internet at home.

Michigan

In her fourth State of the State address to Michigan, Gov. Gretchen Whitmer touched upon the importance of technology investments from both the state and federal government, as well as the private sector. She started by mentioning that the location from which she was giving her speech, Detroit Diesel, is now the home of cutting-edge electric vehicle technology. EVs were a subject she returned to more than once.

Speaking about infrastructure, Whitmer mentioned the sizable task of expanding high-speed Internet using funds from the bipartisan Infrastructure Investment and Jobs Act, although she didn't elaborate. Access to broadband has been critical for families for remote learning during the pandemic, but her only reference to that was to point out that it's less fulfilling and conducive to growth than in-person instruction.

After praising the \$7 billion investment by General Motors to support EV battery manufacturing, she singled out EVs as an industry worthy of public policy support too, something that would help the state maintain its manufacturing heritage while transitioning to clean energy. She proposed to pass a \$2,500 rebate for EVs, involving a \$2,000 rebate for the car and \$500 for in-home charging equipment, on top of the federal government's \$7,500 credit.



Michigan Gov.
Gretchen Whitmer


Toward the end of the speech, Whitmer also implored the federal government to pass the CHIPS for America Act, which would allocate billions to the manufacture of semiconductors needed for microchips.

Tennessee

While endorsing the idea of small government, Gov. Bill Lee's fourth State of the State address to Tennessee nevertheless made several commitments and suggestions for state spending on technology, mostly concerned with education and energy innovation. Talk

of school funding was a significant part of the address, during which Lee mentioned \$1 billion in new, recurring education spending that would include a one-time investment in career and technical education. He charged the state with making sure kids have "tailored options" in subjects like technology, engineering and technical training; recommended legislation to make computer science and coding available to every high school student; and committed to spending \$200 million on expansions of the Tennessee Colleges of Applied Technology, the state's public college system.

Hoping to capitalize on the University of Memphis' recent designation by the Carnegie Classification as a top research university, Lee proposed to spend \$50 million to make the university "a global leader in agri-tech, cybersecurity and the digital workforce." He proposed another \$70 million to complete the Oak Ridge Innovation Institute with programs in data science, technology, advanced materials and other subjects.

Stressing the importance of energy innovation, Lee praised nuclear power for helping the state land major economic projects with its dependability and relatively low cost. He said the state is working with the Tennessee Valley Authority on a long-term strategy to develop a nuclear site at the Clinch River for power production. 



In supporting Indiana's Next Level Connections program, Gov. Eric Holcomb has made the biggest broadband investment in the state's history.

Responding to the Rising Tide of Cybercrime



Cybercriminals and bad actors are increasingly targeting state and local governments. How should public sector organizations respond? **Kevin Flanagan** of Palo Alto Networks, which specializes in enterprise-grade security, describes how threats are evolving, why cyber insurance policies might fall short and how agencies can adapt in the face of an ever-changing threat landscape.

What are the most striking changes in the threat landscape for state and local jurisdictions?

Ten years ago, attacks usually targeted organizations with a lot of money, like banks and other financial organizations. Today, ransomware has evolved into an industry with specializations like toolkit developers and credentials brokers, who steal passwords. This ransomware-as-a-service creates minimal barriers to entry for an attack.

Almost anybody can propagate an attack on state and local governments. And bad actors have realized the potential for impact is high. Thus, we're seeing a lot of attacks on school districts, local municipalities and state governments.

How do cyberattacks on infrastructure differ from other kinds of attacks?

Attacks on infrastructure are going to be more sophisticated and, as we saw with Colonial Pipeline, will have a much bigger impact. This creates more pressure to, say, pay a ransom.

Traditional IT infrastructures — databases, applications, workstations — require a different type of attacker mindset. This requires those of us charged with protecting those systems to understand how those attacks happen and what we can do to

detect infrastructure attacks and respond to them quicker.

Government agencies often have cyberattack insurance policies. What are some of the misperceptions about these policies?

You really have to understand what's covered when you're looking at cyber insurance. We see three main misperceptions:

- ◆ All cyber insurance is the same. Each provider has different levels of coverage and different requirements to get those levels of coverage.
- ◆ Everything is covered. A lot of costs aren't necessarily covered, like reputational damage or lost productivity.
- ◆ The policy you bought in 2020 will be the same as the one you'll buy in 2022. We're seeing a lot of changes in what it takes to qualify and file a claim — and, more importantly, the costs of getting these policies.

States and localities are getting an influx of cyber defense funding. How can they ensure they're getting the most protection for their money?

Cybersecurity is seen as a highly technical problem that people try to solve by buying more technology. This is counterintuitive, but buying more technology, particularly

security technology, actually makes things more complicated.

To get the most protection for your money, it's really, "Let's understand the IT we have, the information we have and the people we have. And let's focus more on the process parts of security rather than buying more technology."

What are a few basic things that an under-resourced agency could do to strengthen its resilience against attacks?

Go back to the basics: people, processes and technology. Help people understand phishing and how to alert their organization when things look suspicious. Educate them on constructing good passwords. Look into processes like multifactor authentication and system patching. And simplify your environment — more complexity creates more seams that lead to security holes. Make sure your security tools are doing a good job of protecting your most critical assets.

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N.C. Names Permanent Chief Data Officer

North Carolina has named **Carol Burroughs** as its chief data officer. Burroughs has held the position on an interim basis dating back to 2021, after previously serving as director of analytics with the state. She replaces John Correllus, who retired, in the role.



Nigel Jacob

Nigel Jacob Leaves Mayor's Office of New Urban Mechanics

Nigel Jacob has left his role as the director of the Boston Mayor's Office of New Urban Mechanics, an organization that Jacob co-founded in 2010. Jacob will now work to bring the same model to other cities, transitioning to a role in Northeastern University's Burnes Family Center for Social Change and Innovation. In February, Jacob was also named a senior fellow at the Taubman Center for State and Local Government at the Harvard Kennedy School.

Leadership Shifts in Virginia

About one month into his tenure, Virginia CIO **Phil Wittmer** announced his departure from the job. Wittmer



Phil Wittmer

was appointed to the position after Gov. Glenn Youngkin took office. No replacement had been announced as of press time, with Wittmer's name remaining on the state's website. Also in Virginia, **Jonathan Ozovek** stepped down as the chief operating officer for the Virginia Information Technologies Agency (VITA). Ozovek started in that position in 2019. Following his departure, VITA Deputy COO Demetrias Rodgers was tapped as acting COO.



Jonathan Ozovek

Evanston, Ill., CIO Named Acting Deputy City Manager

Evanston, Ill., CIO **Luke Stowe** gained a new title, becoming the city's acting deputy city manager. Stowe, who will continue serving as CIO, will now also add to what he oversees, with new responsibilities that include health and human services, parks and recreation, finance and budget, and the fire department.

Orlando, Fla., Makes City CIO Deputy Chief Financial Officer

Orlando CIO **Rosa Akhtarkhavari** was elevated to deputy chief financial officer for the city. The move, which the mayor announced recently, dates back to October. As of press time, Orlando was undertaking a national search to replace Akhtarkhavari as CIO.

Cleveland Names New CIO

Cleveland Mayor Justin Bibb appointed **Froilan Roy C. Fernando** to be the city's chief innovation and technology officer. Fernando brings private-sector experience with companies like PNC and Deloitte to the role.

What is XDR? And How Can It Help Keep Governments Secure?

Extended detection and response – or XDR – is an emerging endpoint-management technology that’s becoming increasingly important in governments’ efforts to safeguard their digital assets. In this Q&A, [Jason White](#), a federal solutions architect with Trellix, a leading XDR platform, provides a concise overview of the value of endpoint management and the growing importance of XDR for state and local government organizations.



(CISA) recently released a Zero-Trust maturity model¹ that allows organizations to understand the beginning and intermediate steps, and then, ultimately, what a mature Zero-Trust model looks like. Technology is really only going to be part of the challenge here.

Q / What are the biggest challenges in endpoint management for government agencies today?

With hybrid work environments becoming standard, agency leaders struggle to assess the true security of the devices accessing their networks. Part of this is because device posture is constantly evolving as users interact with internet applications that could bring new threats into the network environment. Before agencies authenticate and validate a device, they must make sure it’s in a condition suitable to connect to agency resources.

Q / How does XDR help agencies cope with endpoint security challenges?

There’s a big push right now for endpoint detection response (EDR) capabilities across federal, state and local government agencies. The EDR market has taken off because it can surface threats that perhaps weren’t detected by scanning files or scripts in an endpoint. Moreover, EDR can pull together multiple behaviors to get a better understanding of not just a specific threat, but how that threat targets a set of systems.

The evolution of that is extended detection response (XDR), where we pull telemetry data from a Zero-Trust architecture from networks, endpoints, clouds and the web into a single platform that can surface advanced attacks against devices and other endpoints. Ultimately, XDR helps us continuously decide the proper level of authentication and validation for each particular device.

Q / Zero-Trust security is a complex approach that requires continuous validation of every device, application and user in a network. One critical component of Zero-Trust adoption is a maturity model. Why is this important now?

The U.S. government requires federal agencies to move to a Zero-Trust architecture by 2024. They’re also providing a tremendous amount of Zero-Trust resources, many of which have value outside of the federal government.

As part of this effort, the Cybersecurity and Infrastructure Security Agency

Q / How will governments have to invest in technology in the evolution toward XDR?

There’s no easy answer. Organizations will have to put together a lot of moving parts that might be in silos or segmented for security. It has to start with the investment they are willing to make internally to change their operating procedures and then assessing the tools they already have.

Q / What do agencies often overlook when managing endpoints in this evolving landscape?

In a dynamically shifting threat landscape, they need the ability to provide context to threat intelligence, which allows them to be predictive and proactive on defending their devices.

A critical step sometimes gets lost when people say, “Oh, I’ve got EDR; I’ve got machine learning.” Yes, but are you making that intelligence actionable? The more agencies can make threat intelligence actionable, the better they’ll be able to stay ahead of the emerging threat landscape.



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In a December 2021 survey of 1,500 U.S. customers, augmented reality (AR) company Camera IQ found that more than three-quarters of respondents said they're likely to share a brand's AR marketing experience on social media. The study also found that AR product visualizations — like the ability to place a piece of furniture in your own home virtually — can make 59 percent of consumers more likely to buy something.

13 GW

A collaboration from the University of California-Merced, the state's Department of Water Resources, the Turlock, Calif., Irrigation District and San Francisco-based Solar AquaGrid aims to increase the number of solar panels in the Central Valley without taking up land that could otherwise be used for other purposes. Called Project Nexus, the endeavor will build 8,500 feet of solar panels over a canal in Stanislaus County. The idea is that the panels will keep water in the canal from dissipating via evaporation while also keeping the solar panels cool. Researchers estimate that if all of California's canals were covered, they could generate 13 gigawatts of renewable energy annually. SOURCE: NEW ATLAS

CHARGE IT: One of the longtime obstacles to mass electric vehicle adoption in the U.S. has been access to chargers. In partnership with mobile charging app Currently, which lets users schedule a charge at a pre-arranged time by connecting them with a technician with a charger in the field, Kia is piloting a program for its EV drivers in San Francisco, San Diego and San Jose, Calif. While those cities already have robust charger networks, the service could come in handy when drivers need a short burst of power (up to 50 miles, according to Currently) in an emergency. Kia hopes to soon expand the service beyond these California cities. SOURCE: ENGADGET



SOLAR AQUAGRID



Action!

Since the introduction of the virtual world in the metaverse, celebrities and others have begun buying "land" there. But Indian production firm Pooja Entertainment is the first company of its kind to purchase a plot of land for filmmaking. Producer Deepshikha Deshmukh said they plan to make "the

Poojaverse" into "the absolute go-to space for quality entertainment and various aspects of filmmaking in the digital world." Pooja's film *Bade Miyan Chote Miyan*, a remake of the 1998 comedy, will be the first Bollywood movie made in the metaverse, with an estimated release date of Christmas 2023. SOURCE: FORBES



State of Arizona: Making Good on Fiscal Responsibility and Cybersecurity Mandates

Fiscal responsibility and cybersecurity

The state of Arizona has taken significant steps to ensure fiscal responsibility and cybersecurity. This includes the implementation of the Arizona Budget and Fiscal Responsibility Act, which requires the state to maintain a balanced budget and to reduce spending by 10% over the next five years. Additionally, the state has implemented the Arizona Cybersecurity Act, which requires state agencies to implement cybersecurity measures to protect sensitive information.

Eight-Fold Increase in Number of Remote Workers

The number of remote workers in Arizona has increased by eight-fold since 2019. This is due to a combination of factors, including the COVID-19 pandemic, which forced many businesses to allow their employees to work from home. Additionally, the state has implemented policies that encourage remote work, such as providing tax incentives for businesses that hire remote workers.

Four Visibility into Agency Sites

The state has implemented a program to increase visibility into agency sites. This program involves the installation of cameras at various locations throughout the state, including at government buildings, public parks, and other public spaces. The cameras are used to monitor for security threats and to provide evidence in the event of a crime.



How Education Institutions Can Harness Data to Better Serve Students

Data is the key to understanding student behavior and performance. By harnessing data, education institutions can gain valuable insights into student needs and preferences. This information can be used to personalize learning experiences, identify at-risk students, and improve overall educational outcomes.

Key strategies for harnessing data include:

- Investing in data management and analytics tools.
- Establishing a data governance framework.
- Ensuring data privacy and security.
- Providing training and support for staff.
- Encouraging a data-driven culture.



The road ahead for government cloud talent

Governments must build a pipeline of next-generation IT talent for their own needs and those of their communities.

The demand for government cloud talent is growing rapidly. As governments continue to invest in cloud computing, they need a workforce that is skilled in cloud technologies. This includes not only technical skills, but also soft skills such as communication and problem-solving.

Key strategies for building a pipeline of government cloud talent include:

- Partnering with educational institutions.
- Offering apprenticeship programs.
- Providing training and certification opportunities.
- Encouraging diversity and inclusion.



Keep Physical Security from Opening Cybersecurity Risk

Best practices reduce the cyber vulnerabilities of cameras and access control systems.

Physical security systems, such as cameras and access control systems, are essential for protecting government facilities. However, these systems can also be vulnerable to cyberattacks. To reduce this risk, governments should implement the following best practices:

- Regularly update software and firmware.
- Use strong passwords and encryption.
- Limit access to the systems.
- Conduct regular security audits.

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Here's a look at a few recent Questions of the Day from govtech.com. Subscribe to our newsletter to get them daily in your inbox.



How long did it take a flock of magpies to remove their trackers?

Answer: Three days.

Turns out, humans aren't the only animals who don't like to have tracking devices planted on them. A group of magpies made their sentiments on the technology known to a team of researchers who were trying to track them. The team, from the University of the Sunshine Coast in Australia, had developed a new tracker that they thought would be perfect for magpies. Made of a lightweight but tough material, the trackers attached to the birds like backpacks. They could be charged and their data retrieved completely wirelessly, and they used a magnet for easy removal. The birds, however, were not impressed.

About 10 minutes after the magpies were fitted with their trackers, the team noticed one bird using its beak to help another remove the device. A few hours later most of the birds had helped each other take off the trackers, and after three days not one bird had a tracker.



Do disposable face masks make good batteries?

Answer: Yes!

Thanks to the COVID-19 pandemic, the world has a new waste problem: face masks. In just the first few months of the pandemic, an estimated 129 billion disposable face masks were used each month. And we all know that no matter where they ended up once they were used, it wasn't good for the environment.

Fortunately, researchers from the National University of Science and Technology "MISIS" have found an easy and sustainable second life for disposable face masks. After using ultrasound to disinfect used masks, the team dipped them into an ink made from graphene and compressed and heated them to 284 degrees F. This turns them into conductive pellets, which were then separated by an insulating layer made from more old masks. Once soaked in an electrolyte and coated in a protective shell made from used drug blister packs, the masks have officially been converted into a battery. The team found that the battery's performance was comparable to the lithium-ion batteries found in just about everything today, with an energy density of 99.7 watt-hours per kilogram (Wh/kg) compared to the 100-265 Wh/kg of lithium-ion.



What social media site has the biggest carbon footprint?

Answer: TikTok.

Social media platforms may not be the first thing that comes to mind when you consider big pollution contributors, but they probably have a bigger carbon footprint than you think. After all, it requires electricity to power your smartphone, tablet or laptop and everything they connect to when you hop on Instagram to scroll your feed.

The social media company with the largest carbon footprint probably doesn't come as a huge surprise, since it's currently one of the most popular. According to Compare the Market, TikTok emits 2.63 grams of carbon equivalent each minute for every active user. Just five minutes of use a day adds up to about 4,800 grams a year, per user. With a reported 1 billion users, that's a whole lot of emissions. Reddit and Pinterest come in second and third place, respectively.



Making the Right Modernization Moves in Special Districts



In this Q&A, Lawrence E. Fitch, principal consultant for government at Workday, discusses how special-purpose government districts can use a cloud-based, mobile-first strategy to ensure resiliency, better serve customers and prepare for the workforce requirements of tomorrow.

Q What challenges do special districts face in modernizing their technology?

Special districts maintain multiple antiquated HR, finance and other systems that have been bolted together piecemeal over time. This has resulted in very large, heavily customized and heavily integrated systems with one or more components that still do not meet their needs. In addition, these systems have largely left employees behind. Special districts in sectors such as sanitation, utilities and transit rely largely on remote workforces, but there is typically no technology to support employees in the field. Self-service and mobile capabilities are often non-existent or extremely limited, forcing employees to return to a central location to interact with these systems. That means they spend less time on their core mission of serving customers.

Q What approaches can help special districts move in the right direction?

A cloud-based, mobile-first strategy is imperative to accommodate the modern workforce. Organizations tend to focus on the back office when they modernize. They want to streamline and consolidate as many functions under a single system as possible. This is important, but it's also essential to consider

the impact on end users. Most special district employees don't work inside an office building, so they require mobile capabilities to interact with HR, payroll and finance teams. Further, the next generation of employees expects modern technology. Waves of special district workers are retiring or will be eligible for retirement very soon. If special districts don't offer a modern mobile experience, it's going to be harder to recruit and retain employees because they'll be competing against organizations that do.

Q How can special districts apply lessons learned from the past several years?

You can't have a conversation today about lessons learned and not talk about the effects of COVID-19. Resilience means enabling employees to work from wherever they are — whether they're a finance professional who is handling purchase requests from home, a conductor waiting on a train platform to start their shift or a utility worker in the field reading meters. Cloud-based, mobile-first technology enables people to work without being tied to a server or a desktop computer.

Q How should special districts approach transforming business processes as they modernize their technology?

Special districts should approach technology transformation with an eye toward streamlining operations and integrating ERP functionality into a single system. This will help them provide quality service to their customers. Every hour saved because an employee can respond to an HR request or fill out a form remotely is time the district can reinvest in expanding bus ridership, improving water quality, delivering reliable electric power and so on. The goal should be to transfer time and money away from internal business processes and toward things that directly benefit customers.





Why Aren't We Getting Better?

Overcoming resistance to implementing cyber best practices.

Winston Churchill once said, “Never let a good crisis go to waste.” But why don't we improve — even after learning about the mistakes of others? If our government cybersecurity teams know what to do to strengthen our defenses, why are we not getting better at stopping cyber attacks?

Digging deeper, cybersecurity best practices, compliance checklists and frameworks are freely available online from NIST, MS-ISAC, the US-CERT and more. So why is this guidance so often ignored?

Experienced security pros understand that solutions involve people, process and technology. And most leaders know where to go to get help. And yet, ransomware and data breach stories just keep pouring in from victim organizations who only wish they had a second chance to implement better security protections.

Typical answers to these “why so little progress?” questions often surround insufficient funding, lack of trained staff, difficulty in keeping teams together, a sense that hackers are just too good or work too fast, or technology governance challenges. No doubt, these issues are often real and difficult to overcome. But are there less complex, yet compelling, answers to consider when exploring why cybersecurity best practices are not

successfully implemented in a government near you?

In November 2021, my book *Cyber Mayday and the Day After: A Leader's Guide to Preparing Managing and Recovering From Inevitable Business Disruptions* was released

from Wiley Publishers. In the book, my co-author Shamane Tan and I describe more than 35 global ransomware and data breach stories in the public and private sectors through the eyes of technology and business leaders.

While the first 10 chapters are full of examples that offer “the good, the bad and the ugly” regarding emergency cybersecurity incidents, Chapter 11 is my favorite because it covers “turning cyber incident lemons into organizational lemonade.”

Here are five of the top 10 excuses from the book that organizations give for not implementing best practice cybersecurity protections:

Excuse: We didn't have the time.

Questions to ask: Where are we spending the bulk of our time? Are we allocating our time proportionately according to the criticality of risks?

Tip: Project management team needed.

Excuse: Our organization is different.

Questions to ask: How have we educated our stakeholders to raise their level of awareness? Who are our security champions who can influence laterally and upward?

Tip: Every company “is different.” Culture change and leadership are required.

Excuse: The vendor told us it wasn't necessary.

Questions to ask: How are we cross-checking what our third-party experts are telling us? Who is ultimately responsible for customer data and trust?

Tip: Ask who, what, when, where and how?

Excuse: It was too hard.

Questions to ask: Have you tried

getting allies so that it is not just your team fighting organizational battles? Are there smaller steps you can take? *Tip: Time and resources along with priority and follow-through are required.*

Excuse: We were afraid of what we might discover.


Questions to ask: Are you comfortable with not knowing what the malicious attackers likely know about your organization? How are you managing your risks if you do not know what needs to be managed?

Tip: Ongoing risk assessments are a must. Cyber risks do not just stop at us. We must think about our customers and their data.

We also share a few strategies that help fight “best practice apathy”:

First, make failure real. Cyber exercises are a must. Ask: What is your mindset regarding cyber failures? Who is accountable? How can you build a culture that does not finger-point or blame, but encourages transparency in sharing lessons learned and mistakes owned?

Second, consider Failure Mode Effects Analysis (FMEA). This process will allow you to create a structured process to help. Do you know what your industry peers are using to reduce risk? How does your process benchmark against theirs?

Finally, consider getting a second opinion. We should constantly be looking to improve, and we are stronger together. How can you play to your strengths while leveraging community and collaborating with existing or new partners to complement and strengthen your business case for stronger cybersecurity? 

Daniel J. Lohrmann 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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