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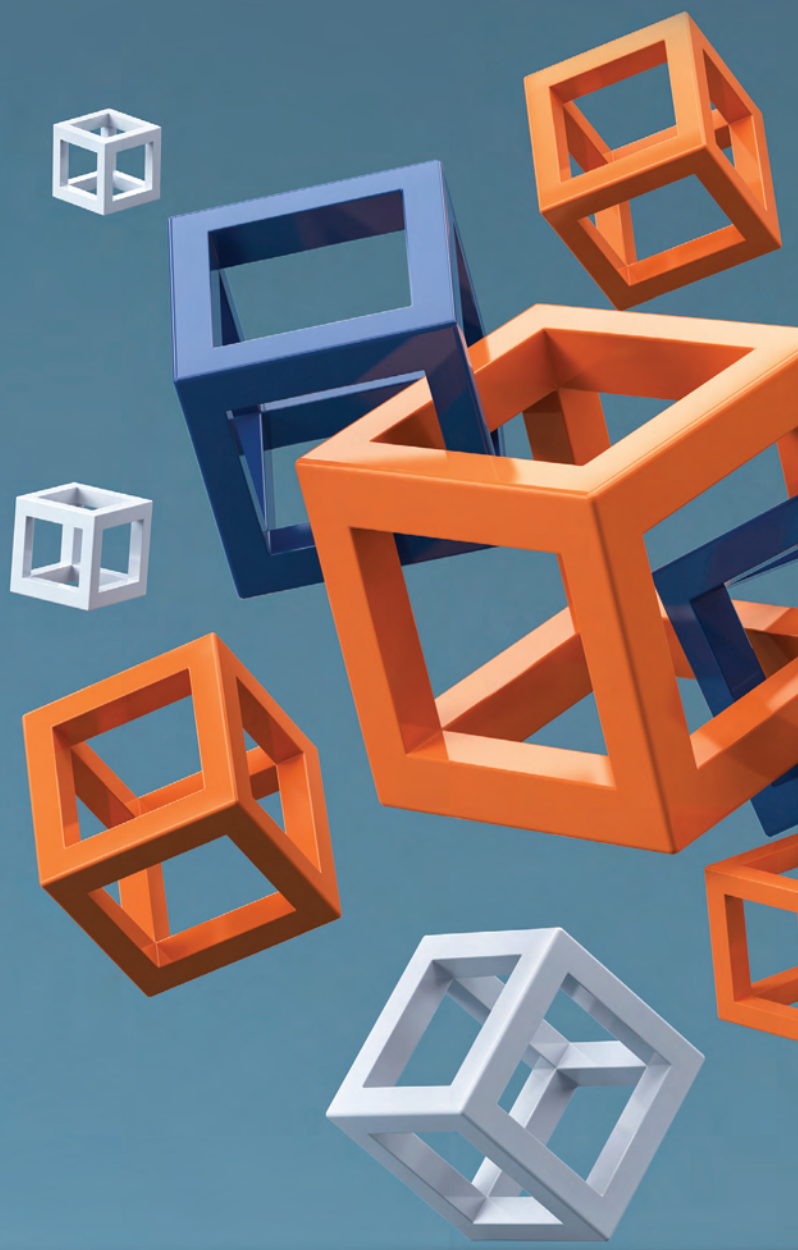

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CONTENTS

Vol 36 | Issue 2

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COVER STORY

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Top 25 in Profile
Meet *GovTech's* Top 25 Doers, Dreamers and Drivers for 2023.

Taking Office
Our annual roundup of technology in governors' State of the State addresses.

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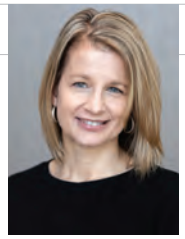
By Noelle Knell / Editor



Updates in Progress

The historic levels of federal support aimed at state and local government over the past few years has enabled something of a golden age for technology modernization. It was much needed. But the size and complexity of the needs really can't be overstated.

This backdrop prompted our far-reaching look this month at how states are doing upgrading the technology that supports core programs (starts on p. 14). For each of the six big systems we focused on — DMV, tax and revenue, MMIS, unemployment, ERP and HCM — our reporters checked in with three states in different parts of the country.

Without exception, officials told us that they had either recently modernized, were in some stage of an upgrade right now, or were finalizing plans and securing funding. And the upgrades are never a simple one-for-one. Rather, they are a chance to condense many disparate systems into one, migrate to a more future-ready, often cloud-based platform and introduce new features that add value for users, both external and internal. In other words, new systems will not just be faster, they'll be better.

The pandemic exposed structural deficiencies with state unemployment systems that were simply not built to scale up quickly enough to meet stiff increases in the number of applicants, compounded by major programmatic changes to eligibility requirements. Many of these systems are decades old and use programming languages that are harder and harder to hire for. New Jersey, for one, has simplified its unemployment application, reducing the time it takes to complete it by more than 45 minutes. Other claimant communications have also been retooled with clarity for the applicant at the forefront.

Adding layers of difficulty to the modernization process for New Jersey and other states, however, is the dizzying array of federal unemployment rules.

> **"It is possible to design IT systems, even in government, with a focus on meeting and exceeding customer expectations, and it's refreshing to see these values manifest in so much of the core work of government."**

"NJDOL [New Jersey Department of Labor and Workforce Development] will continue to call for federal action to reform the underlying unemployment laws and regulations that bog down so many New Jersey workers when assistance is most needed," a spokesperson relayed to *Government Technology*.

Similarly, nearly every person of driving age must interact with their state's department of motor vehicles. Oregon's recent upgrade retired almost 100 older systems, cut paperwork, introduced electronic signatures and otherwise streamlined routine processes including license renewals and registration payments.

"The adoption rate by customers of the new online options is encouraging and provides a direction for future enhancements," said Oregon Department of Transportation's Innovation and Planning Manager Ben Kahn. "Oregon DMV is now a place of innovation and continuous process improvement."

A focus on user experience lies at the heart of much of this modernization work, as it should. It is possible to design IT systems, even in government, with a focus on meeting and exceeding customer expectations, and it's refreshing to see these values manifest in so much of the core work of government.

GT Associate Editor Ben Miller pitched a column for this issue (which you'll find on p. 30) addressing the bad rap government often gets due to perceptions about large-scale inefficiency. But that may be changing due to a growing appreciation for the importance of user experience, especially in big public-facing tech projects.

Here's hoping the current wave of big systems modernization demonstrates that this lesson is not only broadly understood but also broadly applied. gt

Progress Bar

A new "Security Snapshot" service from StateRAMP aims to help cloud solution providers see how far they are from achieving certification with the program. The tool will offer an analysis of a software's security and show both private-sector companies and government agencies how close a product is to meeting StateRAMP's cybersecurity standards.

STREET SMARTS

A partnership between the Center for Urban Informatics and Progress at the University of Tennessee at Chattanooga and software firm Hexagon will better visualize traffic incidents across Hamilton County. The system includes data about 911 reporting, weather and road conditions and can model predictions. In time, the tool could also be part of an expanded system of smart intersections planned in Chattanooga.

Biz Beat

GTY Technologies, which sells software products to government, is expanding into the K-12 education market with its acquisition of Ion Wave, a company that sells procurement tech as well as tools to help schools manage special education under the brand SpedTrack. Ion Wave gives school administrators tools to track student records and monitor progress, bill Medicaid, and ensure regulatory compliance.

WHO SAYS?

"Grants are a one-time opportunity — they're not sustainable. ... Living on grants for cybersecurity is risky."

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tech/bytes

4.7K

The number of people who bought e-bikes last year via Denver's rebate incentive program.

40%

The percentage of Black American households that lack high-speed, fixed broadband access, compared to 28 percent of white households, according to research from McKinsey & Co.

1/5

The proportion of software scanned by application security company Veracode that had a serious security flaw in 2022.

$1.35B

The price a private equity firm paid to buy out Magnet Forensics, a software company that provides digital investigation tools for public safety agencies.

By Stephen Goldsmith

Leveling Up

Ten ways state and local governments should invest in tech now.

Thanks to the federal government, many cities and states are currently flush with cash, but according to the *Wall Street Journal*, cities are headed for fiscal trouble again, especially if there's a recession.

Now is the time for local and state officials to modernize business processes that produce ongoing operational and financial benefits. Too often, near-term budget considerations hinder these necessary investments because the cost of new systems is often frontloaded, but the savings accrue over time. With billions in federal funding (much of which remains unspent), mayors and governors should prioritize investments that will produce transformational benefits for years to come.

The Cloud: Cloud deployment brings storage and security advantages and makes it substantially easier for departments to access a vendor's future innovations and iterations. The scalability and flexibility of the cloud will be critical as agencies address new operational challenges.

Environmental Hardware: Automated meter reading helps a department make better use of its labor while more rapidly identifying leaks and other system problems. And sensors embedded in roads prevent cracks while also producing traffic management data.

Platforms: Cities need to tie together disparate activities to facilitate better management and decision-making. For example, curb and sidewalk data platforms allow insights into how parking, traffic, bikes, transit and commercial loading zones impact travel times, pollution and even land use decisions.

Channel Migration: To increase internal efficiency and improve customer service, it's time to accelerate and complete the re-engineering of how residents do business with government. While much good work has already been done, myriad opportunities still exist to integrate legacy transactions and simultaneously move them to less expensive and easier-to-use service channels.

Automation: Effective channel migration also requires transforming outdated back-office systems to eliminate unnecessary steps and digitize workflows. City staff often struggle to manage multiple benefit requests while those entitled to benefits wait or go without due to processing complexities. Modernizing application processes and creating truly seamless front doors will simplify and accelerate access to benefits, while providing auditable digital trails to address waste, fraud and abuse.

Analytics Capabilities: Extending data science from a niche service to an indispensable part of all activities will produce much more effective government. Budget officials should start thinking about the return on investment they get from data officers.

Machine Analytics: Invest in machine sensors and analytics to better manage some of government's most expensive assets. For example, fleet vehicle analytics can help to increase uptime, extend vehicle life, save fuel and enhance operator safety.

Road Maintenance: Some combination of cloud, lidar, drones and digital twins could help to remediate the country's aging road and bridge infrastructure more effectively.

Pricing of City Assets: Whether it's parking or the use of athletic fields, governments decide the price for public access. Over time, cost structures have been built that influence consumption behaviors. By gathering more data and developing the capacity to use it, cities can create pricing models that optimize use, enhance equitable outcomes and achieve policy goals.

Optimize Logistics: As we learned during the pandemic, logistics impact all of us. Government should seek to optimize the logistics of all its activities to improve service, control costs and protect the environment.

While local officials cannot influence the national economy, nor control declining property or local income tax revenue, policymakers should focus on technology investments that will improve service delivery to residents and drive long-term cost savings for the next year of these relatively good times — before it's too late. gt

This article was co-authored by Charles "Skip" Stitt, principal at Faegre Drinker Consulting.

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.*

How Cities and Counties Can **Adopt a Holistic Approach to Data**

Local government leaders face a turning point as their digital transformation initiatives reach critical mass. While they've made great strides in transforming operations, many agencies are missing out on opportunities to use data more holistically.

This means bringing together data from disparate sources to learn more about constituents and operations and discover opportunities to improve services and reduce costs.

"Today's constituents need and expect timely, high-quality services," says Joel Golub, industry executive for city and county public sector at Oracle. "They want a single pane of glass regardless of which agency is delivering services to them. By thinking about data holistically — not just in silos — and gaining intelligence from it, we can transform service delivery and accelerate transformation overall."

Prior to joining Oracle, Golub served in public sector IT leadership roles for more than 30 years. His career in government — which included stints as the CIO for New Jersey Transit, the CIO for San Bernardino and Orange counties in California, and the CIO for the New York City Fire Department (FDNY) — provides valuable use cases for how organizations can utilize data to deliver critical services.

New Jersey Transit — Empowering staff and giving riders the answers they need

New Jersey Transit customers contact the agency through multiple channels every day, whether at a station counter, by phone or via email. Riders may interact with customer service, ticketing, lost and found, or some other agent.

"We've all had the experience of having to provide the same information multiple times to different people who pass us along to someone else," says Golub. "We wanted to do things differently."

The agency embarked on an effort to connect data so that whoever is delivering frontline service now has as much detail as possible to resolve customer issues quickly.

"That effort has gone a long way toward improving service quality and empowering every employee to take ownership of issues and resolve them quickly," says Golub.

San Bernardino County – Whole person care in health and human services

For years, silos of client data for public health, behavioral health and social services had prevented health and human services providers in San Bernardino County from understanding the full scope of an individual's health needs.

"If an individual goes into a public health department and has a history with the behavioral health department, for example, it may be very valuable to understand what medications they have been prescribed," says Golub.

By connecting data across systems, county health providers can provide comprehensive, coordinated care and achieve better health outcomes for clients.

Orange County – Delivering the right services at the right time to unhoused individuals

To combat homelessness, Orange County launched a data-sharing program that enables agencies that interact with unhoused individuals to coordinate physical health, behavioral health, social services, law and justice, and other services.

"With a more holistic view of individuals and the services they're provided, you can deliver the right service at the moment of engagement," says Golub, who was CIO when the program launched. Having this information at their fingertips

helps case workers make better decisions and deliver services efficiently.

FDNY – Saving lives and reducing property damage

With hundreds of thousands of buildings to inspect and only about 200 fire inspectors in 2012, FDNY needed to prioritize building risk. The risk of fire is linked to a building's age and location, unpaid utility bills or taxes, and other indicators, but pulling together siloed data was cumbersome. As CIO at the time, Golub saw the opportunity to connect data and introduce analytics as a way to make better decisions about where to apply fire inspection resources.

"By connecting all the data about a building we created a risk-based inspection process that had an immediate impact on our program. This success drove plans to expand the data collection from new sources — from the building department, utility departments, property tax division and so on — ultimately resulting in reductions to property damage and saving lives," says Golub.

Challenges to a holistic data approach

Organizations like the ones Golub has worked with face a number of technology challenges when it comes to making better use of data.

Multiple communication channels. Agencies that started 50 years ago with in-person interactions, postal mail and phone calls have gradually tacked on email and interactive voice response (IVR) systems, web portals, chat bots and automation to improve operations and better serve clients.

Cumbersome operations. Different agencies store data in various databases and formats, and they index it according to their own policies. Without tools to elegantly combine data, tracking an individual across systems is cumbersome and costly.

More technologies to support. Besides legacy mainframes and desktop computing, IT teams must now support multichannel communications, hybrid cloud environments and highly distributed systems. Maintaining these systems and enabling organizations to share data across them is increasingly complex.

Multiple technology vendors, each requiring different skillsets. Today's processes may involve dozens of technologies. Most IT teams don't have adequate bench strength to know and use all these technologies proficiently.

Driving transformational change without disrupting operations

Modern toolsets enable organizations to pull together information from disparate systems and apply analytics without overhauling existing systems. Using cloud-based solutions, organizations can more easily — and often automatically — integrate, share and manage data regardless of the data's source, format (i.e., structured or unstructured) or nomenclature.

- **Data management tools.** These cloud-based tools allows organizations to pull data from on-prem and cloud-based applications and manage data centrally. Built-in, automatically applied policies simplify and standardize data governance without changing the applications themselves.
- **Analytics/artificial intelligence (AI).** Applying analytics and AI to data helps organizations understand patterns, predict potential outcomes and improve decision-making.
- **Data visualization.** Better services and outcomes — at reduced cost — emerge when organizations can visualize how they're performing. It's inefficient and practically impossible to view and understand thousands of rows and columns of data. Graphics and other data visualization tools help teams more easily see progress and identify areas for improvement and innovation.

Agencies can get started on a more holistic approach to data by doing an initial proof of concept. While a POC may have been costly and disruptive in the past, cloud-based solutions enable organizations to demonstrate the value of connecting data across agencies quickly and cost-effectively.

"Organizations can see the value without spending millions of dollars," says Golub. "Once they see the value, they embrace the idea and fly with it."

This piece was written and produced by the Center for Digital Government Content Studio, with information and input from Oracle.

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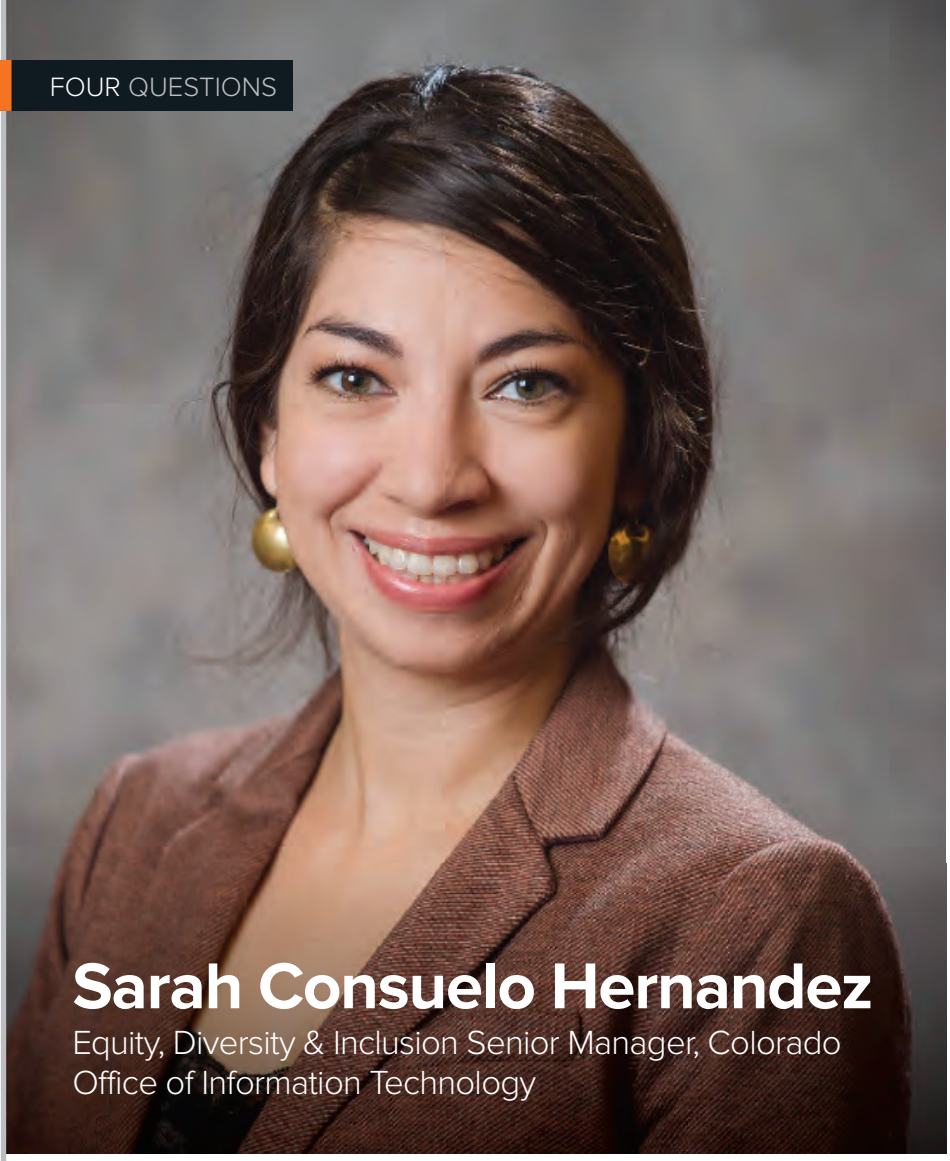

Sarah Consuelo Hernandez

Equity, Diversity & Inclusion Senior Manager, Colorado Office of Information Technology

Sarah Consuelo Hernandez has a relatively rare job in state government — she works within Colorado's Office of Information Technology (OIT) as a full-time manager of diversity, equity and inclusion. While tech equity has risen lately on government priority lists, it's still somewhat rare for a central IT shop to have dedicated staff for the work. But things are starting to change.

1 **How does design factor into equity work?** They go hand in hand. Equity doesn't happen on its own. I think about equity and design in two ways: internal and external. With external work, despite our best intentions, technology is susceptible to bias. It's important we're aware of unintentional biases. For example, we could design a mobile kiosk that is really great, but it turns out it isn't accessible to people with visual impairments. We can bake equity into the design process.

That relates to the internal piece with our workforce. Technology is a reflection of the people who build it. It's important we think about the teams we have doing the work and taking care of our people. We want them to have a great experience with OIT, and that involves building an inclusive workplace that makes all employees feel comfortable bringing their full selves to work.

2 **How can tech facilitate equity and diversity?** Equity, diversity and inclusion are not just nice to have. Tech is not a luxury these days for people in Colorado. It's a necessity, and it's become increasingly important to quality of life and opportunities. For that reason, it's increasingly important for us to think about accessibility and tech. We have a program dedicated to digital accessibility for people with cognitive or physical disabilities, but inclusion work also involves thinking about access to devices. We might design a product that makes a process easier for some, but if you don't have a smartphone, it actually makes it more difficult. Tech can help facilitate equity and diversity, but we need to have equity and diversity internally so we can be informed about what Coloradans need, especially Coloradans facing the greatest barriers, including those who have been historically and structurally marginalized.

3 **What are your top priorities?** In 2023, we're really able to scale up the work, because we've doubled our diversity, equity and inclusion team. There's two of us, and that allows us to go a lot deeper and wider. We're launching a comprehensive employee research group program, creating spaces that are carved out specifically for people who maybe feel less connected. We're also going to continue working with our internal equity, diversity and inclusion work group. Then we're going to scale up our training and development. I try to avoid one-and-done efforts, because research shows those don't have the most sustainable impact. You go to a training and it's great, but then you go back to your day-to-day work and forget. The idea is going deeper.

4 **How does leadership support your work?** In August 2020, our governor signed an executive order on diversity and inclusion. In a lot of ways, that was a catalyst for this work to happen in all state agencies. OIT has really taken that seriously as far as how we can operationalize equity, diversity and inclusion in state government. Our CIO, Tony Neal-Graves, has been supportive of this work from the very beginning. He holds himself and his entire leadership team accountable. Having that kind of support from the very top is just huge, and it makes the impact so much greater. It's not just about checking a box; leadership is very serious about having this woven into our business operations.

— Zack Quaintance, Associate Editor

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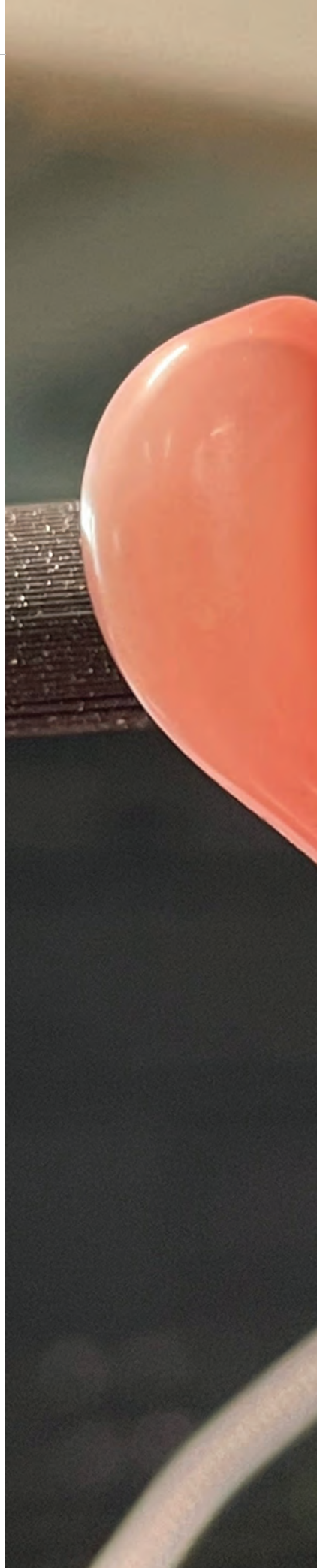
Get a Grip

Robotic claws, or grippers, are notoriously hard to use — remember trying to pick up a toy with an arcade claw machine as a kid (or an adult)? But a new soft gripper designed by researchers at the Harvard John A. Paulson School of Engineering and Applied Sciences, funded in part by the Office of Naval Research and the National Science Foundation, offers an easier way to robotically grasp objects. Traditional methods use embedded sensors and complex feedback loops, plus user skill, to pick up fragile objects, but the new device uses a gentler touch.

This new gripper is made with foot-long hollow rubber tubes. Because one side of each tube is thicker than the other, when the tubes are filled with air they gently curl around the object they're trying to pick up. Each tube on its own is relatively weak and won't damage delicate objects — think of endangered coral reefs or fragile human tissue — but when combined they deftly pick up whatever is needed.

Tests of the soft gripper included picking up houseplants and toys, but real-world applications, in addition to deep sea creatures and medical uses, could include harvesting soft fruits and vegetables in agriculture or picking up fragile glassware at a warehouse.

SOURCE: HARVARD JOHN A. PAULSON SCHOOL OF ENGINEERING AND APPLIED SCIENCES



THE ROAD TO MODERNIZATION FOR THE MAJOR IT SYSTEMS UNDERPINNING STATE GOVERNMENT.

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ON

Retiring legacy systems in large public-sector agencies is often a top goal for CIOs as they work to modernize processes, improve efficiencies and strengthen cybersecurity protocols. In fact, legacy modernization ranks as the No. 4 priority by the National Association of State Chief Information Officers' 2023 survey as well as the latest edition — 2022 — of the Center for Digital Government's* Digital States Survey. It's worth noting as well that both lists have related items at the top: cybersecurity, digital government and customer experience.

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

DMV

By Skip Descant

SHUTTERSTOCK.COM

Motor vehicle departments represent powerful evidence for why older systems need to be modernized. No other state agency comes into contact with such a wide cross-section of residents. And those residents expect widely available, easy-to-use online services. But DMVs can also be the most difficult to modernize, according to Bill Kehoe, state CIO and director of Washington Technology Solutions, the state's consolidated technology agency.

"Many DMV programs were built in silos," said Kehoe, "with disparate and separate technology that is difficult to merge." Add to that the fact that there are highly complex workflows that are tightly aligned with those aging systems, Kehoe said. But the enormity of the challenge isn't stopping states from taking on necessary upgrades.

Oregon

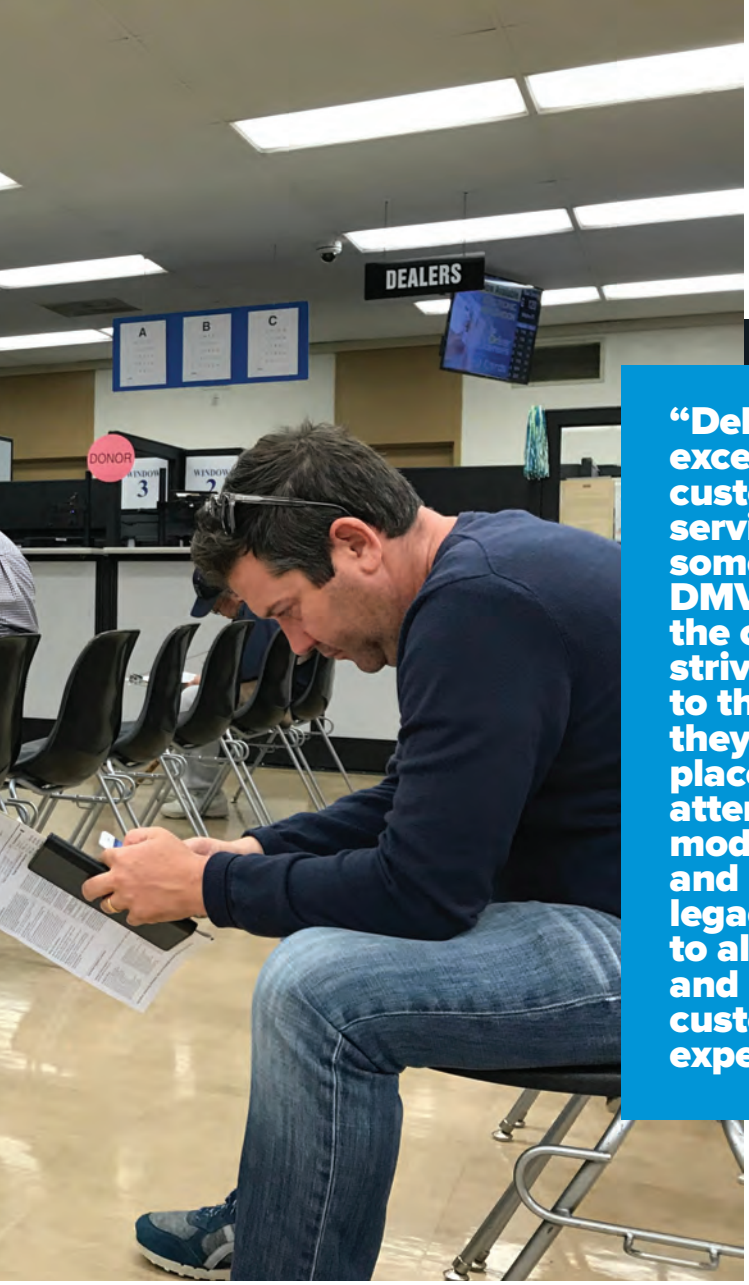
A massive technology overhaul of Oregon Driver and Motor Vehicle Services (DMV), completed just as the COVID-19 pandemic was getting underway, has led to the kinds of automated processes drivers — and indeed, DMV workers — expect.

The project retired nearly 100 old legacy systems, which were difficult to operate and required programming languages like COBOL that have long since faded in use. The new system makes driver data available to other state agencies in real time, among other customer-facing improvements, according to the department.

"From the very beginning, Oregon DMV treated this effort as a business improvement project: a way to re-envision how we serve customers," said Ben Kahn, manager for innovation and planning at the Oregon Department of Transportation.

"Delivering excellent customer service is something DMVs across the country strive for, and to that end, they should place special attention on modernizing and updating legacy systems to align with, and exceed, customer expectations," Kahn added.

Since the launch of the new system, dubbed OLIVR (Oregon License Issuance and Vehicle Registration), online services are now accessible on any connected device, signatures can be handled electronically and paperwork has been drastically reduced. Drivers can renew their license online, access their profile, update emergency contacts, make payments and even purchase a Sno-Park permit. Last year, the state processed more than



"Delivering excellent customer service is something DMVs across the country strive for, and to that end, they should place special attention on modernizing and updating legacy systems to align with, and exceed, customer expectations."

1 million vehicle titles, with 58 percent of these transactions "auto-approved," said Kahn. Later this year, self-service kiosks and online exams will be added to the mix.

"The adoption rate by customers of the new online options is encouraging and provides a direction for future enhancements," he added. "Oregon DMV is now a place of innovation and continuous process improvement."

Texas

Texas is in the throes of planning its own DMV transformation project as it prepares to upgrade the state's Registration and Titling System (RTS). RTS was developed in the mid-1990s and serves as the foundational technology for all motor vehicle transactions, according to Adam Shaivitz, media and communications officer for the Texas Department of Motor Vehicles (TxDMV).

"The project aims to implement a modern system capable of improving customer services and providing robust data management and security features in a platform that is cost-efficient to maintain and expand over time," Shaivitz said in an email to *Government Technology*.

The Texas project is still in the early stages, with TxDMV requesting some $6.75 million from the state Legislature to develop the needed documentation, identify system requirements and define what the final project will look like. In addition, Shaivitz said, the budget ask includes a comprehensive transition plan.

"Texas is a diverse state with unique operational challenges created by expansive geography and a large and constantly growing state population," Shaivitz continued, noting that the state's work is being informed by efforts in other states, including California. Likewise, TxDMV is working with the Texas Department of Information Resources to ensure it applies lessons from other major system upgrades the state has completed recently or that are underway now.

New York

Other DMVs in states like New York have rolled out modernization efforts that have not always unfolded smoothly. An online permit test resulted in fraud and widespread use of fake identification documents, according to the *Times Union*, an Albany newspaper. Officials with the New York DMV could not be reached for comment for this story.

"DMV systems can be very complex and consist of multiple front-end and back-end systems in addition to new online systems that need to interface with the back-end systems to process the transactions and payments," said Kehoe, explaining the at-times daunting nature of these types of system modernizations.

A large-scale, resident-focused modernization plan was unveiled by New York Gov. Kathy Hochul in January, however, and some of its elements will impact DMV operations. Her proposal includes a new chief customer experience officer for the state, charged with smoothing access to vital state services. Elements of this plan most likely to bear fruit at the DMV are fast-tracking the adoption of e-signature tools, implementing chatbots and voice automation technologies, and creating a unified state ID (NY.gov ID+).

By Zack Quaintance

TAX AND REVENUE

In tax system modernization, there is perhaps more incentive than in any other area of government to get it done and get it done right. That incentive is, of course, money.

Indeed, while all government modernization is typically done with the aim of eventually saving money — usually by upping efficiency, decreasing labor — tax and revenue systems link directly to states' primary sources of income. Done well, modernization increases the speed and efficiency with which debts are paid. At the same time, nearly everyone interacts with state tax systems, creating one of the furthest-reaching opportunities to foster a good government experience.

Put simply, taxes literally pay the bills, and if states do this well, constituents notice. Just ask Wisconsin.

Wisconsin

One taxpayer was so appreciative of Wisconsin's modernized tax systems, they sang a song. The state has a phone survey it asks users to take, complete with a chance to leave a voicemail. And it was there, recalls Wisconsin Department of Revenue CIO Rick Offenbecher, that one Wisconsinite chose to sing — and play guitar — about the department's good service.

This, of course, is an extreme example, but the Wisconsin Department of Revenue has seen an uptick in efficiency and resident satisfaction across the board. It's an uptick that the state worked long and hard for, dating back to 2005 when its modernization began.

It was then that Wisconsin began implementing FAST Enterprises' GenTax product, integrating and replacing more than 35 computer systems, none of which talked to each other. This work took six years and 11 rollouts, all of which were completed on time and on budget.

Since then, Wisconsin has migrated its tax data warehouse into the new system, incorporated an unclaimed property program and introduced an ID verification feature. The new system has about 7.4 million active user accounts spanning 100 different tax account types, including income, business and sales. During tax season, it averages 1 million transactions per day.

The list of efficiencies is a long one, including combining everything from spreadsheets to client/server applications into one system, putting all taxpayer documents in one place, and only having to train employees on a single system. When a customer calls in, for example, the state's service rep can see all their information in one spot, a far cry from the days of 35 different systems.

And while the foundational modernization was technically completed in 2011, work never really stopped.

After 2011, Offenbecher says the Department of Revenue went into "support and maintenance" mode, regularly implementing new enhancements based on employee ideas. Last year alone, he notes, there were more than 1,000 enhancements made, ranging from the use of PINs to prevent fraud to having an internal application for other state departments to collect debts.

Wisconsin now has an automated workflow that allows any employee to submit ideas for enhancements. Ideas are evaluated based on things like how many people they will impact, or whether they generate more revenue for the state. A governance group then meets once a quarter to discuss ideas, and the process goes from there.

"Those kind of projects, for many years unfortunately, never bubbled up to the top because they were so small," Offenbecher says. "Getting those projects done is extremely important to employee satisfaction, making sure they feel valued for their ideas."

The department now feels like it can't stop modernizing systems, even if it wanted to.

"We went from being change resistant," Offenbecher says, "to in some regard being addicted to change."

New Hampshire

Wisconsin, of course, is not alone in modernizing tax and revenue systems in recent years. This has taken place in most states, from New Hampshire to Idaho.

In New Hampshire, the Legislature audits state agencies for potential improvement. Audits in both 2008 and 2014 identified issues with New Hampshire's legacy tax systems, which had been in place for 30 years. It was a COBOL system on a mainframe,

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said Lindsey Stepp, the state's revenue department commissioner.

Following the 2014 audit, a true effort to modernize got underway, one that involved research, requests for proposals, soliciting in-depth input from employees who use the systems, on-site demos and more. In 2018, New Hampshire — like Wisconsin — entered into a contract with FAST Enterprises around its GenTax product, also used by nearby states such as Massachusetts, Connecticut and Vermont.

Following the contract, there were three rollouts (again, all on time and on budget), including the 2021 launch of a new outward-facing user portal called Granite Tax Connect. Stepp says that to date, that portal has just under 30,000 taxpayers using it, as well as about 2,700 third-party tax preparers. There are many examples of increased efficiency as a result, chief among them the time the state spends approving changes based on IRS audits. That has gone from about two hours to less than 30 minutes.

"We get back about an hour and a half for any reported change we make," Stepp says. "... We've come a long way from the COBOL green-screen system we were using just a few years ago."

Idaho

While Wisconsin and New Hampshire have graduated from outright modernization to support and maintenance, another state, Idaho, is preparing for its first full tax season with its own newly modernized systems, said Renee Eymann, senior public information officer for the Idaho State Tax Commission.

Idaho has also worked with FAST Enterprises, and the state now has a new, user-friendly website as well as FAST's cloud-hosting servers, rather than state-owned servers housed onsite. Like the other two states, Idaho has also transitioned to GenTax.

As a result, many Idahoers will file state taxes electronically for the first time this spring, moving off of paper, hopefully for good. The department's goal is to be paperless by 2024.

"We can do more thorough reviews with less manual effort," Eymann said.

In the wake of this modernization, the tax folks can more quickly and efficiently ensure that filings across the state are on time and on budget.

"We've come a long way from the COBOL green-screen system we were using just a few years ago."

By Julia Edinger

MEDICAID

"As the nature of health services continues to evolve, our systems must be flexible and nimble enough to change with the needs of those we serve."

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Medicaid Management Information Systems (MMIS) in states pay claims for Medicaid recipients and gather data on health-care services that are provided under the program. Roughly 84 million people rely on Medicaid to access health care in the United States as of September 2022, according to Medicaid.gov. States must ensure their MMISs are running efficiently in order to qualify for Medicaid reimbursement from the federal government.

To support consistent, quality service, best modernization practices have evolved in recent years, pointing to a modular approach that includes a focus on change management and a quality user experience. Here's a look at where states are today on that journey.

Jessica Kahn, former director of Medicaid systems for the U.S. Centers for Medicare and Medicaid Services (CMS) and current partner with McKinsey & Company, said that although the state of these systems varies across the country, there are several common trends.

First, constituents and state officials alike have become increasingly interested in the value of data as a result of the COVID-19 pandemic. And while MMISs hold a significant amount of data, many states are not yet taking advantage of it to create actionable insights.

"It's not just about paying claims," Kahn said. "It's also about providing the data to help improve quality, and set rates, and adjust payments, and comply with federal reporting, and really help drive policy priorities."

States are also starting to automate some of the workflow within their Medicaid systems, like provider

screening and third-party liability work. Additional potential for automation lies in the consumer-facing processes, another area Kahn expects to continually gain ground.

Going Modular

A modular approach to MMIS modernization — breaking the work into smaller components — has several benefits, according to Kahn. The first is that it provides quick wins, which demonstrate the value of the work and can boost morale. It also allows states to engage with a more diverse vendor pool with special expertise in different parts of the project, rather than find a single vendor to take on the entire project. Many states now use this modular approach — also referred to as agile development — due to the inherent complexity of state Medicaid systems, which can vary considerably in age and condition.

CMS has encouraged states to modernize their systems with this approach and is providing funding for active modernization efforts, according to Feyella Toney, chief portfolio officer for Maryland's Department of Health, in a written response to *Government Technology*.

"As the nature of health services continues to evolve, our systems must be flexible and nimble enough to change with the needs of those we serve," Toney said.

For Maryland, the mainframe MMIS is over 30 years old and currently slated for replacement. The state's multiyear modernization program began in 2018 and includes over 20 projects and initiatives that are expected to span the next five to seven years.

For New Mexico, the modular approach helps advance the state's customer-focused approach to the work, explained Joseph Tighe, MMIS Replacement project director in the Medical Assistance Division of the New Mexico Human Services Department. The state's multifaceted effort to modernize health-care systems is expected to extend into 2026. In 2023 and 2024, New Mexico is focused on provider enrollment and provider management solutions.

The project's size and scale earned it a label of "high risk" from the state's legislative finance committee. But Tighe explained that the state has worked to reduce risk by engaging with different project teams, including independent verification and validation services teams, as well as consistently monitoring the project's schedule, scope and budget. These efforts are getting results, according to Tighe, noting a marked reduction in risk over the past 12 months.

Managing Change

One of the keys to making these systems effective, Kahn said, is to tie the IT work to program priorities. Having a strong road map that is closely aligned with Medicaid program goals is a good place to start.

To achieve this alignment, she recommended close collaboration between the different people and offices that have a hand in the work to create a bridge between program and technology.

Nevada's MMIS underwent modernization in February 2019, and according to the state's Medicaid IT Manager II April Caughron, all systems are now relatively new and capable of accommodating up-and-coming initiatives from the federal and state levels.

Caughron said the state works closely with CMS and will track new initiatives and opportunities as needed to ensure the state can maintain compliance and quality service. Nevada used an Organizational Change Management (OCM) approach to modernization. As Caughron explained it, the people side of change management is critical in making technology changes effective. Nevada also participates in workgroups with other states to share best practices.

"At the end of the day, we're all trying to do what's best for the recipients of our state and our providers," Caughron said. "If we can learn even just the smallest thing from another state from their go-live, we're absolutely going to take advantage of that; and we're going to be more than willing to share our experiences, too."

The OCM approach is also being implemented in the state of New Mexico, Tighe said, which helps organize the work in manageable phases.

New Mexico's modernization plan also includes more robust analytics and business intelligence capabilities, which will enable the state to leverage data for decision-making. Part of this strategy involves an integrated approach between systems that work together and sometimes even serve the same people, including not only the MMIS but also the state's welfare information system.

Improved data analytics has also helped guide modernization for Maryland, said Toney. The state's modernization effort includes the development of a cloud-based data and analytics platform to advance data-informed decision-making.

By Thad Rueter

UNEMPLOYMENT

State unemployment offices came under tremendous pressure during the pandemic — not only because of the mass of people trying to access benefits, as well as significant fraud, but also because of often sluggish and even outdated technology.

Now, with that pandemic pressure finally easing, officials across the country are tackling scores of updates and similar projects. A look at the challenges and issues in three states foreshadows the future of unemployment services, which are among the main sources of connection between citizens and their governments.

New Jersey

With unemployment claims back down to pre-pandemic levels in New Jersey, the state's Department of Labor and Workforce Development (NJDOL) in January looked back on recent service improvements. The department launched a UI system with a mobile-responsive, plain-language application, described as the "first of many planned improvements."

That work has resulted in reducing the average time to complete an initial UI application by 47 minutes, the department said in early January. Emails to claimants have been "rewritten" in the interests of clarity, with feedback indicating "the new emails are easier to follow and less confusing than similar communication received in the past." Also on tap is a redesign of the self-service claim status page, upgrading the mainframe and what the department called a new claimant intake page.

New Jersey also provides an example of how much other work is involved in making sure unemployment departments can function more efficiently for various segments of the population.

"NJDOL will continue to call for federal action to reform the underlying unemployment laws and regulations that bog down so many New Jersey workers when assistance is most needed," the department said. "Additionally, NJDOL will continue its work developing groundbreaking digital workforce development tools to better serve New Jersey employers, workers and job seekers."

Of course, the New Jersey unemployment office, like so many others, continues to attract complaints about outdated technology. Last year, for instance, state Sen. Andrew Zwicker criticized the use of COBOL programming language for UI benefits and also highlighted how the unemployment department is a signal post of sorts for broader technological upgrades in state government.

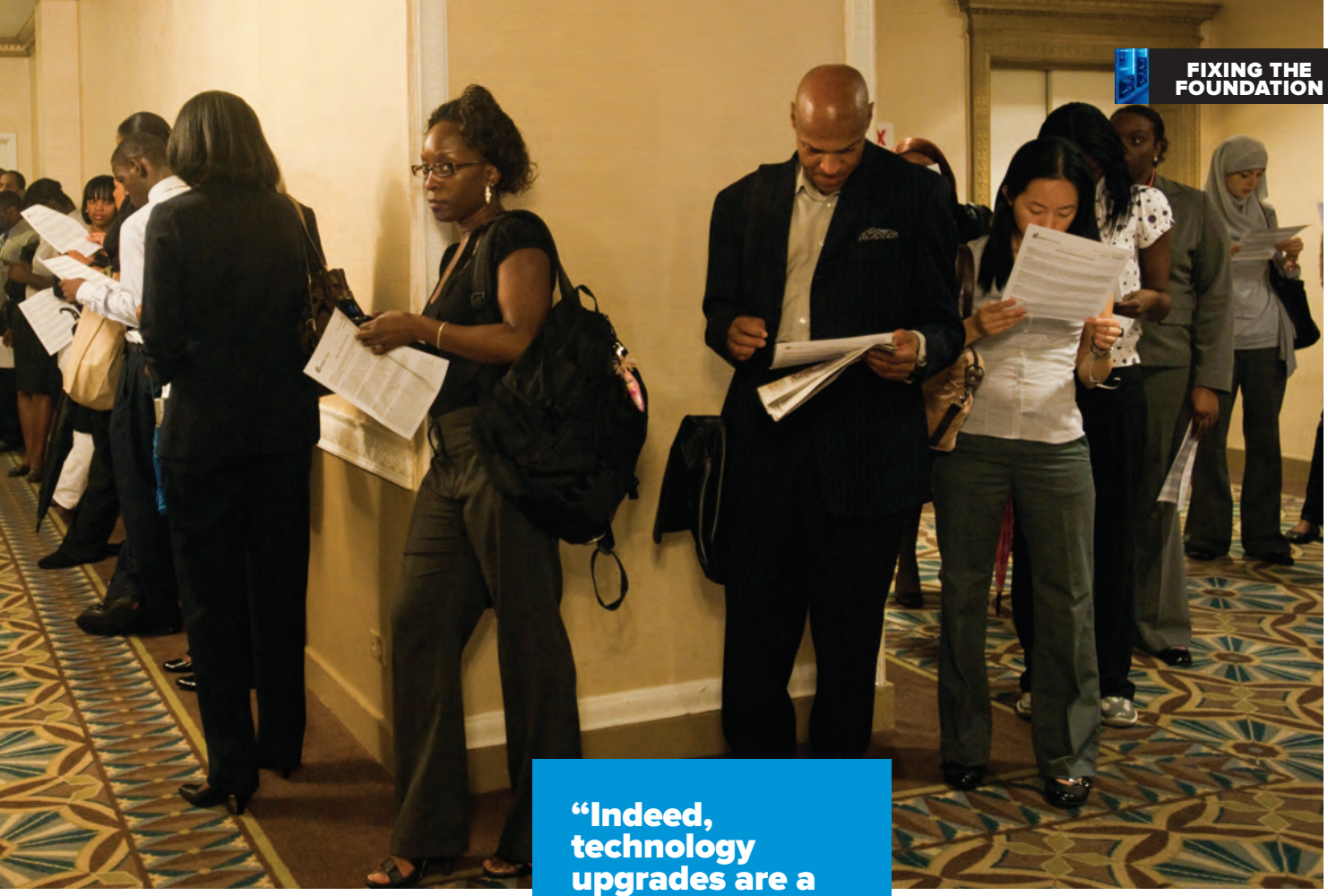
"Nor is the computer infrastructure problem exclusive to unemployment claims or the Department of Labor," he wrote. "Indeed, technology upgrades are a dire need across our government, and must be undertaken in a broad and holistic fashion."

Kansas

In Kansas, meanwhile, state officials are in the midst of a $48 million modernization of the unemployment insurance system, work that kicked off in June 2022 and for which Kansas plans to use $4.5 million in funding from the U.S. Department of Labor, according to a statement from Gov. Laura Kelly.

"Despite our unemployment rate returning to historically low levels, Kansas is still using antiquated equipment to work through pandemic-related claims, claims maintenance adjustments, overpayments, and fraud identification and migration," she wrote in a letter to the U.S. Department of Labor seeking funding help.

The state's UI technology depends on a mainframe system that dates to



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"Indeed, technology upgrades are a dire need across our government, and must be undertaken in a broad and holistic fashion."

the bell-bottom days of the 1970s. The last modernization push began in 2005 and lasted until 2011. Now the state, with the help of Tata Consultancy Services, is determined to bring more online self-service, automation, data access, partner integration and other tools to help applicants, UI recipients, businesses and Kansas Department of Labor employees.

Fraud prevention and cybersecurity will also play big roles in the planned updates.

California

On the West Coast, California was battered by billions in fraud perpetrated by people that took advantage of relaxed eligibility rules used to speed economic relief during the pandemic. It happened in a lot of states, in fact, though the scale was uniquely large given California's population of nearly 40 million residents.

Rita Gass, chief information officer for the California Employment Development Department (EDD), offered an almost dizzying update on how that state is improving its unemployment system. In fact, Gass counted some 200 IT projects over the last 18 months in her department — a good indication of all the work that needs to be done.

For her agency, those changes include creating a cybersecurity division — a reflection of the increasingly tight focus at all levels of government on defending against hackers and other criminals. The general idea is to not only increase digital protections but do so in a way that consolidates and unifies cybersecurity functions across multiple areas of EDD.

"Existing systems are stable and able to continue to process claims and provide service," Gass said via email. "However, the customer-centered, advanced fraud mitigation and security enhancements EDD wants to achieve will require a modern platform," and those are on the horizon with the state's modernization push, EDDNext.

The state has budgeted for new positions, including in cybersecurity and anti-fraud efforts, and officials expect that to grow as EDDNext continues. It's a complex project that involves integrating three systems into one.

Gass offered greater detail about planned improvements underway during the project's first phase: "We are reconfiguring call processes and incorporating multilingual functionality, building a single sign-on account for all our benefit programs, researching with customers the best way to improve our benefit applications and forms and designing enhancements, and strengthening our training materials to better support and empower staff to deliver excellent customer service."

HUMAN CAPITAL MANAGEMENT

By Katya Maruri

Human capital management (HCM) system software is a suite of technologies that helps employers manage employees' needs. For government, these systems do that and more, including handling employee benefits, attendance and talent management throughout an employee's tenure with the organization.

Georgia

Georgia's enterprise resource planning system, PeopleSoft HCM and Finance, was implemented in 1998 and supports over 100 organizations, according to Gerlda Hines, the state's accounting officer.

Currently, this system is hosted on-premise with servers in a state data center. It supports human capital management functions associated with human resources, like promotions, demotions and transfers, along with monitoring employee benefits, payroll, time and attendance, and labor distribution. Other uses include talent management, which involves recruiting, performance

management and learning management across state organizations.

However, after 25 years, Georgia's system needs some upgrades to enable new capabilities.

"Over the years, the system has been highly customized in several key areas, limiting the ability to leverage new features and functionality available in newer software releases," Hines said in an email.

Other issues include not having enough qualified employees to support the aging technology, resulting in the system becoming more difficult and costly to maintain. Georgia is now looking to replace it with a cloud-based solution. The cost of replacing this system isn't yet known, but Hines estimates the replacement will be complete by 2025.

"With a modern, cloud-based ERP system, Georgia hopes to transition to a single integrated platform to minimize third-party and duplicated services across the enterprise," she said. "A more modern, robust system would improve service levels by automating manual processes, enhance user functionality, leverage industry best standards to ensure information security, enhance reporting and analytics, and reduce and eliminate paper-based processes."

Oklahoma

Updating Oklahoma's HCM system became imperative after the state's previous 16-plus-year-old platform had not been updated for about half its lifespan.

As a result, Oklahoma's Office of Management and Enterprise Services (OMES) launched its new Workday@OK system in August 2022.

According to an OMES spokesperson, one of the biggest drivers for the update besides its age was the onset of COVID-19, which forced the state to improve its ability to perform HR functions with newly remote and hybrid workforces. Most of the cost associated with the upgrade was around licensing, implementation, staff augmentation, backfill and training.

"We continue to find areas that need harmonization in order to capitalize on the efficiencies of a modern system."

"The full implementation of the Workday@OK system spanned a full two years," said Liz Brandon, director of Workday Operations at OMES, via email.

At the same time, Brandon added, "we began work that is still ongoing to harmonize business processes among state agencies that would feed into the Workday@OK system. Now that we are live, we are focused on providing assistance and further training to our partner agencies and are excited about all the efficiencies this will bring the state."

But that work to consolidate business practices among Oklahoma's 118 executive branch agencies is not without its challenges.

"We continue to find areas that need harmonization in order to capitalize on the efficiencies of a modern system," the OMES spokesperson said via email, adding that training needs are significant, which is to be expected for such a large project.

With that in mind, the state's short-term goals include stabilizing the system to ensure all agencies can carry out their duties smoothly, developing a contractor and vendor management process, and integrating with other state systems.

North Carolina

North Carolina's SAP infrastructure, the core of its HCM applications, was released in 2005. The state then launched its enterprise resource planning central component (ECC) in 2008.

By 2016, it was decided that no additional functional HR enhancements would be made to ECC applications except for certain elements such as the system's user interface, security and regulatory mandates by SAP.

As a result, "the system's condition is increasingly out of date with respect to core HR functionalities," according to Chryste Hofer, CIO of North Carolina's Office of State Human Resources (OSHR).

To address this, Hofer said in an email to *GovTech*, the state will tackle HCM modernization in conjunction with a general update to its ERP system. "The intent is to explore options for the whole human capital management suite, excluding payroll."

This new option would include all functionality supported by the state's current HCM system, including employee and manager self-services, workforce management, EEO (Equal Employment Opportunity) administration, position description management, organizational charting, talent management, including learning and performance, grievance management, safety and incident management, and benefits administration. Ideally the system will ultimately integrate payroll. Hofer said OSHR plans to roll out the HR modules in phases.

OSHR issued a request for information (RFI) in 2019 and has continued evaluating products, recommending a cloud-based solution. The agency requested funding in the annual state budget process since 2021, but while it was included in the governor's proposed 2022 budget, it was not part of the state's final appropriations act. OSHR says they will continue to work to secure the funding and implement the system in the next three to five years.

Continued on p. 28

DIGITAL COMMUNITIES

CITY OF OREM, UTAH

How a GIS Solution Creates a Pothole-Free City

With more than 550 lane miles of roadway to maintain,[1] the city of Orem, Utah's Streets Section in the Department of Public Works has set a bold goal: a pothole-free city in which any reported pothole is repaired in under 48 hours. Considering the high costs of repaving roads and the fact that pavement failures usually start with potholes, it's an important goal — not only for saving money over the long run but also for preventing traffic hazards and contributing to the community's overall quality of life.

To help meet this goal, the Streets Section has created an end-to-end Report a Pothole solution that relies on VertiGIS Studio and Novotx's Elements XS program, which enables web-based pothole reporting, detailed tracking, record-keeping, updates and more.

Crafting a Powerful, Location-Centric Solution

Prior to the Report a Pothole program, the Streets Section did not have an easily accessible, methodical way of reporting potholes, notifying repair crews and tracking repairs. Additionally, the Streets Section wasn't maintaining historical information about potholes. "That was an issue because potholes tell a bigger story of how your road is doing," says Cody Steggell, Streets Section manager for the city of Orem. "Generally, when you start getting a lot of pothole reports on the same street, that tells you that your street or parts of it are starting to fail."[2]

Steggell went to Roger Dunn, the city's geographic information system (GIS) administrator at the time, with the idea for the Report a Pothole program. "If we could give information live to our team in the field, that would give us an opportunity to respond quicker, and that's what the public wants. You don't want people hitting a pothole and damaging their cars," says Steggell.

> "The crew can see what repairs are planned and what needs to be accomplished. They love clicking a point on the map to complete a work order and seeing tasks drop off the list."
>
> *Cody Steggell, Streets Section Manager, Orem*

The city had been using VertiGIS Geocortex Essentials,[3] which is built on Esri's highly scalable ArcGIS platform, to enable online mapping of bad spots in roads, utility trenches that needed patching and more. Building the Report a Pothole workflow on the same software was a natural fit.

"We were already familiar with the VertiGIS software, and it had proven to be a powerful tool that could be customized for our needs," says Steggell.

Using the VertiGIS software as a starting point, the IT team built a centralized, public-facing map application that residents can access by logging in through their web browser. Residents drop a point on a map to report a new pothole. A workflow then automatically creates a service order within Novotx's Elements XS asset management software and sends a confirmation email to the resident.

The workflow also automatically sends a pothole repair notification via email and text to everyone on the asphalt crew so they can perform the repair as promptly as possible. Once they complete the repair, they simply note it on the solution's GIS map. The workflow automatically notifies the resident and updates records to reflect repair completion. Rich record-keeping and reporting capabilities allow managers and crew to track both historical data and live, in-progress activity.

Enhancing Visibility and Decision-Making with Digital Map Points

The digital map points are part of a user-friendly workflow that can provide varying levels of detail, depending on what users want to know or do. Service orders include information about everything from when and where a pothole was repaired to how much hot mix was used to fill that pothole. Authorized employees can add, view and update service orders and other details associated with a specific location, pothole, street segment, block of streets or other asset.

Having multiple ways to access and track data simplifies and improves decision-making. For example, if users click on a segment to see how many potholes exist within that area, they can also see the associated service order. To get a clear picture of when and where larger "remove and replace" pavement jobs may be needed, users can also search for segments of road that have had more than 10 potholes in the last year.

"Tying the VertiGIS and Novotx solution together provides a better way of tracking tasks. Now, we can all see what's getting done and have the history right there," says Steggell.

Better Record Keeping Delivers Huge Benefits

In addition to automating workflows and keeping residents better informed about pothole repairs, the solution has yielded important benefits related to record-keeping and planning.

"Having information about the tasks that we're doing is the biggest win. This morning, I went into the Elements XS software and turned on one of my filters to see we have eight water utility trenches that need patching. Being able to show that to all the team members so everyone is on the same page is a huge win. The crew leader can see exactly what's on his plate so he can organize how he's going to tackle all those repairs and be more efficient with his crew," says Steggell.

Other benefits include:

✔ **Greater satisfaction for the crew.** "The crew can see what repairs are planned and what needs to be accomplished. They love clicking a point on the map to complete a work order and seeing tasks drop off the list," says Steggell.

✔ **Meaningful insights into costs.** A "cost per task" tool breaks down costs for materials, equipment and labor. The feature encourages efficiency and provides objective data for budgeting projects and charging other utilities for work such as patching trenches. "It opens a team's eyes to work costs and gets them to think about ways to be more efficient," says Steggell. "Now we might choose a method that costs more upfront but has a better financial impact over time."

✔ **Better coordination with other departments.** The solution can track every utility trench that the Streets Section patches. For example, when the city's water utility section digs up a road to repair a water leak, they can use the solution to notify the Streets Section when the repair work is done so the road can be patched.

✔ **Clear views into project status.** Elements XS has helped track the Street Section's work so well that Steggell was able to lend some of his crew to a special project recently. "We were asked to help demo sod and concrete around one of our schools. It was a few weeks of work, but Elements XS gave me enough visibility into what we had going with our own projects that I felt very comfortable letting our team do that work. It freed us up, where normally I would say we can't do that," says Steggell.

Moving Toward a More Collaborative Future

The Streets Section is taking it upon themselves to innovate and evolve their Novotx solution as new opportunities arise. Besides using the solution for its Report a Pothole program, the Streets Section also uses it for maintaining 500 linear miles of sidewalks, walking paths, ramps and gutters.[4] Steggell envisions integrating the solution across other public works sections to improve reporting, planning and collaboration.

This piece was developed and written by the Government Technology Content Studio, with information and input from VertiGIS.

[1] https://orem.org/streets/
[2] Center for Digital Government interview with Cody Steggell. November 2022.
[3] VertiGIS Geocortex Essentials is now branded as VertiGIS Studio.
[4] https://orem.org/streets/

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Elements XS is a comprehensive enterprise asset and work management solution that is built on Esri's ArcGIS platform. The seamless VertiGIS Studio integration found in Elements XS offers unmatched flexibility for utilities and municipalities. Learn more at **elementsxs.com.**

Continued from p. 25

By Jule Pattison-Gordon

ENTERPRISE RESOURCE PLANNING

States are looking to consolidate assortments of financial and HR systems and retire decades-old tools and processes by switching over to modern enterprise resource planning (ERP) systems, central platforms that handle core business processes for a state's various agencies all in one place.

Missouri

Missouri is early in its ERP journey. The state selected its software product in June 2022 and expects to complete the first of three rollout phases this summer. Deputy state CIO Paula Peters said the ERP will let the state consolidate systems and more readily access data.

For example, budgeting is currently handled by a different system from procurement and payment, and so bringing together data involves many steps and manual processes, which is slow and risks mistakes and inconsistencies.

"You have to do a lot more manual transferring of information. You may have to use a shadow system or take things to a data warehouse, so you can transfer it somewhere else," Peters said. Pulling those functions into one platform would remove such issues.

The ERP modernization effort also comes at a time when supporting legacy systems is looking increasingly untenable. Missouri's main system is more than 20 years old, and staff that are able to support it are getting ready to retire, Peters said.

Phase one of transitioning to the new ERP will see budgeting functions go live in July 2023. Starting with this smaller set of capabilities also lets the state "get our feet wet" before tackling more, Peters said, and lays the groundwork for shifting over processes that rely on those functions. Phase two will transition over finance, procurement, manufacturing and learning capabilities in July 2024, while January 2025 will involve HR and payroll, completing the project.

Executive, judicial and legislative agencies as well as elected officials weighed in on determining the state's ERP requirements, and Missouri ultimately selected Oracle software, through reseller Mythics, with Accenture serving as systems integrator.

Illinois

With some HR and financial systems as old as 30 to 40 years, Illinois faced working with cumbersome legacy processes. These could mean a flurry of paperwork whenever employees changed addresses, for example. Plus, legacy tools' limited capabilities meant agencies had to create their own "homegrown systems" to meet specific needs, and the resulting idiosyncrasies presented a steep learning curve for staff moving between agencies. Meanwhile, would-be hires went through time-consuming processes that left them in the dark about their application statuses.

"It was kind of a black hole — you would send [your resume] off and hope that it landed wherever it was

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"We really do try to address and meet 21st-century business challenges and expectations from our business partners, but we're doing it on 20th-century operating systems."

supposed to go and would patiently wait months and months to find out," said Illinois' ERP Program Director Tara Kessler. "... [We're] just trying to make it more user-friendly so people feel comfortable applying."

Now, the state is in the midst of an ERP transition that's introducing new digital conveniences and efficiencies. Employees have gained self-serve options and job seekers can view statuses online as well as flow stored profile information into new applications rather than re-entering it each time. Auditors also can now use the ERP's data analytics and substantive testing capabilities rather than digging through paperwork in agencies' offices.

Following a pilot with three agencies in 2016, Illinois selected an SAP ERP. The state split the remaining agencies into groups and transitioned financial systems for one group at a time over to the new ERP every six to 12 months. By 2022, 73 agencies were on the new system, including several elected officials' offices that chose to join the executive branch agencies in the transition. Accenture and Deloitte served as system integrators, with one company leading each phase while the other quality assurance tested its work.

Illinois has taken a different strategy for transitioning HR systems. Rather than launch full sets of capabilities at increasingly more agencies, the state is instead gradually introducing more and more functions to all agencies at the same time. Roughly 90 agencies will adopt the HR system, and its recruitment model is now live. Modules enabling core HR functions, onboarding, labor, learning and compensation are slated to go live in May 2023. Timekeeping and payroll pieces will be adopted in March 2024.

Kessler emphasized the importance of consulting with agency staff early on to fully learn their needs. Such discussions prompted Illinois to move business intelligence functions sooner than originally planned. Changing the timeline "was a very heavy lift for us, but it was really critical because if they were going to use the new system, they needed to make sure that they could continue their work uninterrupted," Kessler said.

Washington

Washington's more than 120 agencies rely on core administrative systems that are 20 to 40 years old, said Cristie Fredrickson, executive sponsor of the state's One Washington ERP modernization project. To work with legacy technology, staff often must follow "outdated business processes" as well as spend considerable time on maintenance.

"We really do try to address and meet 21st-century business challenges and expectations from our business partners, but we're doing it on 20th-century operating systems," Fredrickson said. Plus, it's easier to attract employees when they're not asked to use four-decades-old systems, she said.

As with Illinois, Washington found that because its core systems had limited capabilities, agencies often have had to create additional systems to support their unique business needs. Lack of integrations among all the systems makes it difficult to produce desired data.

The state expects all that to change. By 2013, Washington had crafted an ERP business case and in 2020 it selected a system from Workday, with Deloitte as the systems integrator. With these companies in place to advise, the state re-evaluated the project's scope and set a new timeline in 2022. Frederickson herself joined in February 2022 as the project became large enough to warrant a dedicated executive sponsor.

The state's plan aims to first modernize those systems facing greatest risks and which are most business critical. Summer 2025 will see core financial functions — like accounting — transitioned, followed by procurement and other financial systems. The ERP's more numerous capabilities will make some of the agencies' supplementary systems redundant, and Frederickson expects at least 22 financial systems can ultimately be retired, saving the state time and money. A later phase modernizes the budgeting systems and the final phase transfers payroll and human capital management systems.

"Sometimes it can be hard for people to get excited about administrative functions that are what keep the wheels moving in such a large state enterprise," Frederickson said. "But knowing how important all of these administrative functions are to the state ... having a robust modern enterprise application is going to be so beneficial in such a large number of ways and so impactful." gt

By Ben Miller

Can Government Catch a Break?

There's more work to do, but public-sector services are noticeably improving.

An amazing thing happened in October: A big federal service launched when it was supposed to, and it was so easy to use that people took to social media to say so. In its first weekend it took in 8 million applications, a several-minutes-long process involving filling out a few boxes on a web page.

That would be the White House's student loan forgiveness program. And it's just one of many, many examples that have been piling up in recent years of people beginning to have a much nicer experience dealing with the government — all levels of government.

That's worth noting — and celebrating. For an average person, the prevailing perception of government is inefficiency and difficulty. For those familiar with government, seeing an average person who can't help but express their satisfaction with a public service is a rarity.

Hopefully that's becoming less so. As it turns out, I'm not the only one who thinks government has turned a corner on constituent experience.

Ordering at-home COVID-19 tests from the U.S. Postal Service was a one-minute exercise — I couldn't believe all I had to do was hand over a couple pieces of information before the tests shipped to my house. Renewing my vehicle registration takes about as long as making myself a sandwich.

There are much larger and more consequential examples: California, Michigan, Minnesota and New Jersey are receiving national attention for making social safety net applications faster and easier. That's money in hands to keep families out of financial catastrophe.

Why is it happening now for government, after so long suffering as the butt of jokes? Several reasons.

A big one is buy-in. Elected officials and others are seeing that not only does investing in user experience make technology deployments more successful, it can save money in the long run.

Nikhil Deshpande, chief digital officer for Georgia, remembers a time when leadership would come to people like him after a service had already been created and say "pretty it up." Now they include testing and feedback loops as part of the initial budget.

"We are now getting more into designing more like a sprinkler system ... rather than being the firefighters," Deshpande said. "We don't have to wait until there's a fire. Let us design systems in a way that you prevent those from happening."

Government has benefited from broadening acceptance of those ideas. Much has come from trailblazers: The U.K. set an example with the establishment of the Government Digital Service in 2011. The work of 18F, the U.S. Digital Service, Code for America and others in the U.S. has slowly pushed the same philosophies forward. In 2021 President Biden issued an executive order directing federal agencies to improve user experience.

> **"We are now getting more into designing more like a sprinkler system ... rather than being the firefighters. We don't have to wait until there's a fire. Let us design systems in a way that you prevent those from happening."**

Then there's the workforce side. According to the U.S. Bureau of Labor Statistics, the number of web developers and digital interface designers in state and local government grew 8 percent from 2019-2021, with more growth forecasted in the future. Suzanne Pauley, director of the eMichigan program responsible for user experience in Michigan state government, said she's seen college degree programs in this area pop up in the past five years or so.

"We have front-end developers [and] we have back-end developers now, and for a long time those were one and the same," Pauley said. "And then adding on top of that the user experience professionals — the people that can do user research, that can go in and do UI experience development — I think that adding that piece into the puzzle makes it better for user experience in the end."

So there are more people involved in this work, with more buy-in and

Ben Miller is the associate editor of data and business for *Government Technology*. His reporting experience includes breaking news, business, community features and technical subjects.

INTELLIGENT TRANSPORTATION

Transportation at the Edge

Intelligent transportation systems allow governments to use data to transform mobility in their communities. **Kevin Tunks**, *technology advisor for Red Hat (at right), and* **David White**, *practice lead for Red Hat (far right), explain how edge technology, machine learning and artificial intelligence can help transportation leaders make more informed, data-driven decisions.*

What are the benefits of intelligent transportation systems?

Tunks: Intelligent transportation systems (ITS) provide a better human experience, increase energy savings and improve safety while simultaneously reducing congestion. When ITS technologies and their benefits are distributed across the entire spectrum of society, we unlock the maximum potential from everyone.

What challenges arise when managing data from smart vehicles and transportation infrastructure?

Tunks: The amount of data that intelligent transportation environments create and collect is enormous. The rise in alternative transportation options like scooters and e-bikes has created new hazards in driving operations. These fast-moving lightweight vehicles present new risks to drivers.

In a sea of complex data from mixed sources, one simplifying approach is to separate "fast data" from "slow data." Fast data refers to information that is necessary for immediate decision-making, such as object detection and avoidance. Fast data is most commonly associated with improving safety. Fast data helps us build smarter systems that augment human operations by reducing the risks of distracted driving.

Slow data refers to large volumes of unstructured and semi-structured content that informs research and development. Leaders and data scientists don't need to use that data immediately, but they will use it for long-term decision-making and future model training.

How can artificial intelligence (AI) and machine learning (ML) help sort through all that information?

White: To react to fast data to make an informed decision, you are going to want some kind of automation intelligence. And if that application can learn continuously, adapt to changing conditions specific to precise geographic locations, it can reveal insights that enable faster, better decision-making.

AI and ML technologies are helping organize, tag, interpret, analyze and deliver model-driven predictions.

How can edge technologies help process data more effectively?

Tunks: Edge computing provides decentralized capabilities that allow fast data to be quickly processed and acted upon.

Vehicles do not all have consistent high-speed connectivity to the web. They often only have intermittent connectivity that may disconnect at unpredictable times. When architecting solutions that take advantage of the massive number of new data sources that can power ITS, leaders have to plan for systems that operate in disadvantaged – often offline – environments. These systems still have to process fast data quickly and efficiently.

That said, with slow data, agencies need to be able to store large volumes of information and extract it for processing later. Since slow data isn't immediately needed for safety-related operations, this information can be transferred into a hyperscale cloud or to an on-premises data center at a time that provides the best cost and performance tradeoffs. This is perhaps when an electric vehicle is plugged in and charging, or when a container ship is in port. This is similar to how your cell phone prioritizes processing backups and updates when it is it is plugged into stable power and connected to a Wi-Fi network.

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funding from leadership. But when funding is an issue, that always comes with an asterisk: What about the underfunded?

Ariel Kennan, a fellow at Georgetown University's Beeck Center for Social Impact + Innovation and former service designer for New York City, pointed out that progress has been far slower in some areas. New York City, for example, has a user-friendly new SNAP application process — but due to a staffing shortage, fewer than half of applicants are receiving benefits on time.

As for student loan forgiveness, the White House had to put the whole thing on pause because courts ruled against the program.

It's a reminder — a very frustrating one for the people relying on those systems, I'm sure — that technology is part of an ecosystem, of which other parts can stymie progress.

"You can make a better front door, and that's a really important part of service delivery, but it has to keep working," Kennan said.

See also the unemployment insurance situation. Those large state systems have faced chronic underfunding, sometimes deliberately because of anti-welfare elected officials. During the early days of COVID-19, UI claims spiked higher than anyone ever expected and systems were overwhelmed. I watched friends and family wait on UI money for far too long or get tangled up in errors. To make things worse, fraud rings took advantage of the chaos and made off with billions.

In response, federal technologists and other do-gooders jumped in to make state systems work better. It's improved the process, but not everywhere. And at the same time, states put in anti-fraud technologies that successfully fought crime while introducing headaches for some innocent bystanders caught up in the dragnet.

"It's so critical to understand all the different constraints and factors that are at play. You have to understand what the technical landscape is, what the policy landscape is that this digital service is situated in. And you have to understand what is preventing you from having a better customer experience."

There's also the problem of modern systems relying on legacy technology, which can cause delays and prevent data sharing. Public officials, inventive vendors and civic technologists have all found ways to slap slick user interfaces on those systems, which can make using them much easier — by, for example, condensing down the number of fields on a form.

But legacy technology is still a problem that will have to be addressed eventually. Once it is, there will be greater opportunities to make the entire process better for the constituent from beginning to end.

Code for America's work with Minnesota is instructive. The organization helped the state launch a new process for applying for several benefits at once. Nine processes were compacted into one; the time to apply dropped from 110 minutes to 15. But it still relies on older infrastructure.

Lou Moore, chief technology officer for Code for America, counseled that addressing all the things outside of simple user interface design can take quite a bit of work.

"It's so critical to understand all the different constraints and factors that are at play," he said. "You have to understand what the technical landscape is, what the policy landscape is that this digital service is situated in. And you have to understand what is preventing you from having a better customer experience. Is it that you don't have the data that you need to actually identify the right problem to solve, or the magnitude of the problem? Is it that you don't have the capabilities or the insights to design a good solution? Or is it that there's something that's preventing you from getting that solution in people's hands? Those are just a few."

Capacity-building will answer many of those questions. Pauley's team in Michigan has been hiring more people to help design services. Her team and Deshpande's in Georgia both emphasize design libraries that help future designers work faster and more consistently. Success will breed success.

Clearly there's still a lot to do. But in the meantime, the level of service provided by the government has reached a point where average people are beginning to see working with the government as something bearable — maybe even pleasant. There's power in that. gt

Reporting from Andrew Adams contributed to this story.

3 Keys to Hardening Government Networks

To improve network security, governments should adopt a three-pronged approach: embrace cloud architecture, add endpoint detection-and-response tools, and implement isolation technologies to mitigate the impact of an attack. **Dan Allen**, *vice president of enterprise security solutions for HP Wolf Security, talks about how it works.*

What are the greatest cyber risks facing governments right now?

The actual types of threats haven't changed much; they're just more prevalent and more sophisticated. They're coming in three key areas. First, criminals are looking to profit from stolen data or ransomware. Next, nation-states are spying on government agencies. State and local leaders may not realize their data is an attractive target for espionage. Finally, terrorists and other politically motivated actors want to cause mayhem and destruction.

What are the most promising innovations for defending against these threats?

Again, we're seeing three areas:

1. **Cloud and software-as-a-service (SaaS) applications** add a layer of strong security, enable simpler backup and recovery, and make Zero-Trust architecture easier to implement. Local governments especially should migrate to cloud-based solutions because they place the burden of maintaining and patching infrastructure into the hands of a cloud or SaaS provider.

2. **Detection and response technologies** monitor endpoints and attempt to identify potential breaches before they become a problem. This is great technology, but it can be expensive and complex to implement and operate. Many state and local governments lack the budget or expertise to implement these sophisticated detection technologies.

3. **Isolation technologies** allow users to interact with high-risk content in disposable containers as opposed to running it directly on their PCs and networks. Isolation technologies can be a cost-effective way to add a significant layer of protection beyond what traditional anti-virus tools provide.

Why is isolation an attractive cyber defense option?

Most malware breaches start with a user tricked into clicking a link, downloading a file or opening a site that turns out to be malicious. Isolation technology creates a small virtual copy of a PC to provide a place to execute high-risk user content without allowing the content to directly access your PC or network. Imagine your PC is your house. When you click on a link, download a file or open an email attachment, it's like you're inviting that website or file into your living room, where it can cause severe damage before traditional AV or detection and response technologies can stop it.

Now think about the difference between a videoconference and an in-person meeting. You can interact with people on a video call, but if they start acting inappropriately, you can just turn off the meeting. After all, they're not really in your living room.

Virtual containers and isolation technology works the same way. Isolation tools let users click on things, look at websites, download and view files, and so on. Any malware remains in the container, so it cannot do any damage. If something bad happens, we can just turn off the container.

Inside 988

A new number, new attention and new funding have shed light on the challenges faced by the 988 Suicide & Crisis Lifeline.

By Andrew Adams

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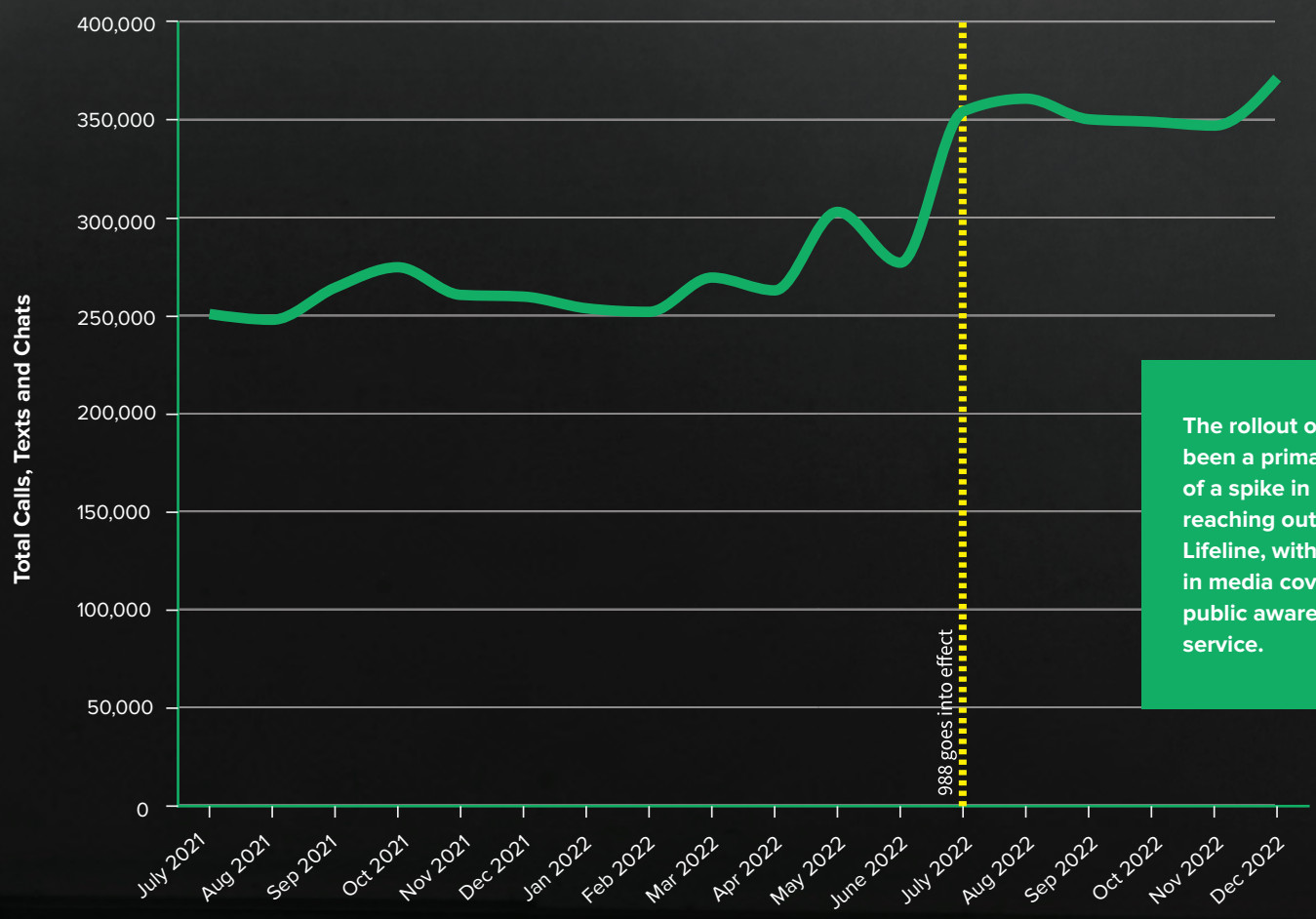

The rollout of 988 has been a primary driver of a spike in people reaching out to the Lifeline, with increases in media coverage and public awareness of the service.

For those seeking mental health help, one of the most commonly linked-to and talked-about resources is the National Suicide Prevention Lifeline. It can be a life-saving resource for those contemplating suicide or who are experiencing a mental health crisis. On July 16, 2022, after years of buildup and preparation, the Lifeline got a new number: 988. The three digits replace a longer toll-free number, 1-800-273-8255.

The idea behind the move to what is now called the 988 National Suicide & Crisis Lifeline was to make help more accessible to those in crisis.

"This cross-government effort has been years in the making and comes at a crucial point to help address the mental health crisis in our country, especially for our young people," said Federal Communications Commission Chairwoman Jessica Rosenworcel in a press release the day before the switchover.

The change has also brought with it a pile of new federal funds flowing into states and nonprofits. Since 2021, the federal Substance Abuse and Mental Health Services Administration (SAMHSA) announced at least $432 million in investments going to 988 implementation, according to Vibrant Emotional Health, the national administrator of the Lifeline network. Vibrant is the recipient of most of these funds. In 2021, for example, Vibrant received $177 million, about 63 percent of the initial funding round.

"This unprecedented increase in resources for centers providing these national backup services builds a stronger Lifeline overall," said John Draper, who leads the 988 Lifeline at Vibrant, in a press release.

59,400

The number of texts sent to the crisis lifeline as of December 2022, up from 7,000 in 2021, before 988 was fully deployed.

The transition to 988 was first recommended by the FCC in 2019 in a report to Congress, which passed the National Suicide Hotline Designation Act in 2020, authorizing the use of 988 for this purpose. Since then, the FCC has instituted rules requiring phone providers to recognize and activate the toll-free number, and states throughout the U.S. have passed supporting legislation to prepare for increased use of the Lifeline.

But the switchover highlighted the challenges faced by states and the nonprofit call centers that facilitate these calls from people in need.

UPGRADES IN SOUTH CAROLINA'S ONLY CALL CENTER

These new funds, as well as those from pandemic-era funding packages, have allowed some call centers to upgrade their technology. In South

Along with the rollout of a new way to access the Lifeline, the system has taken steps to lower the number of calls where someone hangs up before reaching a Lifeline worker. "Abandoned calls" have been falling since early last year.

Carolina, calls to the Lifeline are answered by staff and volunteers at Mental Health America of Greenville County (MHAGC), a nonprofit based in the northeast of the state. South Carolina once had four call centers responding to suicide prevention hotline calls, but over the years that number has fallen to just one.

When a call comes from a South Carolina area code, it is usually routed to MHAGC, though if they are at capacity, the call may be routed out of state. South Carolina has one of the lowest in-state answer rates of any state in the country, a key performance indicator tracked by Vibrant Emotional Health.

But Mental Health America of Greenville County has taken steps to both meet the need for crisis calls and also improve the services they offer once someone in crisis is on the line.

Using funding from the pandemic-era stimulus package, MHAGC was able to upgrade their facility to install a new MyTel phone system and introduce resilience measures.

"We were lucky in that our phone system was landlines and now we're on a VoIP system," said MHAGC Executive Director Jennifer Piver. "The switch was as smooth as could be."

The new facilities accommodate more on-site workers and allow for an "infinite amount" of remote workers, though Piver says that in rural South Carolina, finding workers and volunteers with broadband fast enough to support VoIP can be challenging.

Using a grant made possible through CARES, MHAGC funded the VoIP transition and new backup call center. This should allow for more options in the case of interrupted service at the main office.

"Should there be a disaster here in our main office, we can drive 20 minutes down the road," said Piver. "There's virtually no downtime."

South Carolina's Department of Mental Health has also announced its intention to create a second call center in Charlottesville to be opened later this year. MHAGC will not operate this location, though Piver said they will help get the center set up.

$59.4M

The amount of funding the Substance Abuse and Mental Health Services Administration plans to award states in 2023 to expand or enhance 988 services.

INCREASED DEMAND, SYSTEMWIDE

Outside of South Carolina, the Lifeline network has seen a sharp increase since the rollout of 988. The system saw more than 371,000 calls, texts and chats in December 2022, the most recent month from which data is available. This is a 33 percent increase from the year prior, when the system saw 261,000 calls, texts and chats, according to data from Vibrant Emotional Health.

The most dramatic increase in growth came from texts to 988. While texting has been an option for the system for years, it was not advertised as heavily as calling. In December 2022, the system saw 59,400 incoming text conversations compared to 7,000 the year prior.

Interestingly, thanks to expanded interest in and funding for Lifeline

84%

The average in-state answer rate for calls made to the 988 Suicide & Crisis Lifeline in 2022, up from 69 percent in 2021.

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call centers, the system has actually gotten better at answering calls. Fewer calls were "abandoned," meaning the caller hung up before their call was answered, in November 2022 compared to the year prior.

With the changes made to the 988 system nationwide, one thing is clear: The funding has improved the situation. In November 2021, states and territories had an average in-state answer rate of 69 percent. In 2022, it was 84 percent.

NEW NUMBER, NEW FUNDS, NEW IDEAS

In many places, the increased attention on mental health has meant that state-level lawmakers and executives are looking to fund new efforts to support mental health.

Returning to South Carolina, perhaps the most interesting new development is the state's partnership with RapidDeploy, a GovTech 100 company known for its mapping services provided to public safety answering points answering 911 calls.

"Right now, when a call comes in to 988, we don't get the same data that 911 does," Piver said.

RapidDeploy will help provide MHAGC with a caller's location information as well as a new platform for mapping resources and landmarks relative to that location, such as hospitals, medical facilities and food banks.

Piver stressed that involving law enforcement is not the goal of the Lifeline and that less than 2 percent of calls require intervention beyond a phone call or text chat. Over half of those interventions are voluntarily initiated by the caller, according to Piver.

The partnership, announced in November of last year, is the first of its kind, according to RapidDeploy.

At the federal level, SAMHSA has been giving significant funds to states and territories to expand or enhance their 988 systems. In October 2022, they announced $59.4 million to be awarded in FY 2023 through their Mental Health Block Grant Program, and another $50 million in grants to supplement previous funds from the American Rescue Plan Act.

"The transition to 988 in July was an important step forward, but it is only the beginning of a continuing drive to achieve our vision of comprehensive, responsive mental health and substance use care services nationwide," said Miriam Delphin-Rittmon, the head of SAMHSA, in a press release when those funds were announced.

Several states are already putting the funds made available in recent years to use. In Maine, which has one of the highest performing 988 systems, the state is investing $230 million in state and federal funds over their 2022-2023 budget cycle to mental health, including funding a new brick-and-mortar crisis center in the state's largest city.

It remains an open question whether these one-time grants and investments are an indication of longer-term funding increases for mental health and 988 services or if they are the result of temporary political interest in the subject. gt

If you or a loved one is in crisis, help is available. Call or text 988 to be connected to Crisis Lifeline call centers anywhere in the U.S., and online chat is available at 988lifeline.org. For long-term help, SAMHSA provides a behavioral health treatment services locator at findtreatment.samhsa.gov. For emergency services, call 911.

INTELLIGENT TRANSPORTATION

Rethinking Parking Enforcement for Social Equity

Parking enforcement reduces congestion and improves public safety, but it can also exacerbate socioeconomic disparities. **Matthew Darst**, *director of parking and mobility solutions for Conduent Transportation, explains how rethinking curbside management policies can dismantle historic barriers for underserved populations.*

What's wrong with conventional curbside management strategies?

Enforcement is a critical component of what we do in curbside management. It is necessary to deter illegal parking, which is largely responsible for things like congestion and dangerous driving conditions.

But one mistake we commonly make as transportation professionals is thinking every ticket is the same. Sometimes the dollar value of that fine outweighs the harm that is being caused. A good example of this is expired license plates: Once someone renews their license plate, the social harm that existed ceases to be.

Unfortunately, licensing violations are often disproportionately issued in lower-income communities, and they can be issued every single day. This creates a downward spiral of debt and leads to additional punishments, like vehicle seizures.

How can cities address inequities?

Every city should measure how its current enforcement practices impact disadvantaged communities. Does enforcement align with the objective of deterring the worst types of parking violations? Traffic enforcement agencies can answer this question by examining the distribution of different types of citations across neighborhoods, including fine amounts, and then determining whether current practices correlate with the probability of infractions.

Agencies can use data to rethink how they deploy enforcement resources and distribute staff. Some areas, like a downtown zone, will require enforcement every day. Others may require only occasional enforcement.

What role can improving compliance play in enhancing social equity?

Compliance includes collections, but it is broader than just people making payments. Compliance can include strategies that help people pay fines, including extended payment plans. It even refers to strategies that allow people to easily contest a parking ticket, such as virtual hearings.

Fine waiver and forgiveness programs are another form of compliance. Cities like Chicago, for instance, have recognized that certain violations carry less social harm, so they have created waiver programs. If you get a ticket for an expired plate and show proof that you have renewed your plate within 30 days, your most recent ticket and any earlier ones will be withdrawn.

The notion of compliance is also inclusive of strategies like day fines, in which transportation agencies align fines with a percentage of a person's daily median household income.

What best practices should cities adopt when procuring or implementing intelligent transportation tools?

Cities have unparalleled amounts of data available today as they look to improve fairness, but what city planners lack is the time to sort through all that data. Cities need to embrace business intelligence and data science to sort through these massive amounts of data from varying sources and really understand what they mean.

Transportation in the United States has a history of being weaponized, as seen by the use of freeways and train lines to redline black and brown communities. Today, we have a real opportunity to change that narrative and promote transportation as a tool for achieving fairness instead of denying it.

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Read full reports and breaking news about career changes across tech-driven roles in government at govtech.com/people.

Denver Hires Data, Security Chief
Ashley Bolton, former CIO for the city of Littleton, Colo., is now serving as the chief data and information security officer for the city and county of Denver.

Texas DIR Appoints Data Officer
The state Department of Information Resources announced that **Neil Cooke** was selected as Texas' chief data officer, a role he had filled in an interim capacity since September. Cooke will oversee the Open Data Portal and the Data Management Advisory Committee.

New CIO Named in Baltimore County, Md.
Baltimore County, Md., has named **Mike Fried** its new CIO. Fried was previously the chief technology and innovation officer for Baltimore city's public library system.


Mike Fried

New IT Leadership for North Dakota
Gov. Doug Burgum in February annouced **Kudlip Mohanty** as the state's new CIO, following Shawn Riley's departure late last year. Mohanty brings 30 years of private-sector IT experience to the role. **Craig Felchle** was also chosen to serve as the new chief technology officer for North Dakota, taking over the job in the wake of Duane Schell's departure Dec. 30.

National Cyber Director Reportedly Stepping Down
Chris Inglis, the first national cyber director, is slated to leave office in the coming months. Principal Deputy National Cyber Director **Kemba Walden** will be stepping in as acting director.

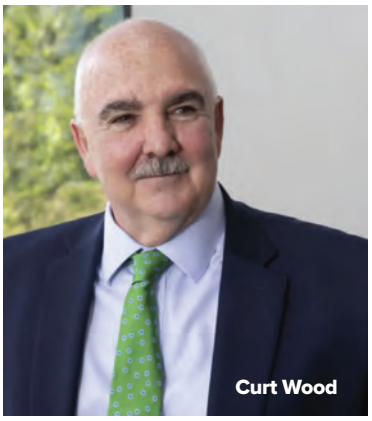
North Carolina Chief Risk Officer Departs
North Carolina Chief Risk Officer **Rob Main** retired from state government at the end of 2022 following a five-year stint with the state's information technology department.


Rob Main

Kansas Governor Fills Two Tech Leadership Positions
Gov. Laura Kelly appointed **Adam Proffitt** as Kansas secretary of administration and **Jeff Maxon** as the interim chief information technology officer following the departure of DeAngela Burns-Wallace.

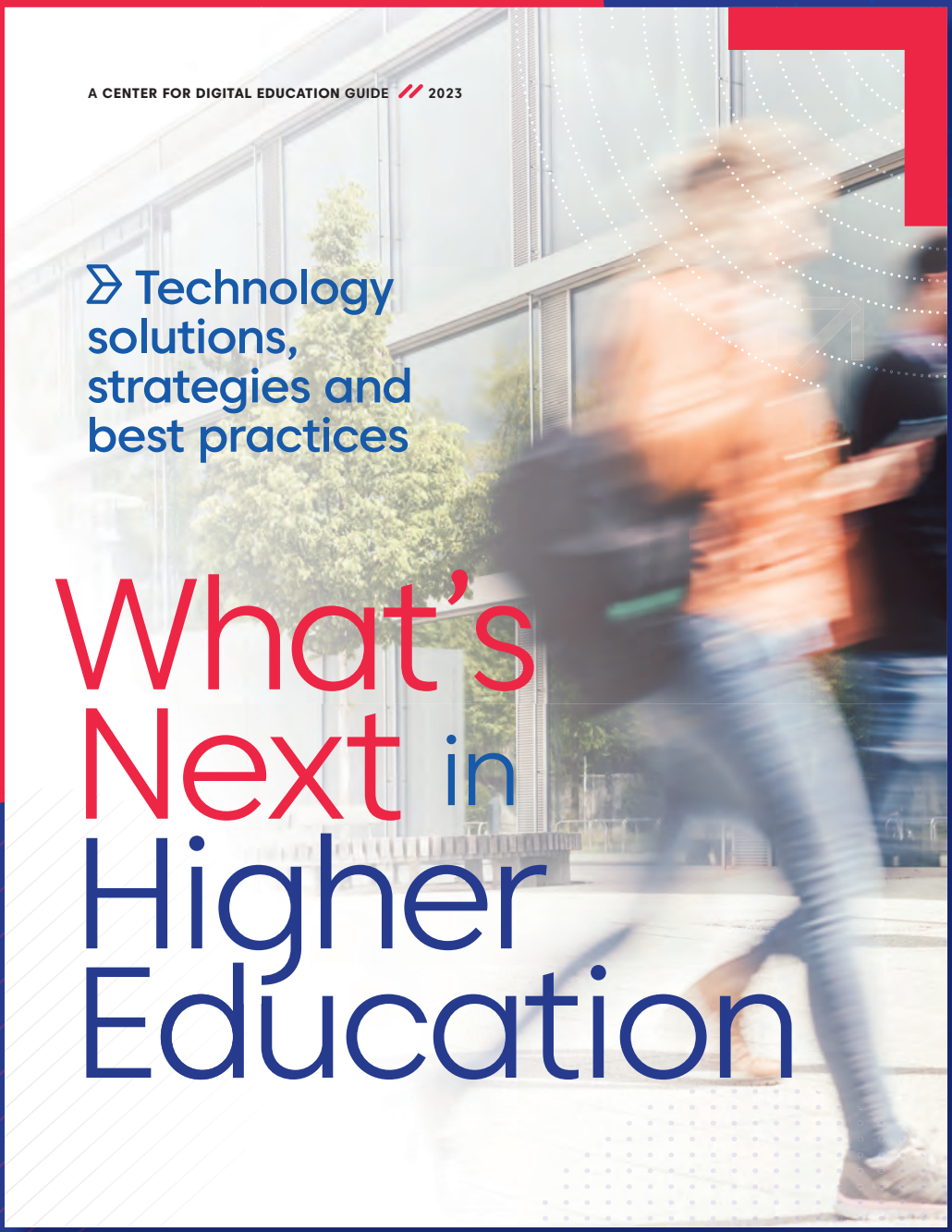
Hawaii CIO Stays on Under New Governor
Hawaii Chief Information Officer **Doug Murdock** will continue serving in the new administration of Gov. Josh Green, the state announced. Murdock was named to the job in 2019.

Massachusetts Names New CIO
Curt Wood announced his retirement as Massachusetts CIO as a new governor took the reins in January, ending a decadeslong career of public service. He was replaced by **Jason Snyder**, who previously worked as the state's chief technology officer.


Curt Wood

Baltimore Hires Its First Digital Services Team Director
Baltimore Mayor Brandon M. Scott announced that **Shelby Switzer** has been hired to take the role of director of the city's new Digital Services Team, formed in September 2022. They report to the city's chief data officer.

Georgia Appoints New CISO
Longtime IT professional **Steve Hodges** was appointed in January to serve as Georgia's new CISO. Hodges most recently served as disclosure officer and senior IT security manager for the state Department of Revenue. He replaces



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David Allen, who stepped down in October.

New CIO Named in Vermont
Gov. Phil Scott appointed **Shawn Nailor** to serve as Vermont's next CIO, a role he'd held in an interim capacity since John Quinn left for the private sector in September. Nailor had been deputy secretary of the state's Agency of Digital Services since 2017.

Maryland CIO Retires, Incoming Gov. Announces Appointments
Michael Leahy stepped down as Maryland CIO Jan. 10 after six years in the position as new Gov. Wes Moore was set to take office. Leahy was replaced by **Katie Savage**, who previously served with the U.S. Department of Defense and within the local government of Chicago. Gov. Moore also announced that **Patrick McLoughlin** would stay on as the state's chief data officer, a position he has held since 2021.

Illinois CIO Moves to Private Sector
Jennifer Ricker stepped down as Illinois CIO at the end of Gov. J.B. Pritzker's first term to take a role


Jennifer Ricker


Tim Roemer

at CGI. Ricker worked in Illinois government for more than 20 years, the past two and a half as CIO. She was replaced in an acting capacity by Deputy CIO **Brandon Ragle**.

Kansas City, Mo., CIO Steps Down
CIO **David Evans** retired from his role as the head of Kansas City, Mo., IT after four years in the position. **Michael Walker**, a veteran of public- and private-sector tech, will serve as interim CIO.

Mississippi Announces New Cybersecurity Leadership
Mississippi tapped **Bobby Freeman** as its first cyber director, where he will lead the state's new cybersecurity unit. Freeman most recently served as a cyber operations officer for the Mississippi Army National Guard.

Philadelphia Director of Innovation Departs
Eliza Pollack, Philadelphia's director of innovation, who co-founded the city's Innovation Management Team, left her role in January. Pollack will now serve as vice president of innovation with Philadelphia-based nonprofit Coded by Kids.

Wyoming CIO Resigns
Bill Vajda stepped down from his position as Wyoming CIO after less than a year with the state's Enterprise Technology Services agency. **Timothy Sheehan**, who served as Vajda's deputy, was named interim CIO.

Arizona CISO Leaves for the Private Sector
Tim Roemer left his role as Arizona's CISO and director of Homeland Security to join cyber skills training and awareness services provider ThriveDX as its president and general manager of Public Sector. As of press time, Roemer's replacement had not been named.

King County, Wash., Appoints New CIO
King County Executive Dow Constantine named **Megan Clarke** the county's new CIO as of January. Clarke was previously assistant CIO for Burbank, Calif., along with other academic and private-sector experience.

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Lightning in a Bottle

A group of European researchers has developed a method of vastly improving the old-fashioned lightning rod. The system fires 1,000 terawatt-level laser pulses per second into storm clouds, intercepting lightning as it forms and directing it toward a 26-foot rod. This laser-driven method can cover areas of up to 590 feet in any direction, making it much more effective than traditional lightning rods, which are limited by their height to catching lightning in much smaller areas.

SOURCE: POPULAR SCIENCE

$700M

Esmeralda County, Nev., could become home to the nation's second lithium mine. The Department of Energy has approved a $700 million conditional loan to mining company Ioneer to build the Rhyolite Ridge Lithium-Boron Project, projected to produce enough lithium for 370,000 electric vehicles annually when it's running at full strength. If the project goes through, the mine likely won't start producing until 2026.

SOURCE: ENGADGET

21%

A report published in January found that the Department of the Interior needs better password management. Auditors were able to crack 21 percent of DOI's 85,944 passwords. Of those, 288 belonged to department employees with high user privilege, and 362 belonged to senior government employees. They also found that 89 percent of DOI's "high-value assets" weren't protected by multifactor authentication.

SOURCE: GIZMODO

Recipe for Success

The Defense Advanced Research Projects Agency (DARPA) is testing a new augmented reality system to help military personnel perform complex tasks with a perhaps surprising pilot: cooking. Perceptually-enabled Task Guidance (PTG) goggles see and hear what the user does, guiding them with AI instructions to complete tasks. The long-term goal is to help less experienced military members assist with medical issues in the field and helicopter co-piloting, for example, but cooking is serving as the perfect demo. It's "a good example of complex physical tasks that can be done in many ways," said Bruce Draper, who manages the program. "There's specialized technology, there are specialized devices and there's a lot of different ways it can be accomplished."

SOURCE: ENGADGET

Send Spectrum ideas to Managing Editor Lauren Harrison, lharrison@govtech.com

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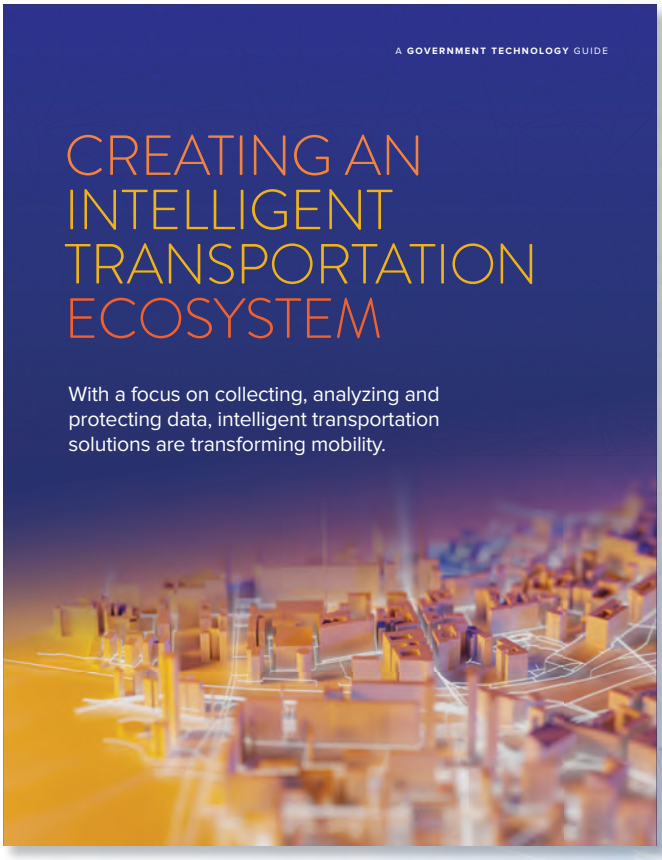
CREATING AN INTELLIGENT TRANSPORTATION ECOSYSTEM:

A Guide for State and Local DOTs



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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 did a group of fish commit credit card fraud?

Answer: Through a computer glitch.

This really is the ultimate phishing scam.

Livestreaming a tank of fish playing video games seems like a harmless, fun idea. That is, until the fish find their way into the settings menu. The Mutekimaru YouTube channel learned this the hard way when the fish it features committed credit card fraud.

The channel shows a livestream of a fish tank with a grid of controller inputs on the bottom. A webcam looking down from the top of the tank connects to a PC running software that tracks the movements of the fish across the grid. The software sends this data to a Nintendo Switch that commits the controller actions into a game, like Pokemon. So the fish are playing, even though they don't know it.

Everything was going smoothly until a game crashed while the fish were playing unmonitored by humans. Instead, the fish had free rein over the entire system when it rebooted, and they eventually found their way into the settings, where credit card information had been stored. They ended up adding 500 yen to the system's eShop account, which fortunately isn't much, about $3.80 U.S. But it could have been a lot worse.

John Deere is branching out into what tech field?

Answer: Satellites.

John Deere and satellites probably aren't a pairing you'd have predicted, but they actually could work well together. Last year the popular agriculture company announced its foray into the satellite business, and it could be a boon for the farming industry.

John Deere is now finalizing a partnership with an industry partner that will make it a serious satellite operator. The goal is to bring enhanced satellite connectivity to John Deere's extensive range of farming equipment, giving farmers a whole new way of monitoring and tracking their equipment and crops. This should yield significant increases in farming productivity and food production and availability.

"We believe SATCOM will unlock significant opportunities in agriculture by enabling farmers to take advantage of innovative technologies that rely on real-time information and communication," said Lane Arthur, John Deere's vice president of data, applications and analytics.

ADOBESTOCK.COM

How much did traffic congestion cost the U.S. last year?

Answer: More than $81 billion.

Traffic congestion in the U.S. got worse over the past year, and drivers paid for it. According to transportation data company Inrix, the average driver in the U.S. spent 15 more hours in traffic in 2022 than in 2021, for a total of 51 hours that equates to $869 in lost time. Additionally, the average driver spent $134 more for fuel last year.

These numbers still reflect the effects of the COVID-19 pandemic though. Inrix found that while vehicle miles traveled in the U.S. increased by 1 percent over 2021, they were still 9 percent below pre-pandemic levels. The company believes this is due to the increased number of employees working from home — 17.9 percent of U.S. workers were home-based in 2021, compared to just 5.7 percent before the pandemic.

Inrix also looked at global data and found that Chicago was the second-most congested city in the world last year. The hours drivers there spent in traffic increased a whopping 49 percent, going up to 155 hours. London took the top spot with 156 hours, a 5 percent increase over the previous year. And Paris came in third with 138 hours, a 1 percent decrease from 2021. Two U.S. cities, Boston and New York, rounded out the top five with 134 hours and 117 hours, respectively.

By Paul W. Taylor

The Promise of the Portal

From full- to self- to synthetic-service government.

Homer Simpson spoke for a generation of legislators and the general public when, in a February 1998 episode, he observed, "Ohh, they have the Internet on computers now." That vibe was very much part of the atmosphere as governments experimented with establishing a presence on the network of networks at the turn of the century.

It seems both quaint and prescient that my first column for *Government Technology*, which appeared 21 years ago this month, celebrated "the portal." It came at a time when there was intense pressure to increase capacity and performance of government service delivery while reducing employee headcount and cost. Sound familiar?

My inaugural column attempted to celebrate and carry forward all that was good about our democratic institutions while hinting at the possibilities of where the Internet — specifically portals — could take us:

"Consider the capitol dome and, in many cases, their virtual equivalents on the Internet — the portal. As the official home of the state flag, the state seal and a portrait gallery of leaders past and present, the capitol building is high on symbolism. It is also, by design, high on function. It is the place where the people's business gets done — supported by a network of operating agencies that stand behind the capitol building with a reach extending across the state.

"The combination is at once compelling and comforting — just watch the first timers approach the grand edifices and enter these civic temples. In the sometimes-overused speech of the Internet, the capitol is the original public-sector portal. As such, it is a useful standard bearer for those who are building 21st-century government. The state capitol represents a declaration of intent that the people in a geographically defined space — which spans multiple cities and counties — will act together as a single entity, sharing the burdens and the benefits of community.

"At best, such a community is bound together by both practical considerations of cost reduction and mutual aid, and by a big idea that is sometimes captured in the state motto — Alaska's 'North to the future'; Kansas' 'Ad astra per aspera ... To the stars through difficulties'; and New Hampshire's embrace of 'Live Free or Die' come to mind. The big idea for the state Internet portal is to provide and support the kind of government that was imagined by the people who first chiseled those words into stone at their respective statehouses, without the constraints of time or space that characterized the earlier era. The Internet collapses geographical barriers, making government available at the time and place of the citizen's choosing."

The intervening years have been hard on those aspirations. Yet, self-service became dominant as full service slipped out of reach for many jurisdictions. While many governments built and operated portals for themselves, a single company grew to partner with 30 states in developing and running their portals. Its self-funded model accelerated adoption and fueled an application arms race. Unlike most arms races, however, this one accrued to the benefit of residents across the country who were able to access an ever-growing universe of online services from their governments.

There have been clear misses. The dot-gov domain and the trust it was intended to engender has not yet become universal. And despite much work and a fair amount of courage to overcome bureaucratic intransigence and inter-agency rivalries, a civics lesson in departmental organization is still necessary to find the services you need. And sometimes the stuff just doesn't work — sometimes when it is needed the most.

Still, the state of self-service government is strong. It proves its value every day, as it did during the worst days of the pandemic. It helps real people do real things around the clock — on their phones! And we may yet see the triumph of synthetic service over self-service. The promise of the portal was to government early this century what AI is to government today. It brings with it the promise of fulfilling the promise of the portal. The dream never dies, just the form factor. gt

Paul Taylor is the executive editor of e.Republic, *Government Technology's* parent company.