SAFE HAVEN

THE GOV TECH MARKET TRENDS TOWARD "BIG TENT" PLATFORMS, OFFERING SHELTER FOR INVESTORS.

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e.Republic

Conversations With Robots

I started working for e.Republic (*Government Technology's* parent company) as a writer almost 12 years ago. I was doing a lot of interviews for case study-style stories on technology deployments. I would later transcribe those interviews word for word to maximize my understanding and faithfully reproduce any direct quotes I ended up using. At the time, AI tools to automate the transcription process fell short — comically short, actually.

What a difference a dozen years makes.

Artificial intelligence, in the ensuing years, has advanced exponentially in its capabilities and ease of use. At *GT*, we report on its growing adoption by public-sector agencies to help identify patterns and automate routine processes, making it possible for staff to reserve more of their time for complex problems. And AI only continues to get smarter, recently demonstrating new capabilities in the creative arts, for example, producing poetry, music and photography that is beginning to rival what humans can do.

In many ways, the pandemic moved chatbots into the "must have" category for government — a force multiplier for agencies that saw dramatic increases in customer inquiries. But chatbots rely on good content. The nature of user questions can evolve as quickly as COVID-19 variants, requiring constant upkeep to remain effective. It's no longer enough to have a chatbot. You have to devote time and resources to making sure it is indeed saving staff time and meeting constituent needs.

Enter the ChatGPT tool from Open AI, an AI-driven chatbot prototype that uses sophisticated natural language processing technology with impressive results. Released in late 2022, it's proof that these tools are getting smarter, earning praise like this from Kevin Roose of the *New York Times*: "ChatGPT is, quite simply, the best artificial intelligence chatbot ever released to the general public."

Dustin Haisler is the chief innovation officer for e.Republic. He follows the evolution of AI and its impact on government and wanted to test ChatGPT's capabilities by asking it questions about how these technologies should be regulated given their vast potential, both positive and negative.

"I thought, how better to look at regulating AI than by asking AI itself?" Haisler said.

What follows is a partial excerpt of Haisler's revealing "interview" with ChatGPT.

Dustin Haisler: How should state and local leaders look at regulating AI systems like you?

ChatGPT: State and local leaders should approach the regulation of AI systems, such as myself, in a thoughtful and measured way. It is important to recognize the potential benefits that AI can bring in terms of improving efficiency, accuracy and decision-making, as well as the potential risks and challenges that it may pose. As such, leaders should consider implementing regulations that balance the need to promote the use of AI with the need to protect the public and ensure that AI systems are used responsibly. This could include measures such as establishing clear standards and guidelines for the use of AI, providing oversight and accountability, and ensuring that there are adequate safeguards in place to prevent misuse or abuse of AI systems. Additionally, leaders should consider engaging with experts and stakeholders to ensure that any regulations are well-informed and effective.

DH: How can state and local leaders mitigate some of the common AI concerns?

ChatGPT: State and local leaders can take a number of steps to mitigate some of the common concerns surrounding AI, including:

1. Establishing clear standards and guidelines for the use of AI: Leaders can develop regulations and policies that outline how AI should be used, including what it can be used for, how it should be implemented, and what safeguards should be in place to prevent misuse or abuse.

2. Providing oversight and accountability: Leaders can establish mechanisms to ensure that AI systems are used in a responsible and transparent manner. This could include creating independent committees or agencies to monitor the use of AI, or requiring regular reporting and audits to ensure compliance with standards and regulations.

3. Engaging with experts and stakeholders: Leaders should seek input from experts and stakeholders, such as ethicists, researchers and members of the public, to ensure that any regulations and policies are well-informed and effective.

The full interview is available online at govtech.com/ChatGPT. gt

Purchasing Power

Recent restrictions on five Chinese telecom companies by the Federal Communications Commission could potentially impact state and local governments more than previous similar bans. A report from CSET found that between 2015 and 2021, at least 1,681 state and local agencies purchased now-prohibited services from the named companies: Huawei, ZTE, Hikvision, Hytera and Dahua. Education accounted for three-quarters of those.

Biz Beat

Beam, whose platform aims to help public agencies administer benefits applications and rent relief programs, among other tasks, raised $6.4 million in a Series A funding round in November. The news was released amid growing concerns of a coming recession and other economic anxieties as governments work to upgrade benefits systems. Beam reports that since the pandemic began in 2020, it has administered more than $180 million to about 300,000 households nationwide.

STREAMLINED

Arizona Business One Stop launched in fall 2022, designed to make creating and operating businesses in the state more efficient. The all-in-one digital platform for tasks like licensing and tax documents reflects a broader trend in government to combine similar applications in a centralized location. Arizona CIO J.R. Sloan anticipated the portal would see 500 to 1,000 daily users and said the next phase of the project will include adding local agency services.

WHO SAYS?

"The question is, how do you get ahead of a narrative that hasn't happened yet? It's the predictability of the misinformation that can be its undoing."

govtech.com/quotejanuary2023

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tech/**bytes**

47%

The percentage of Gen Z who say they trust government leaders, according to a 2021 survey from global communications firm Edelman.

80k

The estimated number of electric vehicles on the road in Texas.

$73M

The total amount of federal grants awarded to nine recipients as part of the Tribal Broadband Connectivity Program.

135k

The number of private tech company layoffs last year through November.

INTELLIGENT TRANSPORTATION

The Integrated Highway
How Intelligent Transportation Can Improve Mobility

Intelligent transportation initiatives can make roadways safer, improve traffic congestion and reduce environmental impacts. **Christopher Montgomery***, digital transformation and cybersecurity strategist for VMware, discusses how departments of transportation and public transit authorities can use technology to improve mobility.*

How will intelligent transportation systems (ITS) shape the future of transportation?

Intelligent transportation has evolved over the years. Today, the concept addresses how transportation systems can advance safety and mobility while taking into account advanced technologies like cloud computing and broadband capabilities. Examples of ITS projects range from smart tolling to connected vehicles to managing traffic flow with video analytics. Intelligent transportation aims to package these projects into a common infrastructure that can be utilized and integrated across states, regions and even globally.

What technologies help support intelligent transportation?

Data is at the heart of all ITS, and cloud computing can play a critical role in data collection, processing and analysis. ITS projects have sensors throughout their environments, and getting that sensor data back to an area where you can take advantage of it is critical. The data needs to be accessed by multiple applications and by multiple users. Cloud computing lcan help achieve these data-driven goals.

Two other technologies that are also proving valuable to ITS are software-defined networking and 5G. Both play a vital role in transporting data from the edge to the cloud.

What strategies can DOT leaders employ when applying for funding from the Infrastructure Investment and Jobs Act (IIJA) or other sources?

It's an exciting time to work in this industry; transportation agencies are now able to receive levels of funding that they have not seen in a long time. To receive this money, transportation organizations will need to have a good business case and a clear explanation of how their projects tie to improving safety and resiliency to yield a better traveler experience.

When possible, transportation leaders should try to develop solutions that could be scaled up to a regional level. Even if the solution starts at a very small scale, leaders should already be thinking about how they could expand the technology in phase two.

Agencies should not paint themselves into boxes with the way that they have always done things. Now is the time to get those innovative pilot projects and proof of concepts funded.

What are some best practices for DOTs as they adopt new digital applications?

First, DOTs need a clear data strategy for every project. Transportation leaders need to know where they want the data to go, who is going to use the data and what type of data-sharing agreements should be in place. It's important to include multiple stakeholders and data users in that discussion.

Second, cybersecurity is going to be critical for ITS projects. Given the integrated nature of ITS and the threat landscape that exists around critical infrastructure, DOTs have to involve cybersecurity experts early on in the process.

Third, building resilient programs is extremely important. Both government leaders and the public depend on solutions once they are in use. This makes it difficult when a system goes offline due to disaster recovery efforts or other unexpected challenges.

Finally, agency leaders should talk to their peers to share best practices and create a center for excellence. This can help them replicate good ITS ideas and avoid the pitfalls that other agencies may have already experienced. Let's not let everybody recreate the wheel. Transportation pun not intended.

Water Ways

An Arizona agency uses citizen scientists to collect data on rivers and streams, a model that could work for others.

The hardest times to stop, take a step back and reassess are often those when a pause and reset are most needed, a paradox that is especially true for hard-pressed state and local officials. When you're in the rhythm of day-to-day work, conceiving new approaches to services and delivery seems like a luxury — but is it?

Meghan Smart, senior scientist from the Arizona Department of Environmental Quality (ADEQ), knows exactly how to creatively stretch capacity. Smart worked her way up in the agency, starting as a sampler and collecting chemistry data on streams and lakes, so she understands how painstaking the work can be. And her current role, protecting water quality, is a broad assignment that extends beyond the capacity of state officials by themselves.

What she needed were more eyes, ears and samplers to ensure that everyone has access to safe water, so Smart began a program that uses volunteers to collect water quality samples, information and photos from streams and lakes throughout the state. The ADEQ AZ Water Watch program not only demonstrates how to protect precious waterways, but also offers a road map for how to get more people invested in the cause while fulfilling the wide range of public services designed to protect health and welfare.

Smart and her colleagues started by identifying gaps the department needed to fill: more data, more people in the field, and a more efficient, mobile and visual way to capture this information. The opportunity for ADEQ is that the volunteers represent a wide range of backgrounds, availability and skills — from college students to retirees to residents simply enjoying the state's recreational opportunities — who could help preserve its waterways in just a few minutes using a free smartphone app.

Smart directly connects the volunteers with the data gaps she needs to address and the issues she needs to monitor, from E. coli to arsenic to trash. For some individuals she provides technical equipment, but the most common technology is a smartphone app. Since photos and data entered into mobile devices incorporate a spatial identifier, the department requires volunteers to upload their findings into the cloud-based tool called Survey123. With the app, volunteers upload photos and answer simple yes/no questions about a nearby body of water.

The diversity of volunteers and different levels of familiarity with technology can be challenging. Even though some people prefer paper-based documentation, ADEQ requires the use of the Survey123 tool. As Smart said, "Use of paper kills a community science program. I am one person, and they're sending me thousands of data points. I need a way to both categorize the information as well as pass the pictures on to the right officials." It was crucial that she paired the creative thinking that led to Water Watch with a tech component; after all, a key feature of this solution is the fact that a "single state official can handle the data" when processed in this way.

Sometimes, government agencies do not engage the public because of the quality of data necessary for an enforcement action. Obviously, an official needs verifiable evidence to act. The Arizona program is multilevel, meaning that Smart and her team evaluate the integrity and quality of the data, using it as a flag to further action. She conducts field and data audits and determines if the quality assurance procedures are in place. In other words, a state official can improve accuracy with more data, while simultaneously using quality control to determine when more and higher quality information is necessary for action.

In some areas a simple photo will do, like if there is trash polluting a stream or disrupting water flow. If the community "can notify us when these streams are flowing or not flowing, that really helps us understand the flow regime to target water quality samples in the future," Smart said. These types of observations from citizen scientists aid the state in management, not just enforcement. Volunteers' sampling work has even helped remove bodies of water from the Environmental Protection Agency's impaired waters list.

As Smart looks to the future, she plans to post aggregated data more frequently and visually, creating story maps that will inform Arizonans and motivate further action as well as helping bring together state, local and nonprofit stakeholders. ADEQ points the way for many agencies charged with monitoring health and safety, from building to restaurant inspectors: Determine the missing data; think about how to expand data collection; invite the community to play a larger role. gt

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.*

INTELLIGENT TRANSPORTATION

Connecting Highways Through 5G & Fiber

The future of transportation will rely on digital applications to create safer, more efficient roadways. The foundation of these applications is a strong communication network. In this Q&A, **Jimmy Kim**, *head of business development for transportation and mobility at Verizon Business,(left) and* **Daniele Loffreda**, *head of virtualized edge solutions marketing at Ciena, discuss how a communication network built on 5G and fiber can support the digitization of infrastructure.*
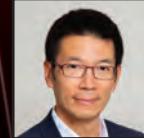
How is technology shaping the future of transportation?

Jimmy Kim: Transportation agencies have started to shift from building more infrastructure, such as bicycle and pedestrian paths, to using technology and data to make the most of the infrastructure they already have.

To reduce traffic incidents, departments of transportation (DOTs) are utilizing data in impactful ways. They are turning to data-driven methods like signal optimization to reduce accidents. Technology is playing a critical role in this transformation.

Daniele Loffreda: Another big challenge is traffic congestion. As they look toward the future, DOTs will be focusing more on improving digital infrastructure like traffic management systems to make traffic flow more efficiently — reducing time wasted for motorists and decreasing environmental impact from pollution.

How can 5G and fiber impact the success of transportation applications?

Kim: To make this digital infrastructure work, DOTs first need the connectivity that enables it. Without basic connectivity to the proper endpoints, any new solution will not be of value.

Loffreda: Together, 5G (or fixed wireless) and fiber provide a one-two punch. Fixed wireless provides broadband-level performance, particularly in remote areas where it is difficult or expensive to build fiber networks. But 5G also requires more cell sites, so you want to get fiber into the ground as soon as possible. Once you have both, it is more cost-effective to get data back to a traffic management center via fiber.

What best practices should DOTs be adhering to as they adopt new digital transportation applications?

Kim: They must have clear communication with and between applications. One way to enhance communication is to put assets in the cloud. Cloud-based applications can provide more secure, reliable communication between endpoints, both internal and external to the agency.

DOTs should also develop standards and policies for data management and exchange. With a concrete strategy for what data they manage versus what they rely on third parties to manage, they can avoid confusion in the long run.

Loffreda: Each new device represents a vulnerability point. DOTs need to think through how to safeguard and ensure the privacy of the data they collect. Agencies should look for cloud-based security software that will support the expansion of their digital capabilities without impeding the performance of their network.

Kim: With over four million miles of open roadway and less than a quarter of the infrastructure already connected, the task of building a connected digital infrastructure can feel daunting. But by taking advantage of every funding source, including the Infrastructure Investment and Jobs Act, agencies can make strides toward blanketing this infrastructure with the fiber and broadband required for a successful transformation of transportation.

Jon Rogers
Director of Strategic Workforce Planning, Indiana Office of Technology

Like most state and local government IT shops, the Indiana Office of Technology (IOT) is working on finding new ways to address staffing. This is where Jon Rogers comes in. Rogers works on workforce development for Indiana with an initiative called the State Earn and Learn (SEAL) program, wherein participants spend a year learning an IT role on the job.

1 What does your role with IOT entail? I handle workforce, including culture, recruitment, skill-gapping, performance management, and use of non-traditional methods to find and retain talent. Since 2020, we've used SEAL as a work-based learning approach to recruit folks from diverse backgrounds, both socioeconomic and professional, and then reskill them into IT. We've hired almost 50 associates.

I've got line cooks, truck drivers, factory workers, a mail carrier, teachers, grocery store employees, and now those folks serve in IOT. They're doing penetration testing, vulnerability management, customer service, operational administration and cloud. We're seeing the power of workplace learning over a 12-month program to bring great citizens in who are passionate about public-sector IT careers, at a time when they are critically needed.

2 Does SEAL help IOT's culture by fostering buy-in? We've seen great gains, especially over the last 12 months. We started at a smaller scale, but hiring managers loved these associates. Word spread, and folks started asking if they could use them on their teams. When we can identify talented and passionate people who want to serve in Indiana IT — and if we treat them with a tremendous degree of dignity and appreciation during their first year — they'll want to stay forever.

We are genuinely grateful they brought their talents to Indiana at a time when government faces challenges around retention and especially retirement. We need people who want to do public-sector work, giving back to people while also advancing their own careers. I'm finding folks at the nexus of that, bringing them in and showing them the love they need. It's reciprocal. They're getting a career they love and working for a place that loves them back.

3 How do you decide where to place people? We assign folks to a specific team in IOT. We want folks to come in and feel part of Team X, not just part of SEAL. This isn't an internship, it isn't fluff; this is work-based learning. I want my people to feel first and foremost like they're part of a team.

Some part of this is done before they come in. I partner with Brooksource — they're our vendor provider for talent — and so I'll say, "Who in the pipeline would fit this role and be good for these skills?" That said, we're not pulling cloud practitioners out of a cloud practitioners pool. This is not staff augmentation; this is work-based learning. We bring them in, take time, develop them, and see if a fit is correct. We've had associates who start in one program convert to another. The door is not shut to that.

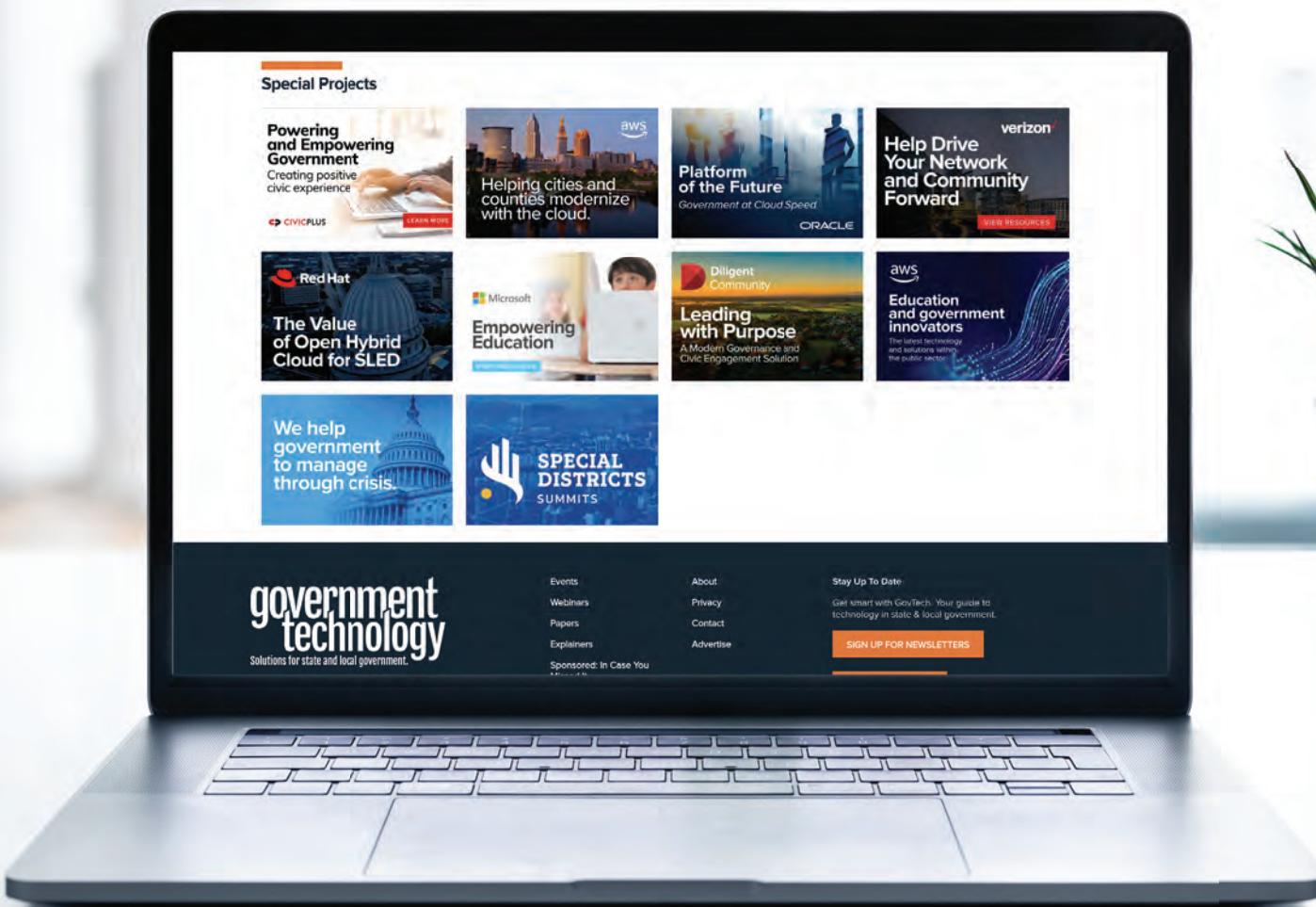**4 Have other states asked about replicating the SEAL program?** I've had conversations with a lot of other states. I've also had conversations with one county out of our 92 so far for them to use a SEAL approach. Out of their four people in IT, three are ready to retire. So what do you do, especially if you have geographic challenges for recruitment?

All of us at the state and local levels are looking down the barrel of the same gun as it relates to IT sector employment. We have so many wonderful people who are ready to retire. We want to thank them for their service, soak in all that knowledge, transfer it to the next generation of talent, and really identify folks who want to make us a home and carry it forward. gt

— Zack Quaintance, Associate Editor
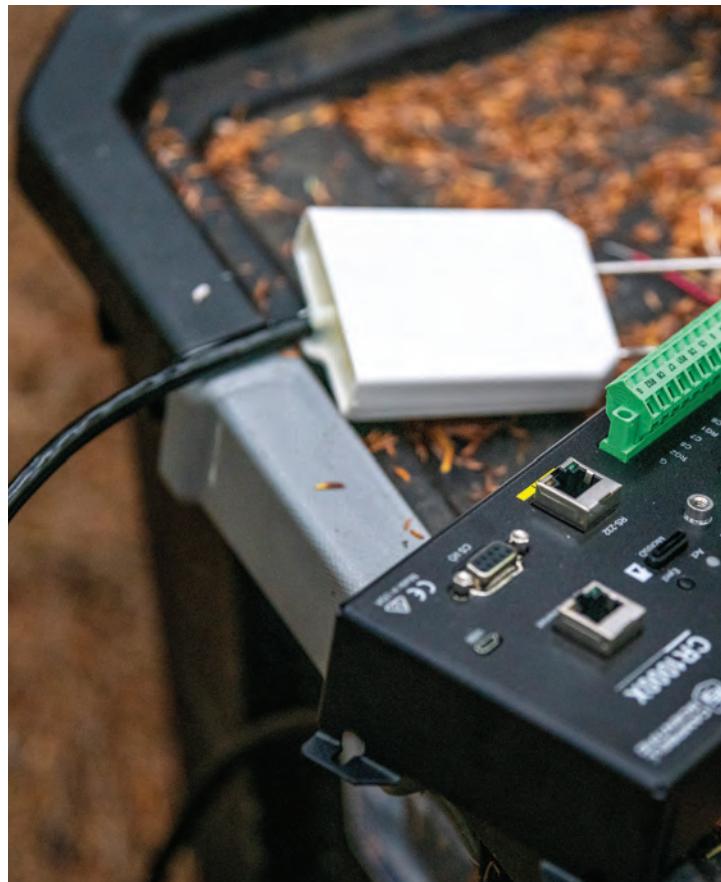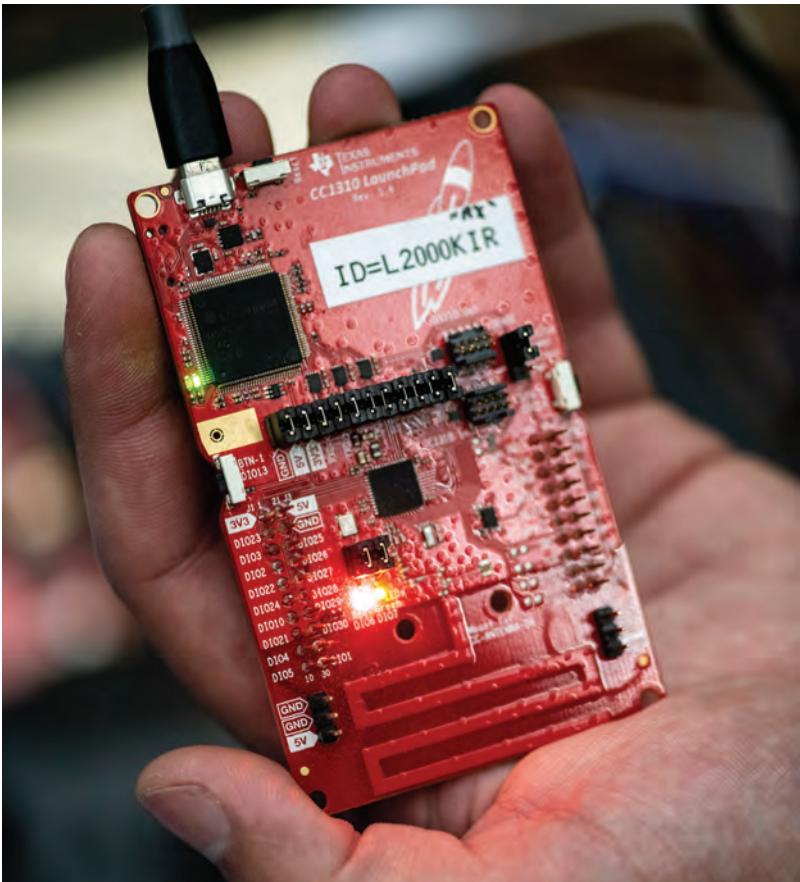
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Dirt Data

Monitoring soil moisture is an important component of both forest management and agriculture, but existing systems need a ton of energy to work well and can be prohibitively expensive for researchers and farmers. But keeping track of soil moisture is essential to keeping ecosystems strong, especially as drought conditions worsen in some parts of the world.

With funding from the National Science Foundation, a new project from the University of Maine's Wireless Sensor Networks (WiSe-Net) lab uses AI and machine learning to make soil monitoring more efficient. Working with researchers from the University of New Hampshire and University of Vermont, WiSe-Net developed a network of AI-powered sensors that learn over time how to better use energy while monitoring soil moisture and processing the resultant data. That means

it will adjust as needed to take advantage of available wireless network resources.

"AI can learn from the environment, predict the wireless link quality and incoming solar energy to efficiently use limited energy, and make a robust low-cost network run longer and more reliably," said Ali Abedi, professor of electrical and computer engineering at the University of Maine and principal investigator on the project.

The technology can also be used for other types of sensors, using the same AI methods to measure things like snow depth.

"Real-time monitoring of different variables requires different sampling rates and power levels," Abedi said. "An AI agent can learn these and adjust the data collection and transmission frequency accordingly rather than sampling and sending every single data point, which is not as efficient."

Upper left: Ali Abedi (center) and the wireless soil moisture sensor with graduate student Kenneth Bundy (left) and local high school teacher Ed Lindsey (right); Upper right: Graduate student Thayer Whitney programs the sensors; Lower left and right: components of the sensors.

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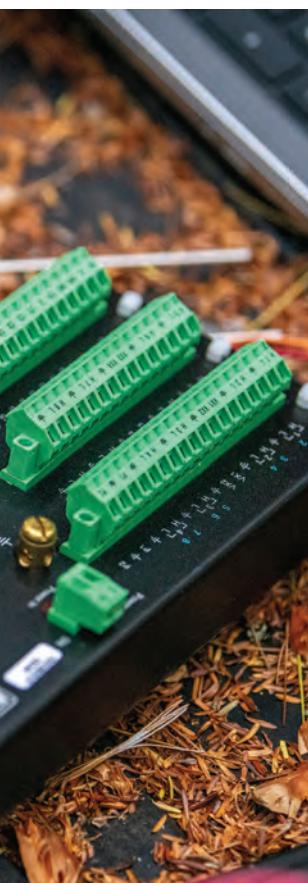
SAFE HAVEN

Managed services and platforms promise to take on more work in 2023 as investors seek the shelter of government from looming uncertainty affecting other sectors.
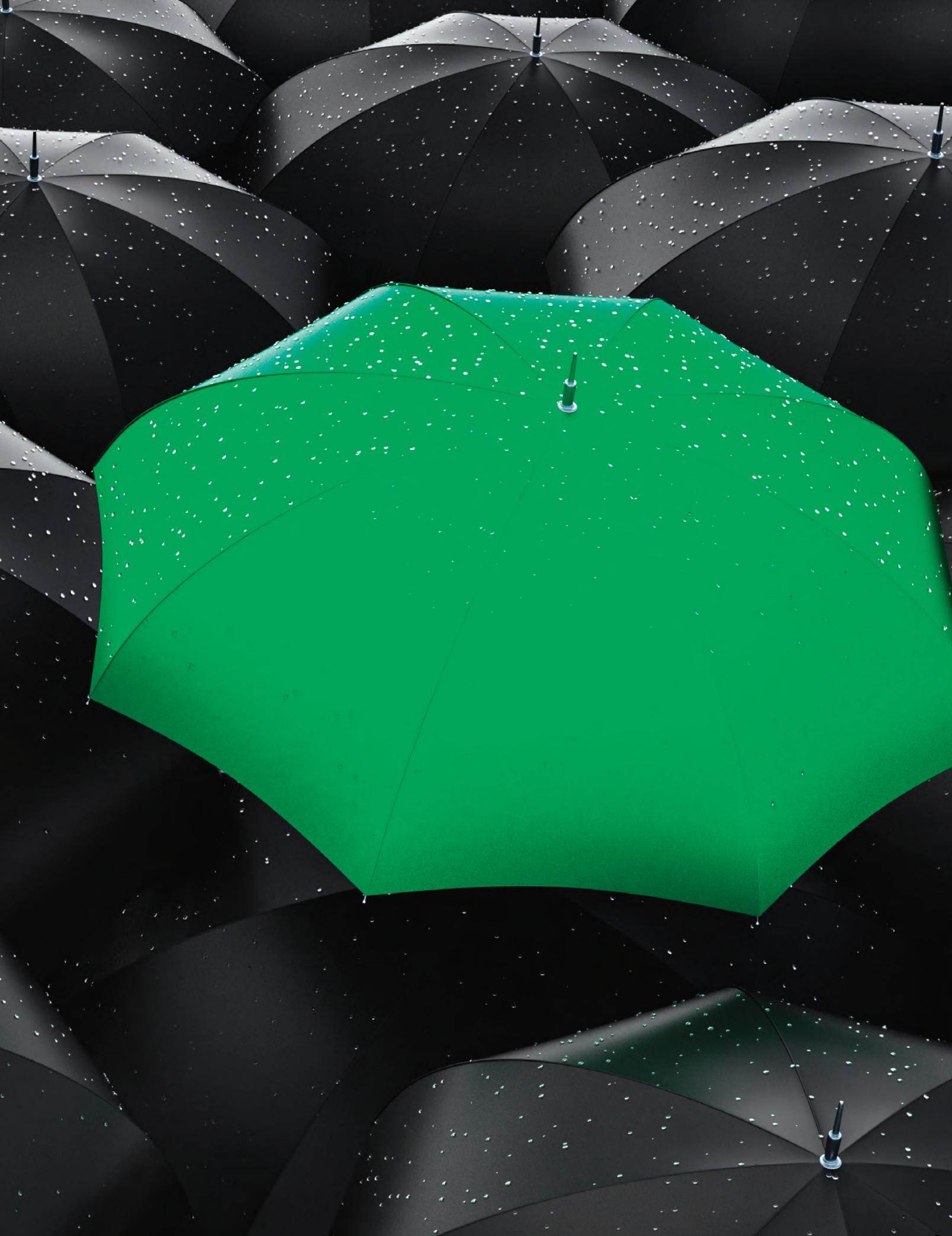
BY THAD RUETER

A few weeks before Halloween, a deal took place that could foreshadow how the government technology industry will look in 2023.

Granicus, which sells agenda, meeting and communications management software to public agencies, said it would buy Rock Solid, known for its citizen engagement tools. The deal marked another step toward what amounts to one-stop shopping for state and local governments in search of the latest digital services.

The spread of big tent platforms — already common in e-commerce — stands among the most notable trends for gov tech as the new year begins. It's one that has certainly caught the attention of many public agency tech leaders, and it promises to help drive acquisitions, mergers and investments in the coming 12 months.

Meanwhile, those investors are looking to the gov tech space as a relatively safe haven for their money as fears of a recession continue to shape markets — and as the industry shows signs of its own slowdown, at least in certain areas. And as all that happens, state and local officials must confront the challenges of hiring and retaining tech talent, a situation that is leading to the growth of managed services by government.

Pandemic and Stimulus

In a sense, gov tech grew up quickly during the pandemic, as IT departments were forced to improvise and innovate. Vendors offered the latest digital tools to help usher in remote work and to bring operations further into the 21st century by expanding online services. Now the pandemic has eased as federal stimulus money flows. Those are among the factors that could cause the business of gov tech to change shape in the coming year.

That's not to oversell the case. But late 2022 offered signs of some meaningful changes on the business and investment side of gov tech, shifts that will potentially impact how state and local agencies buy and deploy the newest digital tools and services.

For instance, while it might be difficult to find an investor or market expert who is not optimistic about the prospects for gov tech in 2023 — especially given all that stimulus money from the Infrastructure Investment and Jobs Act and other sources (see *Follow the Money* on p. 30 for a breakdown of recent federal funding packages) — gov tech transaction volume decreased in Q3, according to an analysis from Jeff Cook, a gov tech investment expert who works as managing director for Shea & Co. Rising interest rates also are making borrowing — and gov tech deals — potentially more expensive.

Even so, no one is panicking.

"I think transaction volumes will slow in the next quarter or two, but those companies that test the market will still be met with strong interest and good valuations," Cook told *Government Technology*. "I also believe that gov tech companies will continue to perform — most operators I speak with talk about how full budgets are and how they expect that to fuel continued growth for the next while. I am also particularly bullish on the public safety side of the market, where funding dynamics are particularly strong."

ADOBE STOCK

Companies listed in **green** are making their first appearance on or returning to the GovTech 100.

100 GOVTECH

120Water
120Water offers cloud-based water management software.
Est. 2016 / 120water.com

3AM Innovations
3AM's mobile command platform helps improve firefighters' situational awareness and safety during emergencies.
Est. 2015 / 3aminnovations.com

Accela
Accela software helps government agencies automate transactions and services in land management, asset management, licensing, and public health and safety.
Est. 1981 / accela.com

Acivilate
Acivilate offers software to help government and law enforcement reduce recidivism.
Est. 2014 / acivilate.com

Aclima
Aclima offers a platform and network of sensors that collect detailed data on air quality and emissions at hyperlocal levels.
Est. 2007 / aclima.io

AINS
AINS provides low-code, cloud-based case management platforms.
Est. 1988 / ains.com
Fast Fact: AINS' product list includes FOIAXpress, aimed at helping governments better track Freedom of Information Act requests.

Airspace Link
Airspace Link helps local governments manage drone use.
Est. 2018 / airspacelink.com

ASTERRA
Asterra uses satellite imagery to monitor underground water systems and detect leaks.
Est. 2013 / asterra.io

Aurigo Software
Aurigo makes software for managing capital projects from planning to maintenance.
Est. 2003 / aurigo.com

Automotus
Automotus uses video technology to improve urban curb management and reduce traffic congestion.
Est. 2017 / automotus.co

Avenu Insights and Analytics
Avenu provides finance and consulting services for government agencies.
Est. 1989 / avenuinsights.com

Axon
Axon creates Taser weapons, as well as body-worn cameras and software for public safety customers.
Est. 1993 / axon.com

Balancing Act
Balancing Act is a suite of tools to help government engage citizens on budget priorities and financial issues. Balancing Act is a product of Engaged Public.
Est. 1998 / abalancingact.com

Binti
Binti's software streamlines the approval process for prospective foster parents.
Est. 2016 / binti.com

Biobot Analytics
Biobot Analytics analyzes city sewage to help understand more about public health.
Est. 2017 / biobot.io

Bludot
Bludot's platform helps city governments analyze the growth of local businesses.
Est. 2018 / bludot.io
Fast Fact: As of summer 2022, Bludot reported having customers in 26 states.

BondLink
BondLink provides tools to modernize municipal bonds and connect cities with investors.
Est. 2016 / bondlink.com

Brandt Information Services
Brandt Information Services offers software for agencies like parks and recreation to distribute licenses and permits for activities like camping and hunting.
Est. 2016 / brandtinfo.com
Fast Fact: Brandt reports 690,000 monthly active users of its platform.

Camino
Camino makes permitting, licensing and remote inspections software for government.
Est. 2015 / camino.ai

Carbyne
Carbyne is a 911 call-handling platform.
Est. 2014 / carbyne.com
Fast Fact: Carbyne raised $56 million in a Series C funding round in September 2022, bringing its total capital raised to $128 million.

Cardinality.ai
Cardinality.ai is an AI-based case management platform for health and human services.
Est. 2017 / cardinality.ai

Casebook PBC
Casebook PBC provides software to help health and human services staff track workflow and clients.
Est. 2017 / casebook.net

CentralSquare Technologies
CentralSquare's platform supports public safety, administration and health-care agencies.
Est. 1979 / centralsquare.com

Citibot
Citibot allows citizens to directly message their governments via text or chatbot to report issues and ask questions.
Est. 2016 / citibot.io

CITYDATA.ai
CITYDATA.ai uses an AI platform to locate mobile users, enhance customer profiles and study geo-behaviors to help improve citizen service offerings.
Est. 2020 / citydata.ai

14%

PERCENTAGE OF 2023 GOVTECH 100 COMPANIES FOUNDED BY WOMEN

Source: Crunchbase

Platform Integration

As those market forces play out, suppliers of gov tech are racing to offer more tools and services to their customers, and set themselves up as reliable partners for government to deliver on its many responsibilities — what Granicus CEO Mark Hynes called a "platform integration strategy."

The company boasts of connecting more than 500,000 government professionals with 300 million opt-in subscribers, a base growing via every acquisition, including one prior to the Rock Solid deal that involved a company focused on public records and compliance workflows.

"Integrated platforms are what technology buyers want," Hynes said. "It shouldn't be incumbent on government IT buyers to have to solve the integration problem. Why shouldn't we centralize that concept?"

This goal of providing a single platform for government use is nothing new, of course. But it seems to have gained importance in 2022 and promises to become even more prominent in gov tech work in the new year. Steve Ressler, a market expert and managing partner at The Brydon Group, points to companies like Granicus and CivicPlus — reportedly the largest provider of websites to governments — chasing the all-in-one model used by

218

NUMBER OF ACQUISITIONS BY 2023 GOVTECH 100 COMPANIES

Source: Crunchbase

gov tech giant Tyler Technologies as evidence of the trend.

"Some [public agencies] are looking for one provider to do all these services, and build deeper relationships with fewer groups," he told *Government Technology*.

Aiming for the Middle

A view from the gov tech trenches confirms that point — and illustrates what it means for public agencies as such all-in-one platforms gain popularity.

Salt Lake City CIO Aaron Bentley told *Government Technology* that until relatively recently, the traditional idea was for tech departments to do things on their own.

"We thought we were special, like every city," he said.

But that attitude is evaporating, in large part because of pandemic experiences, along with broader consumer expectations set by apps and other realities of digital life. The increasing need for the latest cybersecurity protections is also driving interest in platforms, according to Bentley.

"We don't need to build everything specific to us," he said. "We look for partners. We have no desire to do in-house development. We are moving as much as possible to the cloud so that we can focus less on triage and more on governance."

That means more openness to the all-in-one platforms that gov tech suppliers are constructing. But that openness brings some questions, such as how to avoid being locked into a platform that, say, offers little flexibility, or which has some "best of breed" features, as Bentley put it, but also some mediocre ones.

"That is probably the hardest part of the job, to be honest," Bentley said.

The solution is to communicate and work with platform vendors, and to "aim for the middle" when it comes to the city's tech expectations. That is, encourage or pressure vendors with an attractive platform to build up the mediocre parts, and to realize that not every part of the tech machine will be top of the line. The benefit is having fewer vendors to manage, but being able to work more closely with those vendors,
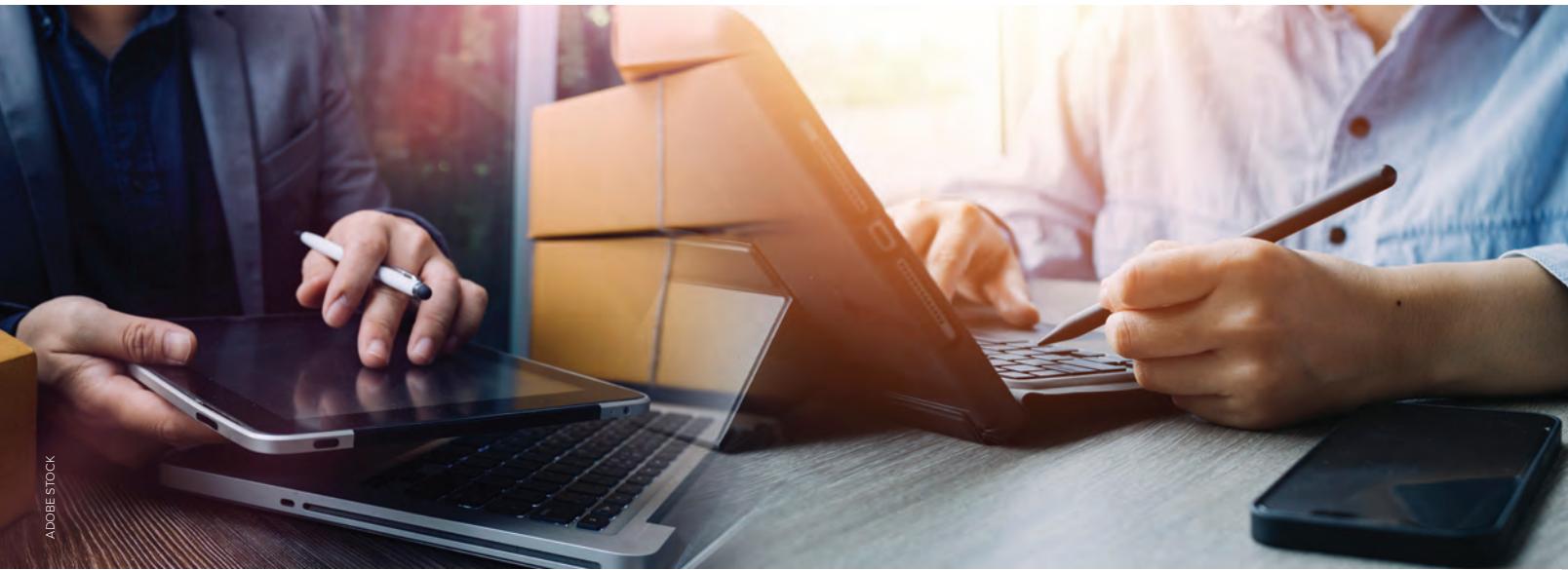
ADOBE STOCK

Companies listed in green are making their first appearance on or returning to the GovTech 100.

100 GOVTECH

CivicPlus
CivicPlus builds digital services for local government, including custom websites, scheduling and civic engagement tools.
Est. 1994 / civicplus.com

Civix
Civix is a software and consulting firm whose major government clients include secretaries of state and airports.
Est. 1979 / gocivix.com

Clariti
Clariti offers cloud-based government permitting and licensing software.
Est. 2006 / claritisoftware.com

Clear Ballot Group
Clear Ballot provides a suite of transparent voting system solutions.
Est. 2009 / clearballot.com

ClearGov
ClearGov aggregates city financial data to help citizens and local officials understand and visualize how tax dollars are being spent compared to other jurisdictions.
Est. 2015 / cleargov.com

Column
Column's platform streamlines public notification processes and compliance.
Est. 2019 / column.us

Conduent
Conduent provides solutions to streamline services like child support payments and Medicaid benefits.
Est. 2017 / conduent.com

coUrbanize
coUrbanize provides an online marketplace for undervalued and abandoned urban real estate.
Est. 2013 / courbanize.com

2
THE AVERAGE NUMBER OF FOUNDERS OF A 2023 GOVTECH 100 COMPANY

Source: Crunchbase

Daupler
Daupler's software simplifies customer service and response for utilities.
Est. 2017 / blog.daupler.com
Fast Fact: Daupler customer Oakland, Calif., reports $2.25 million in annual savings using the system.

EasyVote Solutions**
EasyVote Solutions delivers a software-as-a-service platform to city, county and state election offices to help manage the election process.
Est. 2013 / easyvotesolutions.com

Edmunds GovTech
Edmunds GovTech provides ERP solutions for local government.
Est. 1972 / edmundsgovtech.com

Esper
Esper offers cloud-based technology to help state governments digitally centralize policymaking.
Est. 2013 / esper.com

Esri
Esri provides a geospatial platform and related tools for public agencies.
Est. 1969 / esri.com

First Arriving
First Arriving provides tech solutions for emergency services and public safety.
Est. 2013 / firstarriving.com

Flock Safety
Flock Safety uses fixed cameras to help law enforcement find vehicles and reduce crime in communities.
Est. 2017 / flocksafety.com
Fast Fact: Co-founder and CEO Garrett Langley had the idea for Flock after experiencing property crime in his Atlanta neighborhood.

Forerunner
Forerunner offers a floodplain management platform to help increase community resilience in the face of climate change.
Est. 2018 / withforerunner.com
Fast Fact: Both Forerunner co-founders previously worked as design researchers at MIT Media Lab's City Science group.

GCOM
GCOM offers SaaS technologies to support health and human services.
Est. 2005 / gcomsoft.com

Government Brands
Government Brands offers cloud-based contactless payment services for government.
Est. 2017 / governmentbrands.com

GovPilot
GovPilot is a web-based management platform developed exclusively for local government.
Est. 2014 / govpilot.com

Granicus
Granicus provides cloud-based technology solutions for creating, managing and distributing live and on-demand streaming media content.
Est. 1999 / granicus.com

GTY Technology Holdings
GTY Holdings is a gov tech acquisitions company comprising smaller startups: Bonfire, CityBase, eCivis, OpenCounter, Questica and Sherpa.
Est. 2016 / gtytechnology.com

gWorks
gWorks' software solutions include platforms for municipal asset management, GIS and payroll.
Est. 1999 / gworks.com

HAAS Alert
HAAS uses mobile data to alert drivers (and cyclists) of approaching emergency vehicles through vehicle-to-vehicle notifications.
Est. 2015 / haasalert.com

Hayden AI**
Hayden AI puts cameras on city vehicles to gather data and spot traffic violations.
Est. 2019 / hayden.ai

IPS Group
IPS Group globally delivers smart city tech within an Internet of Things framework.
Est. 1994 / ipsgroupinc.com

he said. It's about finding that "middle ground and trying to consolidate vendors in some way."

More Outsourcing

It also means more reliance on outsourced public agency tech work. Indeed, the growth of managed services promises to also dominate more of the gov tech business in 2023.

Helping to drive that trend are the changes taking place in the public agency workforce — changes that will likely help steer how gov tech programs are rolled out and operated.

A *Government Technology* analysis, for instance, found that the number of state and local government tech jobs in the U.S. declined in 2021, the first time that has happened since 2014. Private-sector salaries are attracting people who might otherwise work in public agency IT departments, especially as inflation cuts into the purchasing power of paychecks. In all, gov tech workers made up approximately 3.6 percent of the tech industry workforce in 2021, according to the most recent figures.

Worker availability — and the innovation that can come from being able to hire top talent — is a bigger issue in certain parts of gov tech than others, and those needs promise to also steer or

8%

THE PERCENTAGE OF 2023 GOVTECH 100 COMPANIES THAT ARE PUBLICLY TRADED

Source: Crunchbase

perhaps in some cases slow the industry in the new year.

"It's hard to take on new projects with government workforces getting stretched thin," said Ressler, The Brydon Group managing partner. "And you still need someone to champion the project internally."

Not only that, but the increasing importance of cybersecurity and the growing complexity of public safety operations — trends influencing various parts of the gov tech industry — also serve to boost opportunities for managed services providers.

For instance, it's not hard to find consideration or support for using some federal cybersecurity grant money to

pay for managed services that local governments can share. As that plays out, the building costs and multimedia demands of emergency dispatch are making officials look toward managed services programs in which one IT department supports multiple public safety agencies.

One company riding this wave is Indiana-based Knowledge Services, which won its first government customer in 2008. It has since built up its focus on SLED (state, local and education) contracts, and it now serves some 20 states and more than 150 cities, President Joe Bielawski told *Government Technology*.

Factors favorable to the company's government business include the ongoing migration of public agencies to the cloud, along with rising cybersecurity risks like ransomware — and labor woes.

Expect more managed services providers to compete for gov tech business in 2023, though it may be best to also temper expectations, at least according to investment expert Cook.

"No question that there is a clear trend toward governments outsourcing whatever they can," he said. "I think you'll continue to see growth in the category, though I don't see any major

ADOBE STOCK

Companies listed in **green** are making their first appearance on or returning to the GovTech 100.

Itron
Itron offers technology and services focused on measuring and controlling energy and water use.
Est. 1977 / itron.com

ITsimple
ITsimple provides no-code platforms for government websites and social media channels.
Est. 2017 / itsimple.io

iWorQ Systems
iWorQ's workflow software helps manage local government systems including permitting, code enforcement and inspections.
Est. 2001 / iworq.com
Fast Fact: According to iWorQ, it was the first company to offer a software-as-a-service solution to city and county governments in 2001.

JusticeText
JusticeText offers evidence management software to analyze video data for criminal cases.
Est. 2019 / justicetext.com
Fast Fact: In September 2022, JusticeText closed a $2.2 million seed round with funding from Bloomberg Beta, True Ventures, Reid Hoffman, John Legend and Michael Tubbs.

Kofile
Kofile digitizes government services so information is secure, accessible and scalable.
Est. 2009 / kofile.com

Lacuna Technologies
Lacuna helps local governments manage public transit and transportation.
Est. 2018 / lacuna.ai
Fast Fact: Lacuna has raised $33.5 million since its launch.

$5.1B
TOTAL FUNDING RAISED BY 2023 GOVTECH 100 COMPANIES
Source: Crunchbase

Lexipol
Lexipol offers policy-writing services, digital wellness tools and other solutions for public safety organizations.
Est. 2003 / lexipol.com
Fast Fact: In October 2021, ownership of Lexipol moved from The Riverside Company, which bought it out in 2014, to another private equity firm, GTCR.

The Library Corporation
The Library Corporation offers automation software services for public libraries and school libraries.
Est. 1974 / tlcdelivers.com
Fast Fact: Co-founder Annette Harwood Murphy has served as The Library Corporation's president and CEO for nearly 50 years.

Mark43
Mark43 software allows police to collect, manage, analyze and share information.
Est. 2012 / mark43.com

Maximus
Maximus software and services help governments administer health, child, family and community development programs.
Est. 1975 / maximus.com

MCCi
MCCi is an end-to-end service provider that automates records and documents management with low-code and no-code solutions.
Est. 2003 / mccinnovations.com
Fast Fact: More than 1,300 organizations reportedly use MCCi's platforms.

Merit
Merit offers a verified identity platform to help agencies manage personnel data.
Est. 2015 / merits.com
Fast Fact: Merit counts among its clients the California Governor's Office of Emergency Services, Miami-Dade County, Fla., and the Louisiana Workforce Commission.

Motorola Solutions
Motorola Solutions provides equipment for data communications and telecommunications.
Est. 2011 / motorolasolutions.com

Munetrix
Munetrix provides tools for visualizing and using financial information from municipal governments.
Est. 2010 / munetrix.com

mySidewalk
mySidewalk's platform allows cities to use aggregated demographic and socioeconomic data in planning and operations.
Est. 2010 / mysidewalk.com

NEOGOV
NEOGOV offers a centralized HR platform for government.
Est. 1999 / neogov.com

Numetric
An analytics company focused on transportation data, Numetric works with departments of transportation to put data sources to work for safer roads.
Est. 2015 / numetric.com

OpenGov
OpenGov software allows interested parties to access, explore and share finance and budget information held by government.
Est. 2012 / opengov.com

Passport
Passport specializes in enterprise business applications and payments for parking and transportation.
Est. 2010 / passportinc.com

PayIt
PayIt simplifies doing business with federal, state and local governments through its mobile transaction and payment platform.
Est. 2013 / payitgov.com

Polco
Polco provides a survey tool for governments to solicit and analyze community feedback.
Est. 2015 / polco.us
Fast Fact: Polco has a customer base of more than 1,400 local governments and in October 2022 raised $14 million.

catalysts that would dramatically accelerate growth in 2023."

Government as Sanctuary

As the gov tech spotlight grows, and companies try to capture a particular corner of the market, investors are looking not just for lucrative innovations but a relatively safe place for their money.

It's hardly a stretch to predict that worries of a recession common in 2022 will carry over into 2023. State and local agencies can count on not only federal money but also the virtual guarantee of being able to pay their bills via those grants and their tax collections.

That, of course, provides a sense of confidence as privately held tech organizations — including members of so-called Big Tech — announced layoffs and released relatively pessimistic economic outlooks based on retail and other metrics as 2022 drew to a close. Companies that sell to public agencies can also offer investors other positive traits: Many are still founder-owned and have relatively lean business models and what amounts to loyal and reliable customers, according to Cook.

But nothing is 100 percent recession-proof, Ressler pointed out. Any economic backsliding could indeed hit gov tech, even if the timing might lag behind other sectors. And different parts of the government market could experience any recession differently, too.

16

## AVERAGE AGE IN YEARS OF 2023 GOVTECH 100 COMPANIES

Source: Crunchbase

"The good news is that companies will continue to invest in gov tech, which is seen by many investors as very resilient," he said.

A New Generation

But what about the innovation to come in 2023? What do other investors have to say about the general sense of gov tech and longer-term changes that are looming?

Investment, after all, is one thing. Securing contracts to bring in revenue is another, especially given that government often still moves more slowly than most other types of organizations. In addition, officials who make tech decisions for government have not traditionally been as open to risk as their counterparts in the private sector, and that can present challenges to innovators and entrepreneurs.
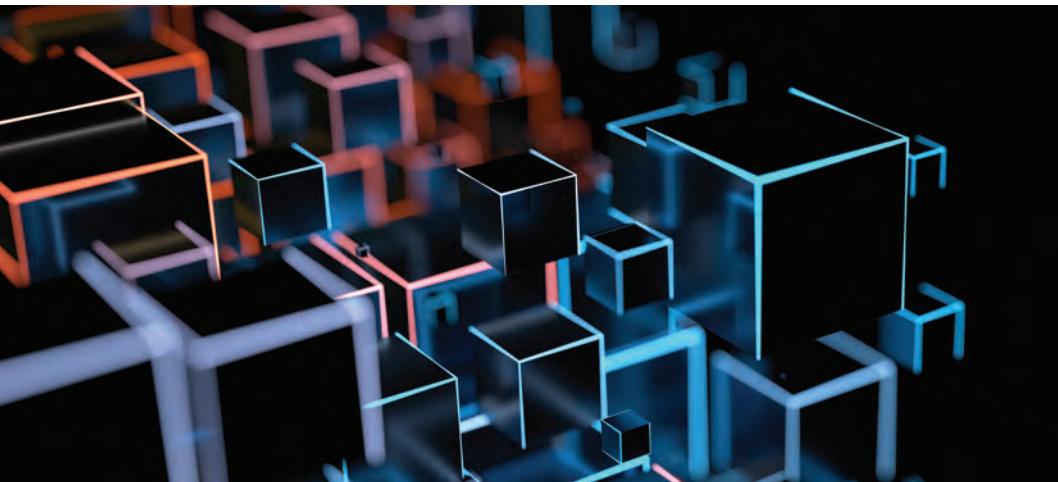
PromisePay
PromisePay offers governments an online platform to collect resident payments.
Est. 2017 / promise-pay.com
Fast Fact: Promise Pay's platform offers users flexible payment plans for rent, parking fees and utilites.

ProudCity
ProudCity's software provides cities with websites and online government services.
Est. 2016 / proudcity.com

Quicket Solutions
Quicket provides a cloud-based data management and operational intelligence platform for public safety, code enforcement and justice agencies.
Est. 2013 / quicketsolutions.com

RapidDeploy
RapidDeploy offers a cloud-based computer-aided dispatch system.
Est. 2013 / rapiddeploy.com

RapidSOS
RapidSOS uses technology to rethink emergency communications and is working on a platform to predict emergencies before they occur.
Est. 2012 / rapidsos.com

Rave Mobile Safety
Rave Mobile Safety provides communication technology for public safety.
Est. 2004 / ravemobilesafety.com
Fast Fact: In August 2022, Rave partnered with fellow GT100 company RapidDeploy to launch a tool to help California public safety agencies share data and improve collaboration during emergencies.

Replica
Replica uses "synthetic" location data to analyze urban transit patterns without compromising privacy.
Est. 2018 / replicahq.com

Sagitec Solutions
Sagitec provides custom pension, provident fund, unemployment insurance, health-care and life sciences software.
Est. 2004 / sagitec.com

Companies listed in **green** are making their first appearance on or returning to the GovTech 100.

598

TOTAL NUMBER OF INVESTORS IN 2023 GOVTECH 100 COMPANIES

Source: Crunchbase

Schneider Geospatial
Schneider Geospatial offers GIS products including appraisal and permitting services to state and local governments.
Est. 1962 / schneidergis.com
Fast Fact: Schneider reports serving 23 million users nationwide and about one-fifth of all U.S. counties.

SimpliGov
SimpliGov automates government workflows to help agencies work more efficiently.
Est. 2018 / simpligov.com

SOMA Global
SOMA Global offers a public-safety-as-a-service platform for systems like computer-aided dispatch and agency interoperability.
Est. 2017 / somaglobal.com

Spatial Data Logic
Spatial Data Logic's municipal management platform automates government workflows.
Est. 1997 / spatialdatalogic.com

Springbrook Software
Springbrook Software supports local government financial systems, including budgeting and utility payments.
Est. 1985 / springbrooksoftware.com

SST
SST develops ShotSpotter gunshot detection and location technology to help reduce gun violence in cities.
Est. 1996 / shotspotter.com

Streamline
Streamline helps build public-facing and internal websites for special districts.
Est. 2015 / getstreamline.com
Fast Fact: Streamline counts more than 800 special districts among its customers.

Swiftly
Swiftly works with cities and transit agencies to harness real-time data to optimize services.
Est. 2014 / goswift.ly

Symbium
Symbium's interactive mapping platform helps property owners understand whether they can build accessory dwelling units.
Est. 2018 / symbium.com

ThirdLine
ThirdLine provides government with no-code risk assessment, auditing and monitoring tools.
Est. 2021 / thirdline.io
Fast Fact: ThirdLine was one of 12 startups included in the CivStart accelerator's 2022 cohort.

TrueRoll
TrueRoll helps maintain property tax rolls by identifying unclaimed and unqualified homesteading exemptions.
Est. 2018 / trueroll.io

Tyler Technologies
Tyler provides end-to-end information management solutions and services for local, state and federal government.
Est. 1966 / tylertech.com

Ubicquia
Ubicquia makes hardware and software for smart streetlights.
Est. 2014 / ubicquia.com

UrbanFootprint
UrbanFootprint compiles municipal data and uses AI to help developers make informed decisions.
Est. 2015 / urbanfootprint.com

Varuna
Varuna's dashboards gather water utility data and make predictions and recommendations for improvement.
Est. 2018 / varuna.city

Velosimo
Velosimo offers integration software to help governments connect different services.
Est. 2018 / velosimo.com
Fast Fact: Velosimo raised $11 million in July 2021, a funding round led by Macquarie Capital Principal Finance.

Verra Mobility
Verra Mobility offers smart transportation solutions like tolls and traffic cameras.
Est. 1987 / verramobility.com

VertexOne
VertexOne provides on-premise and cloud-based customer management software for utilities.
Est. 1996 / vertexone.net

Visionary Integration Professionals
VIP makes business strategy software for governments and corporations.
Est. 1996 / trustvip.com

Waterly
Waterly's software manages water and wastewater data and operations.
Est. 2017 / waterlyapp.com
Fast Fact: Waterly was part of the CivStart startup accelerator in 2020.

Zencity
Zencity's platform aggregates and analyzes citizen feedback for local government.
Est. 2015 / zencity.io

** Disclosure: The parent company of Government Technology *is an investor in EasyVote and Hayden AI through e.Republic Ventures.*

Those observations stemmed from discussions at the State of GovTech 2022* conference in Arlington, Va., in October, where investors met with entrepreneurs, government officials and others to talk about the post-pandemic gov tech landscape and what's in store for the coming year. The conference stood as one of the main points of reference in late 2022 about gov tech business trends going forward.

One big theme was the quickening rate of change in gov tech. People who work in public agencies are getting more comfortable with the latest tools and services offered by all those startups and other vendors looking to partner with state and local government. Innovation, after all, often depends less on fresh capital than people — those who will craft forward-leaning tech visions and champion new ideas within public agencies.

293

TOTAL FUNDING ROUNDS RAISED BY COMPANIES ON THE 2023 GOVTECH 100.

Source: Crunchbase

That's what Chris Massey, an operating partner at Craft Ventures who focuses on government relations, spoke about when mapping out the gov tech future.

"We are seeing a new generation of government employee," he said.

And that new generation has the potential to meet residents' ever-evolving digital expectations.

"In two and a half years there will be citizens voting who never knew life without an iPhone," said Josh Rogers, senior vice president at Advantage Capital. "I hope it accelerates the innovation cycle." 🟧

*Government Technology *was a partner in the State of GovTech 2022 conference.*

An Enterprise Approach to Connected Government

Introduction

Governments have long sought to meet constituents where they are with digital information, services and processes. Despite significant progress, agencies are still addressing technology and integration gaps to meet rapidly growing constituent expectations.

Agencies grapple with disparate systems and solutions that prevent streamlined workflows and data aggregation. Constituents want seamless, integrated payment options for digital services. And digital equity remains a work in progress for many governments and their constituents.

"Everybody wants an Amazon-like experience," says Tamara Dukes, vice president of strategy and growth for Tyler Technologies' NIC Division. "About seven years ago, we took a hard look in the mirror and realized that alongside our government partners we've done a great job of digitizing these silos — but that's not enough."

As CIOs assess modernization priorities, their goal is to move from limitations to results. Overcoming technical debt, burdensome outdated systems and digital services gaps requires foundational technology tools that provide seamless delivery of services and a common constituent experience across the enterprise. This paper outlines strategies CIOs and other decision-makers can follow to better meet constituent needs while increasing organizational ROI through data-driven, efficient operations.

Shifts in Digital Government

While agencies have come a long way, ongoing barriers threaten the continued growth of new solutions to meet constituent needs.

In many states, a shift to federated IT models has led to agencies and departments developing and deploying their own digital services.

"While most states started out with centralized solutions, departments often have their own budgets and IT staff, which has resulted in disparate solutions," Dukes says. "For example, many states have told us they have no idea how many payment processors they have." The multiplicity of standalone payment solutions requires CIOs to ensure each method is compliant with PCI and other regulations. "We're seeing that pendulum swing back to enterprise payment processing because they've got to minimize the risk," Dukes says.

Beyond the payment situation, siloed applications, solution providers and application development environments contribute to a more complex environment. This impacts agencies' ability to effectively safeguard systems and data against rapidly evolving cybersecurity threats.

For constituents, the most visible result of these trends is the lack of a unified digital experience. Constituents often have inconsistent experiences when interacting with different services or departments. "There's a true divide between agencies: the haves and the have-nots," Dukes says. "DMVs have fantastic solutions, but then you have other departments rocking a 1999 website."

A Unified Experience

The roadmap for overcoming these ongoing challenges has been understood for years. "One of the things we've been emphasizing is there should be a single constituent experience," says Teri Takai, senior vice president of the Center for Digital Government (CDG). "CIOs are finding a much greater need to integrate across government."

To do so, technology leaders need to address specific gaps in their

enterprise infrastructure, including the following components:

■ Central identity and authentication. Systems that allow constituents to log in once to access multiple services improve the user experience. Behind the scenes, they also allow governments to collect the information they need to get a holistic view of each constituent — from driver's licenses and personal property taxes to professional licenses and other fees. "It's still a challenging thing to do, but we're getting there," Dukes says.

■ Digital equity. Making digital services accessible to all constituents involves ensuring that government sites and services can be accessed on mobile devices and in multiple languages. But true digital equity also requires governments to simplify the processes and the language involved in doing business with them. "We've got to get rid of acronyms and complicated instructions," Dukes says. "Our research consistently shows that people believe government is too confusing and needs to be simplified."

■ Customer support. Many governments stood up chatbots during the pandemic to meet unprecedented demand for services. But to meet constituent expectations shaped by their experiences with the private sector, chatbots and other support tools need to leverage artificial intelligence to mature and improve. This will allow individuals to more quickly get the answers and information they need, Dukes says.

■ Resiliency. While some governments used cloud services to rapidly implement individual services during the pandemic, others struggled to meet demand for services like unemployment benefits. Going forward, governments need an agile enterprise strategy so that any service they offer can respond to unexpected changes in demand or policy without overwhelming systems.

CIOs should consider an enterprise approach to modernization, matching unique agency needs with a portfolio of capabilities.

"Having a common toolset for everybody is the most efficient and scalable solution," Dukes says. "That's where the enterprise approach comes in."

The Enterprise Approach to Government Experience

An enterprise approach allows CIOs and other leaders to clear technological hurdles in an agile and scalable way. Moreover, adopting an enterprise approach doesn't involve replacing every existing system and starting from scratch.

"This is not about building out unique bespoke applications, but bringing the pieces together," Takai says.

A scalable enterprise strategy can integrate existing solutions and add the building blocks required to create the foundation for new

In Virginia, Scaling to Serve Resident Needs

When the pandemic hit, Virginia turned to cloud-based solutions to respond to the dramatic spike in unemployment claims and rent relief. NIC helped the commonwealth deploy a mobile unemployment claim solution — which was used by 75% of those who filed for unemployment insurance — and an integrated call center to process the remaining applications. All told, more than 11 million claims were processed. Constituents could use a mobile app to check on the status of their claim and file ongoing weekly claims. The same mobile portal helped manage claims to the Virginia Rent Relief Program, which disbursed nearly $1 billion in payments between 2020 and 2022 to help residents remain in their homes.

An enterprise approach allows CIOs and other leaders to clear technological hurdles in an agile and scalable way.

2

services. This strategy can simplify system management, eliminate security risks, and connect siloed departments and agencies. By taking an enterprise approach, "you're not trying to deal with multiple technologies," Takai says. "APIs bring the technologies together in a way that allows you to build a public-facing digital experience, provide consistent security across digital services and share data among disparate applications because they've been integrated."

A Roadmap for Government

Governments should assess their current services and solutions across disparate agencies — applications, payment providers and the underlying infrastructure. They should also evaluate the current constituent experience to understand where gaps exist and prioritize new services. Before moving forward, agencies should consider the critical components required for an enterprise approach, each of which builds on the ones before it to deliver an integrated constituent experience:

■ **Foundation.** The core of an enterprise solution is a flexible, scalable platform with an administrative interface allowing governments to integrate existing technologies with the enterprise-level components that follow.

■ **Identity.** Enterprise solutions should integrate a new or existing identity and access management solution across multiple applications and services. This component

Access Indiana: One Login, 98 Systems

Need to schedule an appointment to renew your driver's license? Check the status of a state tax refund or result of a COVID-19 test? Register to vote?

In Indiana, residents can access 98 services through a single login and password at Access Indiana.[1] There are nearly as many platforms and systems behind all these services across different departments and agencies. To deal with this complexity, Access Indiana leverages industry standard protocols to integrate systems ranging from NIC solutions to those powered by Salesforce, PeopleSoft and Microsoft platforms, as well as numerous custom solutions developed by individual agencies.

improves the user experience by providing a single login and helps governments track constituent use across multiple departments and services.

■ **Payments.** As with identity, a common payment solution integrated across multiple applications and services improves the user experience by allowing constituents to save payment details for multiple services. An integrated enterprise solution also simplifies compliance and management for governments while helping them understand constituent interactions across multiple departments and services.

■ **Constituent engagement.** Software that brings together information from common identity and payment solutions can help governments build what Dukes calls a "third level of identity" — a comprehensive profile of constituent interactions with government that, in turn, helps simplify front-end and backend processes.

■ **Data and analytics.** Applications that generate insights from the comprehensive profiles mentioned above can provide data on how constituents use government services, helping identify gaps and areas for improvement.

■ **Low/no-code development.** Addressing service gaps can be done more quickly and cost effectively with technology that allows government employees without programming experience to develop digital services. "With just a few hours of training, government agencies can build websites and services without any help from IT," Dukes says. Low/no-code systems also help with challenges in recruiting and retaining IT talent by providing tools and processes that can be replicated across multiple agencies and departments, saving both time and money.

Each of these pieces of the puzzle is essential to deploying an enterprise system. With a foundational core capable of

3

integrating solutions and scaling across multiple agencies and services, governments can bring together existing systems — such as cloud applications or an existing identity or payment solution — and adopt the remaining ones from multiple providers. Cooperative purchasing agreements that bring together multiple vendors simplify the integration of components.

With an enterprise solution in place, CIOs can improve the constituent experience by using the low/no-code environment on an agency-by-agency basis to tackle low-hanging fruit — "getting the easy stuff done and getting every single form online," Dukes says. The foundation also provides the opportunity to think bigger. "You have the building blocks to build creative solutions to more complex problems," she says.

Critical Connections

With an enterprise platform, constituents no longer need to navigate a wide range of service experiences, interfaces and approaches to get things done. Instead, they'll be able to log in once — from any device, anywhere —

and do everything from pay their water bill to renew their driver's license. For governments, the platform provides an opportunity to deliver services more efficiently and securely, without the challenges of managing and integrating siloed systems across agencies and departments.

CIOs will have to utilize a collaborative, consultative leadership style to drive the use of the common building blocks of enterprise technology among agencies. Gaining buy-in involves evangelism and illustrating the benefits of the enterprise approach.

Essentially, technology leaders should offer agencies the "easy button," Dukes says.

"I start almost all of my conversations about what has changed and what hasn't changed in terms of digital government," she says. "A solid foundation that everyone can use simplifies the challenges going forward."

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

Tennessee Uses Low Code to Modernize Case Management

For decades, the Tennessee Office of Inspector General relied on a combination of physical case files, spreadsheets and emails to track and manage its civil and criminal cases. These approaches were not only outdated but also scattered across disparate and siloed systems.

The office used a low-code platform developed by Tyler Technologies to develop and implement a civil and criminal tracking system within nine months, bringing together data from multiple legacy systems — as well as spreadsheets and paper files — into one readily accessible platform.[2]

1. in.gov/access/
2. For more, see https://www.tylertech.com/resources/resource-downloads/issue-brief-low-code-high-impact

Produced by: **government technology**

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Sponsored by: **NiC**

Expertise meets innovation — Explore what's possible with Tyler + NIC Since early 2021, Tyler and NIC have worked together to create the industry leader in digital government and payment solutions. Together, Tyler and NIC focus on driving positive outcomes for government and the communities and people they serve through broad services, platforms and technology offerings. **Learn more about Tyler and NIC's off-the-shelf products and tailored services.**
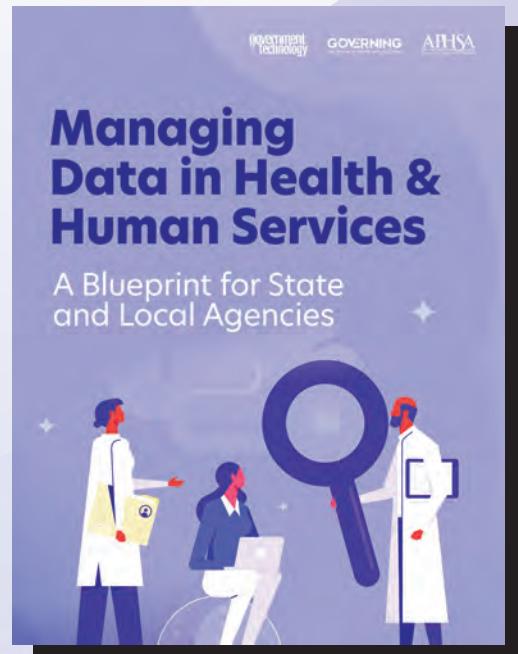
Follow the Mo

Since the pandemic began, the U.S. government has passed four laws that approve spending $7.6 trillion in pandemic relief, infrastructure investment and economic stimulus.

When the U.S. Congress passed the Coronavirus Aid, Relief and Economic Security (CARES) Act in March 2020, it was the largest spending bill ever passed by the federal government, allocating $2.2 trillion in economic stimulus money. In December of that year, Congress broke that recently set record with a consolidated appropriations package that totaled $2.3 trillion, made up of $1.4 trillion in routine funding and $900 billion in economic stimulus. A few months later, in March 2021, Congress passed the American Rescue Plan Act (ARPA), which authorized $1.9 trillion in stimulus. And in November 2021, they passed the $1.2 trillion Infrastructure Investment and Jobs Act (IIJA).

To illustrate the scale of this spending, it is roughly equivalent to 30 percent of the gross domestic product (GDP) of the United States, a little bit over twice the GDP of India and equivalent to the combined GDP of the world's 147 poorest countries, using the latest figures from the International Monetary Fund's World Economic Outlook.

ney

CARES. ARPA. IIJA. We break down the major federal funding packages and how they're being put to use by state and local government. BY ANDREW ADAMS

$7.6T in Four Major Spending Packages

$2.2T

$2.3T

$1.9T

$1.2T

CARES Act
MARCH 2020

Economic Stimulus
DECEMBER 2020

ARPA
MARCH 2021

IIJA
NOVEMBER 2021

Where did all of this money go?

Both the CARES Act and ARPA focused heavily on coronavirus relief, and approximately $713 billion was allocated to state and local governments. As of early November 2022, more than 99 percent of that had been distributed to the relevant agencies, according to the Committee for a Responsible Federal Budget's COVID Money Tracker.

COVID-19 relief bills included billions for transit, election security and education.

These funds have various stated purposes. ARPA's State and Local Fiscal Recovery Fund is meant to both maintain services that might have been interrupted by the pandemic as well as invest in long-term growth for communities. The CARES Act's Coronavirus Relief Fund is more narrowly focused on direct costs related to the pandemic. The Local Assistance and Tribal Consistency Fund is a general revenue enhancement program for tribal governments and some counties.

ARPA put $350 billion into the State and Local Fiscal Recovery Fund, though as of September 2022 only $148 billion of that has been allocated at the state level, according to the National Conference of State Legislatures.
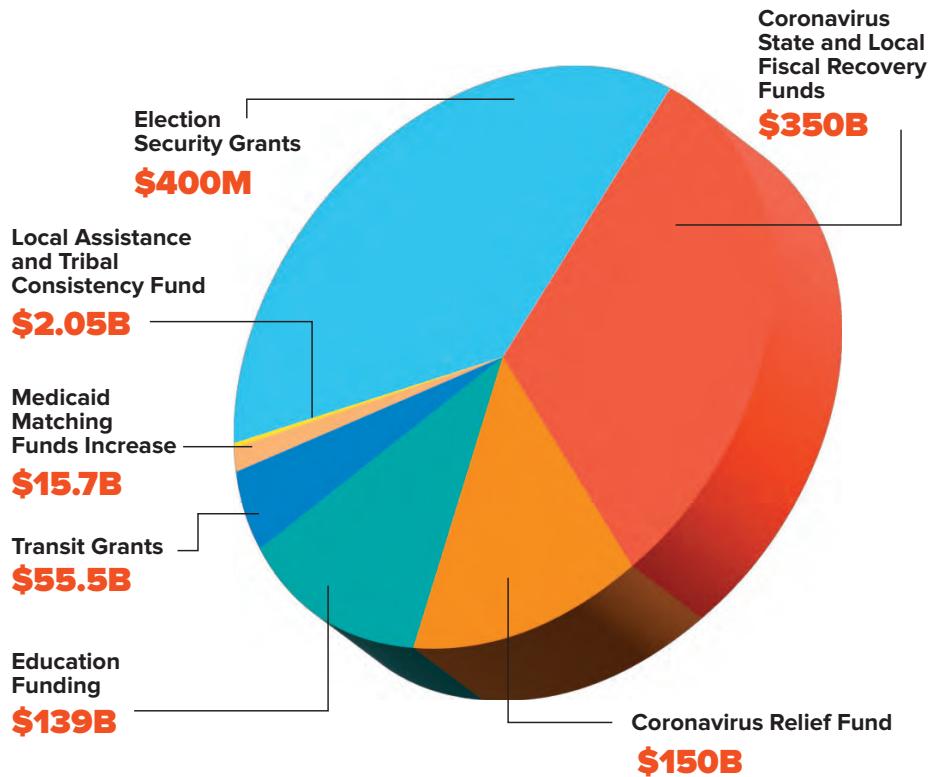
Different states have allocated different amounts of their total ARPA dollars, with some, like Minnesota, only allocating a third of its disbursed ARPA funds while others, like New York, Indiana and Montana, allocating all of theirs.

Election Security Grants
$400M

Coronavirus State and Local Fiscal Recovery Funds
$350B

Local Assistance and Tribal Consistency Fund
$2.05B

Medicaid Matching Funds Increase
$15.7B

Transit Grants
$55.5B

Education Funding
$139B

Coronavirus Relief Fund
$150B

Source: Committee for a Responsible Federal Budget

ARPA funds aren't fully allocated, a year and a half in

Percent of ARPA funds allocated

0% 25% 50% 75% 100% 100%+
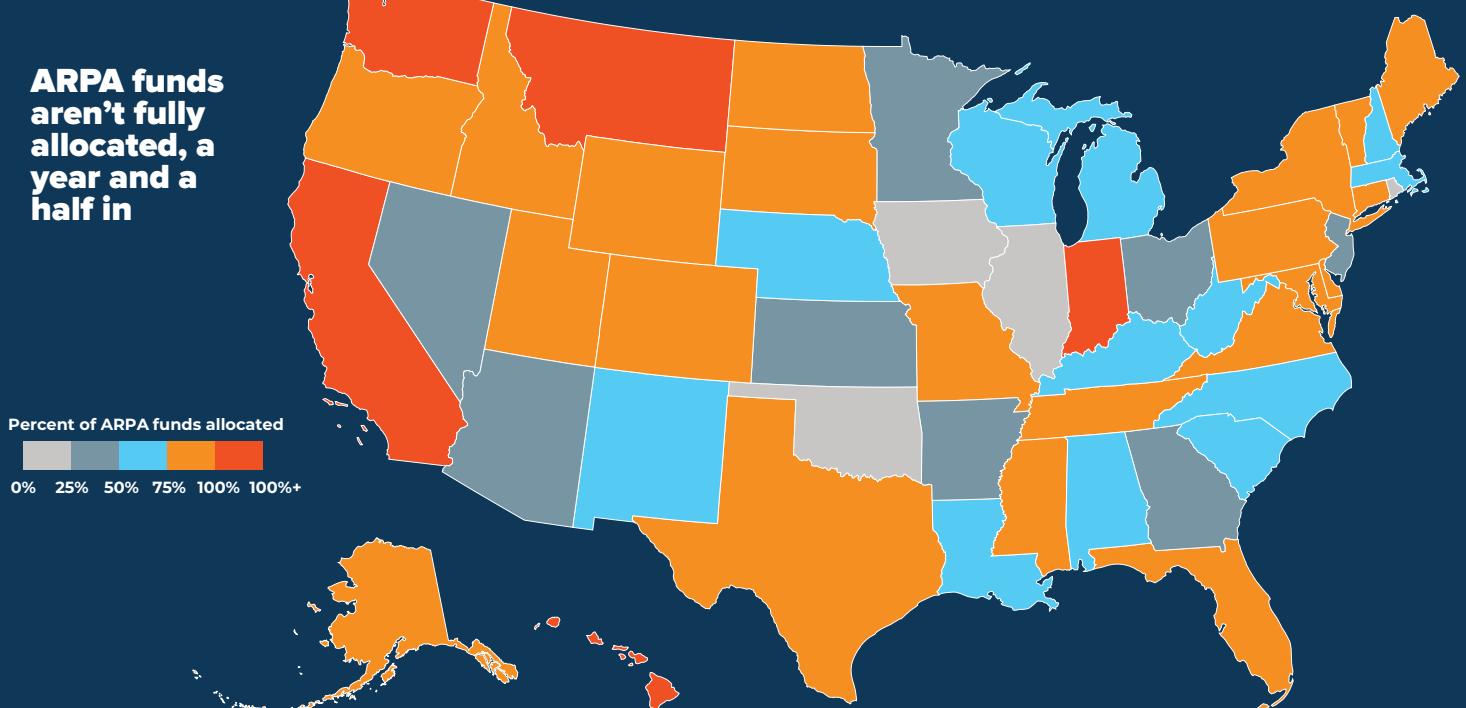
These funds went to a variety of places, with the largest slices of the pie being $31.6 billion going to state operations and $28.5 billion going to infrastructure. A notable slice of $8.5 billion went to fund broadband projects. Together with the $10 billion Coronavirus Capital Projects Fund, these have funded projects in Colorado, California, Hawaii and more.

As recently as November 2022, Massachusetts earmarked $50 million in ARPA funding for broadband expansion programs facilitated by the state's Executive Office of Housing and Economic Development and the Massachusetts Broadband Institute. These programs are in the process of selecting partner organizations from around Massachusetts to participate in long-term planning exercises and to launch local programs to boost digital literacy, Wi-Fi access and modernizing Internet access in public spaces, among other things.

Montana used ARPA funding to kickstart its ConnectMT broadband expansion program. The program is currently in the process of distributing up to $266 million in grants that will be used to deliver new high-speed broadband services to unserved and underserved communities in the state. The state also used the funding to contract Lightbox to set up a broadband map, joining a cadre of other states this year in developing interactive broadband tools.

The state has also applied some if its funding from the IIJA to the ConnectMT program.

"Awarding project funding to qualified applicants will create jobs and stimulate the economy while moving us closer to expanding access to reliable broadband for all of Montana," said Misty Ann Giles, director of the Montana Department of Administration.

Unprecedented funding for cyber

Though a fraction of overall spending, these laws authorized billions of dollars in cybersecurity, though much of it was directed toward the federal government itself. ARPA contained $1.85 billion for cybersecurity, with $1 billion going to the General Services Administration, $650 million to CISA and $200 million to the White House's Digital Service.

But state and local governments are getting their due thanks to IIJA, which brought with it some tech-heavy investments, including $1 billion in grants to be awarded over the next four years to boost state, local and territorial government cybersecurity.

The 2022 grant program has ended, though it only accounts for $185 million in grants for state and local agencies and $6 million in grants for tribal governments. This money will be disbursed between state and local governments so that agencies in each state receive at least $2.19 million, with more money available for agencies in larger states. Texas and California have the largest pools of money to draw from, with $8.5 million and $8 million available to them respectively.

More money will come through this program in future years. In FY 2023, there will be $400 million in funding to the program, with $300 million in 2024 and $100 million in 2025, the program's final year.

IIJA Cyber Funding for State and Local Government

Year	Amount
2022	$191M
2023	$400M
2024	$300M
2025	$100M

"Securing the nation's cyber ecosystem requires a whole-of-society approach, and that includes the crucial work that state, local and territorial governments do in partnership with the federal government every day," said National Cyber Director Chris Inglis in a September 2022 press release announcing the launch of the program.

One of the hallmarks of the early stages of the grant program is the requirement that recipients establish a Cybersecurity Planning Committee, which might be a retooled grant management team or a new body formed in response to the program. These committees will be responsible for developing a cohesive cybersecurity plan as well as assisting other groups in coordinating cyber efforts. gt

Windfalls for transit and sustainable tech?

There is another source of federal funding that might pique the interest of technologists in the government sector: the Inflation Reduction Act, which was signed into law in August 2022.

That bill contains $369 billion aimed at funding energy security projects and addressing climate change, particularly in western states, which have been affected by ongoing drought.

The bill accomplishes this by funding or directing agencies to create more than 89 programs aimed at climate change. The program with the most funding of these, according to a Congressional Research Service analysis of the bill, is the Greenhouse Gas Reduction Fund through the Environmental Protection Agency.

Over the next 10 years, this program will make $27 billion in grants available to states, municipalities and tribal governments to provide financing and technical assistance to low-income and disadvantaged communities to deploy zero-emission technologies.

How Iowa Built a Better Chatbot

Ten to one. That's the state of Iowa's return on investment in chatbots and artificial intelligence (AI).

This impressive ROI reflects a simple desire: Answer Iowans' questions quickly and easily when they visit the state's websites. Iowa's tenfold payback illustrates the possibilities for states looking to modernize and streamline communications with constituents. It also shows the value of a user-centered approach to transforming the constituent experience.

The Challenge:
Providing Information ASAP

Iowa may be known for its agrarian past, but its leaders have their eyes on a technology-enabled future.

"In many ways, they're ahead of much bigger states in thinking about how their constituents get services," says Steve Boberski, chief technology officer for Genesys Public Sector, which helped the state implement an AI-powered chatbot system. "They have a vision."

That vision helped transform the user experience for visitors to iowa.gov, the state's online hub. Before the upgrade, iowa.gov had a live-chat option, but the website had one glaring shortcoming: It could handle only one live chat at a time. For the entire state.

"We were significantly throttled in our ability to respond to questions from the public," says Iowa eGovernment Services Coordinator Dawn Connet. Before the chatbot project, questions that came into iowa.gov via live chat were answered by the state's reference librarians, who stored answers to the most common questions in a spreadsheet. If they couldn't find an answer there during a live chat, they looked facts up by hand.

The overworked librarians were just one part of the communication challenges Iowa needed to resolve. Connet and her colleagues in the state Office of the CIO also wanted to shift to a self-service model that would make it easier for people to find their way to multiple state websites.

The state also employs more than 26,000 call center agents handling 800,000 calls a week. When the COVID-19 pandemic hit, Iowa desperately needed help easing the workload on its call center agents. "People needed answers — they were overwhelming our call centers," Connet says. Her team knew chatbots could answer basic questions and keep call agents focused on responding to more difficult queries.

But they knew bots would not be enough. The state also needed:

- **An AI-powered knowledge base** to automate responding to questions at scale
- **A consistent user experience** across multiple state websites for departments including Corrections, Transportation and Motor Vehicles
- **An alternative** to requiring website visitors to sift through pages of online PDF files to get their questions answered

Technologies from Genesys helped the state resolve these issues.

The Solution:
Implementing Live Chat and an Automated Knowledge Base

Genesys software enabled the state to provide self-service solutions for visitors to iowa.gov and nearly two dozen agency websites. Genesys chatbots and live-chat software answer questions quickly in a fluid, easy-to-use interface. An automated knowledge base built on common questions and answers is iteratively growing and learning, thanks to language-processing AI algorithms.

Chat-enabled agency websites have an identical icon people can click to start chatting. A standard user interface ensures chatting works the same way on each site. Easy questions are answered automatically by the bot; more difficult queries are forwarded to contact center agents.

Iowa's experience with its Department of Corrections shows the value of AI-enabled automation to constantly learn and improve the question-and-answer process. "People often ask what they can wear when they visit an inmate," Connet says. But the DOC website's search would come up empty when people entered that search query. How could this be true? The DOC staff's reply, according to Connet: "The people we serve are 'offenders,' not 'inmates.'"

An AI-empowered knowledge base understands the context of these questions, ensuring the chatbot provides people with the information they need.

The Genesys platform also includes extensive reporting capabilities to help agency leaders find ways to improve service.

"Our dashboard helps us understand the public and the volume of things that are most important to them," Connet says.

Security is baked into the chatbot technology. When a user enters sensitive personal information, such as a Social Security number, the software masks it. "The live agent doesn't see it, and it doesn't get stored in the database," Connet says. "There's no risk there from a security perspective."

Connet says the state has also relied on Genesys for valuable training and support. "They're teaching us how to write for chat, how best to structure the questions and how to work with AI. We didn't have that knowledge and experience."

Iowa's technologists have worked hard to quantify the financial impact of chatbots, live chatting and the AI-powered knowledge base.

The Results:
Iowa's Tenfold ROI

Iowa's technologists have worked hard to quantify the financial impact of chatbots, live chatting and the AI-powered knowledge base.

"We assume that every time AI answers a question through chat, it's going to save one phone call to our staff," Connet says. Each automated reply represents five minutes an agent would have spent on a real-time call, she says. "We assign a dollar amount to this staff time across the enterprise. We're finding that for every $1 we invest in licensing for the platform, we get a return of $10 in staff time."

In addition to the financial ROI, since deployment the Genesys system has helped the state:

- **Eliminate 750 hours of call handling,** freeing staff to focus on other pressing public concerns.
- **Deliver quicker assistance** to residents, driving strong self-service scores from users on multiple state websites.
- **Handle more than 56,000** information requests across three of the state's most frequented websites.
- **Host roughly 1,000 chats per month** on iowa.gov and 3,000 chats per month for the Department of Transportation. During the pandemic, chats spiked to 15,000.

Boberski says Iowa achieved these results by taking the smart approach to AI and chatbots.

"Everybody starts out with good intentions, but we've seen a lot of AI deployments falter, especially with chatbots," he cautions. The biggest problem, he says, is when agencies launch a chatbot and think their work is done. Instead, he says, they need to monitor the data generated by the chatbots and continually iterate their strategy. "It's a virtuous cycle. You deploy this thing and then you have to keep it fed."

Conclusion

With forward-looking leadership and a strong technology partnership with Genesys, the state of Iowa made it easier for people to find the information they need from chatbots, while escalating more complex requests to staff experts. Now the state is evaluating the potential rollout of the solution across every website it has.

Iowa's technology leaders have a clear vision and solid strategy for getting where they need to be. "They understand their challenges and they know what the outcome is, which is making the experience constituent-centric and not agency-centric," Boberski says. "That drives a lot of their success in this project."

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

Ready for Takeoff

Automation is helping airports meet their daily operational needs while also impacting their wider communities.

By Julia Edinger / Staff Writer

Airports are increasingly turning to emerging technologies to improve the airport experience for customers and employees alike — and automation is taking center stage.

In recent years, some have come to consider airports as testing grounds for new technologies, from tech to combat the COVID-19 pandemic to facial recognition. While some regulatory questions still remain, the use of emerging technologies in the public sector is likely to continue.

At Cincinnati/Northern Kentucky International Airport (CVG), the airport's innovation team sees the implementation of new technologies as a process that evolves based on societal changes and economic needs, explained Naashom Marx, CVG's director of strategic innovation.

From autonomous luggage-transporting vehicles to food delivery robots, Marx said Avidbots

— autonomous robotic cleaning equipment — has been the most impactful. In addition to keeping the airport clean, the deployment has created an opportunity for airport staff at all levels to better understand automation, which also helps to simplify future implementations of autonomous technology.

The airport has also adopted IoT sensors, which have helped create what Marx describes as "the heartbeat" of the airport. Meanwhile, EASE, a data integration platform, offers a comprehensive view of operational information. These tools, Marx explained, will be increasingly important as older aviation professionals retire and the airport works to strengthen the workforce.

"This is not just playing with toys," Marx said. "It's a recruitment tool. It's a retention tool — not only for CVG, but also the region."

Jessica Yip, COO and co-founder of A&K Robotics, said that thinking about the workforce needs of the future has helped shape the implementation of the company's products. A&K is an autonomous micromobility company recently put to the test by the Hartsfield-Jackson Atlanta International Airport (ATL) in collaboration with Southwest Airlines. As part of the project, self-driving robot pods transport people with limited mobility so that they can more easily navigate the long distances often found in large airports.

Yip said that both ATL and Southwest Airlines have been evaluating how to address the growing demand for mobility assistance. Many factors contribute to this challenge — including an aging population and an increase in travelers following travel restrictions implemented during the COVID-19 pandemic.

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Yip explained that one of the driving factors is that most mobility assistance services today rely on manual labor for execution. For this reason, the turn to autonomous micromobility products is closely tied with the labor shortage. As such, the A&K pods have been designed with the user experience in mind, to be intuitive both for passengers and for staff that will be integrating them into their workflows.

Airports influence adoption of technologies in the communities in which they operate, serving as a major regional economic driver, she said.

"How I see this is that airports are ultimately like smart cities," she said. "I see a lot of potential with airports as a microcosm for smart cities that we will live in in the future. ... And so, mobility, accessibility and transportation are going to be key in terms of the sustainable communities that we live in in the future."

The technologies that airports use sometimes expand outside of the airport itself. For example, Phoenix Sky Harbor International Airport (PHX) now offers passengers a chance to use a Waymo autonomous vehicle service as a Trusted Tester participant between the airport and downtown Phoenix. Currently, these rides are being offered with an autonomous specialist in the vehicle.

Aman Nalavade, product manager for Waymo, said this is something that Phoenix residents or visitors can participate in voluntarily through the mobile app. This allows the company to ensure accessibility and safety in the coming months, and ultimately will lead to greater confidence when the rides no longer have a specialist in the vehicle. The company will be working to iron out any obstacles, both through user feedback and a collaborative relationship with PHX.

"Phoenix Sky Harbor International Airport is always looking to employ new technology that improves or enhances our customers' experience," Gregory E. Roybal, public information officer for Phoenix Sky Harbor International Airport, said in an email. He pointed to initiatives like the launch of mobile
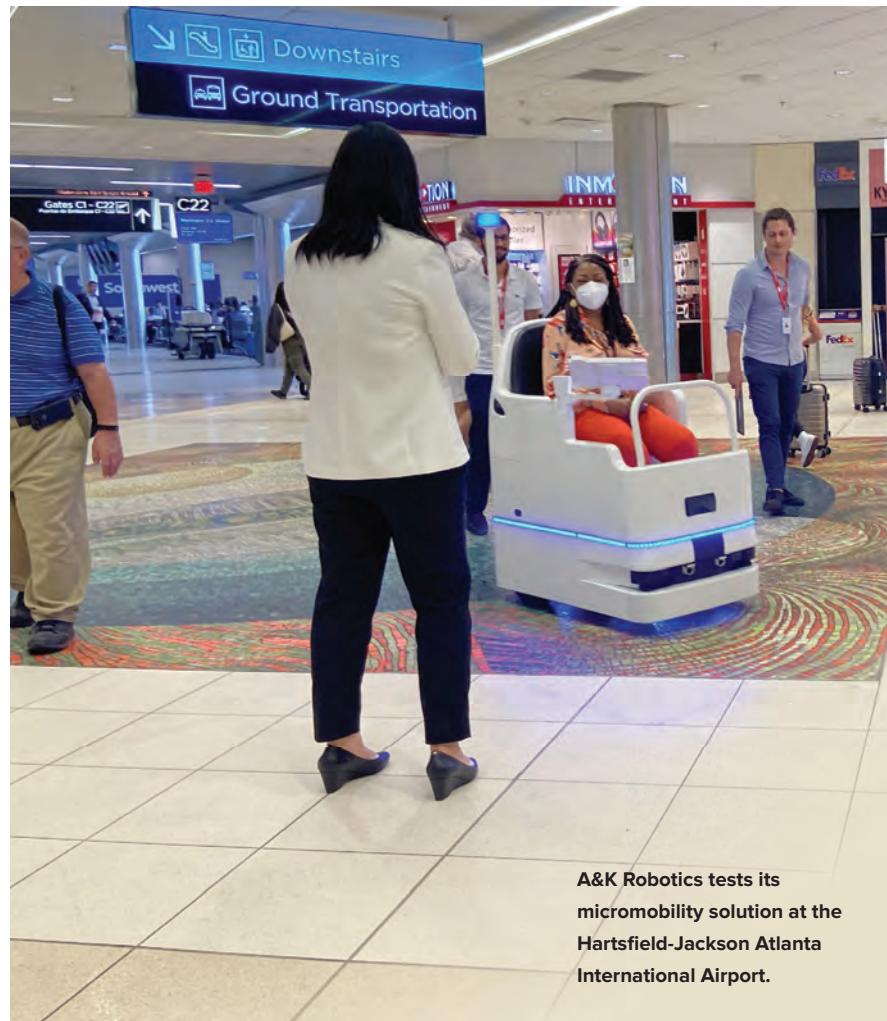
A&K Robotics tests its micromobility solution at the Hartsfield-Jackson Atlanta International Airport.

A&K ROBOTICS

❝ **I see a lot of potential with airports as a microcosm for smart cities that we will live in in the future."**

ID through Apple Wallet at security checkpoints earlier this year and electrochromic glazing on windows that use AI to automatically adjust tint.

The emergence of autonomous technologies to improve the customer experience while addressing growing workforce challenges is creating unique technology experiences for passengers. The Dallas-Fort Worth Airport (DFW) is complementing its existing staff with Iris. First introduced in June 2021, Iris is an artificial intelligence-powered "digital concierge" that can answer questions through voice-based technology.

"We were inspired by the potential of voice responsive, autonomously animated and artificially intelligent technology that could deliver up-to-date information to our passengers in real time and do it in a way that was empathetic to customers," Jodie Brinkerhoff, vice president of innovation for DFW, told *Government Technology* in an email. "At scale, Iris also builds business resiliency across the airport enterprise."

As the workforce continues to change and evolve, airports' widespread adoption of automation-related technologies may preview to other state and local government agencies the trends to come. ▪

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DIGITAL STATES

Bringing Medicaid into the Modern Era

How software integration platforms transform Medicaid agencies' technology stacks

What does it take to modernize a statewide Medicaid technology ecosystem? Get some quick answers from two veteran technologists:

Mark Calem, advisory managing director, health and government solutions, with KPMG, (left) and **Andy Gottschalk**, KPMG partner.

Why should state HHS agencies consider modernizing their Medicaid delivery systems?

Calem: First, they need to improve service delivery to their beneficiaries. As more states move away from fee-for-service toward managed care, they need a more holistic approach — delivering health, not just healthcare. They need to look at things like social determinants of health, and that's hard with their current legacy systems. Also, federal funding is letting agencies move away from monolithic systems to more nimble, modern systems that allow faster time to market.

What are the primary challenges with modernizing legacy systems?

Gottschalk: Legacy systems are huge. But as you modernize, modularity lets you plug in different components without throwing out the whole system. You're not locked into one vendor. Generally, one vendor perhaps does the integration platform, but other vendors handle different modules. That allows for much more flexibility.

Calem: Another big challenge is decommissioning a large monolithic system — slowly taking those capabilities out while moving to your new future state.

What outcomes have you seen when HHS departments use integrated technology platforms to modernize Medicaid delivery?

Calem: CMS [The Centers for Medicare & Medicaid Services] is moving toward an outcomes-based approach. States must describe the outcomes they hope to gain from any new modules to secure CMS funding. Thus, outcomes are center stage when modernizing.

One of the biggest outcomes: Data isn't stuck in monolithic systems anymore, which makes it much more of a strategic asset. Agencies get a better view of their person-centered care and their quality measures. And this helps them manage their clients in a more holistic manner.

How are these platforms upgrading the user experience?

Calem: The new systems improve self-service options like online portals for patients and providers. Also, as managed care organizations move away from fee-for-service, they no longer have claims records. But they need to track encounters in faster, more efficient ways. It's also easier for agencies to create single sign-on to simplify authentications.

How do these platforms improve agencies' financial and operational standing?

Gottschalk: The platforms enhance both finances and operations. Modularity makes it much faster and cheaper to add upgrades like data warehouses and pharmacy benefits management. And moving to hybrid cloud and multicloud environments lowers the cost of operating component systems over time because you're not locked into large monolithic systems for years.

How should Medicaid agencies get started?

Calem: Because this new world is all modular, you really need to look at a systems integration platform up front.

Gottschalk: Also, be sure to start with a road-map to implement your system components. Take a good look at your current processes and lay out your future state. Create a good set of requirements and find efficient, effective ways to procure and implement the different modules. Make sure it's a combined effort of your technology and business teams — but let the business side lead as much as possible.

KPMG

In Session

A court and technology lab collaboration brings a new tool aimed at making the eviction appeals process more accessible.

Left to right: Paul Tuttle, Bryce Willey and Quinten Steenhuis speaking at the National Center for State Courts eCourts conference Dec. 5.

JULE PATTISON-GORDON

By Jule Pattison-Gordon / Staff Writer

Massachusetts tenants facing eviction orders are often presented with a daunting task when trying to navigate the appeals process, explained Paul Tuttle, assistant clerk at the Massachusetts Appeals Court, speaking during the National Center for State Courts (NCSC) eCourts conference in December.

Pandemic-era court closures only added to the struggle and sent him searching for a fix. A collaboration with Suffolk University's Legal Innovation and Technology Lab led to a digital, guided interview tool for defendants who are facing eviction within the next 48 hours. The result, Tuttle said, is a simpler and quicker experience for defendants, and clerks receiving more accurate information.

A Blank Piece of Paper

Ninety percent of defendants in eviction cases represent themselves,

Tuttle said, and, pre-pandemic, those whose motions were denied in housing court had to go to Boston to appeal — regardless of where in the state they lived — or file online. If they wanted help understanding what kind of information to submit when e-filing, defendants had to come to the clerk's office in Boston. Another challenge? The clinic helping defendants was only open on Wednesdays for two hours.

When defendants came outside the clinic's hours, clerks "essentially ... had to give the litigants a yellow legal pad and tell them that they needed to file a motion, and roughly what type of information needs to be in that motion," Tuttle said. "But really, they were faced with just a blank piece of paper."

This led to confusion and mistakes. Clerks sometimes received forms with off-topic explanations from defendants confused about what was being asked of them. Fee waiver

applications accompanying eviction stay requests might be missing checkmarks or signatures that tenants then had to return to complete.

When the pandemic hit, Tuttle tested a variety of off-the-shelf digital forms in hopes of smoothing the process, before teaming up with the Suffolk lab for a custom offering.

Their collaboration led to a guided interview tool that helps self-represented litigants go step by step through eviction appeals petitions and several other legal filings, with explanations provided. The team continues to iterate on the project, updating features, adding availability in new languages and adding other legal procedures.

A Guided Tool

The tool has been a game-changer for both litigants and clerks, Tuttle said.

Thanks to the guidance the tool gives, clerks receive more relevant

A 48-Hour Notice can look like the one above.

and complete information from litigants. Plus, clerks receiving paper forms need to type up details by hand, but e-filings flow more easily into court systems, saving about 20 data entry steps per filing.

In turn, the tool spares self-represented defendants from having to decipher legal nuances and idiosyncrasies, explained Quinten Steenhuis and Bryce Willey, who are both clinical fellows at Suffolk's Legal and Innovation Technology Lab. For example, the team also introduced the e-filing tool in Illinois, where people filing without attorneys must list a specific six-digit code that varies by county; the digital tool can find and plug in the code for them.

The tool also gives users rapid access to judicial services. In one instance, a defendant was mid-eviction when she pulled out her smartphone to file a motion of appeal. Her approval came in soon after, while the constable was in the middle of removing her property from the premises, Tuttle recalled.

"The eviction started at 9:30 in the morning," he said. "We got the motion at about 9:45 a.m., and by 10 o'clock there was a judicial order to stop the eviction, so the constable had to move what [furniture] he'd gotten in the truck back

into the house and the case was stayed, because there was a problem with how eviction happened in trial court ... there's just no way she could've filed that motion without the guided interview tool."

Accessible Design

To make the tool widely useful, the team needed accessibility features. That included designing for those with vision limitations and putting the information in terms accessible to a fourth to sixth grade reading level, Steenhuis said. Features designed to make tools inclusive to people with particular needs also frequently end up benefiting the majority of users, Willey noted.

Plus, they decided the tool should guide litigants all the way through the process — including having a "one click" process to submit the form to court. Too many offerings fall short by supporting users through one part but then abandoning them to figure out the final steps on their own, Steenhuis said.

Given today's cybersecurity climate, limiting data retention was also important. Willey said they automatically delete data after 30 days if users don't re-engage with the tool, meaning there's less information that hackers could potentially steal.

A Software Mindset

A good-enough but available tool is more helpful to tenants than a polished one that releases after they've been evicted, speakers said. That meant getting over courts' usual reluctance to release anything but a highly polished product, Tuttle explained.

Instead, the Suffolk team pushed an iterative approach. They identified what, ideally, they'd like the tool to look like, but decided to release a version of the product once they had something better than the status quo — i.e., better than a PDF or printed form to fill out at home, Steenhuis said.

Once that early version was available and helping people, the team could then dig into adding and testing improvements, like user experience tweaks.

Bringing together the judicial and software worlds was important for another reason too: Courts need to stay neutral and avoid giving advice to any party. The collaboration let court representatives stay firmly on the side of providing legal expertise, while leaving their tech lab partners to host the software and decide what content to use.

"We can objectively say, 'What I'm trying to be is helpful,' which is something that's a little bit trickier sometimes for the court to do," Steenhuis said.

The team is two years into the project, and the lab expects to be able to maintain the offering in part by having students work on it as part of their coursework. gt

DIGITAL COMMUNITIES

Automating and Accelerating the Constituent Experience

Eliminating manual tasks makes life easier for the public and the government employees who serve them

For far too long, government agencies have implemented community-facing processes that have boiled down to a constituent filling out a paper form — and then waiting and wondering. But new process-automation platforms empower governments to overcome paper-driven delays while bringing their constituents clarity and transparency on the status of grant applications and other intricate agency functions.

This brief from the Center for Digital Government explains how process automation platforms can help agency leaders narrow the timelines for complex operations and ease the workload on their hard-pressed staff.

Automation in Action: Transforming a Grant Application

A grant application for COVID-19 local business relief illustrates the potential for an automation platform to make government interactions less cumbersome and more productive.

The problem. A county government had to quickly deliver emergency grants to local businesses that lost income during the pandemic. Paper-based, manual processes dragged out much-needed fund distributions.

The solution. The county partnered with Laserfiche, a global enterprise software provider, for document management and business process automation to accelerate the grant-approval process and help desperate business owners. Before these changes were made, the grant process took up to three weeks.

"We were able to get the processing time from application to funds distribution down to only three days," recalled Allison Young, senior director with Laserfiche, in a recent webinar hosted by the software vendor.

How it Worked

In the webinar, Young used her company's automation platform to demonstrate the steps required to automate and simplify the grant approval process. These steps included creating a form for businesses to enter their location, demographic information and financial impact from the pandemic. Laserfiche helped the agency develop a scoring system based on familiar Microsoft Excel formulas that automatically calculated COVID-related damages. Businesses with the highest scores could then be eligible for the most funding.

Background processes used API calls to an Internal Revenue Service database to validate the company's existence. A mapping application was used to locate the business address.

"We needed to know what district that business was tied to," Young explained. This was required to ensure aid was distributed equitably across the county's districts.

After the applicant entered the necessary data, the automated system sent the application and its score to the people responsible for approvals. They could see all the relevant data and quickly decide the funding total. Checks and balances were built in to give county staff the final say on distributions and to avoid accidental refusals.

Payments by check or bank deposit went out automatically. Finally, all documents created during the process went into a repository that had been indexed to make it searchable.

Because the software and forms are hosted in the cloud, staff can access the system through any web-enabled device. "And we can now run reports and analytics on how long each step in the process took," Young said. Thus, the automation platform gives leaders insights into making the process even more efficient in the future.

Challenges for Implementing an Automation Platform

Agencies have accumulated decades of manual processes that present vast automation opportunities. For instance, when a developer applying for a zoning variance calls an agency to find out the status of her application, she's taking time away from essential business activities.

Meanwhile, every phone call from a constituent distracts agency staff from whatever they're working on. Simply creating

process that keeps everyone apprised of an application's status can save significant time for agency staff and the public.

Almost any department in a public agency, from law enforcement to tax collection, can benefit from automation. But agency leaders must keep a few points in mind when they're choosing an automation platform:

Data and analytics are pivotal. Automated, digital processes generate mounds of useful data. With a robust automation platform, agencies can synthesize data from multiple sources and use reporting tools to discover the implications of newly digitized processes.

"We can't see the full picture all the time," says Noel Loughrin, strategic solutions manager with Laserfiche. "Our brains just aren't built to do that type of analysis on the fly."

Analytics tools help agency staff visualize the value of automation. "You can track your business processes to gain an understanding on how they're progressing, find bottlenecks and gain insights on optimizing processes," Loughrin says.

Human decision-making cannot be automated. While automation can accelerate processes and improve efficiency, technology is no substitute for human discretion and judgment.

Agency staff must retain the final say in automated processes. A well-designed automation platform takes this into account, creating notifications and workflows that produce more timely decisions.

"The human element of these processes and applications is still very much built in," Loughrin says. "The platform just eases the administrative burden of following up and making sure things are done in a timely manner. And communication is seamless."

Digitizing manual processes is not enough. Rather than starting by finding digital equivalents of analog actions, agencies should thoroughly analyze business processes first. Agencies may need to adjust or re-engineer processes to get the most out of an automation platform and drive genuine productivity improvements.

Best Practices for Success with Process Automation

Successfully implementing a process automation platform has three components:

Personnel. People must be trained to use new software and encouraged to adopt it. This includes leaders, agency staff and public users. "Work with your internal teams to see where they're struggling," Loughrin advises. Their struggles will often point to opportunities. Automating processes that eliminate their roadblocks and demonstrating how the new process does so will make it easier to encourage adoption of a new system.

Processes. Agencies must fully understand the steps in the processes they hope to automate, ensuring the automation platform provides data-driven insights and improves visibility and transparency for users. "Once you figure out those issues, then you have to prioritize what processes are going to do the most good first," Loughrin says.

Software. Applications must be easy to use, relying on tools like low-code/no-code apps that allow new features to be added quickly and easily with minimal technical acumen. Controls should be built in to discourage cybercrime and protect sensitive data.

Ultimately, the software solution should help agencies break down data silos and act on the automation opportunities that arise. Don't try to automate everything at once. Instead, use pilot projects to figure out what works best for your organization.

Easier Processes for All

Loughrin advises agencies to stay focused on what's coming next in terms of new capabilities. For instance, robotic process automation bots can detect a water main leak and trigger an alarm that dispatches repair crews to the scene fast enough to limit property damage.

Agencies can also boost self-service options for the public, letting them use government services whenever they choose. "You can make them feel more comfortable with their government because there's more transparency and communication, and it doesn't have to happen on government's time," Loughrin says. "It can happen on your constituents' time."

There's no need for agency processes to be fraught with delays, confusion and aggravation. A process automation platform can help agencies simplify and accelerate their most elaborate functions, giving time back to their staff and streamlining interactions with the public.

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

cio central

Donald Beamer Jr.

Atlanta Appoints Senior Technology Adviser

Atlanta has announced the appointment of **Donald Beamer Jr.** as the city's first senior technology adviser to help build on the city's technology workforce and business ecosystem. In the new role, Beamer will serve as the chief liaison with the technology sector for the mayor and help guide policy development. This is an external role that does not overlap with the CIO's duties.
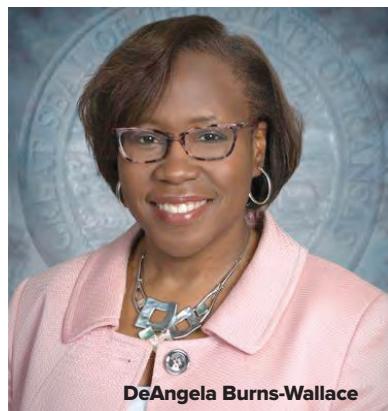
Minnesota CIO to Stay for Governor's Second Term

Minnesota CIO **Tarek Tomes** — who was first appointed by Gov. Tim Walz — was reappointed to the governor's cabinet. The announcement came in the immediate aftermath of Walz winning re-election.

Kansas IT Chief Steps Down

DeAngela Burns-Wallace, secretary of administration and chief information technology officer for Kansas, left her position Jan. 6. She served in the dual role since 2019, and a statement from the governor's office indicated that Burns-Wallace would return to teaching in the spring. As of press time, a successor had not been named.

DeAngela Burns-Wallace

California Names Deputy CIO

Gov. Gavin Newsom in December appointed **Jared C. Johnson** to the dual role of deputy state CIO and chief deputy director of the California Department of Technology. A 20-year veteran of state service, Johnson replaces Russ Nichols, who retired in November.

Jared C. Johnson

Tech Leadership Changes in Cincinnati

Sean Ware was named interim director of Cincinnati Enterprise Technology Solutions upon Tarun Malhotra's departure from the role in August. Ware has worked for the city's IT agency since 1995, most recently as manager of enterprise applications.

Sean Ware

Cybersecurity in the Age of 5G

How will 5G connectivity affect cybersecurity for government agency IT leaders?

Tony Dolezal, *public sector 5G and multi-access edge computing (MEC) specialist with Verizon Business, provides a concise overview of what's at stake.*

Does 5G's expanded network capacity create a new set of security concerns?

More spectrum means an increase of devices and end-user units, which expands the threat landscape. For example, 5G should eventually support one million Internet of Things (IoT) devices per square kilometer, an order of magnitude more than what's possible today. Networks are also becoming more important and more integrated into organizations' operations, so any network disruption can have profound effects.

Is 5G more secure than previous generations of wireless technology?

5G is like a Zero-Trust architecture, in that the network is presumed to be open with no security from overlaid products and processes. All links are assumed to be exposed. To control for that openness, 5G mandates encryption of all inter- and intra-network traffic and provides for enhanced device and network authentication. There's a great focus on roaming, which has been a security gap in the 4G LTE environment. For example, final device authentication in 5G is always by the home network, not by the visited network, and 5G uses public/private key pairs for authentication. 5G has greatly enhanced roaming protection and security compared with previous generations.

Where should agencies focus their attention on addressing cyber risks in the shift to 5G?

The first step is the move toward Zero Trust, assuming no inherited authentications and challenging all transactions. Remember, you're securing everything: the network as well as, for example, storage and technologies like containerization.

Next, adopt an attitude of continuous vigilance, including self-scouting and self-hacking. Engage with security expertise across the ecosystem. But understand that you're never going to arrive at total security. Something new will come up every day.

Mainstream 5G adoption is still down the road. How long do agencies have before they need to seriously address 5G security?

As a security professional, I advise addressing cybersecurity needs today, regardless of where you are with 5G adoption. Adoption will be a moving target. It's unlikely we will ever have total 5G. While 4G was designed to replace 3G, 5G is not designed to replace 4G. That's because 4G LTE is totally appropriate for many applications.

Most communications service providers are moving to a standalone network, which is necessary to enable all the features of 5G, including several of the security features discussed here, in 2023. Full adoption, I would say, is no later than 2024. But there will be early adopters, while some applications, agencies and enterprises will run behind that date.

It's better to look at it as a process and make sure you're addressing cybersecurity today in a 4G environment so you won't be unnecessarily exposed when you move to 5G.

verizon✓

Closing the MFA Gap to Stop Modern Cyber Threats

Hardware security keys help agencies achieve 100% multifactor authentication coverage and meet cyber insurance requirements.

Cyber threats to state and local agencies have increased significantly in recent years. In 2021 alone, nearly 70% of government organizations experienced at least one cyber attack.[1]

State and local agencies have always collected high-value data. They now must also contend with a vastly expanded attack surface, thanks to remote and hybrid work and broader digital services. Together, these challenges heighten the need for governments to adopt a more holistic approach to cybersecurity.

One of the best ways agencies can strengthen security is to implement phishing-resistant multifactor authentication (MFA). Insisting on 100% MFA coverage fortifies long-term security and helps agencies move toward emerging security models like Zero Trust, especially as they embrace distributed work, implement cloud-based collaboration tools and forge partnerships with third-party service providers to accelerate digital transformation.

WHY 100% MFA COVERAGE NOW?

In the current threat environment, relying on usernames and passwords is no longer enough to secure mission-critical systems and applications. Aside from this, several other factors are driving the need for 100% MFA coverage within the public sector.

First, threat actors have grown far more sophisticated. Without 100% MFA coverage, agencies face greater security risks, such as phishing and spear phishing attacks. Indeed, 81% of data breaches are related to stolen credentials such as usernames and passwords, according to the 2022 Verizon Data Breach Investigations Report.[2] 100% MFA — which typically involves token-based authentication that uses encrypted security keys for identity verification — adds more complexity to shrink this threat vector.

The growing cost of cyber insurance is also a driving factor, says Michael Santini, enterprise account executive for Yubico, a leading provider of hardware-based authentication solutions for the public sector.

"Whether it's applying for cyber insurance, renewing cyber insurance or getting a better rate on cyber insurance, MFA is now becoming what insurers will use to help you get cheaper cyber insurance," he says.

The federal government has also become more focused on cybersecurity as an integral part of the country's national security. The January 2022 Office of Budget and Management memo M-22-09, calling for Zero Trust and phishing-resistant MFA across the federal government, is trickling down to state and local governments and contributing to new discussions about how they approach authentication and identity access management.[3]

BARRIERS TO 100% MFA

Despite these headwinds, state and local agencies still face challenges in adopting 100% MFA coverage. Many state and local governments rely on legacy forms of MFA such as mobile authenticators, including SMS (text messaging), one-time passwords (OTP) and push notification apps. These forms of MFA are not phishing-resistant and are susceptible to modern cyber attacks such as phishing, account takeovers, SIM swaps and man-in-the-middle attacks.

Mobile authenticators also create gaps in MFA strategy when users can't, don't or won't use mobile-based authentication for MFA. These could include reasons such as union restrictions, users who don't wish to use personal cell phones for work purposes or users who live in areas with poor cell coverage. In these cases, the typical approach is to fall back on username and password-based authentication, but passwords are easily hacked, and these MFA gaps create opportunities for modern criminals to gain a foothold into the organization.

Cost management and user pushback are two additional barriers. Legacy infrastructure is another issue, according to Santini.

"Organizaitons need to modernize some infrastructure to allow a platform to do MFA," he says. "So part of the challenge is that you can't do an MFA that's not built in because the system is so old."

IT staffing shortages compound these challenges. Even as agencies attempt to modernize their security infrastructure, they may not have enough staffing resources to oversee the maintenance process after they adopt an MFA solution.

But even with these barriers, it's crucial for agencies to advance their MFA strategy and overall cyber maturity. The risk of compromising constituent data and undermining public trust in government systems is too great to do otherwise.

BEST PRACTICES FOR IMPLEMENTING 100% MFA COVERAGE

■ Plan with the end in mind

Agencies should determine how they want to apply 100% MFA within their organization and work backward from there to implement the best solution that supports their MFA strategy. Agencies should adopt a user-friendly solution to minimize employee pushback. Hardware-based tokens are generally less cumbersome for users than mobile authenticators.

■ Consider hardware-based MFA

Rather than relying on one-time passcodes sent via text or email, agencies should consider a hardware-based MFA solution. A hardware-based security key is a physical, one-touch authentication device users can place into their computers or tap against their mobile phones to access their organization's systems and applications.

One of the capabilities that sets hardware-based MFA apart from other solutions is the support it offers for different authentication methods and the latest protocols. The most effective hardware-based MFA solution should be compatible with the leading identity and access management systems, such as Microsoft, Okta, Duo and Ping. It should also address mobile restrictions when employees either don't want to or can't use their personal devices, such as in rural areas with poor connectivity.

■ Collaborate with a strategic technology partner

As agencies rethink their MFA strategy, they should consider working with a technology provider that can guide their implementation.

Agencies should look for a partner with deep expertise in the public sector, but also one that provides comprehensive support and services to complement their technology offerings.

■ Leverage federal funding

MFA is one part of the State and Local Cyber Security Grant Program,[4] which was created by the Infrastructure Investment and Jobs Act (IIJA), passed by Congress in 2021. The federal government is awarding $1 billion in these cyber grants over four years,[5] creating a prime opportunity for state and local governments to use federal dollars to strengthen their security environment long term. Agencies could use these funds to pay for subscription-based services that accelerate MFA adoption, which would allow them to amortize this cost and convert what traditionally would be a capital-expenditures budget item into an operating expenditure.

CONFRONTING TODAY'S CYBER THREATS WITH 100% MFA

Most data breaches are credential-related, so agencies must have a more formidable plan for strengthening the authentication process and keeping bad actors out of their systems. Advancing their MFA strategy and anchoring it around phishing-resistant MFA and 100% MFA coverage can help agencies enhance their security posture. With this approach, agencies will also be better positioned to prevent account takeovers, phishing attacks and other security threats that disrupt their operations, weaken their cyber resilience and undermine constituents' confidence that governments are doing everything within their power to safeguard their data.

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

Endnotes

1. https://www.govtech.com/security/most-governments-were-hacked-in-the-past-year-reports-reveal

2. https://www.verizon.com/business/resources/reports/dbir/

3. https://www.whitehouse.gov/wp-content/uploads/2022/01/M-22-09.pdf

4. https://www.cisa.gov/cybergrants

5. https://www.cisa.gov/cybergrants#:~:text=Through%20the%20Infrastructure%20Investment%20and,be%20awarded%20over%20four%20years.

Spectrum

96%

Intel has introduced what it says is the first real-time deepfake detector and claims it has a 96 percent accuracy rate. Called FakeCatcher, the product analyzes "blood flow" in the pixels to determine whether an image is real or a clever digital reproduction of a person's likeness. It uses a method called photoplethysmography that measures the amount of light reflected by blood in living tissue. Signals are collected from 32 locations on a face, then the system maps them as real or fake, returning a result in milliseconds. SOURCE: VENTUREBEAT

SPACE CASE:

Construction of the world's largest radio telescope kicked off in Australia in December. The Square Kilometre Array (SKA) Observatory will include 131,072 antennas in Australia's western region and is projected to map space about 135 times faster than existing telescopes. Another portion of the SKA, built with 197 radio dishes, is already in use at Meerkat National Park in South Africa. The combined array is expected to help study the early universe, dark energy and potentially even extraterrestrial life. Completion is anticipated by 2028.

SOURCE: NEW ATLAS

WIKIPEDIA

HOLD STEADY:

Robot behaviors just continue to get more human-like. Researchers at the University of Lorraine in France have developed a "Damage Reflex," or D-Reflex, system to help a humanoid robot catch its balance if one of its legs is broken. It's a neural network based on 882,000 training simulations that taught a TALOS bot to prop itself up on a wall three out of four times it was injured. So far D-Reflex only works with stationary robots, but researchers eventually want it to work while the robots are in motion and able to grab objects besides walls for support.

SOURCE: ENGADGET

$599
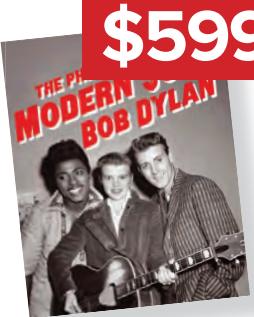
That was the price for a signed copy of Bob Dylan's latest book *The Philosophy of Modern Song* when it was released in November. But fans who forked over the money were disappointed to learn that Dylan himself hadn't signed their books. Instead, he did it with the help of an autopen, a device that isn't new — the brand Dylan used is at least 60 years old — but which replicates a handwritten signature, saving people like celebrities from spending hours signing their names over and over. Dylan said he used the autopen while experiencing a bout of vertigo and issued a formal apology to fans. Simon & Schuster, the book's publisher, refunded buyers' money.

SOURCE: GIZMODO

ADOBESTOCK

Are people still using bad passwords?

Answer: Unfortunately, yes.

It seems one of the world's universal constants is that no matter how adamant the experts are or how many breaches there are, people will still want to use simple, easy passwords. Yes, you will be able to remember "password12345" every time, but so will the cyber criminals.

Cybernews and NordPass both independently

ADBOBESTOCK

released data in November on the world's most commonly used passwords for 2022. The former got its data from 56 million breached or leaked passwords discovered on darknet and clearnet hacker forums. NordPass' team scoured the dark web for passwords and came out with 3 terabytes of info to compile its results.

Surprising absolutely no one, "password" and "123456" were in the top five of most commonly used passwords. "Admin," "guest" and "root" also made it up there. According to Cybernews, 25 percent of all the passwords they looked at were only eight characters long, as compared to the recommended 12 or more; 16 percent were only four characters long.

Can your smartphone detect damage to bridges?

Answer: Yes.

As our infrastructure ages, detecting issues before it comes down on our heads or out from underneath our feet is becoming increasingly important. But the easiest way to do it is with labor-intensive and time-consuming manual inspections, for now.

Every day, thousands of people drive over bridges with smartphones in their cars. A team from the Massachusetts Institute of Technology discovered that they can use these smartphones to check the health of the bridges. They do this by analyzing the accelerometer data that all smartphones are constantly collecting. They were able to pick out the bridges' modal frequencies, which are unique to each bridge.

This is a lot like taking the bridge's temperature — if there's any damage, it will show in the modal frequencies, even before it's visible to the naked eye. The team envisions smartphones in city and commercial vehicles, such as police cars and delivery trucks, being used to collect this data.

Why might someone build a PC in a microwave?

Answer: To save money.

When one man lost his job during the COVID-19 pandemic, he decided to save money by building a PC in his microwave. The Brazilian man's creation was shared on Twitter by user Jake Lucky (@JakeSucky).

While details are a bit scant on the ground, the whole thing reportedly cost $900. According to *Digital Trends, PC Gamer* guessed based on looking at the video Lucky shared that the motherboard is most likely an Asus A320M-K. The device is reportedly fully functional, although it probably can't warm up your leftovers (not because it doesn't get hot enough, but because there's no room left inside the microwave).
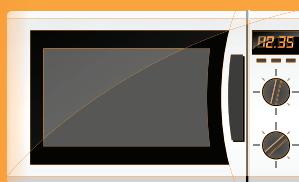
A Fresh Approach

Now is the time for a new look at cybersecurity in state capitols.

Governors, mayors, county executives and other newly elected or re-elected leaders listen up: It's time to revisit your cyber policy.

I know, most of you are thinking, "Thanks for the advice, but that won't be necessary."

Digging deeper, most politicians and their appointed executives often say something to the effect of, "Cybersecurity is already a top concern. We understand that the National Association of State Chief Information Officers has made cyber defense the top priority for the past decade-plus, and we've seen how ransomware has ravaged the public and private sectors. We've been briefed on foreign adversary mischief online, and the cyber attacks just keep coming against our government. But have no fear, we've got this. Been there, done that, got the T-shirt."

But that old mindset will no longer suffice.

Why? Because the messages, actions and urgency set from the top of the government impact your organization's risk profile, and the due diligence required to ensure critical infrastructure resiliency cannot be left to lower-level appointees.

Also, last year's cyber program will not be enough to address tomorrow's cyber challenges. Even if your government has been successful at addressing cyber attacks and ransomware threats so far, our rapidly expanding digital world is bringing new, even greater stakes and greater tests in the future. Sadly, the bad actors are improving as fast or faster than the good guys.

Neglecting cybersecurity can:

1 / Undermine the reputation of both the government and elected officials;
2 / Force unacceptable expenditures associated with the cost of cleaning up after security breaches;
3 / Cripple governments' abilities to respond to a wide variety of homeland security emergency situations or recover from natural or manmade threats;
4 / Disable elected officials' ability to govern.

So what steps can you take?

First, I've never seen any public- or private-sector executive leader say, "Cybersecurity is not important or a low priority." Such statements would harm credibility. Just as in physical health, everyone agrees that good cyber hygiene makes sense and actions like patching servers, solid identity management and having an incident response plan are important.

However, actions often don't match the words. What is more common is for government organizations to treat cybersecurity as an annual event that comes and goes, or a check-the-box requirement needed for compliance or to address audit findings.

Elected and appointed leaders need to make cybersecurity a true priority and a core part of government culture. Talk about cyber protections often — and walk the talk. Surround yourself with experts who can advise your organization on best practices from similar governments around the country.

Second, many government leaders believe that cybersecurity is just another subcategory under technology. One reason is that from a governance perspective, the state's chief information security officer generally reports to the CIO, who runs technology.

But cybersecurity is a business risk issue that will either strengthen or harm your entire government strategy. Security experts agree that what is needed is a robust system of governance and accountability that starts at the top and is similar to the way that risk is managed in other parts of government.

Government leaders have come to expect that dashboards and action plans be put in place to track revenues, spending, project status on key government initiatives and much more — and cybersecurity metrics should be a part of that executive-level dashboard.

Third, the NIST Cybersecurity Framework is a great place to gain direction and guidance, and it covers how organizations of any size can improve cybersecurity risk management by identifying, protecting, detecting, responding to and recovering from inevitable cyber attacks.

But regardless of the framework used, your employees, clients, constituents, partners and others you interact with need to see leadership on cybersecurity from the top.

The exciting mandate that comes with a new or re-elected administration is the perfect time to realign — or even start over — on cybersecurity. As Theodore Roosevelt once said, "In any moment of decision, the best thing you can do is the right thing, the next best thing is the wrong thing and the worst thing you can do is nothing." **gt**

Daniel J. Lohrmann is an internationally recognized cybersecurity leader, technologist and author. From 2002 to 2014, Lohrmann led Michigan's award-winning technology and cybersecurity programs, serving as CSO, CTO and CISO.

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