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Michael Roling,  
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Missouri

DAVID KIDD

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Our fourth annual list of companies impacting the government IT market.

**Battling the Backlog**  
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# 2019: Issues to Watch

**T**he December issue of *Government Technology* is our traditional look back at the biggest news in the gov tech universe over the previous year. We do a data-driven review of the stories we wrote and the issues we covered, in part to make sure the topics we think are important are the ones readers find helpful too. A handful of key issues and news events rose to the surface, so in the course of our year in review feature, *Hindsight: 2018* (p. 18), we gave those some extra attention. Taken altogether, they also make a pretty compelling list of things we'll be keeping an eye on in 2019.

## 1. 5G

It was a year of progress and turmoil for 5G technology, with carriers putting pilots on the map in cities eager to put the pieces in place for intelligent, connected communities. The FCC intervened in the fall, placing limits on municipalities' power over decisions on how the technology proliferates within their boundaries.

## 2. Blockchain

CIOs are deeply split on whether government can benefit from the distributed ledger technology, blockchain, still sullied by its early association with cryptocurrency like bitcoin. But early experiments, like blockchain-based voting for overseas military personnel from West Virginia, are starting to garner interest. Meanwhile, many legislatures want to make sure they greenlight the growth of blockchain-related industry in their states.

## 3. FirstNet

2019 will be another pivotal year for FirstNet, which secured full participation

at the state level at the end of 2017. This year saw a few local agencies start to join as well, though the majority were in wait-and-see mode, watching for lessons from early entrants and limited pilots. CIOs told *GT* this year that early FirstNet mapping efforts gave them cause for optimism when it comes to filling connectivity gaps, especially in rural areas.

## 4. Human-Centered Design

In the quest to create an Amazon-like experience for digital services throughout government, human- or user-centered design gained ground this year, as leaders sought to transform services in a way that doesn't just make sense to government but makes intuitive sense to citizens. Taking hold in both internal and external projects, extensive, iterative user testing is yielding better experiences using technology.

## 5. Micromobility

Last-mile transit aims to get would-be transit users all the way to their destination as they access public transportation options, and this year the sharing economy exploded with electric scooters and bicycles in cities across the country. "Deploy first and apologize later" approaches backfired in some cities that struggled to manage sidewalks littered with scooters and bikes, threatening pedestrian safety. 2019 will likely see some best practices emerge to make sure micromobility options are a welcome addition to city streets.

## 6. Net Neutrality

Challenges to the 2017 FCC decision to roll back net neutrality protections were plentiful in 2018, as state leaders

aimed to prevent content-throttling and protect a free and open Internet. Governors, attorneys general and state legislatures all carved out their positions, capping off with a bill signed in California that saw an immediate challenge by the U.S. Department of Justice. 2019 promises much of the same.

## 7. Privacy

As government data sharing matures alongside smart cities and analytics efforts, jurisdictions are struggling to define their approaches to safeguarding the information citizens entrust to them. These concerns were stoked this year by revelations on the data-sharing practices of social media giants like Facebook. Expect ongoing privacy discussions in 2019, and more privacy staff hired into government to ensure personally identifiable information doesn't end up in the wrong hands.

## 8. Ransomware

The ransomware struggle came into full view in 2018, with notable examples in Atlanta, Colorado and Baltimore, to name but a few. Cities and states are already adjusting their practices in response to the growing sophistication of the threat, which can no longer be abated with strong backup practices. Next year will see a growing focus on ransomware protections, along with continued resource requests aimed at shoring up cyberdefenses across the board.

These are some of the issues we'll be following closely in the next year. As always, read [Govtech.com](http://Govtech.com) for the latest news on these and other issues impacting state and local government IT. 



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## TRAFFIC JAM

A report from the San Francisco County Transportation Authority (SFCTA) has found the main culprit for increased traffic congestion in the City by the Bay: ride-hailing companies like Uber and Lyft, which the study says account for about 50 percent of the uptick between 2010 and 2016. Other factors, however, including an 8.8 percent increase in population and 28.4 percent increase in jobs, have also contributed to clogged roadways. While Uber contests that the study's findings did not take into consideration spikes in tourism and delivery vehicles, SFCTA reports visitors account for less than 5 percent of travel within the city.

## Tennessee's 'App of Apps'

"We're not making it very easy for our citizens to do business with us," said Tennessee CIO Stephanie Dedmon at the National Association of State Chief Information Officers annual conference in October. To alleviate that problem, one faced by jurisdictions nationwide, she explained how her state is building a single app to serve as a central access point for citizens seeking government services — what Dedmon called an "app of apps." The initiative will start with a few agencies and eventually expand to others, and the app won't store personal information like credit card numbers used to pay fees. Dedmon said they anticipate the app going live in early 2019.

## Biz Beat

In light of recent headlines showing kids are being fined for running unpermitted lemonade stands, Lisa Abeyta, CEO and founder of CityLife, is looking to change that. She sought to raise \$20,000 to launch PermitMe, an app that would streamline the application process for food stands, garage sales and other events. Abeyta anticipates building PermitMe on her own CityLife platform, which already works on permitting processes in cities across the country through its work with companies like Accela. The app would first test in a couple of cities that generate the most funding, spreading to others over time. Going forward, Abeyta envisions adding a blockchain element that would make it easy to check if an individual selling lemonade, or anything else, has a permit.



## WHO SAYS?

*"You have the right to be at the table. And if there is no seat at the table, bring your own folding chair."*

govtech.com/quoteDecember2018

## MOST READ STORIES ONLINE:

Digital States Survey 2018: Raising the Bar  
**7,951 VIEWS**

Oracle Launches Community Development Solution, Competing with Tyler and Accela  
**2,476 VIEWS**

Oracle Hires Napa Assistant City Manager to Help Develop New Land Use Platform  
**2,196 VIEWS**

Report: As Tech Changes Law Enforcement, Its Workforce Must Adapt  
**1,889 VIEWS**

Cook County Bets Big on New ERP  
**1,360 VIEWS**

How New York City Tells the Story of Its Open Data Work  
**1,155 VIEWS**

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# 875<sup>K</sup>

The funding from angel investors raised by ePluribus, a startup aiming to facilitate more direct engagement between citizens and their representatives.

# 9

The number of cities that won the Bloomberg Philanthropies U.S. Mayors Challenge, along with \$1 million each to fund their solutions to civic issues.

# 80%

The percentage of Chicago residents who live within 2 kilometers of a sensor connected to the city's Array of Things.

# \$4<sup>M</sup>

The amount of funding behind Electric for All, a campaign to raise awareness about electric vehicles in California.

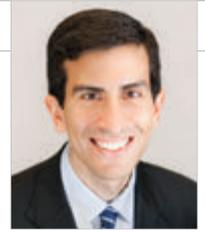
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# Get Smart

How can smaller cities join the AI economy?

**A**rtificial intelligence (AI) is poised to make a significant impact on the global economy, adding \$15.7 trillion to the GDP by 2030. In pursuit of these economic benefits, many countries have developed national strategies to promote the adoption of AI within their borders, such as China's ambitious plan to become the global leader in AI. But what can state and local governments — especially those outside of the country's main tech hubs — do to ensure they are not left behind in the AI economy?

The major challenges these regions face is ensuring that AI is accessible, available and affordable for local businesses, especially small and medium-sized businesses that may not have the resources of their larger counterparts. To address these challenges, state and local governments should develop a three-fold strategy.

First, help ensure AI is accessible to local firms. This requires educating the business community about the benefits of AI, such as through organizing regular networking events for those interested

in the topic or sponsoring an "AI Awareness Month" to help businesses better understand AI. Those that do not understand the potential value of AI are unlikely to pursue it, so local businesses need to learn about use cases for AI in their specific industries. For example, many businesses can use

AI to streamline processes, such as improving customer service interactions by automating responses to certain types of inquiries with chatbots.

Second, government should support the development of local training programs for AI skills. Not all cities will be able to recruit the top graduates from the best computer science programs in the country, so instead they should focus on developing their local talent. State and local governments can partner with local colleges and universities to develop AI certificate or apprenticeship programs targeted at local business needs. The goal should be to train high-potential workers who may already have some technical background and industry experience but lack the necessary data science skills to take on more advanced AI projects.

In particular, state and local governments should focus on training workers for the long tail of AI business adoption. These businesses do not need to be focused on developing the latest cutting-edge AI tools and methods, but instead should focus on effectively using existing AI technologies. For example, there are increasing numbers of cloud providers who are offering AI as a service that make it possible for programmers without deep knowledge of AI to integrate this technology into existing systems.

Third, consider jump-starting local AI adoption. Part of this strategy should involve making AI adoption less risky by having government be an early adopter.

An important part of early adoption will involve not only using AI in custom implementations, but also becoming early adopters of commercial off-the-shelf AI products. For example, many companies are using AI to improve productivity by using virtual assistants to schedule meetings or using algorithms to better match job seekers with job openings and reduce unconscious bias in hiring. By proving the value of the technology, and sharing best practices and lessons learned, the public sector can pave the way for adoption by local small and medium-sized businesses.

In addition, not all businesses are going to be hiring full-time AI experts. To encourage businesses to pursue third-party AI services, states should consider creating an AI incentive tax credit to provide businesses a partial tax credit to incentivize them to become early adopters of AI while also supporting the growth of AI service providers.

While state and local governments cannot replace the need for a national strategy for AI, they can take important steps to ensure that the businesses in their jurisdictions are full beneficiaries of the transition to an AI economy. [91](#)

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

# In-Sync: The Secret to Integrating Procurement and Finance Data

When government organizations successfully sync their procurement systems with financial and enterprise resource planning (ERP) platforms, it simplifies purchasing processes, enhances data governance to better protect taxpayer dollars and promotes fair competition among vendors. But efficient data sharing among these systems is more of a dream than reality for many organizations. In fact, nearly half (49%) of respondents to a Center for Digital Government survey said they desired a procurement solution that is easier to integrate into business processes.

Fortunately, procurement and IT managers can now easily overcome these integration hurdles thanks to Periscope Holdings' BuySpeed eProcurement application. This cloud-based eProcurement platform, combined with the latest integration best practices, enables government organizations to more easily reap the rewards of procurement/finance synchronization.

## BEST-OF-BREED ePROCUREMENT

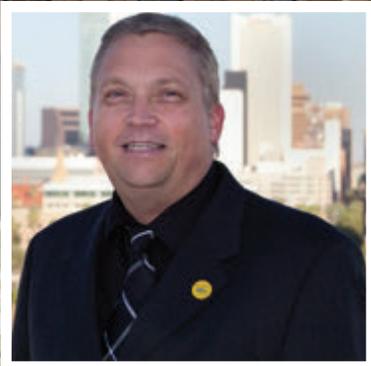
BuySpeed eProcurement is a best-of-breed eProcurement suite that automates the full procure-to-pay process, starting with requisitions and extending to supplier management and payments. Because BuySpeed is cloud-based, organizations can implement it within months, rather than the years it could take to launch a traditional ERP application. In addition to providing standard integrations, the application also lets organizations tailor their integrations based on unique requirements. It comes with industry-standard application programming interfaces (APIs), such as cXML for procurement-related communications, and SFTP for secure file transfers between systems.

Even the best eProcurement solutions alone can't ensure multisystem synchronization. Officials should also follow the latest data management best practices. For example, detailed procurement information should remain within the procurement application, which shares only essential data — such as general ledgers and charts of account — with financial systems.

These measures, along with a best-of-breed eProcurement platform, build the foundation for successful synchronization of procurement data — and allow governments to reap all the benefits that integration provides.

## A LOOK AT HOW BUYSPEED WORKS





## Mike Lettman

Chief Information Security Officer, Arizona

*Mike Lettman has spent six years leading cybersecurity efforts in Arizona and serves as the state's chief information security officer (CISO). A recognized information technology leader with more than 28 years in state government, Lettman previously served as CISO of Wisconsin, as well as chief technical officer for Wisconsin's Department of Justice.*

### 1 How has security evolved and become top-of-mind for not only IT officials, but also other agencies and even the public?

Cybersecurity affects everyone at all levels of government — all of the agencies and everything we do. Years ago when we started down this road, we were concerned solely about data. And then as we started to expose our data to the Internet, and then build systems that were exposed to the Internet, suddenly we had to worry about people attacking our data and our systems, and exfiltrating our data. CISOs today find themselves involved in all parts of the organization, the most recent being elections and the alleged security attacks against the election systems. So the role has evolved over the years, and I think all states and all governors are concerned about cyberthreats.

### 2 Arizona reportedly receives about 8.5 million cyberattacks a month. Is this similar to what other states experience?

I'd say it's par for the course. I have regular contact with my counterparts in state government throughout the rest of the nation, and we're all seeing similar numbers. Events can change this. It's literally in the millions. It's people constantly trying to manipulate or find vulnerabilities in your systems to find a way to get in.

### 3 What are the top concerns among cybersecurity officials?

Most CISOs would say there are three main concerns: No. 1, the lack of qualified cybersecurity professionals to fill all the jobs that we need across the country. Second, the advancement of attacks is also a huge concern. I like to say, I know what we know

and don't know what we don't know. And when something new comes along, sometimes it takes time for people to analyze that and figure out, what is it trying to do? Is it truly an attack? Is it some other way of social engineering? What's really going on?

And No. 3 for most CISOs is the end users and protecting our data. End users are the easiest spot to attack our systems and our states, and to try to social engineer our employees and get them to open documents and things like that. That's the easiest way in. It only takes one employee to click on a link in an email to download a malicious piece of software, and then compromise that PC, and then the bad guy has access to everything the employee has access to.

### 4 What are some new approaches to data security that can make state government more resilient?

What we've been working on is, how do we get proactive? How do we make security automatic? In other words, if there's a way we can discover an attack before it's happening, or at least before it's predominantly happening, and if we can automatically update our systems to protect us, that's our ultimate goal. That's easier said than done, and cooler to talk about than actually see happen.

We also share as much attack information and intel as we can with our other key partners in the federal government, local county government and private sector, where possible. And the more sharing we do together, the more we can see; if they're attacking the private sector today, they may be attacking us tomorrow. The more intel sharing we do, the more proactive we can become to stop these attacks. If they're attacking Virginia today, they might move on to Arizona tomorrow. 

— Skip Descant, Staff Writer



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# Cities' Digital Age

*Facts and figures from the 2018 Digital Cities*

## Winning Cities



## CIO Priorities

1. Cybersecurity
2. Citizen Engagement/Experience
3. IT Staffing
4. Transparency/Open Data/Data Governance
5. Disaster Recovery/Continuity of Operations

## To the Cloud

*The percentage of systems in the cloud keeps growing.*

	0-20%	20-40%	More than 40%
2018	62	22	16
2017	67	26	6
2016	77	16	6

## IoT Still Climbing

*Is IoT impacting city strategic plans?*

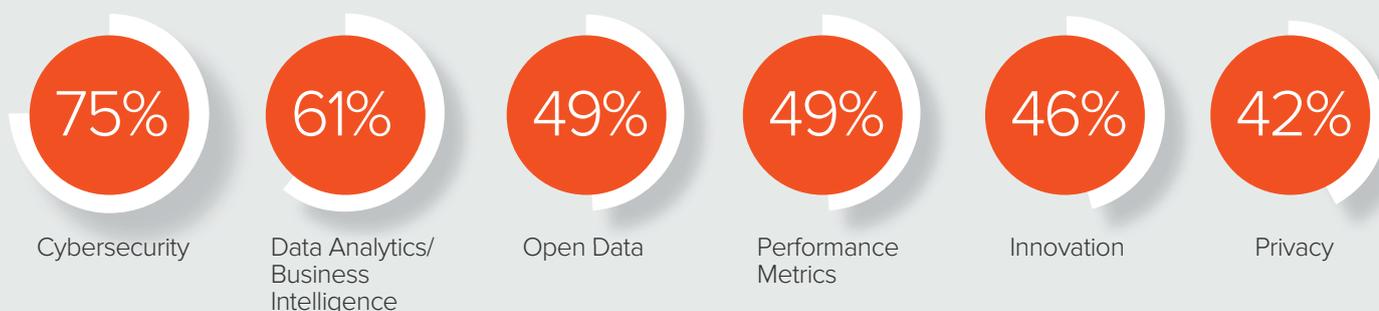


# nda Survey

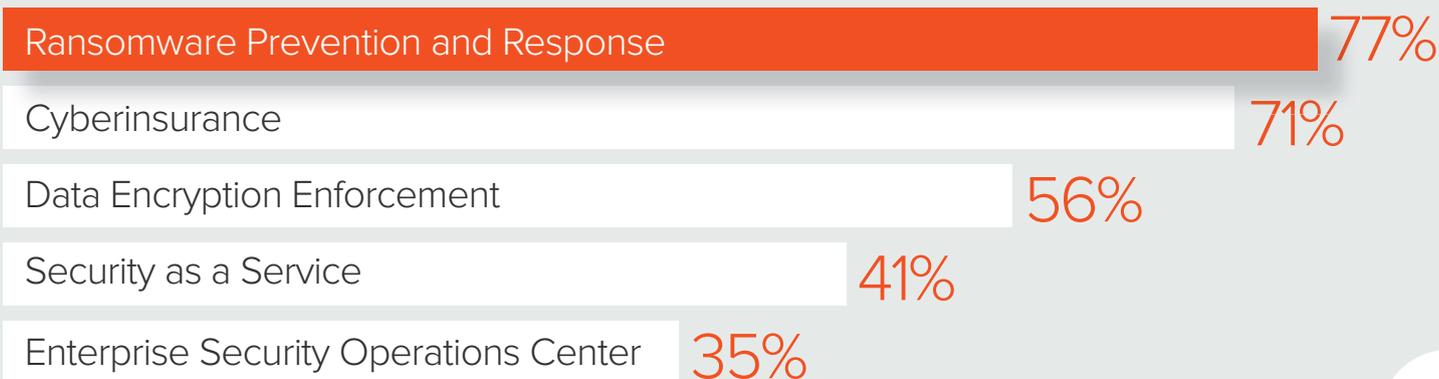
Sixty municipalities from across the country ranked in the 2018 Digital Cities Survey, a nationwide review of digital practices at the city level. Here are some of the most interesting takeaways from this year's winners. For a full story and analysis of each city's digital agenda, see our coverage at [www.govtech.com/DigitalCities2018](http://www.govtech.com/DigitalCities2018).

## Staffed Up?

Cities with at least one dedicated FTE in the following areas:



## Cyberstrategies in Use



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**PURESTORAGE**

**Laserfiche**  
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**TANIUM**

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# MAKING PAPER-BASED PROC

*The combination of customer relationship management and e-signature solutions provides a simple, straightforward path to a more digital government.*



## SYSTEMS OF AGREEMENT DEFINED

As more organizations digitize more processes, three categories have emerged: systems of engagement, systems of agreement and systems of record.

Systems of engagement enable organizations to communicate and interact — both internally and externally — with employees, customers, constituents and citizens. An example of an internal system of engagement is collaboration tools. An external one is an online web portal.

Systems of agreement are technologies and processes used to prepare, sign, act on and manage agreements. A system of agreement connects processes and systems across the organization that deal with contracts and legal documents of all kinds. These documents are often subject to regulatory rules about how they must be signed and retained. With a system of agreement, a document can be prepared, distributed, signed, enacted and managed digitally, end-to-end.

Finally, systems of record collect and keep information updated and correct, such as customer relationship management systems.

**T**he Taxpayer Transparency and Fairness Act, passed by the California state legislature in 2017, changed how the state's tax laws and appeals processes are administered. Part of the law created a new entity, the Office of Tax Appeals, an independent and impartial body that would hear citizen appeals of personal income, corporate franchise, income, sales, and other taxes and fees.

As state officials planned the new office, they saw a golden opportunity to use technology to improve the tax appeal process, both internally for the government and outwardly for citizens. Digitization could speed up processing and communication, increase efficiency, reduce costs and improve transparency. Because the process dealt with legal documents, however, they needed a system that did more than replace mountains of paper. It needed to also enable legally binding e-signatures.

Legal documentation is one of the last paper bastions in government agencies. In areas like judicial and law enforcement, tax records and contracts of all sorts, there's still a lot of printing out documents, obtaining manual signatures, then scanning the documents back into the system. This keeps the process long, laborious, error prone, expensive and — most important — frustrating for citizens who are used to e-signing and digitally submitting financial documents, including federal tax returns.

Now solutions that combine cloud-based customer relationship management (CRM) with e-signature applications are changing that. Agencies can use these tools to build systems of agreement, which digitize the creation, signing and management of legal documents (see sidebar, "Systems of Agreement Defined"). These systems integrate with existing digital processes, so when a citizen submits a form via a website, for example, that form can be automatically routed to the appropriate officials for approval, with legally binding signatures collected digitally. The system can then notify the citizen, track fees owed and paid, and keep all relevant information updated.

Such systems improve service to individuals, who can be approved for benefits more quickly, for example, and business owners, who will find it

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# ESSES A THING OF THE PAST

easier to apply for licenses and respond to RFPs. Meanwhile, government employees have more time to deal with people and strategic business problems, rather than paper. These improvements also fast track agencies on their path to digital transformation.

## BURDENED BY PAPER

Kristen Kane, chief counsel for the California Office of Tax Appeals and its first employee, explains why the office needed a digital legal case management system. Under the state's new law, tax appeals would be decided by panels of three administrative law judges, but the judges and subject matter expert attorneys were dispersed between Sacramento and Los Angeles. Shuttling the legal paperwork associated with each appeal between two cities would be expensive and impractical.

"If we were to print all the documents, it would amount to 20 to 30 bankers' boxes of paper going back and forth," Kane says. "You can imagine the time and money saved by being able to do all this electronically."

As a solution, they chose to implement DocuSign's System of Agreement Platform for Salesforce. DocuSign is used to prepare, sign and act on agreements. The ability to implement the software with configuration rather than coding — which meant the system could be up and running quickly — was one factor in the decision, says Kane. But even more important was the integration of the CRM system with an e-signature capability.

The digitized case files also enable easy and effective collaboration among the judges and attorneys.

"They all have access to the same information at the same time," she says. "Without a digital system, we wouldn't have been able to have collaboration between Sacramento and LA."

The judges can even discuss a case in real time via Chatter, Salesforce's collaboration platform. Once the judges decide on a ruling, the lead judge writes an opinion, which is routed to the other judges for signature. Having an automated process helps ensure this process takes place in a prompt and orderly fashion.

## IMPLEMENTING SYSTEMS OF AGREEMENT: BEST PRACTICES

As with any change, introducing a system of agreement to replace paper has its challenges. Users and vendors recommend several best practices.

**Have a change management strategy.** This is especially important with lawyers, who "love their paper files," notes Kane. She convinced them by walking them through how the system worked and specifically showing them how much time they would save and how much more effectively they could collaborate.

**Re-evaluate the paper process before digitizing.** "Too often, users simply automate an existing process, thereby missing an opportunity to streamline it," says Jennifer Royer, DocuSign's director of product marketing.

By rethinking the process, users may be able to reduce the number of steps involved.

**Start with a customer-facing quick win.** Agency employees can be more easily sold on the advantages if you start with a process that demonstrates clear benefits to citizens, and how employees can better serve them.

**Devise a broad strategic roadmap so everyone sees how each project aligns.** That way, after initial quick wins, everyone in the agency will understand what the next phase of implementation will be, and hopefully why.

Because they were starting from scratch, the early steps at the Office of Tax Appeals had to be internal — digitizing case management for the benefit of judges and attorneys. But its next steps are to automate the front end, so citizens can file their appeals via an online portal, says Kane.

But even streamlining internal processes benefits taxpayers. By becoming more efficient, agencies are saving taxpayer dollars. A system of agreement using a combination of customer relationship management and a digital signature application is a simple, straightforward path to higher efficiency, lower costs and better service — and a more modern government.

*This piece was developed and written by the Center for Digital Government Content Studio, with information and input from Salesforce and DocuSign.*

## BENEFITS QUANTIFIED

Based on studies of government customers, DocuSign quantified the following savings from its e-signature application:



**Savings:** \$35.16 per document, including dollar cost savings, productivity gains and additional revenue or tax dollars received



**Time:** Average reduction in turnaround time of nine days



**Accuracy:** 92 percent reduction in errors, such as missing or incorrect information



Founded in 2003, DocuSign® offers the leading e-signature solution as part of its broader platform for automating the agreement process. Today, DocuSign's cloud-based platform enables more than 400,000 companies and hundreds of millions of users in over 180 countries to accelerate business and simplify life. For more information, visit [www.docusign.com](http://www.docusign.com), call +1-877-720-2040, or follow @DocuSign on Twitter, LinkedIn, Facebook, Instagram and Snapchat.





# 2018 HINDSIGHT

Throughout the year, the editorial staff at *Government Technology* works to bring readers the news they need — from security breaches to tales of tech success — to make public-sector IT smarter, more efficient and more accessible. What follows is a look back at our most popular stories of the year, which offers a revealing view of what drove good government work in 2018 and a glimpse at what the next chapter holds.

# JAN

California entrepreneurs Yury Lifshits and Stepan Korshakov turned to data to tackle the state's astronomical housing prices, launching **Statecraft** as part of Y Combinator's Winter 2018 cohort. Their goal: to clean up and make more accessible the government data sets containing information relevant to **housing policy**. With better data, they said, government could make better policy and create more opportunity.

In other data news, mapping platform company **Mapzen** shut its doors. Thanks to its **open data and code**, users were able for a short time to run the projects they built on Mapzen even after the enterprise folded. In the waning days, fans could snag a wealth of GIS data to create maps and conduct research.



January saw predictive and analytic implementations come to the fore in **Chicago**, as the police department rolled out new data tools to drive a continued decline in shootings and murders. The analytics tools support the recently created Strategic Decision Support Centers (SDSCs), local nerve centers for a high-tech approach to fighting crime in high-crime areas. The city said it would continue to expand such **digital crime-fighting initiatives**.

**South Bend, Ind.**, started off the year by bringing new life to old real estate. The six-story, 800,000-square-foot Studebaker plant – idle since 1963 – was repurposed for new tenants. A tech-driven woodworking company moved in, drawn by the city's low real-estate costs, cool weather and access to **fiber-optic connection speeds**.

In a closely watched policy move, **New York City** passed an **"algorithmic accountability bill,"** creating a task force of technology ethicists, city department heads, tech companies and legal experts to monitor the fairness and validity of algorithms used by municipal agencies to set bail, place students and identify Medicaid fraud, among other things. The city wants to make sure the tools aren't contributing to unintentional bias.

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**"5G DEPLOYMENT** is not imminent at all," said Doug Dawson of CCG Consulting, a telecommunications advisory firm, in an interview with *GT* in early 2018. But this year's headlines might lead to a different conclusion.

Possibly the buzziest term in telecom this year, major carriers aggressively lobbied to pepper urban communities with the small cell technology that brings speeds 10 times

DAVID KIDD



faster than 4G with lower latency. A big part of the effort was changing the rules to make it easier for telecoms to install the cells that power 5G. FCC Commissioner Brendan Carr explained in February that rules governing infrastructure were crafted with hundred-foot 3G and 4G towers in mind, not backpack-sized 5G equipment. “It’s the regulatory equivalent of requiring a commercial pilot license to fly a paper airplane,”

he said, citing concerns that high costs and cumbersome red tape would put the U.S. at a disadvantage on the world stage.

Many local communities pushed back, fearing the loss of local control over decisions within their borders. Nevertheless, the FCC decided in late September to ease the path for 5G by requiring localities to speed up application processing times and limiting what cities can charge for cell installations on new and existing poles.

Several communities had already laid significant groundwork in advance of the FCC decision, seeing its potential to set them up for sophisticated smart city endeavors requiring a foundation of sound connectivity. 5G rollouts from both AT&T and Verizon began to dot the map in 2018. Verizon chose Sacramento, Calif., and Los Angeles, as well as Indianapolis and Houston, while AT&T set up the service in 12 cities including New Orleans, Oklahoma City, Dallas, Raleigh and Jacksonville, Fla. These lists will grow in 2019 as 5G continues to proliferate and second-wave cities look to apply the lessons learned from early adopters. 



In **Louisville**, officials put in a bid to become part of a Federal Aviation Administration program that would allow the city to pilot the use of **autonomous drones to respond to the sound of gunfire**. The drone could capture video evidence to help authorities find the person who fired the weapon, while sparing cops from having to respond to false alarms.

**Columbus, Ohio**, officials issued an RFP for a vendor to develop an operating system to support applications intended to improve mobility, citizen engagement and equity. “We see this as the backbone and the heart of the **Smart Columbus portfolio of projects**,” said Brandi Braun, Columbus’ deputy innovation officer. The city asked vendors to design, build, test and implement a system that could capture data on traffic, weather and other key metrics.

**Los Angeles** became the first city to earn a gold certification from Bloomberg Philanthropies’ **What Works Cities program**, which aims to accelerate how cities use data to serve residents. “We’re proud to be No. 1 in the country, but we know we need to work hard to maintain that next year,” Mayor Eric Garcetti said.

To fight the flu, Missouri officials reported on a recent deployment of a **data visualization** platform from Seattle-based LiveStories to deliver current information on **influenza outbreaks**. The application securely houses agencies’ data in the cloud, and a data-driven website enables citizens to track cases by week, flu type and age of victim.

# MAR

In security news, **Google** reported that a majority of state and local government websites aren't doing enough to protect visitors. The company cited lax implementation of the basic encryption implied by a website having a URL that starts with HTTPS instead of HTTP. Of 50 state **government websites**, Google said, 29 had front pages that were **not encrypted**. Of the 10 most populous cities in the nation, six had non-HTTPS front pages.

Google also announced it had concluded a pilot study of its **Android Emergency Location Service (ELS)**, a supplemental service that sends location data directly from Android handsets to emergency services when a person calls



911. The goal is to provide more **accurate location information** to first responders during an emergency. ELS is activated automatically when a user places a 911 call.

Cities that are not actively trying to get smarter could well fall behind. That was the message delivered by Bob Bennett, chief innovation officer of **Kansas City, Mo.**, at the third annual **Smart Cities Connect Conference** and Expo. As the Internet of Things revolutionizes the citizen experience, "those cities that fail to adjust will become part of a new **'digital Rust Belt,'**" he said.

Also with an eye toward the big picture, KPMG principal Steve Bates told the Public Sector CIO Academy in Sacramento that the role of the **public-sector CIO must evolve**. In the face of rapid technological change, "you cannot run IT services in the same ways you have always done," he said. Specifically, IT leaders need to make their organizations more responsive to citizen needs.

In March we reported on the growing number of **DMVs shuttering legacy systems** in favor of offering customers faster counter service or even the opportunity to conduct transactions online. The new systems are making it simpler to comply with federal security standards while also making it easier to incorporate emerging technologies.

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# BLOCKCO

**IN TERMS OF HYPE**, government couldn't seem to get beyond blockchain when it came to emerging tech in 2018. Jurisdictions large and small moved from speculation about the distributed ledger technology to concrete pilots that tested whether it was feasible: Could blockchain improve everything from voting to finance?

In January, 11 state legislatures introduced bills to either regulate financial tech like blockchain-based cryptocurrency or to create an environment where entrepreneurs might take advantage of the state's attitude toward cutting-edge technology. For example, Arizona introduced SB 1091,

which would allow residents to pay their taxes via cryptocurrency, and the Illinois Blockchain Task Force released its first report, finding that the tech would enhance digital transformation and economic development in the state.

Berkeley, Calif., moved to see what blockchain could do for the city's municipal bonds by announcing a partnership with startup neighborly and the University of California, Berkeley's Blockchain Lab. In what would be the first-ever tokenized muni bond, the city would sell debt the way it always has to fund projects outside the scope of its budget, but it would be digitally recorded in a public ledger. Putting bonds on blockchain would also speed

In April, **Tyler Technologies** announced it would **acquire Socrata**, an early leader in the development of open data portals among state and local governments. The companies said their aim was to make Socrata's data publishing capabilities available to any government using Tyler's products.

*GT* also looked at the **rural broadband gap**: While 92 percent of the total U.S. population has access to both fixed terrestrial services and mobile LTE, this drops to 68.6 percent in rural areas. While Oregon sought a legislative fix, Minnesota worked to build partnerships between phone and electric cooperatives, with an eye toward leveraging their expertise to expand the reach of rural broadband.

Tiny, two-square-mile **West Hollywood, Calif.**, touts itself as a smart city destination. "We're kind of like an ideal test bed for a lot of these **smart city technologies**, because of our size, because of our density," said Francisco Contreras, innovation manager for West Hollywood.

# CHAIN

up a traditionally plodding government process and would allow the city to pursue bonds that are much smaller than usual. Berkeley plans to put the money toward programs to help the homeless and create more affordable housing in the pricey Bay Area city.

Amid ongoing debates about the virtues and drawbacks of electronic voting, West Virginia took online elections to a new level and became the first state to allow online voting via blockchain. In partnership with Voatz, a Boston-based startup, a small pilot offered to some military service members stationed overseas allowed them to vote in

the state's May 8 primary election quickly, securely and anonymously. Despite some skepticism, West Virginia opted to extend the limited test of the system to the Nov. 6 general elections.

The idea behind these pilots and others is that blockchain could create an unhackable record of government transactions in a world where cybersecurity is at the fore of every CIO's mind. But although 2018 saw a small groundswell of blockchain projects, the concept has yet to gain too much ground. 2019 can expect to see a similar trickle of pilots, though critical mass may still prove out of reach. **bt**

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Two **transportation** initiatives rose to the fore, with public agencies in opposite regions of the United States implementing the same intelligent software and devices to monitor traffic signals, move vehicles through construction zones and resolve other transit issues. The **Massachusetts Department of Transportation** and **Pima County, Ariz.**, both announced they were piloting projects utilizing tools from analytics company Miovision to improve their on-scene vision, communication and analysis.

Transportation took center stage in Florida, too, with **Tampa Bay** officials signing a memorandum of understanding with the **Center for Urban Transportation Research** at the University of South Florida to investigate transportation solutions together as a first step toward implementing broader smart cities solutions.

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# FirstNet

**AS ONE *GT* HEADLINE READ** late last year, 2018 was poised to be the year for public safety networks.

The last days of 2017 saw a flurry of activity as a remaining handful of holdout states opted to join FirstNet by the Dec. 28 deadline, including California Gov. Jerry Brown making his final decision on the matter late that night. But even after all 50 states plus six territories

joined the dedicated communications network for first responders, the story was just beginning.

Verizon had already announced the creation of a similar network to FirstNet to offer a competitive alternative for public safety agencies that would give first responders priority access to its system to speed communications. FirstNet, with partner AT&T, would

instead create new priority levels for emergency services personnel and law enforcement to respond to emergencies and communicate more quickly. Both systems launched just days apart at the end of March in limited introductions.

By July, FirstNet reported that more than 1,500 agencies had joined the network, and early adopters immediately saw its benefits.



The Sheriff's Office in Brazos County, Texas, was the first agency in that state to join First-Net and found that the new classifications offered increased its coverage across the large jurisdiction from 60 to 100 percent.

However, the vast majority of the country's 18,000 local law enforcement agencies have joined neither FirstNet nor Verizon's network, perhaps because they are reluctant

to try something that isn't yet completely proven. "What happens when a department adopts it? How do you communicate? How are officers given equipment? How do they use the voice and texting when driving to a call?" asked Chuck Wexler, executive director of the Police Executive Research Forum. "There are just practical issues. A lot of policing is a word-of-mouth kind of enterprise in

which people will look to hear what's working and what isn't."

But as wildfires, hurricanes and other disasters continue to make headlines in seemingly increasing numbers, it may be likely that more first responder agencies will find favor even in unknown tech if it means saving more lives. [gt](#)

# MAY

**Honolulu CIO Mark Wong** saved the IT budget \$1 million each fiscal year for the past four years by bringing a big chunk of software and hardware development in-house, as well as training for his staff of 150 people — a strategy he recommends to his peers.



A report by the Shared-Use Mobility Center showed that transportation network companies (TNCs) like **Uber and Lyft aren't replacing public transit**. While TNCs make up a part of the overall transportation landscape, a survey of riders in multiple cities showed most leaning toward public transit for their daily commute. TNC use did tend to spike on weekends and late in the evenings when transit service typically is scaled back.

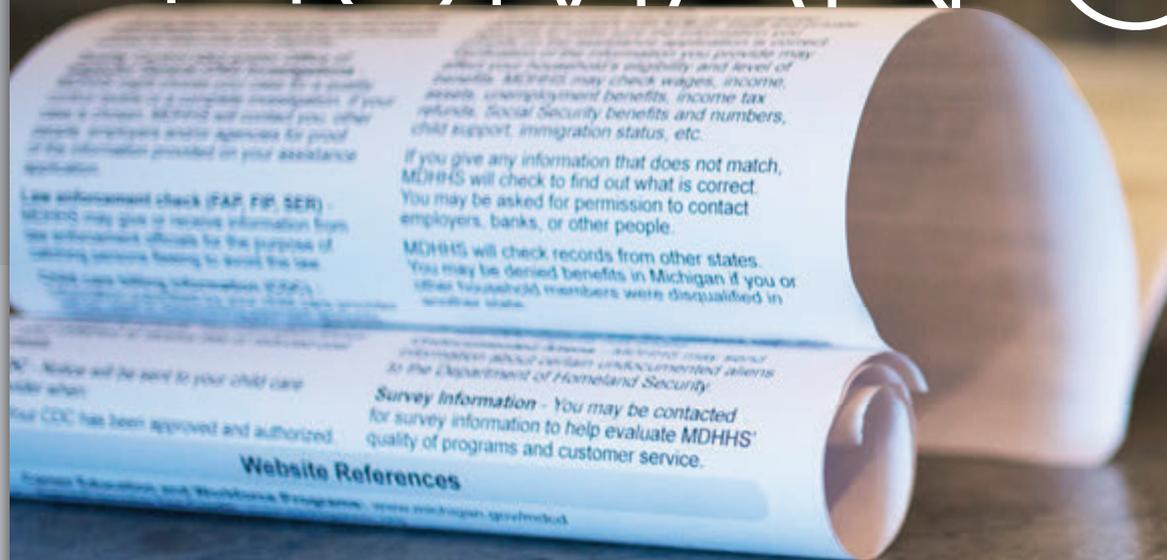
William W. Riggs, a professor of management at the University of San Francisco, following his participation in the 2018 National Planning Conference, warned of a possible **downside to the rise of AVs**: lots more cars on the roadways and, potentially, lots more congestion. "This could have the adverse impact of expanding cities beyond their existing boundaries, gobbling up open spaces, moving people away from downtown areas," he said.

Park planners meanwhile turned to a new Web-based tool from The Trust for Public Land to better understand park access issues. The ParkServe tool offers detailed mapping and other information about more than **130,000 public parks** in more than **14,000 cities and towns**. The aim: to help planners determine what share of the community's residents are within a 10-minute walk to a park, broken down by race and ethnicity, age and household income.

**Cyberattacks** made headlines in May with a rash of incursions. In just a few days, the hacktivist group **AnonPlus**, an offshoot of the renowned hacktivist group Anonymous, claimed to have defaced websites operated by the New Mexico Workers' Compensation Administration, the security site InfraGard Connecticut and the Idaho Legislature.

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# HUMAN-C



**GOVERNMENT HAS THE REPUTATION** of being stagnant, behind the curve and difficult to interact with, and traditionally its websites reflect that. But 2018 saw real change start to gain ground. While state and local sites were previously built to make sense to internal staff, or what internal staff thought they knew about how users accessed services, the concept of "human-centered design" has begun to take hold. It means gov tech leaders are starting to think about how end users, both staff and residents alike, actually use their services, a concept that has been critical to the success of private companies like Amazon and Apple.

Just like a user can buy a book from Amazon with only a couple intuitive clicks, what if they could, say, renew a driver's license the same way?

In practice, this has meant everything from implementing chatbots and voice assistants to simply making more services available online. In January, Orlando, Fla.'s innovation director found the city had 225 services that could be pushed to the Web and set an aggressive timeline to make 50 live by summer. Chicago developed its own municipal ID that would make access to services easier for residents who needed them. The CityKey card was created through meetings

# CENTERED DESIGN

with stakeholders across Chicago, all giving input into how the card should work and accounting for individuals' unique needs.

Perhaps the biggest story of the year came from Civilla, a Detroit design studio that has made human-centered design its focus. The company took a close look at the Michigan Department of Health and Human Services (MDHHS) benefits application, talking to actual users of the unwieldy 45-page paper document to apply for help from the state, such as food assistance. They created a 100-foot "blueprint" that visually communicated the massive hurdles Michigan was asking its citizens to overcome to

get the services they needed. More importantly, they got state officials to come look at it and walk through a simulation of navigating the existing system. In January, MDHHS adopted a new, trim form of the application based on Civilla's redesign — it's now just 18 pages long.

As technology becomes more integral not only to the daily lives of citizens but also to every aspect of the government experience, we can expect to see even more human-centered design baked into the gov tech of the future. It'll be tougher to get a project through to delivery without user testing in 2019. **gt**

**Kansas City, Mo.**, has a lofty goal: to become "the world's most connected smart city." The city issued an **RFP for a partner to guide smart city projects**, develop a long-term strategic plan, and design and build an "integrated suite of sensors, networks and data and analytics platforms," according to the RFP. The winning proposal was expected to be selected in mid-October.

Large providers of parking are experiencing revenue declines as flyers opt for Uber or Lyft to get to and from airports. A survey released by the International Parking and Mobility Institute found that transportation network companies are having a significant impact, particularly on **curb management strategies** as parking officials try to strike the right balance between accessible parking and the many other uses demanding a spot in the public right-of-way.

After using large contracts with relatively few vendors, both Virginia and Georgia are moving toward a multi-sourcing model for IT services, deploying smaller, more agile contracts. A key component is a **multisourcing service integrator (MSI)**, a vendor that connects new suppliers coming to work for a state. **Georgia** brought on Capgemini as its MSI in 2015, while **Virginia** announced this year that it would retain Science Applications International Corp.

As **Sacramento, Calif.**, pioneers a **5G network** this year, one test of the system will be a pilot involving **digital license plates** on the city's 35 all-electric Chevy Bolt fleet cars. The digital plates will allow the city to see where its vehicles have been and how many miles they've traveled, and will test some of the ways the city might use technology to help ease self-driving vehicles into the existing road network.

One Oregon state employee fell for a **phishing scam**, which prevented thousands of other staff from corresponding with members of the public via email. The malicious link generated more than 8 million spam emails from an **Oregon.gov** email address, leading several private email providers to temporarily blacklist the domain Oregon.gov. The state had to work to restore Oregon.gov's sender reputation score while reminding employees about information security awareness resources.

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Let's face it, law enforcement professionals spend a lot of time in their vehicles. Whether in pursuit of wrongdoers or extended idling in the name of keeping the peace, they need a vehicle that's purpose-built for the job. For nearly 70 years Ford has been that vehicle, working alongside law enforcement to provide the tools to protect and serve. And with the 2019 Ford Police Responder Hybrid Sedan, the first-ever pursuit-rated hybrid police vehicle, and the all-new 2020 Ford Police Interceptor Utility, the first-ever pursuit-rated hybrid police SUV to market, we will continue that tradition for generations to come.

Both the Ford Police Responder Hybrid Sedan and the all-new Ford Police Interceptor Utility are not only purpose-built for duty, but they're also smart investments for the community. Standard hybrid powertrains allow the gas engine to shut off for extended periods during idling, offering significant potential fuel savings and reduced CO<sub>2</sub>\* emissions compared with traditional police vehicles, on top of their significantly improved fuel economy while driving.\*\* We're talking potentially \$3,500 to \$4,200 annually in per-vehicle fuel savings at \$2.75 per gallon, depending upon which vehicle you choose. What's more, we provide a standard Ford modem with a two-year complimentary Ford Telematics™ subscription† — so you can track your fuel and CO<sub>2</sub> savings, and report your progress back to the community.

In addition to improving community budgets, the Ford Police Responder Hybrid Sedan and all-new Ford Police Interceptor Utility are purpose-built to meet the unique needs of law enforcement. Contributing to its legacy of safety first, the Ford Police Interceptor Utility is engineered to meet the 75-mph rear-impact test, the only vehicle in the world tested to this rigorous standard. Its standard hybrid AWD powertrain also provides increased horsepower, torque, acceleration and top speed vs. today's 3.7L AWD — with no trade-offs in safety, passenger or cargo space. This type of innovation and response to the needs of law enforcement is why the Ford Police Interceptor Utility outsells all other police vehicles combined.‡

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\*Burning a gallon of E10 ethanol fuel produces about 17.68 pounds of CO<sub>2</sub> emitted from the fossil fuel content, according to data provided by the U.S. Energy Information Administration (<http://ford.to/eiareport>). \*\*Police Responder Hybrid Sedan: Projected EPA-estimated rating of 40 city/36 hwy/38 combined mpg. Actual mileage will vary. Police Interceptor Utility Hybrid: Projected EPA-estimated combined rating of 24 mpg. Interceptor Utility Standard HEV AWD. Actual mileage will vary. Final EPA-estimated ratings not yet available. †2-year subscription for Ford Telematics starts on vehicle sale date. Subscription features may be limited. Factors causing this limitation may include, but are not limited to, issues related to cellular coverage, carrier outages and carrier network service interruptions. Complimentary service ends after two years. ‡Based on IHS Markit new vehicle registration data limited to government entities and POL and SSV trim vehicles for full year 2017.

# JUL

**Google Maps** announced several changes, including requiring all projects to have an official application programming interface (API) key in order to work. The key also must be attached to a credit card, which Google will charge if users exceed a certain number of **API requests**. Public-sector officials did not express much concern about the changes, but civic hacking groups that use government data could be impacted.

Rather than stringing fiber-optic cables in the air or burying them underground, a startup called **Traxyl** is using methyl methacrylate to **“glue” the fiber cables to the ground**. In projects with Stillwater, Okla., and Fauquier County, Va., Traxyl is looking at last-mile applications, and a city that installs a fiber network could use the product to cheaply run fiber from that central network to the customers who will use it.

A **Federal Aviation Administration** pilot project is allowing 10 local and state governments and their private partners to **test drone operations that are currently restricted**: flying drones above groups of people, at night or beyond their line of sight without waivers. The 10 test sites are the Choctaw Nation of Oklahoma; San Diego; Herndon, Va.; Kansas; North Dakota; the Mosquito Control District in Lee County, Fla.; the Memphis-Shelby County Airport Authority; North Carolina; Reno, Nev.; and the University of Alaska Fairbanks.



**Iowa** is working to become the first state to let citizens use their smartphones as mobile or **digital drivers’ licenses (mDL)**. The state signed contracts with several firms and expects to spend \$3.5 million to make the licenses a reality this year. The effort is being watched closely by other states, like Delaware, which began an mDL pilot in March 2018.

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# MICROMOBILITY

**THE QUEST TO SOLVE** the perennial first-mile, last-mile problem made new headway in 2018: Cities across the country looked at new ways to use microtransit to make it easier and more efficient to get from point A to point B. And while everyone agrees that there need to be effective, affordable options for residents of all communities to get from home to work, school and services, public- and private-sector groups — not to mention citizens themselves — haven't yet arrived at the best way to achieve transit utopia.

This year the Los Angeles County Metropolitan Transportation Authority (L.A. Metro) looked into creating a microtransit system to offer door-to-door service, similar to ride-sharing companies like Uber and Lyft. The agency contracted with three companies to do feasibility studies for where such a service might prove useful. In 2017, L.A. Metro's ridership dropped 4.4 percent from 2016. Other cities have partnered with agencies like Strava's public partnership arm, Strava Metro, and other apps that track biking and pedestrian routes to use data from app users about where the city should plan its cycling infrastructure. While this brings questions of privacy, companies report that they can't track just one rider or a single trip.

But what really stole headlines in 2018 were e-scooters. And bike-shares. And bike-share companies rolling out e-scooters. It's seemingly the perfect solution to the last-mile problem. But when scooters descended on cities from New York to San Diego, government wasn't prepared for the problems they brought: dockless scooters left strewn on already-crowded sidewalks; users flouting safety rules; run-ins with cars; and more. In a particularly destructive move, some Southern Californians expressed their dislike for scooters from companies like Bird and Lime by setting them on fire, smearing them with feces and dumping them into the ocean.

Many governments, however, are learning to work with the scooters, not against them. While some cities like Denver initially banned the two-wheelers completely, they began to let them back on the streets with new permits and other regulations. Other cities are working with providers to add geofencing capabilities to contain where scooters can be used. So it seems the scooters — and bikes and Ubers and more — are here to stay. What ground will they gain in 2019? [gt](#)

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When the **Department of Justice** announced that Russian intelligence officers stole information on approximately **500,000 voters** from a hacked state election board website, it raised eyebrows in Illinois. The state previously disclosed that it had notified 76,000 residents that their voter registration data may have been viewed by the attackers. Although the DOJ didn't specify which state was hit, Illinois officials assume the announcement refers to the Land of Lincoln. The difference in numbers comes down to the methodology used to count the potentially affected voters.

A **mega-merger** has created one of the largest companies focused explicitly on state and local gov tech in North America, bringing together Superior, TriTech Software Systems and Zuercher, along with the public-sector and health-care business of Aptean. The combined entity, dubbed **CentralSquare Technologies** in September, provides technology solutions to more than 7,500 public-sector agencies.

## AUG

As **L.A. Metro** builds relationships with private mobility providers such as Uber, Lyft and Lime, its TAP platform is being rebranded as TAPforce, an account-based system. It will allow riders to pay for both the Metro's bus and light rail system and mobility providers that have partnerships with TAP, like **Uber, Lyft and Lime**, all within its own system.

Tampa, Fla., is experimenting with a traffic optimization solution from **Waycare** to better analyze data coming from its own infrastructure — sensors, cameras, and other devices — as well as data points flowing from sources like **Waze** to provide real-time information about traffic conditions. The cloud-based platform uses machine learning to better understand traffic dynamics and better manage traffic and the city's response to accidents.

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# NET NEUTRALITY

**THE WATERSHED DECISION** by the Federal Communications Commission that overturned Obama-era net neutrality protections took place in December 2017, despite the impassioned efforts of local officials and public-sector technology leaders lobbying on the front lines of the debate for a free and open Internet.

What kept state lawmakers (and the *GT* newsroom) busy in 2018, though, was crafting state-by-state responses to what was widely perceived by policymakers on both sides of the aisle as a blow to freedom of information online. In January, Montana Gov. Steve Bullock signed an executive order that would prevent providers of Internet service in the state from slowing down content as allowed by the repeal of net neutrality. A handful of other governors did the same, while separate efforts to

protect net neutrality are also underway in the form of legal challenges by more than 20 state attorneys general.

As for legislative efforts, the National Conference of State Legislatures counts more than 70 bills in 30 states aimed at preserving elements of net neutrality, but not many have passed. Oregon, Vermont, Washington and California are the only states that successfully passed pro-net-neutrality laws this year. But when California Gov. Jerry Brown signed SB 822 into law, the U.S. Department of Justice issued a swift legal response — filing a suit to keep it from going into effect, calling the bill “unlawful and anti-consumer.” Big telecom is expected to take similar action, all but promising that the net neutrality battle will continue unabated in 2019. 

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A startup called **RideAlong** is working with emergency responders in Washington state to improve their interactions with people who have mental health problems by helping providers build profiles for “frequent flyers” — individuals whose names frequently run through the 911 system. In Seattle, RideAlong studied a small group and documented a **35 percent drop in 911 calls** related to those people in the six months after Seattle PD started using RideAlong.

**Conduent**, the large process services company, announced it would sell off six “non-core” gov tech assets to Avenu. Conduent, a Xerox spin-off, will retain most of its government business. The units it’s selling represent about 5 percent of the company’s public-sector business. **Avenu**, a relatively new portfolio company of Mill Point Capital, focuses on licensing and sales tax collection. Including customers Avenu already had, the deal will give the company close to 3,000 clients in all 50 states and Canada.



While many people are optimistic that **body-worn cameras** (BWCs) will bring greater **accountability and transparency** to police work, the technology also is raising privacy concerns, from protesters’ images captured on BWCs for later identification by law enforcement to recordings of vulnerable victims of crime such as rape. In a 2017 scorecard report from the Leadership Conference and Upturn, 67 of 75 law enforcement agencies had a personal privacy policy in place, but only 18 of the agencies had policies that the two organizations deemed acceptable.

## SEPT

Government Payment Service Inc., known online as **GovPayNet**, inadvertently exposed at least 14 million customer receipts dating back to 2012, including personal identifying information, according to an investigation by website [Krebsonsecurity.com](http://Krebsonsecurity.com). GovPayNet issued a statement saying that it had addressed a potential issue and no customer suffered as a result of the **breach**.

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# Privacy

## 2018 WILL GO DOWN AS THE YEAR

that privacy came to the forefront. In March, news broke that political consulting company Cambridge Analytica mined data from tens of millions of Facebook users and used it in service of President Trump’s campaign.

“The lack of oversight on how data is stored and how political advertisements are sold raises concerns about the integrity of American elections as well as privacy rights,” wrote Sens. John Kennedy, R-La., and Amy Klobuchar, D-Minn., in a letter asking for Mark Zuckerberg and his counterparts at Twitter and Google to appear before the United States Senate. Zuckerberg famously appeared in April, assuring policymakers that the social media giant would refine its privacy policies and sever ties with Cambridge Analytica. The

scandal sent Facebook’s stock values plummeting, while revealing a startling gap in understanding on the part of lawmakers on the basic tenets of the Internet economy.

In late May, Europe’s General Data Protection Regulation, known as GDPR, went into effect, ushering in a vast new set of rights for European citizens related to the collection, use and protection of personal data. As *GT* reported at the time, direct impacts to state and local government in the U.S. as a result of GDPR were minimal, but it did generate a lot of conversation about whether American policies should be revised to include similar protections.

California led the way on that front in June when the Legislature raced to get a bill before the governor to keep the issue



off the November ballot. With an effective date of January 2020, the measure gives companies some time to adjust their operations to comply. Under the bill, consumers have the right to know how their data is being used, the right to have their data deleted, the right to prevent their data from being sold and protection from retaliation if they opt out of data collection and sale.

Privacy issues are increasingly bubbling up around smart city deployments, which often hinge on a significant amount of data collection. And while it makes sense that more data on things like pedestrian movements, transit use, crime, etc., can help inform better public policy, it opens up the

possibility of that data being misused. It's a phenomenon that's contributing to the rise of the government chief privacy officer (CPO). Several new CPOs were named in 2018, and many argue they deserve a seat at the table as smart city plans are being formulated, rather than on the eve of project launch, or worse, after privacy has been compromised.

Expect the privacy debate to rage on well into 2019, as organizations in government and the private sector move toward more transparent privacy practices that aim to better protect personally identifiable information. But as the steady flow of data breaches regularly reminds us, it'll be a bumpy road. **bt**

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Gov. Jerry Brown signed two bills into law that could make manufacturers of **Internet-connected devices** more responsible for ensuring the **privacy and security** of Californians. Both bills, which will become law in 2020, require manufacturers of connected devices to equip them with a "reasonable security feature or features" that are designed to protect the device and its information from unauthorized access or modification.



As engineers prepared to remove the Bloede Dam from the Lower Patapsco River in **Maryland**, scientists were eager to try using drones to track the impact of the dam removal. A team of researchers led by the University of Maryland, Baltimore County, planned to use small, **off-the-shelf drones** to track sediment movement more accurately than ever before, at a fraction of the expense.

Several troubling studies having been published on potential bias and accuracy of certain algorithms used by cities to determine things such as whether someone receives bail or where police resources are deployed. Chris Bousquet of Data-Smart City Solutions argues that the answer to **bias in algorithms** is to ensure that the automated tools cities rely on to make critical decisions are fair.

## OCT

A new player has been added to the list of companies providing permitting, licensing and land management software to government. **Oracle** now offers a Public Sector Community Development product, thereby inserting itself in the market alongside **Tyler Technologies** and **Accela**. Oracle officials believe the flexibility and subscription-based nature of their cloud product will help them reach smaller jurisdictions than they typically engage with.

FLICKR/CHESAPEAKE BAY PROGRAM



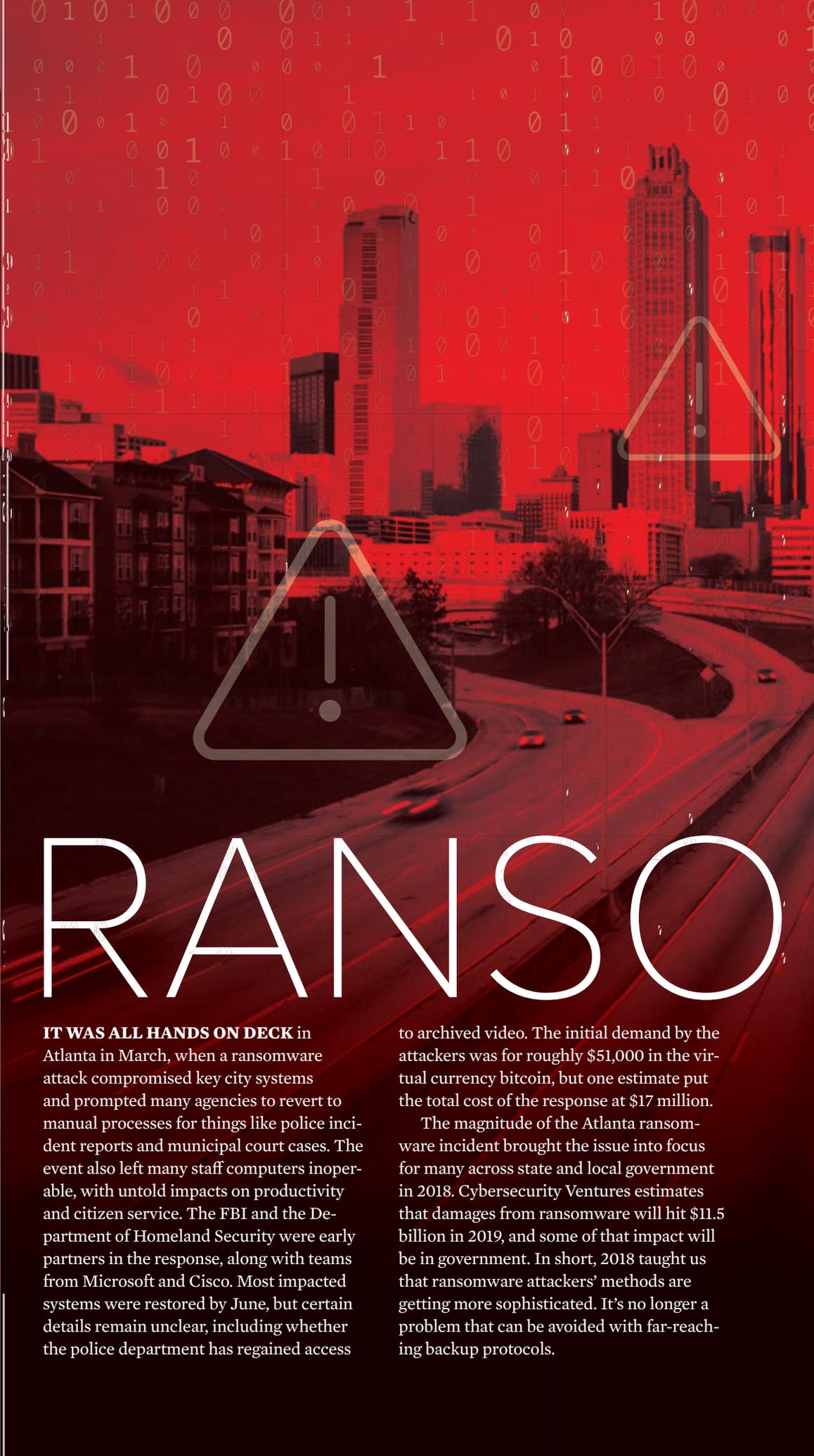
What does **tomorrow's police force** look like? A report from Accenture released in October surveyed officials from around the globe, revealing that the fundamental job of police won't change, but agencies need to make some adjustments in order to effectively serve and protect their communities in the future. Broader community partnerships and a more flexible, **digitally skilled workforce** will be needed.

Home to Chicago, **Cook County, Ill.**, has attempted to replace its ERP before. Until recently, a '90s-era system served the second-most populous county in the country, which operates in a highly federated environment. Announced in September by Board President Toni Preckwinkle, the new \$75 million contract to upgrade the **ERP** uses Oracle software, with IBM serving as system integrator.

In a study of 400 state government websites by the **Information Technology and Innovation Foundation**, 41 percent were deemed inaccessible to people with disabilities. If, for example, a blind person visits a state website and the graphics aren't correctly labeled, a screen reader cannot translate them. As government strives to be more inclusive and accessible, *GT* columnist Daniel Castro recommends an **"accessibility first"** strategy.

Wednesday Oct. 3 saw the debut of the **"Presidential Alert"** system, which hit most smartphones in the U.S. the same way as Amber Alerts do, with the message "THIS IS A TEST of the National Wireless Emergency Alert System. No action is needed." Sent out by FEMA, the system is designed to allow the president, and the federal government more generally, to communicate directly with Americans during times of crisis.

DAVID KIDD



# RANSOM

**IT WAS ALL HANDS ON DECK** in Atlanta in March, when a ransomware attack compromised key city systems and prompted many agencies to revert to manual processes for things like police incident reports and municipal court cases. The event also left many staff computers inoperable, with untold impacts on productivity and citizen service. The FBI and the Department of Homeland Security were early partners in the response, along with teams from Microsoft and Cisco. Most impacted systems were restored by June, but certain details remain unclear, including whether the police department has regained access

to archived video. The initial demand by the attackers was for roughly \$51,000 in the virtual currency bitcoin, but one estimate put the total cost of the response at \$17 million.

The magnitude of the Atlanta ransomware incident brought the issue into focus for many across state and local government in 2018. Cybersecurity Ventures estimates that damages from ransomware will hit \$11.5 billion in 2019, and some of that impact will be in government. In short, 2018 taught us that ransomware attackers' methods are getting more sophisticated. It's no longer a problem that can be avoided with far-reaching backup protocols.



# MMWARE

Nor is it always a one-and-done attack. Once a system is deemed vulnerable, it's more likely to be hit again. The Colorado Department of Transportation learned this in 2018 when a late February ransomware strike remained dormant on the network and then reappeared in a slightly different form a couple weeks later, surprising the agency that had already taken the necessary steps to recover. Baltimore's 911 system fell victim to ransomware in March too, taking the city's emergency dispatch system offline during a busy weekend, slowing responses due to manual call-taking that lengthened processing times.

Cybersecurity remained the biggest worry of state, city and county chief information officers in 2018 — with no end in sight — and attacks like these help justify spending on more robust protections. This year, having cyberinsurance became more common than not having it, as revealed by Center for Digital Government (owned by *Government Technology's* parent company, e.Republic) surveys. Expect cyberinsurance adoption rates to continue this upward trend in 2019, with many jurisdictions seeking specific protections for ransomware attacks. **91**



New York City's **LinkNYC kiosks**, which provide Wi-Fi access, phone chargers and more, are helping expose more New Yorkers to open data. Over 1,700 kiosks this fall displayed videos showing real people explaining how they had used some of the city's **2,000-plus open data sets**. The campaign was aimed at letting more people know that not only is open data available, it has real, practical applications.

## NOV

With hotly contested races across the country, all eyes were on **election security** during the Nov. 6 midterms. Utah was especially prepared to fend off potential threats at its cybercenter, an effort three years in the making. While the state receives **200 million to 300 million attacks per day**, they expected that number to double on election night. In preparation, the Department of Homeland Security and Utah's IT agency worked together on penetration testing the voting systems, which would not have been as effective before the cybercenter's inception.

Led by the Library Innovation Lab at Harvard Law School, the **Caselow Access Project** makes available online more than 6.5 million state and federal legal cases dating back to the 17th century. The initiative, funded by venture capital-backed startup Ravel Law, aims to make court opinions and other related documents **free and easily accessible to anyone**, and to change the way legal data is made available. "Every field is trying to learn things from big data these days," said Director Adam Ziegler, "and this data set has a lot to say about our history, our politics and our policy over time."

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# CAMPUS 360: A BLUEPRINT FOR COMMUNITY COLLEGE MODERNIZATION

Campus 360 is a strategy for ongoing education modernization. It encompasses flexible IT infrastructures with widespread automation and mobility. It also provides always-on availability to learning resources and collaboration through multi-channel environments. And it offers ways for community colleges to take advantage of the latest innovations and analytics to gain actionable insights about students. These digital touchpoints create a circle of student engagement, staff and administrator productivity, and campus efficiency.

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[#ORACLECAMPUS360](https://twitter.com/ORACLECAMPUS360)



## 1. A FLEXIBLE, CLOUD-BASED INFRASTRUCTURE

The cloud allows community colleges to reduce hardware and labor costs, which frees up resources for more strategic goals, such as enhancing student success. It also fast-tracks modernization efforts and enables colleges to adapt quickly to changing student and faculty requirements.

# THE THREE PILLARS OF CAMPUS 360



## 2. A PLATFORM FOR A CONNECTED CAMPUS EXPERIENCE

Modern, personalized, multi-channel communications and tools let students connect to education resources 24/7 and collaborate with classmates and staff. A more connected campus experience leads to higher retention and satisfaction rates and better student outcomes.



## 3. A DATA-DRIVEN CULTURE FOCUSED ON OUTCOMES

Campus 360 isn't just about being smart today, it's about being predictive for tomorrow. The more data a college collects, the more business intelligence it can gather to drive internal efficiencies, improve student outcomes and enhance cybersecurity.

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# TECH IN TRANSITION

**2018 was a big year for IT leadership change.** Longtime stalwarts of state and local gov tech moved on from their posts, their roles filled by new faces ready to continue the work of their predecessors or take it in entirely new directions. At every level of government across the country, CIOs worked to drive change in infrastructure, cybersecurity, analytics and more. Here's a look back at the major moves of the year.

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## JANUARY

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Following the retirement of Commissioner **Anne Roest**, the New York City Department of Information Technology and Telecommunications hired **Samir Saini**, previously the CIO of Atlanta, to take her place.

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**Mark Wheeler** was named interim CIO of Philadelphia — a change made permanent in September — after Charles Brennan was removed from the position.

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Washington, D.C., chose its first-ever chief data officer, **Barney Krucoff**, to

replace outgoing Chief Technology Officer Archana Vemulapalli in an interim capacity.

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**Michael Mattmiller**, Seattle's CTO of four years, resigned his post.

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**Chris Seidt**, a Louisville, Ky., IT veteran, began work as the city's director of information technology.

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New Jersey CTO **Dave Weinstein** announced his departure just ahead of the arrival of a new gubernatorial administration.

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Longtime Montana CIO **Ron Baldwin** left government for a role with Deloitte.

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## FEBRUARY

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State CIO **Shanna Rahming** left her post in Nevada after three years, and later took the lead at the Illinois Office of Strategy and Planning.



DAVID KIDD

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## MARCH

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San Francisco elevated Deputy CIO **Krista Canellakis** to the CIO position following the departure of **Jay Nath**, who vacated the post for a nonprofit position that would allow him to focus more exclusively on the Startup in Residence program he helped create.

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New York City CTO **Miguel Gamiño** departed for the private sector in March, taking a role with Mastercard in May.

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St. Louis hired **Robert Gaskill-Clemons** as its first-ever CTO; at the same time, the city also announced that **Cindy Riordan**, a city hall staffer of 23 years, had recently begun work as the new CIO.

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## APRIL

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**Tanya Hannah** was named the permanent CIO of King County, Wash., having previously served in an interim capacity since October 2017.

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**Michael Dietrich** was named the new CIO of Nevada after positions with LinkedIn, Ericsson and more.

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Thirty-year municipal staffer **Mary J. Miller** announced her retirement as Kansas City, Mo.'s CIO, and Deputy CIO **David Evans** was immediately appointed as her replacement.

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## MAY

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Oakland County, Mich., hired the first woman to ever serve as its chief information security officer, **Bridget Kravchenko**.



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Cook County, Ill., CIO **Simona Rollinson** announced her return to the private sector, prompting a search for her replacement while the county also hired its inaugural chief data officer, **Dessa Gypalo**.

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## JUNE

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Five-year Chicago CDO **Tom Schenk** headed for the private sector.

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New Jersey hired **Christopher Rein**, former deputy director of the New Jersey Office of Homeland Security's Cybersecurity and Communications Integration Cell, as its second chief technology officer.

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**Elayne Starkey**, Delaware's chief security officer of 13 years, retired from state service.

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**Rob St. John**, acting CIO, and **Agnes Kirk**, chief information security officer, both retired from the ranks of Washington state.

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**Alex Pettit**, Oregon CIO, tendered his resignation, having served in the position since 2014.

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Alaska added the position of innovation officer to its IT office, which was filled by **Jason Schneider**.

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Arkansas' Department of Information Systems named **Jennifer Davis**, a former legal adviser for DIS and the Department of Education, as its first chief privacy officer.

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**Lea Eriksen** permanently became Long Beach, Calif.'s director of technology and innovation, having filled the position in an interim status since CIO **Bryan Sastokas** left the city for the same position with the Los Angeles County Metropolitan Transportation Authority in March.

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After seven years as CIO of Albuquerque, N.M., **Peter Ambs** left to become the assistant CIO of Phoenix.

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## JULY

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Montana Department of Revenue CIO **Tim Bottenfield** was chosen to lead the state's IT department.

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**Carlos Rivero** was appointed as Virginia's inaugural chief data officer.

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Former Rhode Island Director of Government Innovation **Kevin Parker** was appointed CIO for the Illinois Department of Innovation and Technology's education cluster.

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## AUGUST

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Longtime state CIO in Ohio **Stu Davis** retired, later announcing he had taken a position with data analytics firm Sense Corp. The state named Deputy CIO **Spencer Wood** as the interim and later the permanent replacement.

GovLab Founder **Beth Simone Noveck** was tapped as the first chief innovation officer for the state of New Jersey.

New Mexico CIO **Darryl Ackley** left for a position in academia after serving the state since 2011.

**Rod Davenport**, Michigan's longtime CTO, stepped down from his state position to become CIO of the Lansing Board of Water and Light.

**SEPTEMBER**

Alaska launched a search for a new CIO after **Bill Vajda** resigned.



Michael Roling

DAVID KIDD

Charlotte, N.C., CIO **Jeff Stovall** returned to the private sector after more than 10 years as the city's head of IT.

New Jersey named **Carrie Parikh** the state's chief data and privacy officer, as well as chief operating officer of the Office of Information Technology.

Following a tenure of more than six years, Maine CIO **Jim Smith** retired.

After a lengthy search, Atlanta announced its new CIO **Gary Brantley**, who previously served in the same role at DeKalb County Schools.

Minneapolis CIO **Otto Doll** retired from his position after more than seven years. He was formerly the longtime CIO of South Dakota.

The leader of San Francisco's data work, CDO **Joy Bonaguro**, stepped down and took a position at Corelight.

**Michael Roling**, who served as Missouri's CISO since 2009, departed his role for a private software company.

**OCTOBER**

North Dakota named longtime private-sector tech executive **Dorman Bazzell** as the state's first chief data officer.

After nearly 11 years as CIO, Tennessee's **Mark Bengel** announced his retirement, and Deputy CIO **Stephanie Dedmon** was elevated to fill the position.



Kelly Jin

JASON DIXSON PHOTOGRAPHY

Delaware announced **Solomon Adote**, who previously worked for the state's Department of Technology and Information from 2003 to 2006, as its new chief security officer.

To fill a role that was vacant for more than a year, New York City named **Kelly Jin** as its new chief analytics officer and director of the Mayor's Office of Data Analytics.

Missouri hired **Mike Cheles** as its permanent CIO, and longtime acting CIO **Rich Kliethermes** stepped into the role of acting deputy director at the state's Information Technologies Services Division.

**NOVEMBER**

Washington state named **James Weaver** as its permanent CIO, replacing Vikki Smith, who had been serving in an acting capacity. Weaver was previously CTO of Pennsylvania. [91](#)

# HOW TO CREATE A MODERN RANSOMWARE SECURITY STRATEGY

Government and education leaders should focus on the three pillars of technology, people and policy to guard against sophisticated hackers.

**READ OUR GUIDE TO LEARN MORE AT:**

**[govtech.com/Ransomware-Security-Strategy](https://govtech.com/Ransomware-Security-Strategy)**

government  
technology



# 5 THINGS TO KNOW ABOUT DRONE DEPLOYMENT IN STATE AND LOCAL GOVERNMENT

Drones have flown into new territory as the technology becomes more affordable and the Federal Aviation Administration (FAA) looks to relax previously prohibitive regulations. The reason is simple. Drones have near limitless uses and can be a critical tool to help government agencies operate more efficiently, obtain actionable information — and, most importantly, save lives.

In June 2018, the Center for Digital Government (CDG) surveyed more than 200 U.S. state and local government leaders about how and where they plan to use drones, and the challenges they face in doing so.

1

DRONES ARE  
A GAME  
CHANGER.

92%

of survey respondents said

DRONES WILL  
HAVE A  
"SIGNIFICANT IMPACT"

on state and local  
government operations.

2

DRONE  
DEPLOYMENTS  
ARE UNDERWAY.

Nearly

50%

of respondents have  
DEPLOYED DRONES  
or have definite plans to  
PROCURE DRONE  
TECHNOLOGY.

## ABOUT DJI

DJI is a global leader in developing and manufacturing civilian drones and aerial imaging technology for personal and professional use. DJI was founded and is run by people with a passion for remote-controlled helicopters and experts in flight-control technology and camera stabilization. The company is dedicated to making aerial photography and filmmaking equipment and platforms more accessible, reliable and easier to use for creators and innovators around the world. DJI's global operations currently span across the Americas, Europe and Asia, and its revolutionary products and solutions have been chosen by customers in over 100 countries for applications in filmmaking, construction, emergency response, agriculture, conservation and many other industries.



3

## DRONES ARE AN IMPORTANT PUBLIC SAFETY TOOL.

Law enforcement officers, fire fighters, and search and rescue teams can all use drones to increase safety on the job and help save lives.

59%

of respondents want to use drones to increase **PUBLIC SAFETY.**

4

## DRONES' USEFULNESS EXTENDS BEYOND PUBLIC SAFETY.

Respondents said drones could help them with:

63% **AERIAL PHOTOGRAPHY**

- 42% Inspections
- 30% Infrastructure/building projects
- 27% Traffic monitoring

5

## LEADERS NEED TO PREPARE THEIR WORKFORCES TO IMPLEMENT DRONES.

50%

of respondents said their **NO. 1 CHALLENGE WAS LACK OF TRAINED STAFF.**

TO LEARN MORE,  
VISIT: [WWW.DJI.COM](http://WWW.DJI.COM)

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# 2018 by the Numbers

Here are some top-level insights from the Center for Digital Government's\* flagship awards programs from the past year: Digital Counties Survey, Digital States Survey, Digital Cities Survey and Government Experience Awards.

## THEY'RE NO. 1

These jurisdictions took home top honors in 2018

### DIGITAL STATES SURVEY: "A" GRADES



### DIGITAL COUNTIES SURVEY: First place in their population category

- Arlington County, Va.
- Dutchess County, N.Y.
- Montgomery County, Md.
- Nevada County, Calif.
- Sonoma County, Calif.

### DIGITAL CITIES SURVEY: First place in their population category

- Los Angeles, Calif.
- Virginia Beach, Va.
- Bellevue, Wash.
- Westminster, Colo.
- Coral Gables, Fla.



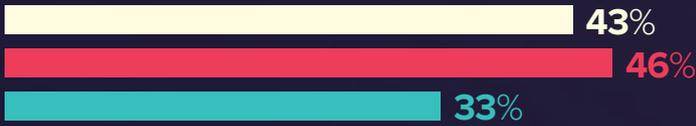
### GOVERNMENT EXPERIENCE AWARDS: First-place finishers

- Utah
- Oakland County, Mich.
- Louisville, Ky.

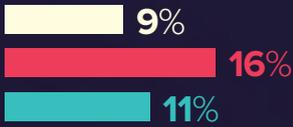
# HOW IT BUDGET IS SPENT

Here's how cities, counties and states report spending their technology budgets:

## IT staff (internal)



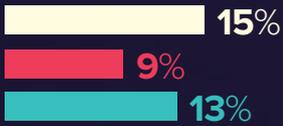
## Telecommunications



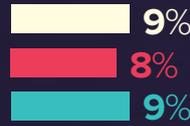
## Hardware



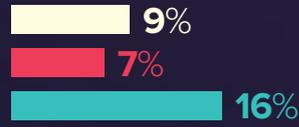
## Software



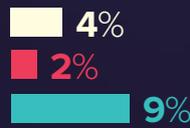
## IT services (cloud and infrastructure services)



## IT services (solutions)



## Other



# 92%

of cities are considering the Internet of Things in their strategic plans.



# 55%

of counties have key performance indicators (KPIs) established, defined and published.



# 30%

of states are working with startups to develop and deploy new tech.

# TECH PRIORITIES

## CITIES



Cybersecurity



Citizen Engagement/  
Experience



IT Staffing

## COUNTIES



Cybersecurity



Disaster Recovery/  
Continuity of Operations



Citizen Engagement/  
Experience

## STATES



Cybersecurity



Shared Services



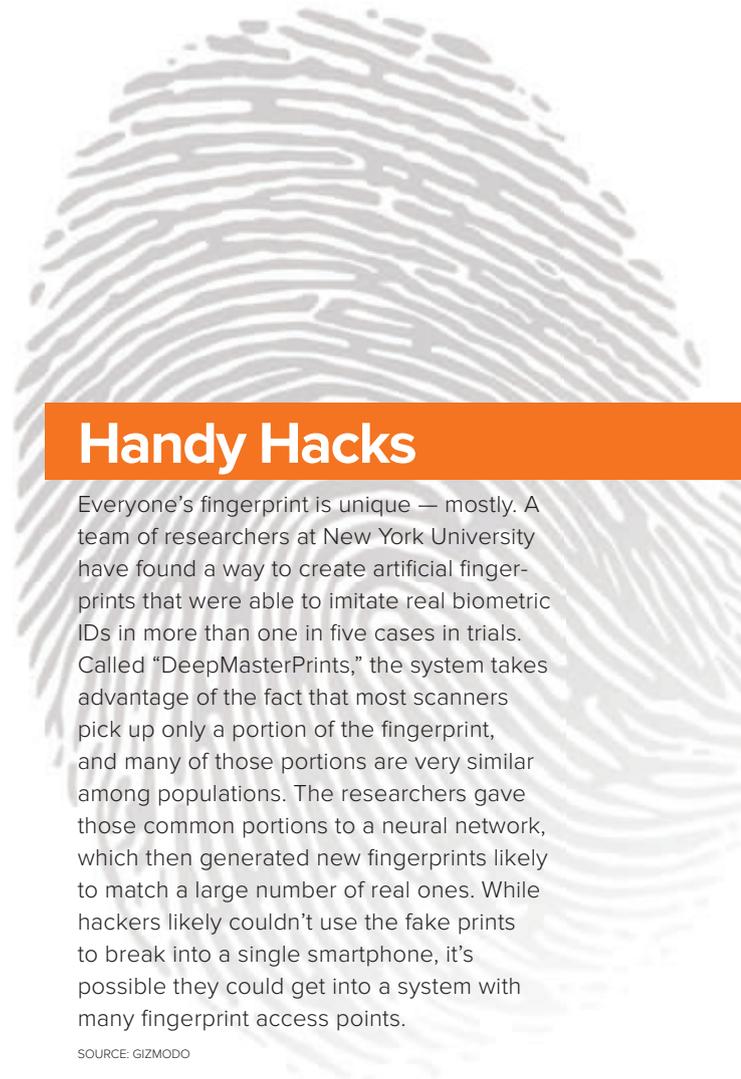
Cloud Computing

States, counties and cities all identify cybersecurity as their greatest workforce need.



E-scooters have been a divisive form of micro-transit in cities across the country (see Micromobility, p. 30), in part because of the safety issues they pose. To encourage users to follow rules that keep them safer on two wheels, scooter-share company Lime is launching a \$3 million campaign called Respect the Ride aiming to get riders to obey local laws, wear helmets and park appropriately. The effort is managed by the company's new Head of Trust and Safety, and there's an extra incentive for the first 25,000 users to pledge to Respect the Ride: a free Lime-brand helmet.

SOURCE: ENGADGET



## Handy Hacks

Everyone's fingerprint is unique — mostly. A team of researchers at New York University have found a way to create artificial fingerprints that were able to imitate real biometric IDs in more than one in five cases in trials. Called "DeepMasterPrints," the system takes advantage of the fact that most scanners pick up only a portion of the fingerprint, and many of those portions are very similar among populations. The researchers gave those common portions to a neural network, which then generated new fingerprints likely to match a large number of real ones. While hackers likely couldn't use the fake prints to break into a single smartphone, it's possible they could get into a system with many fingerprint access points.

SOURCE: GIZMODO

**DAMN FINE DATA:** Tech behemoths like Facebook basically operate on a simple principle: Users get to access the service in exchange for giving the company their data. Facebook then uses that data to target advertising, which allows them to generate revenue. Shiru Café is essentially doing the same thing — with coffee. The company sells cups of coffee on college campuses, but instead of using cash or card, customers pay by giving up information like their name, school, major and more. Shiru then sells that information to corporations that will use it to direct their advertising efforts. It's an idea that seems to be taking off: A location opened on the Brown University campus earlier this year, and Shiru estimates that more than 75 percent of students will sign up for free coffee in the fall semester.

SOURCE: DIGITAL TRENDS



Send Spectrum ideas to Managing Editor Lauren Harrison, [lharrison@govtech.com](mailto:lharrison@govtech.com)

# How Endpoints Can Strengthen Cybersecurity



**Ron Chestang**  
Senior Security Consultant, HP

PCs and printers are a vital link to protect against application attacks and data.

Government IT leaders view cybersecurity as a top priority but getting a handle on it can be difficult. In this Q&A, Ron Chestang, Senior Security Consultant for HP, shares his expert perspective on how governments can better address their cybersecurity challenges.

## Q: What cybersecurity issues are often not recognized as affecting the public sector?

It's easy to think security threats are only external, but most governments have multiple internal vulnerabilities that pose a significant risk. This is particularly true with older PCs and printers that weren't designed for today's security requirements.

Also, employees don't always realize that endpoint devices can be an entry point for an attack or data breach when they are connected to the office network. Without adequate measures for access control and activity monitoring, users may inadvertently create risk as they do things — like share passwords — they think will make their work easier.

## Q: Where are the weakest links commonly found in endpoint security?

The first weakest link is easy to fix: improving control over user access for every endpoint in the network. This means requiring user logons for shared printers, changing default passwords on every device and restricting administrator access on sensitive endpoints.

The second weakest link is a bigger challenge: securing older PCs and applications that run on operating systems no longer supported by the vendor. This challenge will diminish as governments replace those applications. But until then, IT teams need to isolate these systems as much as possible and be more vigilant in monitoring their activity.

## Q: What are the biggest challenges for improving endpoint security in a public agency?

Unfortunately, some public sector organizations don't see the need for strong security until there's a data breach or ransomware attack. But it's much easier and less costly to improve security proactively, especially for endpoints. These improvements can be made over time as part of PC and printer refresh cycles.

## Q: How can a government address these challenges when they refresh PCs and printers?

Educating procurement staff about the importance of security requirements can help them avoid choosing a less secure product simply because it is the least expensive option. It's also important to understand that many equipment vendors offer security only as an add-on product. This approach not only means extra cost, but also a solution that's more complex to monitor and manage.

Today's threats require attention to data in-transit and endpoint devices on the network so IT personnel can keep their organization secure.

HP's latest security features build on our legacy of self-healing solutions. HP hardware-enforced,<sup>1</sup> self-healing and easy-to-manage security solutions make Elite PCs resilient against ever-evolving threats. HP printers can stop an attack the moment it starts, and HP Enterprise models can self-heal with unique security features like HP Sure Start with its self-healing BIOS, whitelisting and run-time intrusion detection.<sup>2</sup>

What's important for procurement staff to remember is that a device decision is a security decision.

### ENDNOTES

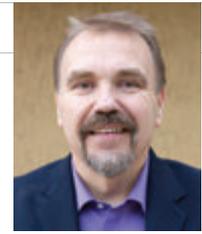
1. HP Sure Start Gen4 is available on HP Elite and HP Pro 600 products equipped with 8th generation Intel® or AMD processors.

2. Based on HP review of 2018 published security features of competitive in-class printers - monitor to detect and automatically stop an attack then self-validate software integrity in a reboot. For a list of printers, visit [hp.com/go/PrintersThatProtect](http://hp.com/go/PrintersThatProtect). For more information: [hp.com/go/printersecurityclaims](http://hp.com/go/printersecurityclaims).



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# Pipe Dreams

The story of a robotics startup using crappy data to produce big results.

**W**hile largely forgotten after it's flushed down the drain, wastewater is a rich source of untapped data that can tell you a lot about the health of your city, neighborhood by neighborhood. In fact, a new gov tech startup is capturing and analyzing this rawest of raw data at the intersection of public health and public works.

Born of graduate research in wastewater epidemiology at the Massachusetts Institute of Technology, Mariana Matus and Newsha Ghaeli combined their respective disciplines — computational biology and urban science — to better understand cities as ecosystems through the use of near real-time data. For her part, Ghaeli told an interviewer that “she never thought it would become a company.” But it did. And 2018 was a strong debut year for Biobot Analytics.

To unpack its name in reverse order, the big data it produces is the analytics. The second half of the first name refers to robotics — particularly the bots about the size of carry-on luggage that the company lowers into sewer systems to capture local sewage near the source. (The founders concede it is easier to collect centrally but the human excretions begin to break down by the time they reach a sewage treatment plant.) That brings us to bio — namely the man-made chemicals

(xenobiotics) we consume and subsequently excrete into the sewer system.

In a country that produces 30 billion gallons

of wastewater a day, the possibilities for epidemiology are limitless. Scientists can see how a place is doing by studying what we leave, including markers for certain illnesses, chemical exposure, viruses and other pathogens, emerging contaminants in our food and personal care products. Then there is the ability to track and analyze drug use — both prescription and illicit — through which Biobot is providing fast, accurate and anonymous screening of wastewater for partnering cities. It is a powerful tool that fundamentally redefines crappy data as a good thing.

Earlier this year, Ghaeli told *Governing* (*GT*'s sister publication) that mayors, whose interests are citywide and not confined to a single agency, intuitively understand the power of the data in city efforts to combat the opioid epidemic and help officials understand where public funding needs to go.

On the way to winning an audience in front of 600 chief city executives at the U.S. Conference of Mayors, she told a panel, “This rich source of human health information aggregates in our public sewers — an infrastructure that you own, you maintain and you manage.”

As a fledgling business, Biobot earned early support from General Catalyst's student-funding program, Rough Draft Ventures, and in May raised \$2.5 million in first-round seed funding through Chicago venture firm Ekistic Ventures.

Its future includes a throwback moment to its origins as an MIT grad school project operating in Kuwait and South Korea. Biobot



is nominated for the 2018 World Summit Awards, an international competition formed to help realize the United Nations' Sustainable Development Goals. Winners will be announced this month.

Underlying all this science, technology and audacious public health goals is the relationship between Biobot's founders. Ghaeli told the Martin Trust Center for MIT Entrepreneurship, “I'm excited about starting [and growing this] company with another woman, especially in a field that touches on some male-dominated spheres.”

Spoiler Alert: Biobot's first-year success also makes it a very strong candidate for the fourth annual GovTech 100, due out in the next issue of *Government Technology*. **91**

**Paul Taylor** is the chief content officer of e.Republic, Government Technology's parent company.



# Government Telework Solutions Improve Employee Morale and Reduce Operational Costs

Teleworking is growing as a way to offer employees a better work-life balance and can also result in significant cost savings. Today's government employees need powerful, portable devices from which to securely access information and applications anytime, anywhere. Dell 2-in-1 laptops plus VMware Workspace ONE provide the perfect solution.

- **Mecklenberg County:** Saved over \$3.2 million per year through productivity gains and cost avoidance; improved service delivery; and increased data security after enabling government employees to access data and applications from anywhere on tablets and mobile devices.
- **Montgomery County:** Reduced mileage and overtime pay, resulting in significant cost savings and enhanced business continuity, fault tolerance, data security, and compliance by providing field employee access to desktops and applications on any device.

For more information, visit: [www.dellemc.com/slg](http://www.dellemc.com/slg)  
and [www.vmware.com/solutions/industry/  
government/state-local.html](http://www.vmware.com/solutions/industry/government/state-local.html)

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## Charge Up

Altigo's portable battery chargers deliver hours of power to all of today's connected consumer devices, providing extended battery life and mobility. The devices enable charging on the go with a variety of lightweight options that are easy to transport and compatible with most Apple, Android and micro USB products. They feature a wide range of ports and integrated cable options, including 10K and 20K batteries with integrated Lightning and micro USB cables; 10K and 20K batteries with integrated USB-C and micro USB cables; and 13K and 26K batteries with multiple USB-A outputs. [www.altigoproducts.com](http://www.altigoproducts.com)



## Smart Recording

Speech Processing Solutions launched the Philips SpeechAir 2000 series smart voice recorder, which features three professional microphones, increased Wi-Fi range, more battery power and an improved camera. A Gorilla Glass touchscreen and shockproof housing provide additional protection. Dictations are encrypted in real time using 256-bit technology, and the device itself can be protected via individual password, PIN or pattern. The new power-saving feature lets users set a time for the device to turn itself off if left idle. This is useful for both battery-saving and security. [www.dictation.philips.com/us](http://www.dictation.philips.com/us)

For more product news, log on to explore *Government Technology's* Product Source. [govtech.com/products](http://govtech.com/products)

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H. Total	60,457	61,309
I. Percent Paid and/or Requested Circulation	99.27%	98.77%
a. Requested and Paid Electronic Copies	16,193	15,594
b. Total Requested and Paid Print Copies + Requested/Paid Electronic Copies	75,148	75,427
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I certify that all information furnished on this form is true and complete.

**Lauren Harrison, Managing Editor**



# CONNECTING GOVERNMENT TO TRANSFORM COMMUNITIES

## WHEN GOVERNMENTS CONNECT

Connected governments can change communities for the better. First responders have the information to act with greater speed and safety. Citizens enjoy 24/7 online access to services and information. Employees work efficiently — even across agencies and departments — improving service delivery and making better use of public funds.

Tyler solutions help governments create connected communities by spanning boundaries, sharing processes and engaging citizens.

## CONNECTIONS ACROSS BOUNDARIES

Automating the flow of information across local government agencies, departments, school districts and others increases efficiency and improves performance. This allows law enforcement agencies, for example, to solve crimes faster. It enables social services departments to collaborate among each other and with community partners to address homelessness. Cloud-based Tyler solutions break down information-sharing barriers between departments and jurisdictions, empowering communities to address their most important challenges.

## CONNECTIONS THROUGH SHARED PROCESSES

Electronic workflows and paperless processes between departments and agencies equip connected communities to deliver more value to constituents. Routine tasks are streamlined, ensuring proper tracking and preservation of land records for accurate property taxation, for instance. Tyler solutions work together across multiple jurisdictions to integrate workloads, tasks and processes in ways that make the most of taxpayer dollars.

## CONNECTIONS TO ENGAGED CITIZENS

Engaged citizens make strong communities — and connected communities give citizens powerful digital channels to engage with their government. For instance, citizens can access services and conduct civic business through a single, constituent portal. They can pay bills, view business licenses and permits, and check court information from any device, at any time. They can report downed trees, vandalism, potholes, and other common issues from a mobile app and see them through to resolution without waiting on hold or enduring long lines.

## SOLUTIONS FOR CONNECTED COMMUNITIES

Today's technologies enable broad and deep connections that transform governments and the communities they serve. Tyler solutions deliver these technologies using a common foundation that helps governments make communities safer; operate with greater transparency; and offer equitable, innovative and improved services to citizens and businesses.





# A Vote for Smooth Social Sailing

Two social media mistakes new politicians should look out for.

If you're lucky enough to be a social media user elected to a government office, congratulations! You've entered the often-confusing world of being both a politician and an elected official in the age of social media.

You've likely grown a following of people supporting your campaign, and now you'll enter an office where you represent constituents from both sides of the aisle. You're probably bringing several social media profiles with you, and perhaps some staffers too, as you transition into your new role.

Let's talk about two social media pitfalls to avoid right off the bat in order to help you and your constituents experience all the best of what social has to offer.

## Mistake #1: Mixing the Personal with the Professional

Help keep yourself out of trouble by keeping your personal and elected official profiles as separate as possible. It's not as easy as it sounds, and it may be very difficult to claim that your personal

accounts are indeed private if your communications are about government business, or if you tie them to your elected role in the descriptive language on your profile.

As you may recall, last year President Trump faced a lawsuit from several citizens represented by the Knight First Amendment

Institute for blocking them from his Twitter account. The president's defense argued that @realDonaldTrump is the president's personal account, which he maintained well before his presidency.

In May 2018, federal district judge Naomi Reice Buchwald ruled that because the account was registered to "the 45th President of the United States of America," combined with the fact that it had been used to conduct official business



and a handful of other reasons, those tweets were indeed considered public record. The court ruled that blocking the Twitter users from this account did violate their First Amendment rights.

With this in mind, if you do maintain both personal and professional accounts on social platforms, make sure there is a clear line between the two. Note that it's a violation of Facebook's terms of service for an individual to have two profiles, so a good rule of thumb

on that platform is to have a personal "profile" and a professional "page."

## Mistake #2: Involving Staff in Campaigns

New politicians making a difference for their jurisdictions will inevitably want to run for re-election. You may even have wonderful communications staff who maintain your professional profiles and want to help your campaign by sharing endorsements, advertisements and statements supporting you for re-election.

As I've noted in this column before, public employees can't use, or be directed to use, official government profiles to campaign for candidates or ballot measures. Staff may be able to work around this in your state by volunteering their time to support your campaign only during non-work hours. If they want to go that route, first confirm

that this practice is acceptable with your state and local campaign laws, that they're not using work equipment, and that any social media posts aren't coming from your official government profiles.

When in doubt, set up a chat with your agency's legal counsel for advice. Engage on social media with your constituents by all means, but understand these two potential missteps so you can avoid them and focus on the important business of good government. 

Kristy is known as "GovGirl" in the government technology industry. A former city government Web manager with a passion for social media, technology and the lighter side of government life, Kristy is the CEO of Government Social Media.

# Getting the Most Value Out of Your Content Services Platform

Many local governments have implemented an enterprise content management (ECM) system to digitize and better manage documents; however, they have not fully deployed it across the organization and legacy issues prevent true digital transformation. With the help of Laserfiche's content services platform (CSP), agencies can get the most value out of their unstructured data, optimize the citizen experience, automate business processes and enhance decision-making throughout the enterprise.

**84%** of counties have an ECM system in place. **→** **52%** of respondents said more than **1/2** of the county uses the system.

Laserfiche addresses the shortcomings of existing ECM systems and opens the door to digital innovation.

## ECM UNMET NEEDS



## LASERFICHE CSP CAPABILITIES

### Integration

**35%**

Create a central content repository by easily integrating Laserfiche with CRM, ERP, GIS and other applications with little to no coding



### Analytics/reporting

**28%**

Easily access and share data to gain insights into operations; take advantage of predictive analytics to make more informed decisions



### Ease of use

**19%**

Offer an intuitive user experience for employees and citizens with more self-service capabilities that save time and boost productivity



### Security

**6%**

Apply granular access controls to secure documents and improve compliance with regulatory mandates



Source: 2018 Center for Digital Government Digital Counties Survey

To learn more about why digital transformation is key to future success, download "Leading for Innovation and Growth: Five Strategies for Driving Digital Transformation."

<https://info.laserfiche.com/DTM5> 

A close-up photograph of a person wearing a blue jacket, holding a pair of black binoculars. The person's face is partially visible in the upper right corner. The background is blurred, showing other people in similar blue jackets. The overall scene suggests a first responder or emergency professional.

“FirstNet provides the situational awareness, reliability and security first responders need during any crisis.”

Zal Azmi  
Former Executive Assistant Director  
and Chief Information Officer for the FBI

The only wireless communications ecosystem dedicated to the dedicated is here. Priority. Security. Reliability. Innovation. FirstNet is more than the much needed upgrade your agency demands. It's your network. The only emergency communications, tools, and applications inspired by first responders, exclusively for first responders. And it's available right now. **Get the facts at [firstnet.com](https://www.firstnet.com).**

