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CLOUD
CLARITY

THE PANDEMIC WAS THE ULTIMATE TEST FOR AS-A-SERVICE TECHNOLOGIES — DID THEY PASS?

SEPTEMBER 2020
VOL 33 ISSUE 6 / A PUBLICATION OF e.REPUBLIC / GTONLINE.COM
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Getting to know CISOs in state and local government.

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Data from the 2020 Digital Counties Survey.

To gain ground in gov tech, St. Paul, Minn., CIO Sharon Kennedy Vickers says women must have “an unwavering belief” in their abilities.
2020 Vision on the Cloud

It seems like a lifetime ago, fall 2019, when we decided to devote the September 2020 issue of this magazine to an examination of cloud technologies and their adoption in state and local government. We’re fortunate in so many ways to work in print journalism, a realization we on the GT editorial staff strive never to take for granted. But one of the greatest challenges of working ahead is projecting into the future, trying to predict what issues might be salient for readers in the coming months and years.

Every aspect of modern life has been upended by the global pandemic and few could have predicted the scale of the changes it has wrought. Interestingly, though, those changes have underscored the need for creative, flexible leaders who expect the same from their technology.

Anecdotally, the tech teams that pivoted most quickly to new service delivery models had some tools in place that they could build upon when the pandemic hit. As-a-service technologies played a significant role in that, especially as security concerns that dogged cloud solutions in early years have abated. Evidence of the cloud’s prominence abounds in our news coverage of government response efforts over the past few months.

Many, if not most, states used cloud technologies to increase the capacity of their unemployment systems to handle massive surges in applications created by pandemic-related job loss. Rhode Island, for example, duplicated its unemployment system in the cloud enabling new claims to then feed into its legacy mainframe system during off hours. A new cloud-based call center, a tool used by many states, also helped officials better track call volume. “This new generation of cloud-based computing is really, really suited to the kind of work we do,” said Scott Jensen, director of the Rhode Island Department of Labor and Training, in April.

The Maryland IT Department teamed with the Department of Commerce to meet another COVID-19 related need: distributing CARES Act grant money to struggling small businesses. The project built on a years-long effort for a robust online One-Stop portal, hosted in the cloud. Built with capacity to expand and adapt to future needs, the state and its partners made quick work of adding the new functionality.

Survey data backs up the fact that the adaptability inherent in many cloud solutions has made them essential during the pandemic. Further, it demonstrates that COVID-19 response efforts are changing minds about the cloud, inside and outside the CFO’s office.

A broad-based survey from The Harris Poll in May revealed that nearly two-thirds of companies are now more likely to pursue cloud solutions because of the pandemic.

But the urgency is more proof of a trajectory that was already in motion. The Center for Digital Government, owned by GovTech’s parent company e.Republic, has been gathering data on cloud acceptance in cities, counties and states for a number of years. Some of this information is visualized in our cover story, which starts on p. 12. The numbers demonstrate a growing confidence in, and commitment to, cloud technologies as an important component of overall IT infrastructure strategy.

But the cloud, now well past its initial hype cycle, is not the solution to every need. Tech leaders who voiced aggressive “cloud first” strategies early on, following a declaration that every effort from the federal government under then-CIO Vivek Kundra in 2010, have come around to more nuanced approaches. But even the shift in terminology to terms like “cloud right” and “cloud smart,” as outlined by Arkansas CTO Ye-sica Jones and California CIO Amy Tong, respectively, suggest the future is bright for cloud technologies in government.
Preparing state & local leaders for the new normal

2020 brought new uncertainties that required state and local agencies to rapidly shift to a new normal for their work and operations. Thriving in the new normal requires a future ready foundation that intelligently connects people, processes and technology.

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Ransomware Rising

While successful ransomware attacks on U.S. governments appeared to decline in the first few months of 2020, the COVID-19 pandemic has brought a resurgence. Cybersecurity firm Check Point Research reported an uptick in pandemic-related attacks across all sectors between February and April, and vendor SonicWall found an increased focus on “soft targets” like hospitals, local governments and public administration agencies.

BIZ BEAT

In an effort to reduce the occurrence or impact of mass shootings, two startups partnered to get information on gun use to police more quickly. The idea is to use gunshot detection software from ZeroEyes to send alerts to law enforcement via RapidSOS, which links to first responders via connected devices, allowing them to respond faster to a shooting.

Still Smart

While intelligent streetlights have long been the proverbial poster child for smart city technologies, experts say they’re likely to remain key as jurisdictions work through the economic implications of the novel coronavirus. Because they provide both energy cost savings compared to traditional lights as well as a simple base for data collection efforts, the industry consensus is that smart streetlights are still “low-hanging fruit.”

WHO SAYS?

“You can’t keep doing things the same way over and over again over 30 years.”

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Chicago Wants to Make Its Student Broadband Program Permanent
COVID-19 Has Given Hackers an Unfair Advantage, Experts Say

69k

The number of government clients Citibot, a chatbot company, has nationwide.

11.8%

The growth Austin, Texas, saw in calls to its 311 system in March, compared to the same month last year.

23

The number of Alaska state employees using Microsoft Teams as a result of the push to remote work. Previously, none used the software.

tech/bytes

39%

The decline from pre-COVID levels in public transportation ridership in Miami-Dade County in July, according to the Transit app.
School’s in Session

States need to invest in cybersecurity to help students safely shift to online learning.

The COVID-19 pandemic has created a unique cybersecurity environment that many attackers are seeking to exploit and, unfortunately, schools are prepared for this new challenge. All sectors are grappling with security. The FBI reported a fourfold increase in daily online crime complaints in the months following the start of the pandemic compared to before it. One challenge is that many individuals are working from home for the first time, so the traditional approach of keeping untrusted devices off organizations’ networks is ill-suited for the new wave of threats from unpatched home computers running on insecure home networks. In addition, with staff no longer working in proximity to one another, employees are more susceptible to phishing attacks because they are less likely to confirm a suspicious email with a colleague or have access to in-person IT support. Finally, with more activities moving online, IT has become even more mission-critical than in the past, which means organizations are more willing than ever to pay attackers when they are hit with ransomware.

On top of these issues, the education sector faces some unique challenges. First, it is a top target for attackers. According to Microsoft Security Intelligence, the education sector accounted for 60 percent of all reported enterprise malware in June. The FBI even issued an alert to K-12 schools in late June, warning them of an increase in ransomware attacks during the pandemic as schools transition to distance learning.

Second, the education sector often uses older systems. One of the biggest vulnerabilities is the continued use of Windows 7. Microsoft ended support for this operating system in January, which means it is no longer issuing patches for new security vulnerabilities. Unfortunately, as many as 10 percent of U.S. schools are still using Windows 7 machines, which makes them particularly vulnerable to new exploits. In addition, many students may be using these older machines at home, particularly since it is common for children to be using older, hand-me-down devices.

Finally, schools must contend with the fact that they must support many inexperienced users. Both educators and students are often unfamiliar with many of the online tools they are now using for distance learning. Indeed, the wave of Zoombombing incidents in classrooms can at least partially be attributed to users poorly configuring the security settings for their meetings. Likewise, many students may be bringing school-issued computers into their home for the first time and may not understand all the security risks. Schools must also meet the challenge of providing usable security for younger users who may struggle with following best practices such as using complex passwords.

Few states have taken steps to address these issues, and school reopening plans have largely been silent on the question of cybersecurity for distance learning. This needs to change, and states need to dedicate money and resources to ensure students can learn in a secure environment. Some of these changes will require investments in new technology, such as replacing outdated devices and enabling single sign-on and two-factor authentication (such as facial recognition or tokens) so students and teachers can log on to e-learning applications more easily and securely. And some of these changes will require investments in more training and support for teachers, staff and students to learn and practice good cybersecurity. Importantly, these efforts should equip schools with the resources to address emerging issues such as online bullying, hate speech and misinformation to ensure students are as safe in a virtual classroom as they are in a traditional one.

One step in this direction would be for states to develop and share best practices for education cybersecurity, perhaps through organizations like the National Association of State Chief Information Officers or the Council of Chief State School Officers. Ignoring this problem may be tempting — there are so many other important priorities to safely reopen schools and administrators are already stretched thin — but if millions of children will be spending their days online this school year, it is a challenge states will need to address soon.
FOUR QUESTIONS

Jessica Tisch
Commissioner, New York City Department of Information Technology and Telecommunications

If New York City were a state, it would be the 52nd largest in the nation by population. So when the city deploys tech solutions, it’s on a massive scale. Jessica Tisch took over city IT last December, following six years of IT leadership at NYPD, so she has ample experience with large-scale projects. Her ambitions are grand: SIG across the city, next-generation 911 and “wholesale modernization” of IT infrastructure. We caught up with Tisch in July, four months into the COVID-19 pandemic.

What role does technology play in New York City’s response to COVID-19? I think about this in three main workstreams: The first was positioning a large portion of the city’s 300,000-plus workforce to work remotely. That included purchasing and distributing tens of thousands of laptops; building out the city’s remote access platforms; WebEx accounts to allow for collaboration and virtual meetings; multi-factor authentication … Everything that is required for remote work.

The second was designing and delivering new services or reimagining the way that the city delivers traditional services to the public in areas ranging from public safety to human services to economic development. We worked with the Department of Education to distribute 300,000 iPads to support remote learning for kids in NYC public schools in six weeks. Another great example is our Get Food program. We built an application that allowed members of the public to sign up and say, “Hey, I need food and meals delivered to my home.” We built a portal for taxi drivers to pick up those meals and deliver them to residents’ doors. At its peak, we were delivering 1 million meals a day. That platform was built and set up over a weekend. Another good example is our contact tracing system, which was built out over the course of a month. We have several thousand contact trackers, and we built out both the case management and the communication platform that they use.

The third big workstream has been with our 311 system. With COVID-19, 311 has really become a lifeline for people. They call to order meals as part of the Get Food program. They call if they need to be connected to a doctor if they don’t have a primary care physician. Small businesses can call 311 to find out how to become eligible for small business loans. We built out new service request types, but we also put a huge effort into the operation of 311 to minimize wait times. We hired hundreds of additional call takers, and we built out a whole bunch of new call centers to accommodate them. We’ve spent a lot of time thinking about how to make 311 work best for New Yorkers.

Have perceptions of digital government changed in recent months? The major sea change that I see is around people’s perceptions of the role that technology plays in government. As agencies reimagine the way that they provide services and the types of services they are providing, tech in general has pivoted from being thought of as a support function to absolutely central and fundamental to most of what the city does. To put it another way, people take my calls, typically on the first ring now.

Government has a reputation for moving slowly and deliberately. Should it be able to move more quickly? Government has to be able to build things in a nimble and quick way, but balance that with building things in a thoughtful way, so the cybersecurity protection is built in, data privacy is built in. I do think that we did move in three or four months than we ever imagined possible. We were working around the clock though. We were on conference calls from 7 a.m. until 1 a.m. every day. No one here on my executive team took a day off in three months.

When you have a capable and committed tech agency working with capable and committed business owners, you can achieve a lot. But the pace of what went on in those three months is not sustainable. That’s not to say that we can’t or won’t continue to deliver services to the public in an expeditious way, but what went on during those months was not normal. These were extraordinary efforts.

Have you been able to move any pre-pandemic projects forward? Despite all of this, the general work of our agency didn’t stop. For example, on June 2, we launched the long-planned text-to-911 system. We made a commitment to New Yorkers that this service would be available in June, and there was no way we were going to allow this pandemic to stand in the way of that. My priorities really haven’t changed, which I think validates the clear priorities I set when I started this job. The overarching priority is to modernize the city’s IT, and in so doing put the city in a position to leverage tech as a key enabler of agencies’ efforts to provide services to the public. If anything, this pandemic has only highlighted the importance of these priorities.

— Noelle Knell, Editor
SPREADING BEST PRACTICES & SPURRING INNOVATION IN CHALLENGING TIMES.

DIGITAL GOVERNMENT SUMMITS ARE GOING VIRTUAL!

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Submarines, with their stealth abilities and capacity to stay at sea for long periods of time, have become tremendous assets to military operations. One stumbling block to their modern use, however, is that their cost to build, often billions of dollars, means that it is difficult to justify the risk of putting them in harm’s way during a battle. To work around this, the British government is putting up to £2.5 million ($3.2 million) into research to convert traditional human-operated submarines into autonomous subs for the Royal Navy. Contracting with vendor MSubs, the S201 manned submersible (pictured) will be refitted to an extra-large uncrewed underwater vehicle (XLUUV) that at 30 meters long will be bigger than any existing autonomous sub, able to operate at a range of 3,000 nautical miles. If successful, the robotic ship will be even stealthier than its predecessors and less expensive to build and operate.
EVENING. THE PANDEMIC GAVE THEM A CHANCE TO PROVE IT.

BY ADAM STONE
he COVID-19 crisis demonstrated state and local government’s ability to shift on the fly. While work-from-home arrangements were sporadic pre-pandemic, government technology leaders quickly and effectively adapted to the new requirements. In Tennessee, more than half of all government employees were teleworking this spring, and in Massachusetts over 90 percent of back-office staff were working remotely. Cloud played a key role in empowering the rapid transition to new modes of work. Microsoft, for instance, announced in March that use of its cloud-based messaging and collaboration tools had jumped 37 percent in one week, at one point logging 900 million meeting and call minutes a week. In the COVID-19 crisis, cloud and software-as-a-service proved their utility, their versatility and their scalability. Government and private-sector technology executives say this practical demonstration will accelerate the adoption of cloud and SaaS going forward. Microsoft was headed this way already. NASCIO’s 2019 state CIO survey showed 34 percent of IT leaders had a cloud migration strategy in place and 51 percent had a strategy in development. The Center for Digital Government (CDG)* has also been tracking changing attitudes toward cloud technologies in cities, counties and states for several years. COVID-19 has opened up the throttle on those efforts. How cloud helped

In a recent CDG webinar, state IT chiefs from California, Indiana and Arkansas all described the use of cloud and SaaS technologies as key to their successful COVID-19 response.

Arkansas CIO Jessica Jones said cloud technologies not only enabled state employees to telework, but in many cases made them more productive.

In Indiana, CIO Tracy Barnes and his team supported some 120 state agencies in the push to work from home, and investments made last fall in cloud-enabled services helped make that transition possible. His department had been piloting...
Office 365, laying out governance for the use of such tools before the pandemic hit.

“That early investment allowed for us to quickly scale and stand up and expand our footprint, to support the massive work-from-home need that hit us almost overnight,” he said.

California’s state IT shop has been aggressively pursuing cloud since 2016, an effort that paid off in the COVID-19 crisis. CIO Amy Tong reported that 90 percent of some 200,000 state employees were able to transition smoothly to a telework environment.

Hardware presented an initial challenge, Tong said: Existing rules required employees to use state-owned laptops when working remotely, in order to ensure security, but there weren’t enough such devices available. Tong’s office flexed the rules, implementing uniform security protocols that made it safe for workers to access government systems via their personal devices.

The ability to more easily implement new security protocols may be one of the chief benefits of working in a cloud environment. A recent NASCIO survey found that among government IT leaders who have implemented cloud applications and services, 53 percent say those uses are governed centrally. Advocates for cloud and SaaS have long said that centralized governance offers a way to bolster security across an organization.

The state of Arkansas likewise benefited from cloud, with CTO Yessica Jones also supporting a rapid shift to telework. “When it was time to stand up a call center, and we really needed to do it very quickly, pieces of that call center went to the cloud,” she said. The pandemic unemployment assistance program also ramped up rapidly via a cloud deployment, and cloud has continued to play a role in supporting state employees’ return to work, with SaaS-enabled temperature measuring stations.

In some cases, the successful transition to telework didn’t just make state employees capable — it made them better.

Jones’ office polled remote workers part-way into the crisis, and while some said they missed the daily interaction with co-workers, “others mentioned that working from home allowed them to pay more attention to long-overdue tasks,” she said. This aligns with private-sector experiences: A recent report from CNBC/Change Research found 60 percent of workers say they are either as productive or even more productive working from home.

Cloud offered states a means to meet the need for large-scale remote access to key business applications, even as demand for services from citizens and other key constituents skyrocketed virtually overnight. “It’s the scalability of having services in the cloud that allowed many of these public services to be quickly ramped up to deal with the public demand,” Tong said.
Jones has reached a similar conclusion. “For this particular event, how things developed so quickly, it really made good sense to just stand up cloud services for whatever the needs were,” she said. In one state, CRM provider Salesforce saw a 400 percent jump in unemployment claims. Legacy systems couldn’t keep pace, and the company worked with state officials to swiftly implement a cloud-based solution.

“In less than a week, we set up a virtual contact center, so that no one had to be in the call center sitting at a desk,” said Salesforce SVP of Global Government Solutions Casey Coleman. “With those digital capabilities they were able to work through that backlog, process the applications and get money into the hands of people who were in urgent need of assistance.”

For states already on the journey to the cloud, and for those still waiting in the wings, experts say the successful push to telework this spring could provide the catalyst for accelerated adoption.

The New ROI
While many states have had some form of “cloud first” ambition in play in recent years, finances have proven to be a stumbling block for some. In a shift from legacy-era capital expenditures to a modernized operating-expenditure model, some have found it difficult to offer solid metrics around return on investment.

IT leaders could point to cost savings through data center consolidation as a clear win for SaaS, along with other incremental gains. But the financial adjustment from CapEx to OpEx isn’t apples-to-apples, and that made it hard to nail down a definitive ROI.

With the productivity gains evident in the COVID-19 telework experience, it may become possible to generate a fuller economic argument in favor of cloud and SaaS. That economic argument becomes all the more persuasive, given that many states will face budget cuts as tax revenues decline amid the COVID-19-related economic downturn.

“We have to make sure ... that we are delivering service that truly is able to be accessed and utilized by our users across the state. How do we do that with a pending massive budget cut? That’s going to be the big challenge.”
— INDIANA CIO TRACY BARNES

What’s in the Cloud Now, and What Can Go to the Cloud?
Cities, counties and states in the Center for Digital Government’s surveys all said that between 11 and 20 percent of their systems were currently in the cloud. But as the data below shows, the numbers get much higher when the question is what percentage can eventually go to the cloud.

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*The Digital States Survey is conducted biannually in even years. Data from 2020 surveys is not yet available.

INDIANA CIO TRACY BARNES
Barnes said the economic considerations will be a key factor in determining his state's future embrace of modern solutions. “We have to make sure that we are delivering service that truly is able to be accessed and utilized by our users across the state. How do we do that with a pending massive budget cut?” he said. “That’s going to be the big challenge.”

Indeed, the expected downturn is starting to materialize, forcing creative approaches like Ohio's recent request of its contractors, including those delivering IT services, to take a 15 percent pay cut on current contracts.

Part of the answer lies in a more aggressive uptake of cloud and SaaS solutions. “Where we can definitely show value and potentially show a decrease in cost and spend, let’s look at what pieces we can start transitioning to the cloud and offloading from our internal support,” Barnes said.

If anything, state CIOs say, tight fiscal times could help them make the case for more as-a-service offerings. “We are in a digital era, which means [we need] continuous investment into digital services,” Tong said.

Cloud … Next

The move to cloud has been an evolutionary exercise in state government. After initial forays proved successful, many adopted a “cloud first” approach, saying they would consider cloud and SaaS options first as they sought to modernize legacy systems.

More recently, forward-thinking CIOs have adapted this slightly. Arkansas calls its strategy “cloud right,” while California is pursuing a “cloud smart” approach. This emerging terminology points to a more finessed approach to modernization, one that state CIOs say will be reflected in their post-COVID-19 efforts to broaden cloud adoption.

Jones said of her team, “we’re still firm believers in cloud. But that belief does not equate to blind faith.

“We believe that not everything is a good fit — whether it is the visibility, the cost … the security of the data,” she said. “There are many different things to be taken into consideration before moving an application or data to the cloud.”

Barnes described a similar approach unfolding in Indiana. “Do you aggressively start pushing everything to the cloud?” he asked. Short answer: No. The longer answer depends on the specific application or process, as well as the agency or department that owns or relies on that application. “We always have to be focused on that business need.”

Certain situations may be a natural fit for cloud, “but if the business is not ready, if the business is not capable, if the business doesn’t understand the need and the opportunity with utilizing cloud tools and technologies — then we can’t start pushing every technology and every solution down that path,” he said.

Some applications will be a fit — probably many, as IT seeks to reduce the cost burden surrounding upkeep of legacy systems, while simultaneously building in a new level of digital resiliency in response to the unexpected nature of the COVID-19 crisis.

Cloud vendors say the success of cloud-based responses to the pandemic helped to prove out the case for modernization. IT leaders may have already understood the value of cloud and SaaS, “but now these organizations can point to tangible outcomes. They were able to serve their constituents overnight,” Schroeder said.

Those who may have hesitated in the past — either because of budgetary concerns or fears of breaking ties with their legacy provider — have discovered those fears were groundless. “We proved it all wrong,” Schroeder said.

“This argument that ‘we cannot touch the mainframe’ — well, we had to change it because it couldn’t evolve to meet the pandemic requirements, and it worked,” he said. “It delivered unprecedented volumes of benefit. That will make people think about what else they can accomplish going forward. We are seeing the paradigm shift in motion.”

Salesforce has worked with 35 states during the pandemic crisis, and has also seen those governments leverage cloud in ways that could support further SaaS implementations in the future.

“Our customers will be able to take what they’re already doing and activate new capabilities for the next phase,” said Coleman. “It’s about reopening the workplace safely and figuring out what digital channels need to be put in place [for citizens], in an environment where we still need to be social distancing,” she said.

The Connectivity Question

State CIOs agree that state-level cloud engagements will likely expand more rapidly in the post-COVID-19 world — but only if there’s enough bandwidth to go around. Connectivity will be a key factor in helping to determine how fast and how far they can push their cloud deployments.

“Not every single spot has a broadband connection,” Tong said. “Not every single spot has good Wi-Fi, or a Wi-Fi connection...
at the speed and affordability that even many of our state employees could manage,” Barnes said connectivity proved a sticking point during the COVID-19 outbreak. “Even getting employees to work from home in some of our rural areas was a bit of a challenge,” he said. “It’s availability, reliability and affordability — because even in some areas where there is sufficient coverage, it’s not always affordable to actually get connectivity and get those folks up and running.”

The issue will likely need to be addressed in support of future cloud and SaaS efforts. “You have to work very aggressively with the providers in your state to make sure that they realize and see that there is a priority of getting connections ... in an aggressive manner,” he said.

Tong pointed to support from Internet service providers and even the FCC had to act fast in the face of the pandemic. “Don’t wait for that perfection. Take the risk. Do the best thinking and discovery, and be methodical as much as you can, and then just go. Move the ball forward.” Historically risk-averse, government had to act fast in the face of the pandemic. The fact that it was able to successfully shift on the fly may have emboldened some in government IT to pursue projects — including cloud and SaaS — that in the past may have seemed problematic.

Even before COVID-19, many state CIOs had cloud and SaaS high on their to-do lists. The NASCIO survey, for instance, found 92 percent of state IT leaders planned to expand their use of as-a-service models in the next three years. Those states are supported by Center for Digital Government data from IT leaders in states, cities and counties alike. Looking ahead, state CIOs say they are widening that vision.

Beyond just putting cloud in place in situations where it is appropriate, they are thinking about new strategies for ensuring that those as-a-service solutions are robust enough not just to support today’s uses, but to withstand tomorrow’s unforeseen needs. “We really need to start thinking into the future in case another event such as a pandemic hits, and how that solution will stand up against that,” Jones said. 

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BOLSTERING THE RANKS
WHAT WILL IT TAKE TO CLOSE GOV TECH’S GENDER GAP?

It’s a well-documented fact that women are underrepresented in tech. Despite decades of working to increase their representation, still only about 25 percent of tech jobs are held by women. Leaders in the tech world are not giving up on reversing that trend, however, and are doubling down on efforts to recruit and retain female workers and to show young girls that technology jobs can be rewarding, fun and welcoming.

GovTech spoke with a number of government technology leaders to gauge their views on the issue and to gather advice for women striving to get into the field or stay in it, often despite a less-than-welcoming environment.

“It’s multi-faceted,” Catherine Ashcraft, a researcher with the National Center for Women and Information Technology (NCWIT), said of the low number of women in the field. “It needs to be addressed from multiple angles and multiple levels.”

BY PAMELA MARTINEAU
DISPELLING THE GEEK FACTOR

Too often, people — and women especially — view tech jobs as roles where workers sit in dark cubicles coding into all hours of the night, several people contacted for this story said. If employers want to recruit more women — and a diverse range of job candidates in general — they need to highlight that today’s tech jobs involve collaboration, project management and big-picture thinking, tech leaders said. In other words, it’s time to take aim at the “geek factor.”

“Technology has so many aspects ... tech is important to environmental science, health and human services, transportation, even corrections ...,” said California CIO Amy Tong. “That’s the beauty of technology. It has so much flexibility and it allows for creativity.”

Many tech leaders say that if technology jobs can be reframed toward their public service value, the field would attract more workers in general, and women in particular.

“We have to dispel the geekiness factor,” said Delaware CIO James Collins, whose department has launched a multi-pronged effort to recruit more women. “People think of tech people as geeks, and no one wants to be a geek. We have to show how tech impacts people’s lives and is meaningful work.”

Tech also isn’t just the purview of math wizzes and programmers. Several women in tech took circuitous routes to the field. For example, Tennessee CIO Stephanie Dedmon majored in marketing as an undergraduate, then realized she didn’t want to go into sales, so she pursued an MBA. The MBA was not a specialty program, so she took courses in accounting, statistics and computer science. After graduating, she took a job with a consulting firm that had some tech clients. She found she liked the work.

“It wasn’t so much the technology side, but working with people,” she said. She took a job with the state in 2005 to do an ERP implementation. “In my experience in state government, if you are a problem solver, can build teams and work well with others, the sky is the limit,” she said. “I fell in love with helping people understand technology and how to leverage technology to provide better services.”

Dedmon moved up the ranks, and about four years ago, the then-CIO came to her and said he wanted to retire and she was his succession plan. He promoted her to deputy, and she later became CIO.

“My background was journalism, public relations. I came to the state ... because they wanted to bring in an experienced [communications] person ... within a matter of months, I found myself within the acting director role,” she said. “I learned I had a passion for the tech space and the service side of working within state government.”

Burris added that tech is “so much more than ones and zeroes.”

“Tech touches on all different types of sectors ... technology is there and available for you to deliver the services, but also to feed that creative side.”

Tong said she was weak at math as an undergraduate and discovered her love of tech when she wrote a “logic-based” computer program to help her

Many gov tech leaders, like Tennessee CIO Stephanie Dedmon, don’t necessarily have math or computer backgrounds, but thrive in the collaborative environment of public IT work.

BOLSTERING THE RANKS

The following are the percentages of women who hold the position of chief information officer in state and local government:

- **STATES**: 16%
- **COUNCIES**: 12%
- **CITIES**: 24%

*Data is current as of July 1, 2020. Information from 25 of the largest cities and counties by population is included.*
solve math problems. She noted that it is important to erase the “stigma” that tech jobs require math wizardry.

Navigating the Sometimes Rocky Career Path

Experts recommend that women let those around them know they are interested in more responsibility and a diversity of tasks. And they shouldn’t over-worry that they are being denied positions because they are a woman. That’s the overarching advice many tech leaders offered women entering the tech field.

“I didn’t spend a lot of time as I was coming up through my career worrying about how many of my obstacles were because I was a woman,” said Teri Takai, executive director of the Center for Digital Government.

Takai’s path in the tech world was broad and varied. After graduating with a math major from the University of Michigan, she knew she didn’t want to teach and accepted a job as a computer programmer at Ford Motor Company, where she spent 30 years ascending the ranks. A friend introduced her to then-Michigan Gov. Jennifer Granholm, who was in need of a CIO. Though Takai wasn’t looking for a new position at the time, she wanted to enter public service to give back. She accepted the job and later went on to work as CIO for the state of California and for the Department of Defense under President Barack Obama.

“My real challenge when I went into government was understanding politics with a big ‘P,’” she said. But she has never looked back, and found the government work highly gratifying. She says it is important that women “stick up for themselves in the workplace.”

“You have to think about what you want next from a career perspective and make that known,” Takai said. “And you’ve got to be resilient.”

Takai said she has been called a “survivor.”

“I’ve survived times where my career was stalled. I survived times where individuals got promoted over me and I wasn’t happy about it … but I kept pushing.”

Susan Kellogg, North Carolina’s deputy state CIO, said she gravitated to computers in high school.

“My brain is wired that way,” she said. After working for the University of North Carolina in various CIO roles, she went to work for the state after being recruited by former CIO Tracy Doaks.

“The tech community is relatively small,” she said, which is why she advises people to network.

Kellogg believes one of her strongest traits in the workplace is her ability to “talk like a real person” and avoid technical jargon when interacting with people.

“The ability to gauge the audience is important,” Kellogg said. “With the tech people I could switch to that as well. One of my success factors is that I can focus on either side.”

Kellogg added that for both women and men, it is important to “know yourself, know your core values” and pursue opportunities that align with those.

“If you understand yourself well, you will understand the environments you will thrive in,” she said. “Success doesn’t mean you will survive in every place.”

Kellogg also advises women to “find your support group … it doesn’t need to be techies either,” she said. “Seek those groups out and if one doesn’t exist, create it.”

Sharon Kennedy Vickers, CIO of St. Paul, Minn., said that women in tech need to have an “unwavering belief in [their] capabilities” because “there are going to be a lot of individuals who believe you don’t belong in that space.”

Creating an Inclusive Work Environment

Kennedy Vickers says that one of the biggest challenges to recruiting and retaining women in the tech field is the fact that the workplace isn’t always a welcoming environment for women.

“We have to create space that is welcoming and offer opportunities for women to thrive,” Kennedy Vickers said. Catherine Ashcraft, of NCWIT, agrees. She said research reveals that women leave tech jobs at twice the rate of men “because of the biases.” NCWIT has developed a “change model” to help workplaces become more inclusive and welcoming to women. The model advises taking a strategic, ecosystem approach, addressing the issue across all facets of the organization, and enlisting top leadership, educating managers and ensuring data transparency.

“(Some workplaces) have subtle screening processes that inadvertently screen out women in the workplace … subtle biases that happen in task management … similar micro inequities,” Ashcraft said.

Ashcraft advised that managers need to take care to see who is speaking in meetings, who is interrupting and

“Because of the biases.” NCWIT has developed a “change model” to help workplaces become more inclusive and welcoming to women.
being interrupted, and to look closely at interview questions to screen for biases.

Kennedy Vickers said women leave tech workplaces because they “encounter a lot of misogyny and discrimination.”

“If we want to see an increase of women in the space, we have to understand that it is a business imperative, as well as a moral imperative,” said Kennedy Vickers. “We know that organizations that are diverse outperform those that are not.”

Rob Lloyd, CIO of San Jose, Calif., said the underrepresentation of women and some ethnicities in tech has been a “long-time challenge that is worse in some places than in others.”

“One once you get up to 30 percent-plus of different genders and ethnicities, it’s normalized,” said Lloyd, who oversees a staff in San Jose that is 50 percent female.

He added that when he is interviewing for new hires, he requires that both men and women be on the interview panel and among the interviewees. He also advocates that CIOs and managers coach and mentor employees.

“A year ago, we said the next big challenge for tech was going to be about equity,” Lloyd said, adding that human resource professionals need to get better at addressing the problem too.

“They will sometimes protect the organization or deny the problem,” he said.

“I’m grateful for the approach to race and gender equity we take in San Jose. It’s honest and biased toward action.”

Collins says his organization in Delaware was recently looking to hire five new service representatives and when the final candidates crossed his desk, all were men.

“I asked, ‘Were there no potential candidates that were female?’” he said, adding that his staff told him they believed the candidates they put forth were the “most qualified.”

Collins says if a woman or underrepresented candidate is qualified for a position, but perhaps not the most qualified of a pool, they should be given a shot at the interview process and job.

“They went back and found some great talent,” Collins said.

Gerald Young, a senior research associate at the Center for State and Local Government Excellence, said he believes government technology jobs in particular are harder to fill with women because it is difficult to compete with the private sector for all job candidates. In government, he added, “there is not a lot of leeway to grant hiring bonuses or incentives beyond a step increase.” However, government positions do often offer better benefits than the private sector, he noted.

Young advises local governments looking to hire tech talent to recruit on campuses and attract potential employees before they graduate.

“Sometimes [students] aren’t even aware that working in the public sector is an option,” he said.

Build the Pipeline

Research reveals that young girls make the decision about whether they will go into a tech career very early — often around age 11. Across the country, efforts are underway to demystify tech jobs and entice more girls into the profession. Groups such as Girls Go CyberStart, Black Girls Code and DigiGirls work to educate girls about the possibilities for them in technology.

Most all of the tech leaders contacted for this story stressed the importance of mentorship in educating girls about tech careers and helping young women stay in tech careers.

“It’s important to let girls see other women in the field and to connect with them,” said Kellogg.

Burris also said education about tech needs to start early with girls to teach them how “varied, impactful and engaging the careers are.” This can be achieved through organizations targeting girls and young women and through parents and teachers talking about tech careers. Burris also engages in a mentoring program for women called Triangle Women in STEAM, referring to the region of North Carolina where three major research universities are located.

But Kennedy Vickers stressed that there is a distinction between mentorship and sponsorship.

“A mentor is someone you can come to who offers advice,” she said. “A sponsor is someone who is actively working with you to open doors and provide opportunities to advance.”

Dedmon said it is important to advise girls and young women that even if they are not sure tech is the career for them, they should take classes in tech.

And Tong has a simple message for anyone looking to get into the tech field: “If I can do it, anyone can do it.”
Why has transformation been slow in state and local government? Transformation has been slow, but there have been some successes driven by strong CIOs, government business leaders, and their staffs. There are four primary reasons these kinds of projects spin out of control:

- One is trying to tackle transformation with technology alone. It’s not just technology. It is people, processes and technology. Two is not clearly defining business outcomes. Transformation drives business, so we have to define exactly what outcomes we’re trying to achieve. Three is a lack of executive leadership. Executives need to drive this from the top. And four, we bite off too much at once. Transformation, if done right, is a collection of small, iterative projects that build on one another.

- For example, we’re working with a major state government in the Midwest to modernize its health and human services technology stack to ensure it can be built as a common platform that can serve multiple types of programs. What makes it transformational is the iterative approach the state is taking. Rather than trying to build the next-generation monolith, it has taken on multiple, smaller projects, each building on the success of the last. These initiatives have bigger picture strategy and executive focus, which keeps the organization on the same page.

How can enterprise open source technology and a Development Operations (DevOps) approach enable state and local governments to be more agile, especially in times of crisis?

- Enterprise open source technologies are secure, enterprise-ready solutions that spur innovation — but without the risk presented in traditional, unsupported open source solutions. They enable IT agile like few proprietary solutions can.

- Because of the openness, enterprise open source solutions have garnered widespread adoption across all sectors. They create a wealth of available resources on enablement, reference architectures, use cases, and qualified vendors and systems integrators to support and implement these solutions. This is combined with the speed to deployment and quality of services these technologies provide, which are desperately needed during times of crisis.

- Development Security Operations (DevSecOps) is one of the key methods through which government agencies automate their technology infrastructure and workflows to improve collaboration between developer and operations teams and accelerate a secure development-to-production life cycle to provide more value to end users, whether they are constituents or employees. Enterprise open source technologies give you the technology capability to become agile, but it’s DevSecOps that will teach you how to properly leverage the technology.

IT optimization will be critical for government agencies going forward, especially with lower tax revenues. How can they assess which solutions will best meet their long-term needs?

- First, make sure the solution can meet the expected business outcomes. Just because the product has the worst “integration” in the name doesn’t mean it will integrate with your solution. You need to research the adoption of the technology. Does it have support across multiple industries, positive customer references and good user feedback? This is a leading indicator of the quality and longevity of the solution in the market. Also, pay close attention to lock-in scenarios and how difficult it could be to move to another solution if one product doesn’t pan out. It’s critical for government agencies to adapt technology that can run on cloud, on-premises or in hybrid cloud environments. The world is changing and state and local governments need portability and flexibility for the long run.

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Best of What’s New in Health and Human Services

Cloud-based and data-driven technologies are improving efficiencies and outcomes.

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16 Sonny Segal: The Pandemic Teaches Us Modernization is Possible
The COVID-19 crisis is forcing dramatic modernization in the way social safety net programs operate and deliver services to citizens. Driven by urgent social distancing requirements, health and human services (HHS) organizations virtualized an array of activities that traditionally have been performed face to face — everything from doctor visits and client intake meetings to administrative hearings and affordable housing inspections. They also adopted new data-driven technologies, such as analytics dashboards that helped public officials understand coronavirus activity in their communities and artificial intelligence (AI) tools that helped departments cope with crushing demand for unemployment insurance and other benefits.

Unlike typical HHS modernization projects, these changes happened with unprecedented speed. Often new capabilities were implemented in weeks or even days. Cloud was a key enabler, letting organizations rapidly roll out new services, scale capacity, and deploy sophisticated AI and analytics capabilities.

And although these moves were made in immediate response to the COVID pandemic, they’re likely to have long-term impacts on the digital experience for HHS clients, how and where HHS staff members work, and how these organizations purchase and deploy technology.

Virtual Services and Work
One obvious impact of the pandemic is a huge increase — and potential long-term mainstreaming — of virtual medical visits. Almost 44 percent of Medicare primary care visits were provided through telehealth in April, according to the U.S. Department of Health and Human Services, compared with less than one percent before the coronavirus hit.1

Unlike typical HHS modernization projects, COVID-driven deployments were implemented in weeks or even days, often enabled by the cloud.

Other services are being virtualized too. For instance, the Atlanta Housing Authority, which provides affordable housing services to 23,000 families, now conducts client intake meetings and inspections of housing properties via video. Like many public agencies, the housing authority also shifted the bulk of its staff to remote work, including contact center agents who now field citizen inquiries from home. Pandemic-driven uptake of virtual work and digital services could have long-term positive impacts on HHS workforces and the clients they serve.

These changes could improve employee satisfaction and retention within HHS organizations, particularly in high-turnover caseworker positions. Much of the public sector workforce continues to work remotely and may remain that way into 2021. Over the longer term, many government leaders predict the pandemic experience will open the door to more workplace flexibility.

For HHS clients, a long-term shift toward virtual visits, administrative hearings and other official functions could significantly improve access to services — especially for citizens who lack transportation or can’t miss work to attend in-person appointments during normal office hours.

Scaling Up and Getting Smarter
The pandemic response also proved the value of cloud and AI tools. Multiple states used cloud and intelligent software to address huge spikes in unemployment insurance claims when shutdown orders forced millions of citizens out of work.

For example, the state of Rhode Island implemented new cloud-based contact center technology in less than 10 days after its existing contact center systems were overwhelmed by unprecedented numbers of citizens seeking benefits.2

Besides dramatically increasing call center capacity — the platform supported a record 61,252 calls shortly after it was implemented — the new solution includes text-to-speech and interactive voice response capabilities which now handle 96 percent of calls, according to the state. Rhode Island officials expect to expand capacity even further by adding AI-enabled chatbot technology.

Other states have made similar moves. Both Utah and Michigan launched intelligent online assistants to help answer citizen questions about COVID-19. Robin, the chatbot recently launched by Michigan’s Department of

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HHS in Transition
COVID crisis forces immediate changes that may bring long-term benefits.

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Health and Human Services interprets natural language questions from users and gives responses drawn from a database of commonly requested information.

“Information about this outbreak is changing rapidly, and there’s a great deal of misinformation online,” Michigan HHS Director Robert Gordon said in May. "Robin, our new chatbot, is an easy, interactive way for Michiganders to get their questions answered without frustrating wait times. Every moment counts in our fight to increase awareness and education and slow the spread of the virus.”

In addition, communities used cloud-based platforms to rapidly collect, analyze and visualize virus-related data. Officials in Eagle County, Colo. — an early COVID hotspot — spun up a web-based tracker and real-time data dashboard that let citizens report potential COVID symptoms. The self-reported data helped public health officials understand virus activity and identify at-risk patients to prioritize them for testing. It also created data visualizations that were used in daily meetings with medical providers about allocating protective equipment, adding hospital beds and maximizing other resources.

The effectiveness and speed of these deployments are sparking greater acceptance of cloud-based approaches for broader HHS modernization.

“This put cloud technology and its transformational capabilities front and center for us,” says Joshua Spence, West Virginia’s chief technology officer and director of the state’s Office of Technology. “Cloud might not be the right solution for every situation, but in this case, it definitely gave us agility, flexibility and speed at a time we most needed it.”

A Bigger Role for AI?

Pandemic-driven analytics and AI deployments also may become stepping stones to broader and deeper uses of AI in the HHS space. Data shows state IT officials already viewed HHS as a primary target for AI deployment pre-COVID. State CIOs ranked HHS as the second-biggest opportunity for AI deployment — trailing only cybersecurity — in a 2019 survey conducted jointly by the Center for Digital Government, the National Association of State CIOs and IBM.

With new use cases now under their belt, state and local HHS agencies could accelerate AI adoption — although challenges need to be confronted. Respondents in the 2019 survey cited lack of skills and organizational data silos as their two biggest barriers to AI adoption. In addition, almost 75 percent of respondents said they were only somewhat confident they can manage risks associated with emerging technologies such as AI. But the COVID-19 response is giving HHS leaders a glimpse at what’s possible around cloud, data analytics and AI, as well as modernizing workplaces and services. And HHS organizations and their clients likely will see long-term benefits from these changes.

Trending Technologies

Cloud and AI were HHS priorities last year. The COVID-19 crisis is accelerating their impact.

Top 5 Cloud Adoption Areas for Counties

1. Geospatial Services
2. Application Development and Testing
3. Health and Human Services (tie)
4. Finance and Administration (tie)
5. Public Safety/ Law Enforcement

Top 5 AI Adoption Areas for States

1. Cybersecurity
2. Health and Human Services
3. Information Technology
4. Citizen Experience and Digital Services
5. Transportation and Infrastructure

Where Data-Driven Technologies Can Improve City Decision-Making

1. Budgeting and Contracting
2. Permitting and Licensing
3. Case Management
4. Hiring and Retaining Government Personnel

Top 5 Cloud Adoption

1. Budgeting and Contracting
2. Permitting and Licensing
3. Case Management
4. Health and Human Services (tie)
5. Transportation and Infrastructure

Top 5 AI Adoption

1. Cybersecurity
2. Health and Human Services
3. Information Technology
4. Citizen Experience and Digital Services
5. Transportation and Infrastructure

2019 DIGITAL COUNTIES SURVEY

2019 DIGITAL CITIES SURVEY

2019 STATE ARTIFICIAL INTELLIGENCE SURVEY

Appendix

2. Agenda for Action: Cloud and AI: Where Data-Driven Technologies Can Improve City Decision-Making
3. Cloud and AI: Where Data-Driven Technologies Can Improve City Decision-Making
4. Cloud and AI: Where Data-Driven Technologies Can Improve City Decision-Making
5. Cloud and AI: Where Data-Driven Technologies Can Improve City Decision-Making
6. Cloud and AI: Where Data-Driven Technologies Can Improve City Decision-Making
Focusing on Outcomes that Matter

Government organizations don’t need to “rip and replace” to reduce technical debt, improve outcomes and digitally transform. Rod Bremby, health and human services industry executive for Salesforce, suggests a path forward.

How are the pandemic and economic downturn influencing strategies related to digital transformation in agencies and departments that provide Medicaid and public health programs?

The pandemic-induced recession exposed service limitations of organizations that do not have mature digital capabilities. My sense is that strategies to deploy digital solutions will continue to accelerate through the recovery phase and post COVID-19, but organizations also are learning better ways to serve customers. For example, Medicaid programs are expanding the use of telehealth services during COVID-19, and CMS (Centers for Medicare & Medicaid Services) is working to permanently expand telehealth for home healthcare providers. Consumers have begun to experience and demand telehealth as the first site of care.

Where do agencies and departments get stuck as they modernize the way they provide health services and programs?

One place that organizations get stuck is in “good enough.” Unless something’s horribly broken, they stay with what works today instead of pursuing continuous improvement cycles that include customer satisfaction. Organizations that are satisfied with their current operation and their current level of service tend not to want to adopt — or can’t adopt quickly — opportunities that digital technology can offer. Change is exponentially more difficult to execute without a culture that pursues excellence in service quality. To foster a culture that responds to and embraces change, it’s important to adopt a quality approach like Lean or another continuous improvement cycle.

How can cloud-based patient management solutions help organizations deliver better health outcomes at lower costs?

Cloud-based patient management solutions eliminate technical debt, so organizations can focus on innovation and service outcomes that matter instead of on keeping the operation afloat. Government agencies and departments can achieve better outcomes by placing the patient at the center of the service and providing a 360-degree view with timely and aligned engagement of service personnel. Cloud-based solutions also enable the integration of social supports that help assure attention to the social determinants of health, which we know account for a greater degree of well-being than clinical care.

How can cloud-based solutions, along with AI and machine learning (ML), help decrease fraud, waste and abuse?

These solutions permit the collection and analysis of variants within large data to provide important insights. They have the capacity to identify patterns at a scale and speed that exceeds what’s available with human investigation alone. At the same time, combining skilled human investigation with these technological insights can significantly enhance results. For example, AI and ML can identify variants in patterns of behavior, payment or interactions; however, it takes a skilled investigator to follow up on those outliers and thoroughly ensure what they’re seeing is just an anomaly rather than fraud, waste or abuse.

What challenges are government contact centers encountering with the pandemic and how can they address them?

The first challenge is that the volume of calls typically exceeds the capacity of call takers to answer. In addition, not all call centers are staffed at hours when customers may require assistance. One particularly successful solution is to use bots to deflect calls from live attendants. These bots provide information that is either relatively routine or available. There are also process bots that can help a customer step through an interaction to either access a service or complete an application. These 24x7 automated attendants allow human agents to address the more complex customer interactions while permitting more customers to be served.

How can organizations use CARES Act funding to advance modernization goals?

State and local government organizations should seek their federal partners to clarify what is an allowable or reimbursable expense under the CARES Act. They should seek the funding to address immediate service challenges that can be solved through technology, but they should also consider how the procurement helps fulfill the agency’s digital transformation plan. Another point is that agencies don’t need to rip out an old solution and replace it entirely to get value. We suggest that they replace the components that do not work well and solve for today’s challenges, but with a platform that can scale and extend across the enterprise. They can get that value in weeks and months rather than in years.

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LEADING THROUGH CHANGE

Learn more: salesforce.com/govcovidresponse
Using Data to Navigate Change

What issues do government organizations confront when they attempt to act on data?
The first issue is fear of what data will actually say. This slows down decision-making and has plagued organizations for decades. The pandemic is happening in real time, and there’s a critical need for real-time decisions. Organizations that are leading through this period trust their data, strive for speed to decision and execute decisions based on data. Organizations that hesitate and try to achieve perfection of their data and decisions may find that decisions are being made for them. The second issue is the pandemic has proven that everything is related. Public health, economic security and recovery, and public education are all interwoven with individual safety, and this presents a massive challenge for data management and data integration and sets the stage for what it’s to come in a post-pandemic world.

What has the pandemic highlighted these challenges?
It has reinforced the notion that data and good analytics drive both speed and quality of response. Organizations with sound data governance, agile analytical processes and collaborative data-sharing agreements with agency partners were well-equipped to lead their people through change, and they are emerging better because of it. Organizations that did not have these standards in place are still playing catch up. Interestingly, the pandemic set the stage for more near-term change in the form of significant modernization of business processes and technology. As a byproduct, this will improve the way organizations handle common, everyday challenges that arise in the future.

What approaches help organizations make better decisions and lead through change?
Two areas are critical: performance management and data management. I mean performance management in the sense of organizational metrics that showcase mission success or progress. Thinking in terms of “macro to micro,” agency-level mission metrics drive strategic direction and provide transparency to citizens. These metrics are conveyed to the mission-driven support organizations, which have their own metrics and KPIs that advance the overall agency mission.

All too often, a breakdown occurs when data management can’t support the data collection or data integration needs of true integrated performance management. It’s absolutely critical that organizations improve the integration of poly-source data and associated data management practices to support both standard and emerging data sources.

How can healthcare organizations best take advantage of AI, ML and other advanced technologies?
Organizations must have a good grasp of their current data and what that data can provide for them for a specific outcome. Brilliant statistical analyses have been performed for years, yet the biggest challenge is tying that data to execution of the agency mission; that is, tying that data to a business process to automate a decision or inform a workflow. There must be an after action tied to the data, or something to gain, or the AI was done for naught.

How can finance analytics help organizations adjust to budget uncertainties and changes triggered by the pandemic?
Budgets are generally formulated high in the organization and executed low in the organization. This creates a disconnect when it comes to understanding spending. Without good analytics to bridge the gap, the people’s money is often spent without consideration for how it ties back to the mission. In the post-pandemic world, every dollar will be scrutinized. Organizations should incur only expenses that align with and advance the mission. This is where analytics makes the difference by keeping leadership constantly aware of its position and avoiding expenses that don’t add value.

What do organizations sometimes misunderstand about analytics?
Organizations often chase the neon rainbow of perfect data that drives the killer report that automates decision-making; the reality is there will never be a truly perfect dataset. Early in the pandemic, I supported agencies that knew their data wasn’t perfect, but they also knew they had to save lives. They executed without hesitation; they built analytical dashboards and evolved them as processes and data collection capabilities improved. That approach enabled them to make increasingly better, more rapid decisions. Other agencies are still working through multiple iterations to get their data and reporting just right; meanwhile they are not making data-informed decisions. This pandemic has proven that it’s the unknown questions that we discover along the way that create change and ultimately drive progress.

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Virtualization: A Rapid, Flexible and Cost-Effective Path to Transformation

Hank Thompson, VMware state and local education strategist, discusses how organizations can modernize application development and digitally transform to meet their mission and serve citizens, regardless of the situation.

How can emerging technologies help organizations improve health outcomes while reducing costs?
Technologies like artificial intelligence (AI), machine learning (ML) and medical Internet of Things (IoT) sensors drive improvements in patient care, business outcomes and operational costs. When used with smart IoT devices — to monitor cardiac rhythms, diabetic conditions and daily activity, for example — AI helps physicians monitor, diagnose and deliver patient care remotely to drive down costs while improving health outcomes. Agency call centers are using AI and ML for chatbots and natural language processing (NLP) to help citizens navigate government services; improve accuracy and call resolution; and reduce time spent on case notes, diagnostics and testing. AI is also being used to reduce staff costs — for example, by helping healthcare payers adjudicate claims — and identify fraud.

How can organizations use virtualization to fully leverage emerging technologies?
These new technologies can strain existing networks, storage, compute power and security. Networks must be able to rapidly transmit the huge amounts of data generated by IoT devices, sensors and monitors; and storage infrastructure must scale to store these large datasets. AI and ML algorithms require sufficient compute power for processing. Emerging cloud-based technology services require organizations to connect to and manage cloud services across multiple, disparate cloud environments and deliver those services to any device. In addition, organizations must meet security and compliance requirements. Virtualization solutions provide a digital foundation with the flexibility and scalability to meet these challenges and incorporate emerging technology services while still running day-to-day operations.

How can organizations modernize and expedite application development?
Organizations that are most effective in modernizing their application portfolios do three things well: 1) developing an application modernization strategy to identify what to modernize and how to do it; 2) crafting a cloud strategy to determine how to integrate cloud services into their modernization strategy; and 3) standardizing on a single platform to build, run, manage and secure applications in a multi-cloud environment. This platform provides a single pane of glass through which organizations can develop and deploy modern container-based applications across a multi-cloud environment. Virtualization technologies for things like cloud load-balancing, firewalls and software-defined networking further enable organizations to integrate cloud services with their on-premises workloads while providing robust end-to-end security.

How can virtualization help with pandemic-related challenges?
The mission of government has not changed with the pandemic, but the way citizen services are delivered has. Virtualization provides a quick, flexible, cost-effective and secure path to the digital delivery of citizen services. Using virtualization, organizations can implement solutions that give remote workers secure, single-sign-on access to critical applications in the cloud and data centers. These solutions also save time and money by streamlining device management processes such as provisioning, patching and lifecycle management. In addition, virtualization helps our customers rapidly implement pop-up healthcare clinics and satellite unemployment call centers. They can implement a software-defined network solution in days, not weeks or months.

As organizations turn to telehealth and digital communications to manage patient care and other services, how are digital transformation strategies changing? Our customers have not necessarily changed their digital transformation strategies, but they want to accelerate them to deal with this new normal. To accelerate digital transformation, organizations are taking a modular approach to modernizing legacy applications; digitizing older processes to provide online access to critical data for citizens and remote workers; implementing technologies such as digital signatures and using video and audio notes in case files to streamline processes; and integrating cloud services for things like AI, chatbot and analytics instead of building them.

How can HHS organizations turn this moment into an opportunity?
They can use this crisis as an opportunity to do things they could not do before. The pandemic highlighted how quickly IT needs to respond to emergencies and how much organizations rely on technology to achieve their mission. CIOs have a great opportunity to bring real value to their organizations through strategy development and creation of a digital foundation that enables organizational agility and scale. They are well-positioned to invest in platforms and solutions that future-proof their organization’s ability to respond to the next emergency that requires business resiliency.

Learn more at Carah.io/HHS-VMware
Create the future with a digital foundation built on VMware.

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Integrating the Continuum of Care

What are the main enterprise integration challenges for Medicaid and HHS organizations?

Containing costs and pivoting to quality outcomes are top of mind whether organizations are integrating applications, data, Internet of Things (IoT), application programming interfaces (APIs) or mobile apps. Everyone in the healthcare ecosystem must be able to share data and participate in a meaningful way to deliver higher-quality outcomes. Even if it’s a mandate that starts generically with rules for interoperability, you have to have the right set of technologies to enable the future state — whether it’s incorporating applications at the edge or a connected device, or moving to an API-driven landscape. The challenges are really around reducing technical debt while increasing efficacy in the outcomes-based arena.

How does an enterprise iPaaS solution help solve integration challenges?

The Boomi Enterprise iPaaS platform helps integrate disparate or hybrid architectures across the continuum of care. It provides a single-instance, multitenant architecture that frees organizations from having to do things like manage code versions. The platform also lets organizations modernize without replacing everything they currently use. They can augment and move forward to support low code, agility, and intelligence and insights. That creates a very high return on investment because organizations can focus on their business initiatives and clinical or business outcomes instead of undertaking enterprise IT projects.

What differentiates enterprise iPaaS offerings?

iPaaS moves enterprise integration to the cloud. But taking a legacy technology or a type of work that was previously done on premises and simply moving it off premises doesn’t necessarily improve the experience. Leading enterprise iPaaS solutions also include a comprehensive and ever-changing service layer in the cloud. They provide a platform for implementing continuous innovation and feature sets in a low-cost, agile way. Before iPaaS, there was a lot of customization and unique ways to do this type of work. The work was often tied to one IT person’s individual skills. Leading enterprise iPaaS offerings provide a systematic way of creating these digital transformation efforts in the cloud and easily adapting to changes. That allows an organization to save money on adjacencies and make changes incrementally as the business continues to change.

Where should organizations start on the path to cloud-based platform integration?

Organizations should think honestly about their multi-cloud strategy — what they’re trying to achieve and where they need to gain efficiencies. They can start with a small project that gives them a good understanding of how that solution marries to their strategy. They can then use the platform to extend the project through the enterprise. In addition, organizations should test the efficacy of the solution in some quantifiable way, making sure they get the returns on investment they expect.
Building Seamless and Connected Government

MODERNIZE AND TRANSFORM
Ensure proper connectivity and smooth data exchange when applications and infrastructure are migrated and consolidated

ACCELERATE CLOUD SMART ADOPTION
Speed up cloud adoption to boost operational efficiency and implement shared services to foster collaboration and increase engagement

IMPROVE CONSTITUENTS’ EXPERIENCE
Bring together workforce processes and workflows from across organizations for a streamlined approach to customer experience and serve employees, partners, contractors, and citizens better
Improving Citizens’ Digital Journey Through HHS

Megan Ashley, health and human services director for Adobe, explains how government organizations can achieve quick wins to improve services, simplify content creation and reduce costs.

What IT and business challenges do organizations face as they seek to adapt to current disruptors?

Inflexible legacy systems and custom applications have created a lot of technical debt, which impedes agility as the focus moves to digital channels and remote work. Second, there’s traditionally been a large reliance on IT to manage digital channels, content and communications at scale. This has delayed communication of critical messages around COVID and hindered the public’s access to services. Third, organizations lack the capability to analyze data and generate meaningful insights about customer experience and digital interactions. That capability is vital as COVID evolves into a social services crisis as well as a public health crisis.

What near-term steps can organizations take to address these challenges while keeping in mind long-term IT modernization objectives?

A lot of agencies are moving to the cloud as a first step toward agility and scalability. Another fast win is implementing digital signatures to support business continuity. There are also opportunities to quickly impact client experiences by focusing on customer-facing, front-end initiatives such as making things easier to find on agency websites through web analytics and personalizing the user experience.

These types of projects have the added benefit of encouraging adoption of existing self-service channels, and they can happen regardless of progress on backend modernization.

Please discuss the public’s growing reliance on mobile technology and the kinds of solutions that support engagement across any device.

In the HHS field, a mobile device may be the only way an agency customer can access online services. In terms of the user’s experience, things like responsive web design and forms are minimum requirements. However, as the number of devices and digital channels grows, the only way to keep up is by simplifying the content creation experience. To do this, organizations must be capable of centralizing authoring and management of web content, outreach or forms across all devices and publishing to any screen size — all in one automated process.

How can artificial intelligence (AI) and machine learning (ML) improve the digital experience for patients and their families?

The two key pillars of creating exceptional digital experiences are content and data — and AI and ML can help with both. Using AI and ML, organizations can automate repetitive tasks that prevent them from producing and personalizing content at scale and on every single device. For example, organizations can use AI to automate aspects of website design, layout and creation, as well as the conversion of PDFs to adaptive interactive forms. In terms of data, organizations can use AI to sift through volumes of data and unlock insights that help them understand customers, predict trends, monitor unusual activity and act faster.

What should organizations consider as they adopt digital forms and documents?

Organizations should ensure forms are cross channel, responsive and able to be filled out from any device. That includes saving and resuming forms and having a compliant e-signature on any device. Forms also need to be integrated with backend systems to allow for workflows and processing. In more mature solutions, forms should be measurable. That includes having visibility into form usage down to the form field level, so organizations can better understand and correct issues that might cause people to abandon the form. The last thing, as noted earlier, is to have business-friendly, reusable components that let the organization author and update forms at scale.

The pandemic disrupted traditional government service delivery. Where is the opportunity?

With COVID shifting our focus to digital interactions, we have an opportunity to expand our vision of the “no wrong door” approach. We can improve the customer experience across all touch points, even when users aren’t authenticated. If the goal is to help people obtain the services they need at the right time, at any point in their journey, we need to do a better job of predicting needs and personalizing content. We call this a “next best door” approach, using anonymous profiles — meaning we can’t identify a specific person, but we can understand key traits such as age range, gender or income. These things are tied to social determinants of health and provide a clearer understanding of HHS clients and relevant services or information.
Digital experiences that put people first.

Discover how Adobe's digital solutions improve the HHS experience by:

- Increasing efficiency with workflows, web and digital marketing
- Personalizing opportunities based on user context and behavior gained from analytics
- Streamlining service delivery with secure and compliant electronic signatures

Learn more at:
Re-Imagining Healthcare

What challenges do HHS organizations confront as they attempt to share data across an ever-expanding universe of endpoints?

The pandemic highlights how data silos and poor interoperability impact the ability to share, manage and analyze data. This ties into one of the biggest organizational challenges, which is to create a data-centric approach as opposed to the traditional policy-centric approach. Data needs to integrate the entire life of a person as they interact with HHS agencies. Another ongoing challenge is transparency. Organizations need a comprehensive view of data for each patient and each population so they can bring science to bear on how to better treat people.

How can organizations address these challenges?

An important piece, escalated by the pandemic, is the re-imagining of healthcare. A good example is virtual health, which is tied into telehealth. With the rise of COVID-19, telehealth has become more prevalent. Organizations need to provide virtual health services to patients who cannot or do not want to visit the healthcare facility.

What technologies can help organizations improve care and reduce costs during the pandemic and into the future?

Organizations can use AI and machine learning to analyze data and predict outcomes. AI can help healthcare organizations understand and improve revenue cycle management and internal operations. Chatbots are another emerging technology. With the appropriate bot framework, organizations can quickly develop intelligent, automated questionnaires that patients can step through to find out whether they need a COVID test or a checkup, for example. The chatbot uses their responses to move them to the next appropriate step in the care plan. Collaboration technologies also have become more important for effective virtual visits with patients and for virtual consultations between clinicians.

How can AI and ML support more personalized services and care?

If you apply AI and ML to a patient profile that pulls together data from the patient’s medical devices, electronic medical records, personal health records, insurance claims and other (often public) resources, you can understand a patient better and create a customized treatment strategy. You can do this not only with COVID-19 but also with chronic diseases such as diabetes and asthma. In addition, there are cognitive tools that can be used to ingest unstructured data. For example, if an organization receives COVID test reports via fax, it can use text analytics to bring that data into the structured digital system, where it can be shared, analyzed for decision-making and then acted upon.

How can organizations build resiliency into their digital transformation strategies?

Having a comprehensive cloud strategy is critical. The cloud lets organizations scale out the interoperability we’ve been talking about—the 360-degree view of the patient, the collaboration, the workflow, the analytics, the ability to act on data and so on. All this becomes even more powerful when these services are brought together under a single, unified cloud architecture specifically tailored to healthcare. Modularization is another important part of creating resilience. Combined with cloud, a modular approach helps organizations break down system silos and quickly deploy and scale new services.

How is the pandemic driving HHS innovation?

We’ve already talked about virtual health and cognitive services such as chatbots and process bots. One of the more significant outcomes is that we’ve streamlined the way we do clinical trials for a COVID-19 vaccine, so we now have a process for rapid development of all drugs. When the COVID-19 vaccine comes to market, it will be important to gather every aspect of data on every patient and store the data in a way it can be analyzed. That’s the only way to learn if there are longer-term effects or complications. The pandemic also highlighted how greatly social determinants impact health; I expect to see some big changes related to that.
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Sonny Segal: The Pandemic Teaches Us Modernization is Possible

Harash (Sonny) Segal served as chief information officer of Montgomery County, Md., from 2012 until 2020. In 2014, Segal oversaw an effort by the county’s Department of Health and Human Services (DHHS) to improve service delivery after department caseworkers and the county’s large and diverse clientele—including many individuals seeking multiple benefits—expressed frustration over a service model that required repeated visits and redundant data entry. In response, county officials developed a cloud-based integrated case management system to simplify access to services for county residents.

We recently spoke with Segal about the importance of digital services in HHS, what he’s learned about delivering cost-effective, future-friendly modernization strategies to replace aging legacy systems, and the benefits of data sharing and analysis to drive outcomes and performance.

How has data combined with modern technologies like cloud helped Montgomery County improve outcomes in HHS and other areas?

It allowed us to see where commonalities existed among clients. For example, we could see that a citizen using several health and human services might also be in the corrections and housing systems. That allowed us to be more proactive. We could see who was at risk and better prepare to meet their needs. We could also see where certain parts of the system were not as effective as they could be and perhaps led to a poor outcome. We could then adjust to get a better outcome for that citizen.

Cloud also enabled us to aggregate data in ways we couldn’t before. These systems—whether they are in law enforcement, corrections, housing, etc.—are still disparate, but using cloud means the data in each of those systems no longer has to be siloed. For example, a cloud-based data lake can aggregate data from multiple departments. We can then work with a cloud provider to easily apply powerful analytics tools to that data. That’s removed many barriers and provided us all kinds of insights we didn’t have access to before.

Have the impacts of COVID-19 made the use of cloud more critical to local government HHS departments?

Like many others, our HHS departments used cloud to quickly expand call center capacity in the wake of the pandemic. The use of cloud also enabled county employees to work remotely to keep the business of government open. In addition, cloud enabled other technologies like artificial intelligence and bots that are helping us work more efficiently and effectively. For example, bots can be used to rapidly review an HHS client’s history and make practical recommendations. That’s a much-improved approach over the old knowledge-based articles which contained static information and often didn’t even answer the questions citizens were asking. We are starting to see huge potential from the use of bots that live in the cloud and are driven by analytics.

Will the types of virtual services governments are now offering continue post-pandemic?

The way we live and the way we do business is changing. That applies to government and its constituency. The expectation we have for how our clients engage us and how we respond and deliver solutions and services is the new way. The changes we see now were driven by a crisis, but they have taught government a lot about what’s possible. There are many government modernization efforts that have languished or lingered for long periods of time. That’s all going to change. Automation and digitization of government services is taking the front seat, and it’s got to happen fast. We’ve learned a lot from industry in that regard, and now we know rapid modernization is possible in government, too.
Even before the nationwide call for police reform, facial recognition was struggling to win public support. A Pew poll last September showed that only around half of Americans thought police departments could be trusted to use the biometric tool responsibly. Even fewer thought the technology should be used by advertisers or tech companies. Descriptors like “creepy,” “invasive” and “Orwellian” have frequently dogged the technology, and, as a result, every civil liberties organization in the country has put a target on its back.

Now, as calls to defund, divest or otherwise drastically alter police departments have escalated, a fairly hostile regulatory landscape is emerging for facial recognition. Some municipalities are considering outright bans and a number of potential laws threaten to drastically curtail the industry. To a large degree, the police protests have reset the legislative conversation.

Previously, face recording moratoriums had been introduced in cities across the country, but almost all of these bills foundered, frequently after localized pressure from the tech lobby. Now, however, these regulations are seeing renewed interest. Much of this momentum has likely been engendered by the now heightened relevance of arguments long made by civil rights groups: that facial recognition inordinately targets marginalized communities and, in some cases, reinforces a racist system of policing.

Within weeks of George Floyd’s death in Minneapolis, Boston became the largest city on the East Coast to enact a moratorium on facial recognition, joining a growing coalition of communities that have rejected it as a legitimate policing tool. It’s so far unclear whether this trend will catch on in other cities. The private sector has handled this maelstrom with a certain amount of flexibility, and numerous companies have made quick concessions to the current public outcry surrounding the technology. As protests exploded across the country, a number of the U.S.’s largest vendors halted sales in an apparent bid to stifle controversy. IBM, Microsoft and Amazon announced that they would not sell facial recognition technology to police departments, at least for the time being. This hasn’t stopped many of these same companies from being the targets of new lawsuits that claim they broke the Illinois biometric privacy law.

When reached by email, IBM provided GT the following statement: “IBM no longer offers general purpose IBM facial recognition or analysis software. IBM firmly opposes and will not condone uses of any technology, including facial recognition technology offered by other vendors, for mass surveillance, racial profiling, violations of basic human rights and freedoms, or any purpose which is not consistent with our values and Principles of Trust and Transparency. We believe now is the time to begin a national dialog on whether and how facial recognition technology should be employed by domestic law enforcement agencies.” A spokesperson for Amazon, meanwhile, pointed to writings by Michael...
Punke, the company’s vice president of global public policy. Punke takes a decid-
edly more flexible view when it comes to facial recognition, and his writings show hope for the product line’s future.

“Our communities are safer and better equipped to help in emergencies when we have the latest technology, including facial recognition technology, in our toolkit,” Punke wrote, mentioning the tech’s power to assist police in important criminal inves-
tigations, like human trafficking cases.

Punke also argues that allegations that Amazon Rekognition routinely mis-
identifies suspects have all been based on improper usage of the product.

“In each case, we’ve demonstrated that the service was not used properly, and when we’ve re-created their tests using the service correctly, we’ve shown that facial recognition is actually a very valu-
able tool for improving accuracy and removing bias when compared to man-
ual, human processes,” Punke wrote.

In the case of Microsoft, a spokes-
person pointed out that it has consis-
tently lobbied for regulations that protect both communities and industry. A policy framework with testing requirements and transparency and accountability components is essential, they said.

“For the past two years we have been focused on developing and implementing strong principles that govern our use of facial recognition, and we’ve been calling for strong government regulation. We do not sell our facial recognition technology to U.S. police departments today, and until there is a strong national law grounded in human rights, we will not sell this technology to police departments,” the spokesperson said.

But even more “equitable” facial rec-
cognition may not be enough to satisfy certain quarters of the public. Jennifer Lee, technology and liberty project manager for the ACLU Washington state chapter, said that even if facial recogni-
tion technology is perfected to weed out potential racial bias, it still represents a basic threat to Americans’ civil liberties.

“Accuracy does not equal equity.” Lee said. “Making facial recognition 100 percent accurate does not solve the problems presented by face surveillance technology and its role as a tool that fuels police brutality…. Everyone should be concerned about a perfectly accurate facial recognition tool. The equity component is huge, but beyond that it just facilitates unprecedented government intrusion.”

Though companies like Microsoft have frequently fought for more industry-friendly regulations like the one recently passed in Washington state, certain lawmakers seem to advocate for a more draconian approach. Case in point, the “strong national law” Microsoft has in mind is probably not the legislation is to “hit pause” on the tech-
ology until it can be further scrutinized.

As an example, an omnibus police reform bill in Massachusetts, the Reform, Shift and Build Act, has proposed a one-year ban on use of facial recognition by state agencies. A staffer for Sen. Cynthia Stone Creem, who is co-sponsoring the bill, said that the point of the legislation is to “hit pause” on the tech-
ology until it can be further scrutinized.

“It’s basically a full-on moratorium on facial recognition technology. That moratorium would last until December 2021,” the staffer said, explaining that it would apply to any state agency or bureau, with the exception of the DMV, which uses the technology for routine identity verification purposes and to prevent fraud.

At the same time, the bill would create a special commission to study the technology. The commission would comprise numer-
ous officials from public agencies, as well as experts from various backgrounds — includ-
ing those specializing in civil rights. The group would submit its findings and recom-
endations to the Legislature no later than July 2023, according to the text of the bill.

Then the Legislature would have some time to go through those recommenda-
tions and either enact statutory authority for it, or, if the recommendations come out saying, “There’s no good use for this,” then they might make a different decision.”

Sen. Creem, speaking with Government Technology, said that she had been inter-
ested in regulating facial recognition since before the wave of police protests swept the country. Her stance has been that deploy-
ment of biometrics by government should be halted until proper investigation into its usage can be conducted. Creem said that she might eventually be open to use of the tools, but that there should be a more robust public process surrounding how it’s used, which communities are affected by it and whether it is effective or not, as well as appropriate rules and regulations in place.

“Perhaps you get a warrant, perhaps the technology gets better. I’m open minded to having a discussion about it and seeing where we go,” she said. __________Editorial __________Prepress

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Strengthening security and improving responsiveness with limited resources

State and local governments are once again finding their resources strained as they deal with a COVID-19-related spike in citizen demand for services. At the same time, they must deal with new cybersecurity threats as remote work multiplies network connections.

These problems don’t have easy solutions. But in this Government Technology Q&A, Jared Pane, principal solution architect at Elastic, discusses simple ways agencies can improve the citizen experience and make their online work environment safer without busting the budget.

Q: Staffers working from home are struggling to handle a record number of claims and questions. How can today’s technology help them deliver these resources faster?

Pane: By leveraging the power of search, agency employees can find the information they need much faster. They can also make it easier for citizens to answer questions on their own, conserving staff resources.

When agencies connect a unified search experience to their internal content, a search engine does the work of combing through disparate data sources quickly to deliver relevant results. With unified workplace search, it doesn’t matter whether content is in a document folder, an internal shared drive, or a cloud-based app – the search engine finds it. Managers can set access parameters to ensure only qualified people see sensitive information.

Agencies can also add a search bar to the front end of their websites for citizens. The engine uses metadata to deliver appropriate results, so someone who wants to renew their vehicle registration isn’t directed to information about obtaining a driver’s license.

Creating a search bar from scratch is notoriously difficult and expensive, but Elastic’s ready-made search products are quick to install. Built-in analytics show what people are searching for and the quality of the results, so agencies can tweak the system to make improvements.

Q: State and local agencies are likely to experience financial difficulties for some time, making technology modernization difficult. Is there anything they can do to improve the performance of existing networks and apps?

Pane: Gaining better visibility into app and system performance helps a lot. When administrators are trying to address an issue, they typically hold meetings with various IT teams and it can be difficult to track down the source of a problem.

When finances are tight, open source technology represents an opportunity for agencies to build and deploy unified solutions quickly, without upfront costs and contractual entanglements.

With Elastic’s free and open, unified solutions, agencies can see logging, metrics, application performance, and uptime across the entire network infrastructure, all from one place. This reduces problem resolution time from hours to minutes, giving staff more time to concentrate on higher-level tasks.

Q: Hackers are taking advantage of remote workers – cyberattacks have surged 400 percent during the COVID-19 pandemic. What can agencies do to help security teams respond better to threats?

Pane: For effective cybersecurity, agencies need a 360-degree view of what’s happening on the network. That means security teams need to consider all of the data in their systems. Some providers charge by volume, forcing agencies to pick and choose what data to put in. But if you can’t put all your data in, how do you know if you have a breach?

It’s important to find a provider that offers a standard fee, allowing agencies to scale. Once all data is in a security system, machine learning, dashboards, and alerts can be applied to spot anomalies and respond in real time.

Q: How can governments protect the growing number of device endpoints from phishing attempts and other attacks?

Pane: Employees working from home should start by using a VPN with two-factor authentication. But a VPN is still a network connection. It takes one person to open a bad link or attachment and you’ve got a virus or malware in your system.

Endpoints are most likely the vulnerability for some time, making it difficult to track down the source of a problem. With endpoint monitoring and detection, a bad file may be downloaded, but it will be prevented from detonating. IT can easily locate, quarantine, and analyze it in a secure, isolated environment and then make system changes to ensure it doesn’t get in again.

Contact sèlelastic.co for more information.
In a sense, there was no way for local governments not to be caught off guard by COVID-19. The first few days of March saw a few dozen cases across a handful of states, and by March 27 the virus had eclipsed 100,000 cases from coast to coast. States shut their offices, in-person government services ceased at the same time unemployment claims skyrocketed, and many businesses — especially small ones — needed a hand to survive. The pandemic presented a test case for digital services and cloud technology to prove their worth, and some states such as Maryland, in the midst of maturing its online platform called Maryland OneStop, were able to stand up solutions literally overnight because they'd been laying the groundwork for years.

How fast can you build a solution?

To distribute small-business grants and loans across the state, the Maryland Department of Information Technology (DoIT) worked with the state Department of Commerce to add new functionality to a platform they had launched in early 2018. Lance Schine, the deputy secretary of DoIT, said OneStop was envisioned as a digital services platform that multiple departments could use for various permits and licenses, giving citizens a uniform system on the front end with a framework for expansions and modifications on the back. Schine compared it to the iPhone's user interface, which hasn't changed much in years, while the back end is under constant revision.

"We realized that having dozens of different systems wasn't really efficient, so we built the Maryland OneStop platform... having a single place for people to go for hundreds of licenses, permits and certifications, with a single, universal experience. The ultimate goal is to decouple the front end from the back end, so a citizen signs in, puts in all their information in this OneStop, and it does all the work on the back end," he said. "Our front end is responsive, so it runs in your native browser. It can run on your desktop, your tablet, your smartphone."

From the beginning, OneStop was a work in progress that never really ended. Following the agile mentality, Schine said, the state initially came out with a minimum viable product in 2018 that served, for example, the Maryland Department of Health, but it kept adding features and enhancements that other agencies could use, adapting the platform on a case-by-case basis.

"If we build connections to a payment gateway, anybody who needs to use OneStop that requires a payment can now take advantage of that integration work that was already done," he said. "If we
build features for one department in one agency, all of a sudden, all the departments of that agency, and all the other agencies in the state, can leverage that feature.”

That approach in 2018 meant the platform was easy to adapt in 2020, and was already familiar to other departments, including to Secretary of Commerce Kelly Schulz, who had formerly been secretary of the Department of Labor, Licensing and Regulation. As soon as the state decided to disburse small-business grants through the OneStop platform, Schulz’s staff provided a list of high-level requirements to Schine’s office. The list quickly went to Enovational, the app developer in Washington, D.C., that won the state’s competitive bid to set up OneStop two years before.

“Since [Enovational] was intimately involved with it … and the small business solution was basically an intake and workflow, it was a good fit, and they did it very quickly,” Schine said. “We just lever-
age the current contract to add new forms onto the OneStop platform.”

Besides the technology, Schulz’s un-
derstanding of the business processes involved — knowing what information people need to collect and how to process it — was critical for a fast turnaround time.

“The speed to implement is fairly depen-
dent on the requirements-gathering. If someone comes to us and says, ‘We need to collect information, we don’t know what we need to collect, we don’t know what the conditional forms are … and we don’t know what other databases we need to authen-
ticate against,’ and you’re creating all that from scratch, obviously it takes more time,” Schine said. “If they come to you with a 10-page form, they’ve already been doing this for 10 years, they know the business process and they know exactly what they need to do, that’s a much faster speed to imple-
ment, setting aside the technology piece … We will re-engineer [the business process] when we go from paper to computer, but at least we know what the process requires.”

Enovational’s Chief Operating Officer Cham Chancharadeth recalled being approached at 5 p.m. March 24. By 1 a.m., there was a Maryland OneStop portal up and running to handle small-business grant applications.

“Part of the reason we were able to bring the loans and the grant application online is because the platform was already launched and developed,” Chancharadeth said. “The two years that we invested in developing the platform helped a lot.”

He approached the project with the goal of using the latest open source tools for the technology stack and hosting it in the cloud. Specifically, he used Ruby on Rails for the Web application framework, MongoDB for the database, Elasticsearch for the search engine and AWS GovCloud to host.

Schine said the fact that the state already had a shared cloud infra-
structure with security controls and mechanisms in place, in the AWS GovCloud, allowed it to roll out new solutions quickly. That, combined with the OneStop platform already being part of the state’s digital infrastructure, meant the small-business grant project wasn’t starting from scratch on any major components.

From a project management perspective, Chancharadeth reiterated the importance of decoupling the public’s user experience from the workflow. He said this allowed Enovational to focus on getting the citizen-facing application up and running while taking more time with Schine’s department to finalize the approval process, and the steps involved in handling the applications.

Schine said it was a week or two before they had all the integration points complete and the application processing automated.

There are a lot of systems across the country that have failed because the front-end system was tied to an old back-end system. More often than not, that approach in 2018 meant the platform was easy to adapt in 2020, and was already familiar to other departments, including to Secretary of Commerce Kelly Schulz, who had formerly been secretary of the Department of Labor, Licensing and Regulation. As soon as the state decided to disburse small-business grants through the OneStop platform, Schulz’s staff provided a list of high-level requirements to Schine’s office. The list quickly went to Enovational, the app developer in Washington, D.C., that won the state’s competitive bid to set up OneStop two years before.

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age the current contract to add new forms onto the OneStop platform.”

Besides the technology, Schulz’s un-
derstanding of the business processes involved — knowing what information people need to collect and how to process it — was critical for a fast turnaround time.

“The speed to implement is fairly depen-
dent on the requirements-gathering. If someone comes to us and says, ‘We need to collect information, we don’t know what we need to collect, we don’t know what the conditional forms are … and we don’t know what other databases we need to authen-
ticate against,’ and you’re creating all that from scratch, obviously it takes more time,” Schine said. “If they come to you with a 10-page form, they’ve already been doing this for 10 years, they know the business process and they know exactly what they need to do, that’s a much faster speed to imple-
ment, setting aside the technology piece … We will re-engineer [the business process] when we go from paper to computer, but at least we know what the process requires.”

Enovational’s Chief Operating Officer Cham Chancharadeth recalled being approached at 5 p.m. March 24. By 1 a.m., there was a Maryland OneStop portal up and running to handle small-business grant applications.

“Part of the reason we were able to bring the loans and the grant application online is because the platform was already launched and developed,” Chancharadeth said. “The two years that we invested in developing the platform helped a lot.”

He approached the project with the goal of using the latest open source tools for the technology stack and hosting it in the cloud. Specifically, he used Ruby on Rails for the Web application framework, MongoDB for the database, Elasticsearch for the search engine and AWS GovCloud to host.

Schine said the fact that the state already had a shared cloud infra-
structure with security controls and mechanisms in place, in the AWS GovCloud, allowed it to roll out new solutions quickly. That, combined with the OneStop platform already being part of the state’s digital infrastructure, meant the small-business grant project wasn’t starting from scratch on any major components.

From a project management perspective, Chancharadeth reiterated the importance of decoupling the public’s user experience from the workflow. He said this allowed Enovational to focus on getting the citizen-facing application up and running while taking more time with Schine’s department to finalize the approval process, and the steps involved in handling the applications.

Schine said it was a week or two before they had all the integration points complete and the application processing automated.

Never too soon to talk about next time

Chancharadeth said Maryland OneStop received about 18,000 appli-
cations for small-business grants and loans within the first three days, and 56,000 within a month. The program is still open, but Schine and Chanchara-
deth were generally pleased with it.

Chancharadeth said if not for the time pressure of a pandemic and government shutdown, Enovational might have done an analysis of the entire system end to end and worked out all the integra-
tion points and methodolo-
gies for collecting information from citizens prior to launch. But given the emergency at hand, he was glad they had an adaptable platform on which the front end could be modified and launched so quickly.

“There are a lot of systems across the country that have failed because the front-end system was tied to an old back-end system, and the back-end systems couldn’t handle the load,” Schine said. “What we’re doing is taking in all the information, in a secure environment, and then dealing with the back-end integration at whatever cadence that back end can handle,” he said. “So the public doesn’t sit there with the system timing out, because it’s not an older back-end system that can’t handle the volume that a lot of states have run into, because COVID affects such a high percentage of people in their state. Their systems weren’t prepared for that.”

Reflecting on nontechnical reasons the project turned around so fast, Schine mentioned a few common best practices.

“Don’t try to do everything things faster and more efficiently,” he said. “It paid off during COVID.”
NASCIO’s State CIO Top 10 Priorities for 2020 indicate emerging technology and changing attitudes about how government should best serve citizens are reshaping government CIO agendas. One thing is clear: to meet the 21st-century needs of constituents, state and local governments must build a more agile culture within their organizations. Getting there is challenging considering the many obstacles that lie in the way. But with a roadmap in hand, organizations can plan a modernization journey that will help them reach their destination.

**Build the Foundation**
Strengthen IT infrastructures with key capabilities and technologies, including:
- An open source-based standard operating system
- Cloud-based solutions that reduce storage costs while accelerating innovation
- A container platform that streamlines application development, production and deployment
- Data analytics to improve decision-making

**Drive Innovation and Transformation**
- Find new ways to develop and deploy technologies
- Create an adaptive and collaborative culture
- Embrace a startup mindset

**Move Toward Consolidation and Optimization**
Combine services, operations, resources, infrastructure and data centers and embrace enterprise thinking

For more details on how to become a more nimble government organization, download our ebook at
More Nimble:

Focus on Data Management and Analytics
Adopt a holistic approach that focuses on:
- Data architecture & governance
- Data strategy
- Big Data
- Business Intelligence
- Predictive analytics

Embrace the Cloud
✓ Enable economic savings and new ways of operating
✓ Consider adopting a container platform to prevent vendor lock-in, deploy applications faster and enhance security

Standarization Has to Begin with Legacy Modernization

62% of public sector organizations experienced at least two cyber attacks in the previous two years.

A more nimble government driven by a DevSecOps approach and enterprise open source technologies.

Improve Cybersecurity and Risk Management
Adopt privacy-focused technologies that reduce risks and protect citizen data

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County court systems have used technology to conduct business during the past several months of social distancing, and some of those uses are yielding benefits that may lead to long-term changes.

Since March, pandemic-related restrictions have upended the logistical functions of nearly all aspects of American governance, including court systems. Much of the courts’ traditional functionality happens through in-person interactions, be it outward-facing functions like arrangements or behind-the-scenes work such as meetings between judges and attorneys.

While many courts have been set up for some time to conduct functions remotely on occasion — particularly in instances of proceedings that involve juveniles or other sensitive participants — the rate at which they have utilized technology in this way historically has been minimal. In other words, when the impact of COVID-19 ground life to a halt in March, most American courts did not have practices or in some cases the physical technology to go remote, said Rita Reynolds, chief technology officer for the National Association of Counties (NACo).

“When COVID hits, all of a sudden we have to use video,” Reynolds said. “We can’t have people coming to the courthouse. Judges themselves may not even be able to get in.”

In her capacity during the crisis, Reynolds participated in a discussion group of county IT leaders from across the country, and as part of that process, conducted a survey that found that roughly 80 percent of the group’s participants were using some sort of video functionality to conduct court business.

In general, Reynolds has heard positive responses to the expanded use of video, especially regarding functions outside of the courtroom itself, including probation officers meeting with clients.

“I can’t say to what degree,” Reynolds said of the increase in technology in the courts, “but I can say that court staff, IT leaders and elected officials are all seeing the benefits.”

Fairfax County, Va., with more than 1 million residents, is one jurisdiction that attests to that.

Gregory Scott is the chief technology officer and director of the IT department there, while Dave Bartee is the court technology officer. They both agreed that the county has seen benefits to using technology and remote capability to conduct court business.

The Fairfax County court system is made up of 40 courtroom rooms that handle circuit court cases, district court cases and juvenile proceedings. Since expanding their physical court
facilities in 2018, officials have worked to build a platform where a strong majority of the courtrooms there have high-tech capabilities. They’ve always done video arraignments for the county jail, just never more than two or three at once, making it easy for them to distribute the physical hardware those proceedings required.

As such, in the wake of COVID-19 they’ve been pushed to develop new ways to increase capacity to allow more courtrooms to conduct virtual business simultaneously. They’ve started issuing iPads to staff who can go directly where inmates are kept to reduce the risk of spreading infections.

“We may have only five or six of our courtrooms out of 40 in operation,” Bartee said, “but our lives are busier than they’ve ever been trying to use technology to support the courts.”

Circuit courts have also been able to carry out civil functions using videoconferencing, including issuing marriage licenses, conducting virtual probate activities and issuing concealed weapons permits. Recently, their circuit court even conducted a grand jury via videoconferencing, a practice gaining momentum around the country. Hybrid models have also been used, like in Mohave County, Ariz., where a grand jury was empaneled before pandemic restrictions were put in place. Some officials — the foreman, the prosecutor and the court reporter — are onsite at the courthouse during the proceedings, while jurors and witnesses log in remotely using Zoom. In Florida, Miami-Dade’s 11th Judicial circuit began piloting remote video technologies for jury selection in July. Once jurors were chosen, the in-person trial followed social distancing protocols, and proceedings were streamed on YouTube. The county is one of five selected by the state’s supreme court to pilot video technologies, and a report on their efforts will be published in October.

The two major court functions that remain elusive via video in Fairfax County arebench jury trials — and some jurisdictions elsewhere in the country are even working to use video to do that — and the high-volume courts that handle hundreds of traffic issues per day. Otherwise, it’s been relatively smooth using technology to do business.

“I absolutely think you’re going to see changes in the future and a new way of doing things,” Bartee said. “We’re seeing benefits that may be courtroom-related and non-courtroom-related. There’s a lot of activity that goes on before a case gets into a courtroom, and a lot of that has been handled virtually, and we’re finding it very efficient and very effective.”

In effect, the courts are yet another segment of the public sector that is learning that it is often easier to conduct business via phone or video chat than it is to find time to gather a dozen-plus people in the same room. It’s a lesson learned during the crisis, but as those involved point out, it’s also a lesson that can shape the way work is done moving forward.
The COVID-19 pandemic has state and local government agencies working harder than ever to provide healthcare benefits that serve the wide-ranging needs of American citizens. Having pivoted to take on the coronavirus, these agencies are complying with regulations and evolving in accordance with best practices set forth by the Centers for Medicare & Medicaid Services (CMS) and other industry organizations.

Meanwhile, the unemployment rate is soaring, along with the cost of delivering and managing services that now include providing coronavirus testing and care for those sickened by COVID-19. A 2020 trustee report found that parts of CMS will run out of money as early as 2023 and become insolvent by 2026. Issued in April, these projections did not yet reflect the potential effects of the COVID-19 pandemic on the Medicare program.

One way government agencies can improve outcomes and contain costs is to streamline and simplify their benefits programs. An integrated payments platform that enables a unified, person-centric approach to healthcare benefits is key to managing client services and transactions in a more holistic, responsive and cost-effective way—during our current crisis and beyond.

"Our government agencies are straining beneath a crush of coronavirus cases, and it’s clear that the time for solutions is now. The pandemic has underscored the need for a simplified payments system that allows Americans to access—with one login, and on one platform—the transportation, childcare, housing, health and other benefits and programs in which they are enrolled."

—John Sweeney, Strategy and Business Development, Public Sector at WEX

STEPPED IN COMPLEXITY

The following trends amplify the need for an integrated payments platform that reduces complexity for organizations and the people they serve.

Push to commercialize benefits features

To reduce costs, states are adopting features found in commercial healthcare coverage, such as health savings accounts (HSAs) that include incentives and cost sharing. For a low, income-based monthly payment, Indiana’s POWER account members can control the first $2,500 of their healthcare spending. Along with HSA components, states are also introducing new requirements. According to Clay Farris of Mostly Medicaid, nearly one-third of states are starting to tie Medicaid coverage to certain conditions such as work, volunteer or training activities.

Movement toward integrating social determinants of health (SDoH)

Emerging evidence shows SDoH benefits, such as access to food, shelter and transportation, are as essential to health outcomes as healthcare itself. These benefits also help reduce overall healthcare costs. In one study in which Medicaid members received a single SDoH benefit, medical costs decreased by $2,400 per year. In another study, emergency department use dropped by 60 percent when members were enrolled in a housing program. Despite the promise of this emerging model, building a technology bridge across multiple agencies and helping clients access benefits in a seamless way is complex.

Sprawling regulations across agencies

Each agency and program that offers health and SDoH benefits has its own set of regulations governing budget, services and data protection. In addition, each agency operates under a different government department (e.g., Health and Human Services, Housing and Urban Development, and Education) and must respond differently to COVID-induced changes such as mass unemployment and the move to remote work. Organizations must find an accurate, efficient way of coordinating
and ensuring compliance as they integrate benefits from multiple agencies. In addition, they need ways to ensure that overall budget allocations align appropriately with the factors that most influence outcomes.

**Demand for a better user experience**

Citizens expect their user experience to compare with or exceed private-sector experiences. Instead of maintaining multiple accounts, they want a single credential they can use across all government programs. In addition, they want easier access to their healthcare information. COVID-19 has only intensified the demand for an improved (and often digital) user experience, and our government agencies need systems that respond to this demand. Many Americans are already using third-party mobile applications that aggregate healthcare information such as immunizations, prescriptions, lab results and vital statistics. According to Ryan Howells, who is a principal at Leavitt Partners and on the management team of the CARIN Alliance—an organization at the forefront of the movement to enable consumers to more easily obtain, use and share their digital health records—nearly 241 million people can now access clinical data via Apple’s health records application alone.

**MOVING TOWARD AN INTEGRATED DELIVERY MODEL**

As health and human services seek to mitigate costs during COVID-19, improve outcomes and meet user expectations, organizations need an integrated payments platform that supports a connected ecosystem of agencies.

This person-centric ecosystem provides a consolidated view of client data and a single-credential delivery model for billing, payments and benefits. Benefits recipients use one virtual account to seamlessly access the transportation, childcare, housing, health and other benefits and programs in which they are enrolled. Behind the scenes, each virtual account has multiple “purses,” with each purse representing a single Medicaid or SDoH program. Each purse has its own rule sets to enforce the usage, incentives, regulatory compliance, funding and other requirements of the individual program. Because it uses a modular approach, an integrated payments platform can easily add new programs while building off existing infrastructure, business processes and data pools. Leveraging the person-centric virtual account, multiple agencies can collaborate on a personalized service delivery plan with funds being allocated, for example, to a transportation, childcare and health-expense purse.

A number of states are already using an integrated payments platform to power ABLE savings accounts. ABLE accounts help people with disabilities maintain health, independence and quality of life by allowing them to put aside money for immediate needs, as well as save for the future (e.g., for furniture, education and training, or assistive technology). Similar accounts could be used for other populations.

Another emerging use case allows organizations to partner with state exchanges and Medicaid to create a consolidated bill for families. Family heads can see their total premium, which accounts for every member in their household—for example a child on a CHIP program and an adult on a qualified health plan—and make a single payment.

Looking into the future, an integrated, person-centric platform will also allow organizations to automatically push member-relevant programs and offers when the system detects changes in income or other circumstances.

**A WHOLE-PERSON APPROACH**

To lay the foundation for a unified, person-centric model, organizations can start by thinking of an individual or family’s healthcare account as the hub and SDoH benefits as the spokes of the solution. For example, one spoke might be a housing subsidy, as studies show that housing can help reduce healthcare costs. Another near-term spoke might be a transportation benefit, as lack of adequate transportation often prevents people from keeping healthcare appointments and accessing services. Regardless of which spokes are added first, an open standards-based, modular approach is critical for easy integration of new spokes and existing systems. In addition, this approach aligns with Medicaid Infrastructure Technology Architecture objectives related to modularity and ease of integration.

A unified, person-centric payments platform provides a flexible, scalable foundation for a modern approach to benefits delivery. With full visibility into an individual or family’s data across the provider ecosystem, organizations can better address all the circumstances that contribute to overall well-being. In doing so, they can better empower clients and their communities to thrive, while also gaining more control over compliance, costs, fraud and waste.

**ENDNOTES**

2. www.in.gov/fssa/hip/2590.htm
4. Ibid.
5. Ibid.

WEX simplifies benefits for federal, state and local government agencies. With domain-specific, modular and cloud-based solutions, WEX can assist you in the financial administration of your health and social programs, including Medicaid, CHIP, state-based marketplaces, SNAP, TANF and government employee health benefits.

www.wexinc.com/public-sector
Dallas Hires New CIO
Bill Zielinski, who spent the last 30 years working for the federal government, mostly in IT, was named the new CIO for Dallas in June. Zielinski replaced interim CIO Gloria Lopez Carter, who took over after Hugh Miller left the city in January.

Syracuse, N.Y., CDO Heads to Private Sector
In June, Syracuse, N.Y.’s first chief data officer, Sam Edelstein, announced he was leaving city service to take a role with BlueGranite, a private data-consulting company. Edelstein spent four years as CDO, where he helped shape both the role and how Syracuse uses data. As of press time, a replacement had not been named.

New CIO Named in Wisconsin
Trina Zanow was appointed to the post of CIO and administrator of the Wisconsin Division of Enterprise Technology following the departure of longtime tech chief David Cagigal. Zanow has 25 years of experience in state government, including a number of roles in IT, as well as with the Housing and Economic Development Authority and the Department of Health Services.

NC CIO Departs for Nonprofit
After just a few months as North Carolina CIO, Tracy Doaks left government work to head MCNC, a nonprofit aimed at expanding broadband, cloud services and other tech in the state. Before being appointed the head IT role in February, Doaks spent five years as deputy CIO. Gov. Roy Cooper named Thomas Parrish IV, acting secretary of the North Carolina Department of Information Technology in early August. Parrish brings a variety of experience to the role, including IT director for the state’s Governor’s Office.

Indianapolis Taps New Data Officer
Gov. Eric Holcomb named Josh Martin Indiana’s chief data officer, a position he had held in an interim capacity since December 2019 following Darshan Shah’s departure. The CDO works within the Indiana Performance Management Hub, where Martin was previously chief of staff since 2015.

Steve Emanuel Leaves City Service
Having served as CIO of Newark, N.J., for 18 months, Steve Emanuel left the position in July to join IT consultancy CGI. Emanuel has previously held both private- and public-sector roles, including CIO of New Jersey.

Read full reports and breaking news about career changes across tech-driven roles in government at govtech.com/people.
Leadership Shifts in North Dakota
The North Dakota Information Technology Department in June announced the creation of a chief customer success officer role, designed to help improve delivery of citizen services. Jeff Hensel will take an 18-month leave of absence from his work at Microsoft to fill the position. Concurrently, Kevin Parker, a veteran of state government work, announced he was stepping down as the state’s chief reinvention officer.

Michigan Creates Mobility Office and Chief
As part of its continuing effort to be a hub for transportation technologies, Michigan launched a new Office of Future Mobility and Electrification, naming Trevor Pawl as its inaugural chief mobility officer.

Florida Governor Names New CIO
Gov. Ron DeSantis in August announced Jamie Grant as the head of Florida’s new Digital Service. Grant was most recently a Florida state representative, and played a key role in the state’s latest IT reorganization earlier this year.

State CISOs on the Move
2020 has seen a flurry of activity among state chief information security officers:

Indiana CISO Bryan Sacks left state work for a position with SHI International, and was replaced with interim security chief Hemant Jain.

After 16 years leading Kansas IT security, CISO Rod Blunt transitioned to the same role with El Paso County, Texas. He was replaced by longtime state employee Jeff Maxon.

Rohit Tandon was named Minnesota’s permanent CISO, a role he’d held in an acting capacity since December.

Acting Arkansas CISO Nolan Leatherwood was elevated to the position permanently, having filled the office since 2018.

Chris DeRusha stepped down as Michigan CISO to head up cybersecurity for Joe Biden’s presidential campaign. At press time, a replacement had not been named.

Patrick Wright was named Nebraska CISO, coming from a role in security operations with Farmers Mutual Insurance. He succeeded former CISO Chris Hobbs.

Colorado CIO Stepping Down
Gov. Jared Polis announced that Colorado CIO Theresa Szczurek would be leaving state service in early September after about 18 months in the position. Anthony Neal-Graves, currently chief operating officer for the Colorado Office of Information Technology and executive director of the state Broadband Office, will fill in as interim CIO. Szczurek had not announced her next move as of press time.
The Kentucky Education Technology Systems (KETS) — part of the Kentucky Department of Education (KDE) — has been a trailblazer in providing education technology and assuring digital equity for the state’s nearly 650,000 K-12 students. Working with AT&T since the early 1990s, KETS has developed and evolved the Kentucky Information Highway (KIH) network to provide industry-leading network access, cloud-based computing and cybersecurity across all school districts in Kentucky. This includes schools in rural, low-income or traditionally underserved areas in the Commonwealth.

High-Speed Connectivity to 171 Kentucky Districts

Equitable internet access has been a founding principle of KETS since its inception in 1992. “We believe that anywhere, anytime, always-on digital access to learning is not only today’s expectation, but it also is a great equalizer for all students to achieve at high levels,” says David Couch, Associate Commissioner, Kentucky Office of Education Technology, KDE. “All of our K-12 district offices and schools have access to high-quality fibered internet services.”

KETS prides itself on being the first state in the nation to meet the State Educational Technology Directors Association’s (SETRA) early national bandwidth standards of 100 Kbps per student on average. One hundred percent of Kentucky’s K-12 district offices and schools have been connected via high-quality, high-speed, reliable (99.99%) internet services since the 1990s.

With AT&T’s Ethernet-based services available to every district today, KETS is raising the bar. Since 2015, it has scaled up its average bandwidth per student from 100 Kbps to 260 Kbps.

“It’s not just going to Louisville and Lexington and urban areas where you expect to have great service,” says Hood Harris, President, AT&T Kentucky. “It’s going to traditionally underserved areas like rural counties in East Kentucky and West Kentucky and giving them the same network advantage. We have worked really hard to provide every student in all 120 counties access to high-speed, dependable internet service from this partnership.”

During the COVID-19 pandemic, it has become even more critical to ensure all students have internet access, especially at their homes, since many districts are offering a distance learning option for the 2020/2021 school year.

“We have between nine and 15 percent of Kentucky K-12 students that don’t have internet access at their homes which would allow them to do school-related instruction and work remotely,” says Couch. “A very high percentage of those students are from low-income homes, so this will be a priority on the radar screen over the next 12 months.”

Anytime, Anywhere Access

Network speed, reliability, scalability and ease of access are essential to the successful use of technology in K-12 environments.

KDE’s proven, high-quality network enables Kentucky to equitably provide differentiated instruction, statewide online summative and formative assessments, video collaboration, curriculum and content sharing, and other bandwidth-consuming applications to all its districts. In addition, any teacher or student can move from one district to another and have access to the same sets of tools.

Because advanced networking is one of AT&T’s core competencies, KDE’s
“We believe that anywhere, anytime, always-on digital access to learning is not only today’s expectation, but it also is a great equalizer for all students to achieve at high levels.”

David Couch, Associate Commissioner, Kentucky Office of Education Technology, KDE

relationship with AT&T offers unique advantages. “We provide both wired and wireless services; this allows us to do things that others can’t. For example, we can put Wi-Fi on buses, so students can access the network while they’re commuting back and forth to school,” says Dennis Meyer, AT&T Account Manager.

The overall impact of the KDE network and the education technology it supports is an engaged student population. Ninety-three percent of our school districts say their students are taking online or virtual courses. According to a 2019 survey conducted by KDE, 81 percent of our students find it easy to collaborate using online documents and 72 percent say they read content online at least once a week,” says Couch. “These digital devices aren’t just window dressing; they are a vital part of each child’s learning experiences.”

Students and teachers aren’t the only groups to benefit. Administrative offices are taking advantage of the network to manage systems support for district financials, student information, IP-based phone services, physical security, HVAC and more. Standardization helps support staff with a common set of tools as well.

Over the Top Technology Innovation

AT&T helps KDE maximize its investment and deploy additional bandwidth and applications on top of the network as needed, bringing state-of-the-art technologies and services to KDE. AT&T invested nearly $700 million in its Kentucky networks from 2014 to 2016, providing upgrades to reliability, coverage, speed and overall performance.

“What started as a high-speed, fiber-optic network to all school districts has become a managed, advanced technology core that evolves to meet the state’s testing and education needs as they continue to change,” says Dan Sisson, Regional Vice President, AT&T.

The network’s stability, performance, security and ease of use have helped put KDE at the forefront of transitioning from on-premises to cloud-based applications for everything from online testing and video instruction to content delivery and administrative functions. Whether it’s email, financials or student information — everything is in the cloud so it’s a more consistent, reliable experience,” says Meyer.

KDE’s cloud-based computing strategy has also helped the state save a significant amount of money each year and increase the security of its services for K-12 students and teachers. To help protect itself against the increasing volume and complexity of cybersecurity threats, KDE chose AT&T to provide managed security services. It was the first in the nation to implement a cloud-based firewall security service for every public school district in the state. The solution is designed to detect abnormal and malicious activity across the network, provide insight into the overall threat landscape and deflect potential attacks.

“There are numerous threats across the state every month in various school districts. The end users never know because we work to identify and mitigate attacks long before they ever hit a site,” says Meyer.

Privacy and security of student data are also top priorities for districts throughout Kentucky. KDE was the first in the country to enable single sign-on capabilities for every student and teacher to access Chromebooks and Google resources via their Office 365 credentials.

Fiscal Responsibility and Long-Term Sustainability

Kentucky’s K-12 internet bandwidth demands are expected to increase in the coming decade. Having AT&T’s proven, reliable network as a foundation for all of the Commonwealth’s districts will give KDE the ability to flexibly accommodate these needs and evolve technology offerings to students, teachers and administrators — all while helping to make good use of taxpayers’ dollars.

In doing so, the state can enhance the learning experience, prepare students for higher education and help develop a competitive workforce. By providing all students with the same opportunities, KDE supports an equitable education environment regardless of students’ circumstances, which helps communities flourish now and in the future.

“You can rest assured that as technology, the workplace and the world change, KDE will be working tirelessly to make sure that the Commonwealth’s children are ready for what lies ahead,” says Couch.
Beth Noveck Takes Additional Role
New Jersey Chief Innovation Officer Beth Noveck, who also serves as director of New York University’s Governance Lab and is a veteran of the Obama administration’s tech work, also became board chair of the Brussels-based firm CitizenLab in July. The citizen-engagement company is expanding its services from Europe to the U.S., and Noveck will help CitizenLab market its digital democracy tools to cities.

Craig Ogeron

Craig Ogeron Retires from Mississippi IT
Longtime Mississippi CIO Craig Ogeron retired from state service in early August. He served as head of Mississippi Information Technology Services since 2011, but began work with the department in 1997. State officials said Ogeron will remain involved in technology work there, while taking on a role with Amazon Web Services GovCloud. Michelle Blocker, chief administrative officer for Mississippi IT, was named interim CIO.

Data Officer Departs Kansas City
Eric Roche, Kansas City, Mo.’s first chief data officer, left the position to take over as budget officer in Pearland, Texas, a role he said would still be heavily involved with data. Roche spent five years as CDO in Kansas City.

San Jose Finds New Innovation Officer
In July, Jordan Sun took over as chief innovation officer in San Jose, Calif., bringing tech experience in the military, health-care and finance sectors to the position. Sun’s focus on digital inclusion and resiliency in San Jose will continue the work of his predecessor, Shireen Santosham, who left the city in January.

Gwinnett County, Ga., Names New CIO
Georgia’s second most populous county named Dorothy Parks as the new head of its Information Technology Services agency. Parks has been with Gwinnett County IT for three years as both assistant director and deputy director of enterprise applications. Prior to that she held a number of leadership roles in private-sector technology.

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Beth Noveck

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A Broader Role for Cybersecurity Leaders: Enterprise Risk Management

The COVID-19 pandemic offers clear proof that enterprise risk management is not just an exercise, but a crucial government function. To protect their operations and continue to fulfill their public-service missions, governments need robust plans for mitigating a range of potential emergencies.

Robert Huber, chief security officer at Tenable, says cybersecurity professionals should play a larger role in enterprise risk management. He discussed how cybersecurity leaders can contribute to this crucial function in government organizations.

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With the ongoing focus on IT budgets, every dollar must produce higher value than ever before. When managed well, IT services, support activity and projects have the potential to deliver this value. Yet tracking and managing IT activity and resources to maximize their benefit is a complex and sometimes costly challenge. As IT leaders in state and local government evaluate their effectiveness in managing IT services, support and projects, here are five key pillars to consider for more cost-effective and efficient work management.

**PILLAR 1: SIMPLIFY IT WORK WITH A SINGLE ECOSYSTEM VIEW**

Traditionally, separate systems for managing services, projects and operations make it difficult to track utilization and allocate resources, especially for employees who work across these areas. Different system interfaces and reporting features also make it hard for employees to enter updates and for leaders to obtain useful information.

Integrated IT service management (ITSM) uses a single system for all tracking and reporting.

“You don’t need to spend days or weeks consolidating data from multiple systems, then wonder if you got it all,” says Andrew Graf, chief product strategist at TeamDynamix. “In a single ITSM system, dashboards help everyone understand work priorities and help leaders make faster, more confident and fact-based decisions about resource needs and assignments.”

**PILLAR 2: IMPLEMENT SELF-SERVICE PORTALS FOR END USERS**

Any IT help desk receives certain questions and support tickets again and again. Moving these frequently repeated requests to a self-service system benefits both help desk staff and users.

“You can free staff to work on complex issues that are more impactful and meaningful, and give more time to users who really need the personal assistance,” says Graf.

Data indicates that handling a service issue on a phone call costs $22 on average. The cost for a self-service request is just $2.

However, self-service is less effective if it’s a patched-together collection of documents, web links, device driver files, etc. Instead, look at support self-service as a holistic offering that encompasses a web portal for user requests, the knowledge base of support content, the support tickets and the services catalog. Integrating these components into a single system streamlines the service experience and make it more consistent and compelling for users. Phone and email support options can remain for users who prefer that form of contact. These methods are also better suited for handling complex requests. But if the knowledge base offers helpful content and users are guided to self-service at relevant touch points, they will increasingly turn to this method.
Self-service support can produce cost savings, even if as few as 20 percent of support requests move to this option. Data indicates that handling a service issue on a phone call costs $22 on average. The cost for a self-service request is just $2.¹

**PILLAR 3: MANAGE TEAMWORK WITH CARD WALLS**

Maintaining the ever-changing status of projects, schedules, people and resources is a complex and ongoing challenge in IT. Tracking this activity in traditional project management software can be cumbersome, and information is often incomplete or outdated.

For some IT departments, the alternative is to track projects with still tools, such as a whiteboard or conference room wall. A modern ITSM solution adapts this idea through a “card wall” feature that offers a simple approach to manage current work and resources. Managers and employees can easily view and update project assignments, priorities and status on virtual cards, rearranging them as if they were on a physical wall.

The card wall display helps the IT team with planning discussions and collaboration. When the card wall is hosted online, this feature makes it easier to coordinate activity when some or all team members work remotely.

**PILLAR 4: APPLY FORMAL PROJECT INTAKE AND GOVERNANCE PROCESSES**

Studies have found a 70 percent project failure rate for organizations that undervalue formal project management processes.² A formal intake process helps prioritize and select IT project requests when the scope of work is more than what can be delivered within available budgets and resources. This intake process is especially helpful to identify priorities and define a realistic scope of work. It can be as simple as a conversation or as formal as a written evaluation process with a project scoring system.

An ITSM system’s dashboard and reports provide essential information for the intake process. Visibility into current workloads, resource availability and scheduling factors help decision-makers select and prioritize new projects.

Once a project has been approved and launched, the organization’s governance process resolves issues, monitors milestones and tracks key indicators. This activity can generate more data than can be managed easily in a spreadsheet. Instead, an ITSM system collects and reports this data through core functions such as project monitoring and time tracking.

**PILLAR 5: USE TIME TRACKING TO UNDERSTAND RESOURCE ALLOCATION**

IT leaders and employees understand tracking identifies how much time is spent on routine operations compared to new projects that help advance the agency. Time tracking can also identify employee availability for new projects, especially those that need specialized skills.

A modern ITSM system makes it easy for employees to enter accurate time information. Team leaders and department managers can easily see staffing trends, assignment issues and capacity levels.

**HOW GOVERNMENTS BENEFIT FROM ITSM**

Two local governments illustrate different ways to leverage value from an integrated ITSM system:

- Sunnyvale, Calif., uses a single system to manage IT services and a portfolio of IT projects. Department-level dashboards provide clear, real-time visibility into support tickets and response times, service level agreements (SLAs), resource capacity and project risks.

- The application services team for Frederick County, Md., achieved better use of staff and resources by instituting a single platform to manage IT services, support and projects. The team replaced a mix of spreadsheets, a stand-alone ticketing platform, and a separate SharePoint environment with a single ITSM and project portfolio platform. This integrated system enables the team to deliver IT services faster and easier.

**CONTINUAL CLARITY AMID CONTINUAL CHANGE**

Governments will rely even more on IT services and support to help sustain core functions and serve constituents through the changing dynamics of the COVID-19 response and beyond. IT must meet these expectations in ways that maximize the value of tight budgets.

An ITSM platform enables this value. With greater clarity about the match of current needs to current resources, IT can respond more quickly and effectively to unpredictable change.

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

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1. Help Desk Institute
2. Project Management Institute

Produced by: TeamDynamix

TeamDynamix cloud-based work management software gives organizations the ability to align, work together, and simplify their work management processes across their organization. Higher Education, K-12 districts, state and local governments, and nonprofits use the TeamDynamix project portfolio and service management platform to work together faster, better, smarter to fulfill service requests. www.teamdynamix.com

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Better Access

NETGEAR cloud-managed multi-gig WiFi 6 WAX610 access points give increased capacity for more simultaneous device connections, providing a strong and secure Wi-Fi solution for small and medium organizations. The access point uses WPA3 for the highest level of Wi-Fi connection security. Eight separate wireless networks (SSIDs) can be used for administration, employees, customers or guests, and IoT devices (such as Wi-Fi surveillance cameras, thermostats, door locks and sensors) with separate and secure virtual local area networks. Remote monitoring allows management of devices (Wi-Fi, switches, routers, NAS) with performance dashboards, alerts and troubleshooting features, including remote reboot. www.netgear.com

Prison Tablets

Securus Technologies unveiled its next-generation tablet for use in correctional facilities, the JP6S. It operates up to 13 hours before needing charging, provides up to 32 GB of storage, delivers up to 140 hours of music play time and offers 1280 x 800 screen resolution. The tablet weighs 17 ounces and features an optional 2-megapixel camera, a new Android 8.1 operating system, rugged protective casing with impact-resistant glass, and built-in secure Wi-Fi with dual band support (2.4 GHz and 5 GHz). In addition to applications available on legacy tablets such as music and ebooks, the company offers a broad selection of no-cost re-entry, self-help and education resources. https://securustech.net

For more product news, log on to explore Government Technology's Product Source. govtech.com/products

Videoconference Ease

With the Logitech Swytch, and a single USB connection, users can move control of the camera, audio devices and display in meeting rooms to their own laptop. Swytch, a compact, one-cable laptop link, enables people to use a laptop to run meetings with any videoconferencing platform, webinar or streaming software, e.g., modern platforms like Zoom or Microsoft Teams. Swytch consolidates HDMI and USB into one cable to project the user's screen from a laptop on the room's display at resolutions up to 4K with crisp, clear audio, without needing dongles, splitters or HDMI adaptors. www.logitech.com
Citizens, business owners and internal employees have higher expectations for state and local governments than ever before, but government organizations can struggle to meet them. State and local agencies need smarter technology and operations to be as productive, efficient and innovative as possible.

Verizon Wireless makes it easier and more cost-effective to implement smart government tools by making these solutions available through the National Association of State Procurement Officials (NASPO) ValuePoint® cooperative purchasing contract.

See how you can start on your journey to a smarter government:

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Smart infrastructure

Intelligent Lighting
Lower operational costs and improve public safety by managing, monitoring and controlling street lighting remotely.

Traffic Data Services
Use deidentified cellular network records to analyze historical and up-to-the-minute population movement to minimize congestion and plan development.

Parking Optimization
Optimize parking for additional revenue and reduce congestion.

Telematics Fleet Tracking and Management
Track vehicles, optimize routing and control costs.

ThingSpace (IoT management)
Simplify development and management of your Internet of Things (IoT)/machine-to-machine devices.

Smart communications

One Talk
Use a single phone number across mobile and desk phones so staff can be reached regardless of their location or the device they’re using.

Push to Talk Plus
Just push a button to connect instantly and securely with one or many.

Digital Signage
Target public safety messages, raise awareness and engage citizens and visitors.

NetMotion (Mobile VPN)
Make sure mobile employees can connect to applications reliably wherever they are—even when coverage is spotty.

GoCanvas
Replace paper forms with mobile apps to simplify data collection, streamline operations and boost productivity.

Field Force Manager
Help mobile teams stay in touch and on track; simplify workforce administration.

Smart mobile security

Verizon Mobile Device Management (MDM)
Track and manage all the mobile devices and operating systems connecting to your network from a single unified portal.

MobileIron
Become truly mobile with a foundation to manage standards-based security across the mobile-cloud ecosystem.

IBMs MaaS360
Simplify how you manage mobile applications, security, data and connectivity.

Samsung Knox
Use the industry’s latest mobile devices to increase productivity, enhance collaboration and strengthen device security.

Smart response

Intrepid Networks
Help shorten response times and improve safety.

Public Safety Applications
Verizon’s extensive ecosystem of public safety applications includes first responder coordination and cantel, communications, automation and device integration.

For more information, visit verizon.com/naspo
All Aboard

The pandemic has exposed the realities of the digital divide. Local CIOs are well-poised to help close it.

Former Charlotte, N.C., Chief Information Officer Jeff Stovall recently authored a thoughtful article that suggested the era of the smart city is fading in favor of a new era of digital equity. He’s exactly right. Social justice protests and COVID-19 have exposed and highlighted long-standing and growing inequities often represented in a digital divide. These digital inequities were unacceptable before COVID-19’s arrival and are now even less so.

Defeating the digital divide is much more than wiring up a home with an Internet connection. Families, particularly those with school-age children, often experience gaps in device access, digital literacy and cyberhygiene. There might not be enough devices, the hardware may be outdated or incompatible, and there may be a lack of security software. The household may also need training, have privacy concerns or require additional digital wraparound services. Our public library allies will continue to play a vital role in supporting these programs and needs.

We’ve witnessed retail outlets, restaurants and others discouraging the use of cash in favor of apps and credit cards. While these policies are understandable in a COVID-19 world and laudable from a digital transformation perspective, they create additional challenges for underbanked families and customers. These households are typically the very ones who are disproportionately impacted by the global pandemic. Many public-facing government services are now limited, curtailed or altered in favor of technology-driven options. While this is terrific progress on many levels, we must still recognize residents who cannot efficiently conduct online business due to financial barriers, or lack of Web access or digital knowledge.

All indications point to a long-term COVID-19 battle even as vaccine trials and treatments. In particular, seniors are facing months or even years before normalcy returns for many of them. Isolation, loneliness and social disconnection will pose substantial challenges to our older citizens. Subsidized broadband in concert with special devices can help bridge the engagement gap. Products such as Uniper can turn a regular television into a smart device capable of real-time, two-way communication. This technology opens the door to critical services such as telehealth, fitness classes and connections that support well-being.

Many schools are starting their academic years with completely virtual or hybrid formats, or will need to fall back on virtual methods as conditions dictate. Extraordinary opportunity to support our education partners, students and parents. School can be difficult enough for students (and parents), but technology shouldn’t be one of the hurdles. Now is a great time to connect with our local ed tech directors to build or strengthen those relationships. Government IT leaders have an extraordinary opportunity to support our education partners, students and parents. Modest investments now can provide community dividends for years to come.

We would also benefit from a coherent, national strategy on technology access. Too often, the initiatives or funding are weighed down by too much bureaucracy, inefficiency or restrictions. Other broadband plans pit urban constituents against rural constituents, while suburban stakeholders are often left out altogether. The focus is usually on broadband but frequently overlooks devices, training and privacy concerns. Many local nonprofits and groups, and national organizations such as the National Digital Inclusion Alliance, stand ready to help us with this essential endeavor.

Government CIOs and IT directors are well-positioned to step forward to wear another hat as a visionary technology leader for their communities. There needs to be a collective sense of urgency to move this effort forward. We can help connect dots among nonprofits, our residents and the private sector. It’s time to lobby the broadband carriers to be true partners in bringing everyone online. Our communities need this vision from us now more than ever.
The Procurement Official’s Guide to the Cloud

Practical strategies for successful implementation of cloud services

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Thanks in part to people spending less time socializing in person and more time on their phones during the COVID-19 pandemic, the downloads from U.S. app stores between April and June were up 27.4 percent over Chinese stores, the first time the U.S. has led since 2014. Business and education apps saw the greatest growth in the American market. Perhaps unsurprisingly, downloads in the navigation, travel and sports categories were down.

SOURCE: TECH CRUNCH

The amount of equity-based investments in the space technology sector in the second quarter of 2020, according to investment firm Space Capital.

SOURCE: TECH CRUNCH

ROLLING OUT:
After a yearlong pilot in New York City, Google Maps is deploying a feature to 23 cities worldwide that integrates the mapping service with bike-share information. Using data from bike-share firm Ito World, Google users can now find docking stations, number of available bikes and more. Apple Maps released a similar feature, also working with Ito World, in 2018.

SOURCE: THE VERGE

HONEY, I SHRUNK THE CAMERA:
To learn more about life at the insect level, researchers at the University of Washington have designed a tiny camera that's small and light enough to be carried on the back of a bug (or a bug-size robot). Weighing just 248 milligrams, the device wirelessly connects to a smartphone via Bluetooth, so not only can the operator see what the bug sees, but they can also control the camera that moves on a 60-degree arm. While the camera can take only black-and-white video at just 160 x 120 pixels and five frames per second, researchers say this is not dissimilar to the tradeoffs insects make between their small size and vision abilities.

SOURCE: NEW ATLAS

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

More research, more science, more technology.
How do you see state and local governments leveraging the ongoing crisis to advance their digital transformation agendas?

State and local governments have been rapidly innovating to transform their applications and citizen interfaces. Most of them are more focused than ever on how they can better serve constituents with much faster response and feedback mechanisms. For example, department of labor and department of health call centers are changing the way they interact with constituents. Not just in terms of answering calls but also sharing information and using new technology and processes to improve interactions. We’ve seen a dramatic shift in the use of AI — not only to reduce in-person call center volumes by handling question/answer types of calls, but also by interpreting the intent and sentiment of callers’ questions so agencies can provide the most effective and immediate response.

Community engagement and data sharing are important to obtain a holistic view of an individual. How has contact tracing and care management of COVID-infected individuals advanced these approaches?

State and local governments see the pandemic as an opportunity to provide better services to constituents. A person who tests positive for COVID-19 will likely be asked to quarantine. How do you support them in terms of health care, food, housing, childcare and so on — the whole social care needs assessment? State and local leaders know we need to look at people holistically, and the pandemic has created an opportunity to advance their initiatives on data integration/sharing between agencies and the ability to integrate with community partners for resources referrals and engagement.

How has the pandemic shifted the CIO’s role?

The pandemic provides state CIOs with an opportunity to broker services beyond a state agency. State CIOs are providing information and services to city and county governments, and they are working with education institutions to help students and instructors return to campus. In addition to expanding their reach and sphere of influence, they are brokering a broader set of services.

For more information, visit https://www.ibm.com/watson/watson-works or contact Chris Shriver at cshriver@us.ibm.com.
A crack is a pothole waiting to happen.

Stop throwing resources and money into a perilous hole. With CentralSquare Enterprise Asset Management software, monitor your asset inventories — roads, water, sewer, fleet, waste, equipment and facilities — alongside associated work orders, maintenance requests, accounting and depreciation to prevent costly emergency repairs and remove dangerous hazards from your streets.

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