How State & Local Gov Tech Will Look in 2020 & Beyond

govloop

Contents

Executive Summary

Technology is evolving faster than ever. The rate of change is so rapid, in fact, that one of the biggest challenges for state and local governments today is predicting how their tools will be used in the future. For instance, cloud computing can enable such emerging technologies as artificial intelligence (AI), which mimics human cognitive abilities such as learning.

How technologies progress is a problem with real consequences for public servants nationwide because they must ensure that they're secure for government use and meet all applicable regulations. State and local agencies are also struggling to adopt fresh perspectives and processes for their technologies. Take manual, paper-based processes, for example. They're slow, monotonous and time-consuming. The longer government employees remain stuck with such workloads, the less time they spend better serving citizens and achieving mission success.

If your agency isn't sure what the intersection of government technology and workforces will look like going forward, GovLoop is here to help. Based on interviews with agency leaders, research and case studies, this guide forecasts how successful state and local governments will operate in 2020 and beyond.

First, we'll discuss the more human-centric topics agencies will likely face: Customer experience (CX) and smart cities. We'll explain how technology and workforces interact to influence both.

Next, we'll examine some of the hottest topics in government technology, including cybersecurity, cloud computing and geographic information systems (GIS).

Finally, this guide will offer your agency a playbook for weathering current or upcoming changes to its technology and workforce. The less time your agency spends looking backward, the more forward momentum it will build.

How to Use This Guide

This guide is intended to be a playbook for scoring victories at your agency no matter when technology or workforce obstacles emerge. To balance your agency's current and future technology with its workforces, consider the following ideas:

1. Pin down your problems

Start with the difficulties your agency has with its products, services and operations. Where are they originating? Are humans, technology or both causing your issues? The answers to these questions will help determine the clearest way forward.

2. Know what works — and what doesn't

For every right move a strategy has, there's a wrong one, too. Knowing the difference between the two will help your agency make the best possible decisions. Learning from thriving peers or private-sector partners can guide you down the correct path; similarly, heeding your contemporaries' mistakes can help you avoid the same ones.

3. Ask questions and consider every angle

Don't miss the forest for the trees when it comes to workforce or technology hurdles. If you have questions, ask for advice from other governments or thought leaders in academia and business. As the feedback you receive diversifies, the solutions that materialize will also grow stronger.

4. Establish timelines

Ask what time constraints your agency encounters. How soon does it need a fix? If employees will tackle the dilemma, how long will it take them? If technology is the solution, what's the time frame for successful adoption? Building a timeline can help your agency stay on schedule, meet deadlines and bypass trials as quickly as possible.

By keeping the above ideas in mind, you'll reap the best returns from our guide. Next, we'll describe some of the latest developments in government technology and workforces — starting with CX.

What's Next For CX

Colorado recently launched an application that demonstrates how agencies might manage the experience that citizens have with public services for years to come.

Debuting in 2019, myColorado now serves as Colorado's official mobile app for accessing government services. Rather than forcing people to visit several physical agencies, myColorado offers digital versions of public services in one centralized hub. For example, citizens can now renew their driver's license through the app.

"One stop for all Colorado government services is our plan and hope," William Chumley, Colorado's Chief Customer Officer (CCO), said during a GovLoop virtual summit in 2019. Chumley's role is based in Colorado's Office of Information Technology (OIT), which created myColorado. "We want to drive state government searches to one place and make it easier, quicker and relevant for the user's experience."

MyColorado represents a larger effort by state and local agencies to design products and services with constituents' experience in mind. CX is how an organization and its customers interact across various platforms over time. In terms of state and local agencies, CX covers how citizens react to the branding, environments, information and interactions they encounter while receiving public services.

MyColorado's CX touches cost, functionality and other areas that matter to citizens. Another factor is engagement, or whether citizens will enjoy using the application.

Colorado plans to keep myColorado relevant by adding more services to the app over time. Digital driver's licenses are one planned update, which is where privacy and security factor into the app's CX.

Theoretically, digital driver's licenses are cheaper, easier to renew and harder to lose than their physical counterparts. They also raise concerns about how safe they'll keep citizens' personally identifiable information (PII) – any information, such as birthdays, that can be used to identify individuals.

Providing Colorado's citizens with easy access requires coordinating CX efforts among state and local agencies. As of September 2019, OIT handled more than 1,000 apps across Colorado's 64 counties.

A Facelift For San Francisco's Website

San Francisco's efforts to reinvent its website show how state and local governments can deliver higher-quality CX by incorporating citizen feedback.

In 2018, city officials decided that San Francisco's online presence had become too cluttered. At the time, San Francisco had 210 websites with more than 300,000 pages devoted to city services. Even worse, despite offering more than 800 services citywide, San Francisco allowed citizens to perform only 20% of them online.

Enter San Francisco's Digital Services team, which works to improve public services by assisting other agencies with their technology. The team spent most of 2018 surveying more than 250 city officials, community groups and residents about how the city could improve its digital footprint.

In 2019, San Francisco unveiled a new website focused on simplicity and user-friendly design. Now, the city is gradually merging its various departments into one website. The result is a more consistent, streamlined browsing experience for citizens, regardless of what services they're seeking.

Ultimately, San Francisco's attention to detail could earn it lasting goodwill from its populace. Over time, state and local governments that deliver CX on their residents' terms find themselves serving happier, more engaged citizens.

Key Stats

7th State CIOs ranked customer relationship management seventh out of their top 10 priorities in 2019.

30% of state CIOs said they had staffed or approved of a chief customer officer (CCO) role at their agency in 2018.

72% of U.S. adults said in 2018 that they have a great deal or fair amount of trust in their local government, compared with 63% who said the same of their state government.

Best Practices

1. Meet citizens on their terms by providing public services physically and digitally on devices including computers, smartphones and tablets.

2. Meet the needs of the community by providing services based on demographics such as age, income and preferred languages.

3. Lay a foundation to scale the number of services that agencies provide so that they ultimately serve more citizens.

What's Next For Smart Cities

Kansas City, Missouri, demonstrates how state and local governments can use technology to make their cities smarter and more connected.

Smart cities are urban areas that collect and analyze large amounts of data using Internet of Things (IoT) devices. IoT networks consist of all the devices that can gather, store and share information with one another. Collectively, this information can help a city's leaders make better decisions faster.

Kansas City began its smart city project in 2015, with officials pledging to complete three goals while implementing a digital roadmap: improving the delivery of public services, enhancing citizens' interactions with the government, and supporting entrepreneurship and economic development.

After establishing these guiding principles in 2015, Kansas City's leaders entered a $15.7 million public-private partnership with a major technology company to begin the transformation. The project began with

a smart city corridor along Kansas City's 2.2-mile streetcar route. The streetcars are free to ride, making them a natural starting point for smart city upgrades as citizens frequently travel on them.

Kansas City now has 54 square blocks of free public WiFi along its streetcar route, which makes the internet more accessible to low-income residents and visitors. The city has also built interactive kiosks along the route, in the downtown business district, at Kansas City International Airport (KCI) and the University of Missouri – Kansas City's (UMKC) campus. The kiosks provide tourist information, public-safety alerts and promotional opportunities for local businesses.

Kansas City's data is now improving everything from its storm water systems to its traffic flows. City officials also use the IoT network to boost efficiency, speed decision-making and make better choices. With so many changes and a clear vision for what's next, Kansas City might be ahead of the curve when it comes to smart cities.
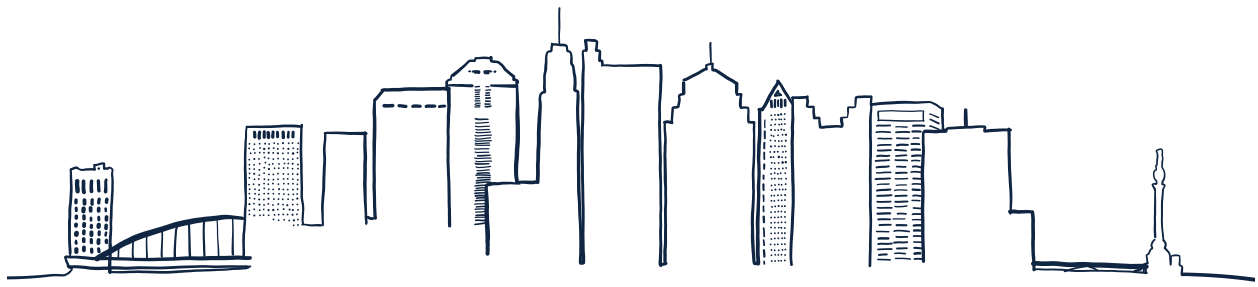
Columbus Wins Federal Smart City Challenge

Columbus, Ohio won a national contest conducted by the federal government that reveals the opportunities available to potential smart cities.

Announced in 2015, the Transportation Department's (DOT) Smart City Challenge offered $40 million to the winning community. To enter, applicants needed to be midsize cities proposing a smart transportation system; describe new transportation infrastructures that would use applications, data and technology; and ensure that these systems could move goods and people quickly, cheaply and efficiently.

DOT received 78 vision statements before narrowing the field to seven cities in 2017. Besides Columbus, the other contestants were Austin; Denver; Kansas City, Missouri; Pittsburgh; Portland, Oregon and San Francisco.

Columbus won soon after, and the city rolled out several pilot projects detailed in its proposal, which includes long-term goals such as autonomous vehicles and an integrated data platform for the city.

Columbus is now collaborating with the competition's other finalists on best practices for replicating successful proposals. DOT's contest, meanwhile, showcases a world in which smart cities become even more intelligent by learning from one another.

Because data is at the heart of Columbus' strategy, the city pictures it seamlessly connecting residents, visitors and transportation. For example, the plan calls for traffic signals with sensors for detecting pedestrians and traffic. Ultimately, Columbus hopes that the data from such tools will make the city safer, more efficient and more sustainable.

Key Stats

459
U.S. cities were planning smart city projects through 2017.

51
Despite this, just 51 U.S. cities were planning or implementing their smart city initiatives in 2018.

88+
smart cities are predicted to exist worldwide by 2025, an estimated number that is quadruple the amount that existed in 2013.

$774.8 billion
The global market for smart city IT is estimated to reach this number by 2021.

Best Practices

1. Create a detailed proposal for a smart city that involves input from agencies, local businesses and the public.

2. Put citizens first when starting smart city initiatives by determining how technologies can improve their lives and the public services they receive.

3. Gauge what funding for smart cities is available from other governments, the private sector and interested citizens.

CIOs and Cloud: A Recipe For Success

An interview with Hardik Bhatt, Leader, Digital Government, Amazon Web Services (AWS), and former Illinois and Chicago CIO

For many state and local governments, IT modernization seems out of reach. Daily, agencies nationwide encounter barriers to digitally transforming their services. Whether it's cost, cybersecurity risks or staffing shortages, even one obstacle can stall an agency's modernization journey.

Thankfully, cloud computing can give CIOs the ingredients they need to cook up modern agencies. Because they manage their agency's IT, CIOs are uniquely suited for upgrading it. More importantly, cloud's adaptability and security can help enable the innovation these CIOs need to overhaul their organizations.

To understand how CIOs can lead their agency's digital transformation using cloud, GovLoop spoke with Hardik Bhatt, Leader, Digital Government at Amazon Web Services (AWS). AWS provides on-demand cloud platforms and services to public and private sector organizations.

Prior to joining AWS, Bhatt served as the CIO of both Illinois and Chicago. Bhatt said that because CIOs manage IT, they're critical for any government's modernization efforts. "CIOs have this unique opportunity because of how the technology is available and how they're positioned in the organization," he said. "They need to take a leadership role for this transformation."

Unfortunately, many CIOs are preoccupied with managing legacy IT. For example, Bhatt said it took an average of 39 days to set up IT servers early in his tenure as Illinois' CIO. "The majority of the workforce gets tied up in keeping the lights on," he said. "With cloud, you're not tied up maintaining or managing legacy systems. You're now offering agility to agencies."

Cloud not only eases IT administration, it also assists with other frequent CIO concerns. For instance, cloud can provide cost savings for agencies by delivering services more efficiently. "You're not buying the server – you're just getting compute capacity," Bhatt said. "You can experiment, fail fast and innovate without having to spend as much taxpayer money on the hardware and provisioning necessary for testing."

Cybersecurity, meanwhile, remain s a constant anxiety for agencies as they handle sensitive citizen data. Fortunately, cloud can help fortify agencies by letting them deploy new security tools faster. "It completely changes your security posture," Bhatt said. "Various cloud services keep a continuous watch on your environment."

Cloud additionally offers agencies the opportunity to reskill their workers. Employees who once managed physical IT can learn new, cloud-based abilities. Governments with modern IT then become more attractive to new, younger employees.

Ultimately, cloud solutions such as AWS's can provide agencies with elastic platforms for such emerging technologies as AI. AI mimics human cognitive abilities such as learning, making it a potentially revolutionary technology. "It's endless, enormous innovation," Bhatt said of cloud. "It makes your jurisdiction extremely competitive, agile and more secure."

Takeaway: CIOs can use cloud to transform their entire government so that it's agile, innovative and secure.

Q&A: Maryland County Puts RPA to Work

Jhason Abuan oversees an increasingly futuristic workforce as the IT Division Chief at Montgomery County, Maryland's Department of Finance. That's because over time, the department has become more split between human and digital coworkers.

Robotic process automation (RPA) is driving these changes at Abuan's agency. RPA software, which automates menial business procedures so that machines can perform them without humans, is becoming increasingly popular at state and local agencies such as Abuan's.

GovLoop spoke with Abuan about how RPA has changed his office's dynamics. In the following Q&A, he also shares tips for launching and handling RPA programs.

This interview was lightly edited for length and clarity.

GOVLOOP: What is RPA and how does it help agencies like yours?

ABUAN: RPA is a method of automating tasks that are done on a computer. Whatever you're doing on a computer, in most cases it can be automated. If you think about a frontline person that's doing data entry every day, as an example, lots of that stuff is repetitive and extremely manual.

One of the things that we've learned is that when building these robots, you must take an enterprise approach. You've got to include login capabilities, error check-in capabilities and the ability for any robot to restart in the event they hit an exception. We just always want to make sure we're building a robust robot with checks and balances being done, especially if we're dealing with things regarding money.

How can RPA help agencies protect their cybersecurity?

Creating accounts for these robots to use with the least amount of privileges is a way to help protect organizations while they run certain processes. If an account is compromised, the robot is not going to have the keys to the kingdom or access to multiple systems.

When you're dealing with sensitive data – whether you're reading from or writing to an application – the robot is also only going to do what you program the robot to do. If you're doing data entry on a system where there's sensitive information – say, protected health information – a robot's not going to be tempted to do a search on someone else that's outside the scope of what it's supposed to be doing.

How can RPA help improve CX?

Right now, more of the benefit is going to be on the backend. When we're enabling RPA on these backend processes, theoretically, your service levels will get better. For a person to get a refund, for instance, it should be quicker because you'd be doing it via automation using a robot rather than by hand. That reduces the turnaround time for the customer. The

value's going to be accelerating the backend processes to deliver services faster.

How does RPA help you and your coworkers with your workloads?

As part of reconciling our credit card transactions, we had a task where someone had to go and log into our credit card processing website and download 25 reports every day. For whatever reason, the system for all 25 physical stores involved did not allow emailing the reports to the person reconciling them. The person responsible would then have to open a browser, log in, collect each merchant ID, download each report and then save each one in its specific folder. The entire process took about 20 minutes each day. We've totally automated this task for that person. She has an extra 20 minutes in her life every day now.

We're looking at always making sure that we're delivering the best customer service. This helped because it removed a low-value task our employee was doing and, in my view, increased morale.

Many of the folks we've hired within the Finance Department are certified public accountants (CPAs) or have a master's in business administration (MBA) or accounting degrees. I don't think that devoting a portion of every day doing mundane work such as downloading reports is the best use of their time. Offloading that to robots so that people can focus on higher-value work is a morale booster.

What can other agencies learn from your department about RPA?

I think there's lots of hesitation at first about RPA. It's a disruptive and transformative technology. The takeaway is, give it a try. Pick a task that's easy to automate, that's very well-defined and that has little to no decision points. Then, look at creating a proof of concept. Many vendors out there, they're willing to come onsite and conduct a proof of concept free of charge. I think people have nothing to lose if they see that there's an opportunity. Every organization has manual tasks that can be automated.

What's Next For GIS

State and local agencies can level up the public services they provide by better using their location data.

Consider **Johns Creek, Georgia**, which is using precise location data to improve daily life for its roughly 86,000 citizens. Johns Creek is a smart community that combines data from its IoT network with additional insights from its GIS. GIS software captures, stores, manages and presents geographic data. When combined with IoT systems, GIS tools can forge powerful partnerships for places such as Johns Creek.

Incorporated in 2006, Johns Creek immediately received three fire stations from a neighboring community. Despite this, city leaders quickly noticed gaps in its public-safety infrastructure, thanks to GIS data. The data revealed that firefighters were reaching a significant portion of Johns Creek later than others because of their starting points.

The community then used its GIS data to pinpoint the best location for a fire station that could help citizens in the affected area, said Nick O'Day, Johns Creek's Chief Data Officer (CDO).

"GIS is a really powerful tool to be able to pull this real live data in and be more proactive rather than reactive," he said during a 2019 GovLoop online training.

Johns Creek officials also used GIS to address concerns about the nearby Chattahoochee River. The waterway runs along Johns Creek's southern border and part of its eastern border. Using GIS, the city shored up some of the infrastructure by the river, making it safer for public transportation.

"We have some bridges that are substantially older than others," O'Day said, using one example of what Johns Creek's water-level GIS sensors measured. "They sit a lot lower and closer to the water. When we have a lot of flooding, it can create conditions that are unsafe for cars traveling across them."

O'Day added that governments looking to embrace GIS should initially use the technology on a low-lift initiative that quickly benefits citizens.

"You'll be surprised how much impact you can have with a simple project," he said. "Just get something moving to get some traction."
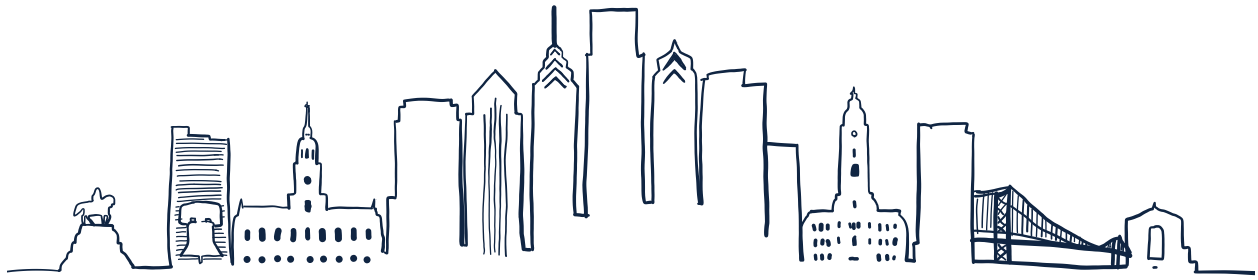
Pennsylvania Maps its Environment With GIS

Pennsylvania's Department of Environmental Protection (DEP) has an open data portal that shows the level of detail that's possible for state and local agencies with GIS.

Using more than 300 data layers, DEP's portal can create maps of Pennsylvania that illustrate the state's many environmental characteristics. These data layers rely on publicly published, non-sensitive GIS data, but, after that, the possibilities are nearly endless. For starters, users can map features such as Pennsylvania's air quality.

DEP lets external users directly connect with its data. Users can download the data, embed it in their own applications or share it, increasing the potential for collaboration between DEP and its partners.

Mapping qualities such as radiation can help Pennsylvania protect residents and visitors. Other configurations can assist the state with conserving its natural resources. For instance, users can measure public water supply. The portal can even predict the long-term effects climate change is having statewide. GIS' flexibility gives the department a wide range of options, and for Pennsylvania's citizens, the only limit is their imaginations.

Key Stats

As of September 2019, the federal government's open data portal listed **4,227 datasets** containing geospatial data collected from state and local governments.

As of July 2019, Tempe, Arizona, had recorded the precise locations of **958,305 calls** for police services using GIS.

As of August 2019, Sioux Falls, South Dakota had recorded the locations of **70 voting precincts** using GIS.

As of September 2019, Pennsylvania's DEP had recorded the locations of **184,505 conventional oil or natural gas wells** using GIS.

Best Practices

1. Make all GIS data as accessible as possible to increase transparency and deliver more diverse insights.

2. Ensure that all GIS data is easy to arrange, visualize and share so that users can get information from it as quickly and efficiently as possible.

3. Open public data portals to trusted outside sources so that their GIS data can improve the existing information.

Open-Source Automation: A Gov Dream Team

An interview with Damien Eversmann, Senior Solutions Architect, Red Hat

Automation is a hot topic among state and local governments. Faced with tight budgets and growing workloads, agencies are looking for tools that can perform work with minimal human input. Recall a repetitive, unexciting work assignment. Wouldn't it have been nice having an automated tool perform that task?

Although many public servants might say yes, many are finding that automation's hype doesn't match reality. Nationwide, scores of agencies are discovering three main reasons that innovating with automation is harder than expected. First, these agencies are struggling to communicate about automation agencywide. Second, they're wrestling with how automation fits with their security requirements. Third, they're anxious about how automation will impact their workforce.

Fortunately, the use of open-source software - publicly-available code intended for collaboration and innovation - can help agencies address all three challenges and embrace automation in whatever way works best for them.

To understand how automation and open-source software can become a dream team for agencies, GovLoop spoke with Damien Eversmann, Senior Solutions Architect at Red Hat, a provider of enterprise open source software solutions.

According to Eversmann, open-source software's communal development erases the barriers between an agency's various teams. Furthermore, creating open-source tools also attracts private-sector companies and other external participants.

"Anyone can contribute," Eversmann said. "If you contribute to software, you can help steer what some of the next features are. And, if you have concerns about security or stability, you can view the source code itself."

That ability to view the source code provides agencies with more confidence when it comes to vetting automation to ensure it meets their cybersecurity requirements. Better yet, once vetted, automation can improve cybersecurity by taking over such tasks as resetting passwords - which both reduces the opportunity for human error and frees up cyber professionals to focus on higher value work.

Taking repetitive, process-driven tasks out of a job description is not a foundation for eliminating jobs but for improving job satisfaction.

"Lots of people have workloads that are too big and not enough time to do them," Eversmann said. "Automation can take some of those things off their plate. It gives all those workers time to do more with less and focus on more interesting tasks."

Eversmann added that agencies should not think about automation as an all-or-nothing proposition. Nothing could be further from the truth with open-source software in the picture, he concluded. "The nice thing about open-source software, it enables you to be much more agile," he said. "You should get started on automation as soon as you can. Once you're no longer afraid of it, there are lots of things that you can do."

Takeaway: Open-source software can help agencies adopt collaborative, innovative and secure automation whenever they're ready.

What's Next For Cybersecurity

A wave of cyberattacks that recently hit local governments across **Texas** suggests a future where the latest threats can strike anywhere at once.

On one morning in 2019, more than 20 agencies in Texas reported that they had suffered a ransomware attack. Ransomware is a type of malicious software that threatens to publish the victim's data or block access to IT unless they pay a ransom. This incident was unusual, however, given the number of agencies targeted at the same time statewide. As America's second-largest state, the attacks in Texas suggested unprecedented strength and scope.

Fortunately, Texas' Department of Information Resources (DIR) had prepared a response plan for situations such as widespread cyberattacks. Hours after the first attacks were reported, federal, state and local officials were coordinating recovery efforts. Four days later, response teams had visited each of the affected sites and completed work to mitigate the ransomware at more than 25% of them. Collectively, it would take one week for all the victims to remediate the ransomware and recover fully.

Ransomware can trap agencies when it comes to the financial damages they suffer. On one hand, agencies might be forced to pay an expensive ransom; conversely, recovering from longer attacks can prove costlier than the demanded ransom.

DIR reported in 2019 that it was unaware of any state or local agencies paying the ransom that attackers demanded one month after the attacks. The agency added that it was scheduling follow-up visits with the victims to ensure that their rebuilding efforts were successful.

Ransomware is becoming more common as more cyber criminals realize they can potentially profit it from it. Even worse, ransomware presents other threats – such as hostile foreign nations – with an opportunity to reap financial rewards while disrupting crucial public services. Moments like the Texas attacks show that for many agencies, a plan for surviving cyberattacks can make the difference between inconvenience and disaster.

After the Cyberattack: Accountability in Baltimore?

A recent crisis in Baltimore implies that there may be consequences for state and local officials who fail to protect their governments' cybersecurity.

In 2019, Mayor Bernard C. "Jack" Young announced that Baltimore had suffered a ransomware attack. The incident devastated Baltimore's IT networks, leaving the city temporarily unable to handle property taxes, water bills and more. The disruption was severe enough that, more than a month later, some public services had not been restored.

Before the attack, Frank Johnson was Baltimore's IT Director. Johnson was already on shaky ground with several members of Baltimore's City Council, who had accused him of focusing on the wrong priorities for the city's IT. After the ransomware incident, several of these officials voiced displeasure with Johnson's performance.

"I think that Frank is not the right person to lead the city's IT efforts," Councilman Eric Costello, chairman of the council's new cybersecurity committee, said, citing Johnson's poor communication with other city officials after the attack.

Four months later, the mayor's spokesman announced that Baltimore no longer employed Johnson and that Todd Carter, Johnson's Deputy, would become Acting Director. The spokesman declined to explain Johnson's departure, calling it a confidential personnel matter.

Johnson's departure suggests that some state and local governments may hold leaders accountable for future cybersecurity lapses. Because cyberthreats are a constant menace, public servants at every level should stay vigilant or risk unforeseen ramifications.

Key Stats

48% of state chief information security officers (CISOs) said they did not have a separate line item for cybersecurity in their government's budget in 2018.

26% of local government CIOs nationwide said that their government's IT system was subjected to cyberattacks hourly or more in 2016.

58% of local government CIOs said that their government's inability to pay competitive salaries for cybersecurity personnel was a severe or somewhat severe barrier to achieving the highest possible level of cybersecurity in 2016.

Best Practices

1. Check what personnel and recovery resources are available after emergencies are declared for cyberattacks.

2. Report potential or confirmed cyberthreats immediately to all partner organizations that may be impacted.

3. For ransomware, create a policy for responding to attacks and consider purchasing an insurance policy for when breaches are successful.

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Leaving Legacy IT in the Past

An interview with Dave Jones, Vice President for Marketing, AODocs

In an age of shrinking budgets, staff and time, agencies need every competitive advantage they can get, and removing legacy IT systems is a great place to start.

But modernizing areas such as document and process management is easier said than done. Many agencies have invested years or even decades in their legacy technology, and they're reluctant to let them go. Even worse, scores of governments are finding that modernization requires upgrading not just their tools, but their attitudes too. These agencies are realizing that reaping modernization's true benefits requires upgrading both their culture and their IT.

Fortunately, going into 2020 offers agencies the opportunity to enter a new decade with flexible, innovative solutions that they've never had before. For instance, cloud computing can help agencies rethink both their document and process management routines entirely. Rather than merely evolving their bad habits and technologies, cloud can assist agencies with completely revolutionizing them instead.

To understand how cloud can inspire agencies to leave their outdated document and process management in the past, GovLoop spoke with Dave Jones, Vice President for Marketing at AODocs. AODocs provides cloud-based document and process management software solutions. "I think it's the perfect time for agencies to modernize not just from a technology perspective, but also a user perspective," Jones said.

Continuing to run legacy systems present agencies with three challenges. First, many of these systems are unsupported and expose agencies to cybersecurity risks.

Second, older systems are harder to integrate successfully with newer ones. Third, the longer agencies use aging tools, the more dependent they are on them. "Using systems that they've used forever, makes people think that there are no issues, no danger associated with them," Jones said.

As a result, many agencies don't change their ways and subsequently fall into other traps. For example, take manual, paper-based processes. New software won't improve processes if agencies replicate old, manual processes. "They're taking bad systems and simply getting new versions of bad systems," Jones said.

Software-as-a-Service (SaaS) cloud, however, can help agencies see tired practices in a new light. SaaS clouds delivers subscription-based software on a centrally hosted cloud. SaaS clouds such as AODocs' can host tools that boost document collaboration and enhance mobile device access for agencies.

Cloud's flexibility and scalability, meanwhile, means it can quickly adapt to agencies' needs. Rather than put new paint on ancient tools, agencies can add or subtract the functions they desire as necessary. "AODocs was born in the cloud," Jones said. "We're bringing the best features and functions from the on-premises document management systems and deploying them in the cloud directly to agencies."

Takeaway: The time is ripe for agencies to modernize their document and process management systems using cloud.

What's Next For Cloud

Recent events in **Virginia** imply that the highest-level executives in state and local governments are starting to grasp cloud's importance.

In 2018, Gov. Ralph Northam issued Executive Order Nineteen, which directed all of Virginia's IT services to use cloud. Northam's order also acknowledged that adopting cloud would help the state keep pace with the private sector.

The order tasked the Virginia Information Technologies Agency (VITA) with developing guidance for evaluating the state's new and existing IT systems for cloud readiness. VITA finished developing the guidance in 2019. The agency will now annually report to Virginia's secretary of administration about how the state is progressing on migrating systems that have been identified as appropriate for cloud solutions.

Besides continuity, efficiency and speed, Northam's order listed flexibility, scalability and transparency as key benefits of adopting cloud. The order also pledges to make Virginia's IT services available through various cloud deployment models using both the public internet and private connections.

What's more, the measure addresses two major public concerns with the technology. It requires all of Virginia's agencies to ensure the availability, privacy and security of their business and citizen data, and to follow VITA's security and infrastructure policies, standards and guidelines going forward. As more of Virginia's agencies embrace cloud, the state's successes may only grow exponentially.

Los Angeles Leverages Cloud For Detecting Earthquakes

An app that Los Angeles recently released indicates that cloud is a blank canvas that state and local governments can use to provide almost any public service.

Situated along multiple fault lines, Los Angeles has long suffered from earthquakes that can cost lives and damage property. A new cloud-based app called ShakeAlertLA that Los Angeles' Information Technology Agency (ITA) released in 2019, alerts users when earthquakes of certain intensities happen. The goal is to help people prepare for serious earthquake tremors before they occur.

ShakeAlertLA identifies any seismic activity before calculating how powerful the subsequent earthquake will be. Next, the app warns people with an alert so that they can prepare before shaking starts. Additionally, the tool

can help users find aid after earthquakes or review the details of recent ones.

When it was released, ShakeAlertLA warned users about earthquakes with a seismic activity of 5.0 or higher on the roughly 9-point Richter scale. Earthquakes with a magnitude between 5.0 and 6.0 are generally considered moderate.

Los Angeles has since upgraded ShakeAlertLA to alert people of earthquakes with a magnitude of 4.5 or higher. The city tweaked the app after feedback from users who wanted information about lower-level earthquakes. By modifying ShakeAlertLA to meet more needs, Los Angeles improved the user experience. The resulting app could make the difference between life and death for Los Angeles' approximately 4 million residents.

Key Stats

22%

of state CIOs said that their agency did not have a strategy to migrate legacy applications to cloud in 2018.

58%

of state CIOs said that they had migrated or planned to migrate email and collaboration services to the cloud in 2018.

20.6%

Local governments spent 20.6% of their IT budgets on cloud in 2018.

17.1%

Spending on government use of public cloud services was forecast in 2018 to grow on average 17.1% per year through 2021.

Best Practices

1. Agencies should pick trusted partners that can meet their financial, operational and security needs before procuring any cloud services.

2. Agencies should choose the cloud with the security that best protects their data.

3. Prepare workforces for cloud by recruiting, retaining and reskilling talent so that they benefit from using it.

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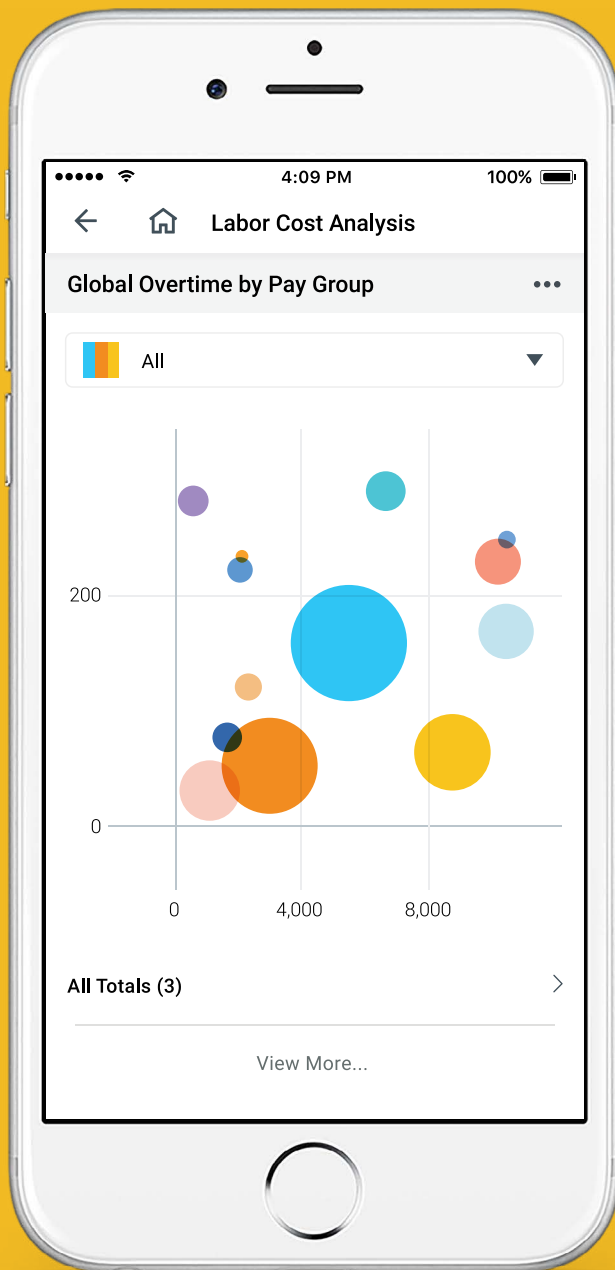
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Your Workplace in One Space With Cloud

An interview with Sherry Amos, Director of Market Development, Education and Government, Workday

Every day, state and local governments are doing more with less. As workloads grow at agencies nationwide, their budgets and workforces contract in the opposite direction. At these agencies, success involves recognizing all their resources and using them to their full potential.

Unfortunately, many agencies aren't getting a handle on these daily struggles. These agencies often lack visibility into their entire organization because of data silos; They're also haven't implemented strategies that are recruiting and retaining today's top talent. The public services these agencies deliver, meanwhile, are increasingly falling short of citizens expectations for them when compared to the private sector's version.

Although these circumstances sound challenging, cloud computing can offer agencies a way out. To understand how cloud can give agencies a unified platform for conducting their business, GovLoop spoke with Sherry Amos, Director of Market Development, Education and Government at Workday. Workday provides cloud-based financial and human capital management solutions.

Amos said that scores of agencies are in the dark about some key factors regarding their business. For instance, many agencies aren't aware how many positions they have filled at a given time. Cloud can overcome this obstacle by providing a single platform for managing finances, human resources (HR), business management and more. "This all happens in a unified environment," Amos said. "All this data is in one place. Agencies aren't having to assemble those solutions in multiple places."

By pooling data in one place, cloud aids leaders by letting them see their operations agencywide. The resulting insights inform agencies about how to plot their business, finance and workforce strategies. "Everything is available in real-time," Amos said. "They don't have to wait 10 days to get a report. It's what we call business process engines."

Adopting cloud, however, has other benefits for agencies. Cloud can produce cost savings by reducing how much physical IT assets agencies have; it can also provide them with continuously reliable operations. Gradually, agencies using cloud can become more flexible, streamlined and intelligent about their missions. "Many applications have had huge upgrade costs associated with them over the years," Amos said. "With cloud, they don't have to plan for those big, costly upgrades anymore. They have access to them, but they can choose to turn them on or off."

Ultimately, cloud can help close the CX gap citizens see between their agencies and the private sector. The agencies that empower their workforces with modern capabilities, then, are the ones who are more equipped to serve their citizens too.

Takeaway: Cloud can help agencies fully comprehend their financial, HR and workforce resources to better serve their citizens.

Q&A: Ohio Embraces Innovation

Ohio CIO **Ervan Rodgers** is optimistic about his state's future. Gazing into the proverbial crystal ball, Rodgers imagines Ohio's technology and workforces reaching new heights in 2020 and beyond.

According to Rodgers, Gov. Mike DeWine's administration is seeking a more innovative Ohio where agencies imitate the private sector's best practices. Once this vision is realized, state agencies will serve its citizens with more flexibility and simplicity.

GovLoop spoke with Rodgers about how Ohio is trying to better serve its residents by streamlining public services. In the following Q&A, Rodgers also projected where important subjects such as cybersecurity, cloud computing and GIS are heading.

This interview was lightly edited for length and clarity.

GOVLOOP: How do you see Ohio's workforces and the CX they deliver changing in the years ahead?

Rodgers: For the most part, we have a great opportunity ahead of us. I'm so excited. The DeWine administration has made this a top priority. I was one of their first appointees. That's how much technology is at the center of what we can do from an innovations standpoint. That's what we're focused on – delivering services to citizens. That's at the heart of what we're trying to accomplish. Having that type of support from the top of the house, I can't echo how important that is. It helps me to unite and rally all the troops around the state from an IT standpoint. They see it as a partnership versus being against one another. It's very much a complementary approach.

One thing the governor has said in the past is, 'We're here to do as much good as we can while we can.' I've just embraced that. In fact, every six weeks I bring together all the CIOs of the various boards, agencies and commissions. That's where a lot of the collaboration is taking place and we're germinating ideas across these agencies that can then be shared. That means we're quicker to market and have quicker turnaround times. We're seeing some creative things. We see an opportunity to be more like the private sector within the government walls. We want to be that Midwest state that West Coast companies seek out to come and innovate in.

What cybersecurity threats are you dealing with, and how do you see them evolving going forward?

The top three things right now are ransomware, social engineering and phishing. We continue to see those attempts daily, especially at the local levels, where their investment from a cybersecurity perspective may not be as great. *(Editor's note: Phishing is a fraudulent attempt to get sensitive information by disguising oneself as a trusted source in an electronic communication; social engineering involves psychologically manipulating people into performing actions or revealing sensitive information.)*

I think that these attacks will continue to become more sophisticated. The bad guys are getting smarter. These trends will continue because they're profitable from their standpoint. We must be very diligent, whether it's an agency, city or county.

We're reaching out and extending the olive branch across all of Ohio. We're looking at this from an entire state standpoint and a collaborative standpoint. The stronger we are collaboratively together, the stronger our posture can be from a security standpoint.

How do you think Ohio will leverage GIS tools going forward?

We have a statewide board called the Ohio Geographically Referenced Information Program, or OGRIP. We're providing some of the backbone capabilities that counties are taking advantage of statewide. I really think that this is going to be an area that continues to evolve.

My daughter happens to be a GIS graduate, so, as her dad, I try and pay attention to the trends in this space. It's been helpful for me. For the 2020 Census, there are all sorts of possibilities that can be leveraged in this space by leveraging this technology. With the date fast approaching, every state wants to make sure that they're taking full advantage and making sure that every person gets counted.

There's a different approach to the next census. It's along the lines of, "Yes, you'll still get a letter in the mail, but it's going to be an invitation to go online." That's a different approach than what we've done in the past. We need to make sure that we're leveraging all state assets, especially from a GIS perspective, that can greatly help us to look at our data.

Conclusion

Change is a constant, and governments aren't exempt from its effects. For many state and local agencies, the shifts that occur in their operations can seem insurmountable. Looking past 2020, the defining challenge for agencies may be balancing how their technology and workforces evolve.

For agencies grappling with transformation, however, all hope isn't lost. Harmony is possible where technology and workforces intersect. Over time, agencies that balance both sides of this equation can innovate regardless of how society morphs around them.

For starters, technology is most useful when people know how to use and apply it to their mission. Humans are critical for boosting CX and building smart cities. To reach these goals, agencies must let their employees exercise their creativity and know-how to achieve mission success.

The best tools are the highest-quality options that people can easily adopt. Technology that's too costly, difficult or risky won't stand the test of time. For GIS, cloud or cybersecurity to work, they must seamlessly mesh with the work public servants perform.

Although their technology and workforces may change, the song always remains the same for agencies. At day's end, every state and local public servant leaves work hoping that they've served citizens while advancing their office toward mission success.

About GovLoop

GovLoop's mission is to inspire public sector professionals by serving as the knowledge network for government. GovLoop connects more than 300,000 members, fostering cross-government collaboration, solving common problems and advancing government careers. GovLoop is headquartered in Washington, D.C., with a team of dedicated professionals who share a commitment to the public sector.

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govloop.com | @govloop

Author

Mark Hensch, Staff Writer

Designer

Kaitlyn Baker, Creative Manager

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