



# Reinventing Government: 20 Innovations for 2020

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## Tech Trends Covered in this Guide

Cloud Computing

Data Analytics

Emerging Technology  
(Artificial Intelligence,  
Machine Learning and More)

Remote Work

Virtual Learning

Zero Trust Cybersecurity

# Executive Summary



When the history books are written, 2020 will stand out as the year when agencies were challenged like few times before. Since January, each level of government has experienced an unprecedented host of issues. Whether it was the COVID-19 pandemic, economic pain or social unrest, agencies faced turmoil month after month.

But 2020 also might prove to be a turning point. While difficult, recent months have shown agencies nationwide they can dream big and succeed. Necessity is the mother of invention, and today's obstacles are leading governments to imagine a better future. **Taking advantage of this unusual era, agencies are innovating creative solutions to old problems.**

As 2021 nears, it seems some fresh developments are here to stay. From remote work to videoconferencing, original thinking not only works, but can have a lasting impact. Eventually, the approaches agencies are experimenting with now might benefit their workforces and the public for decades to come.

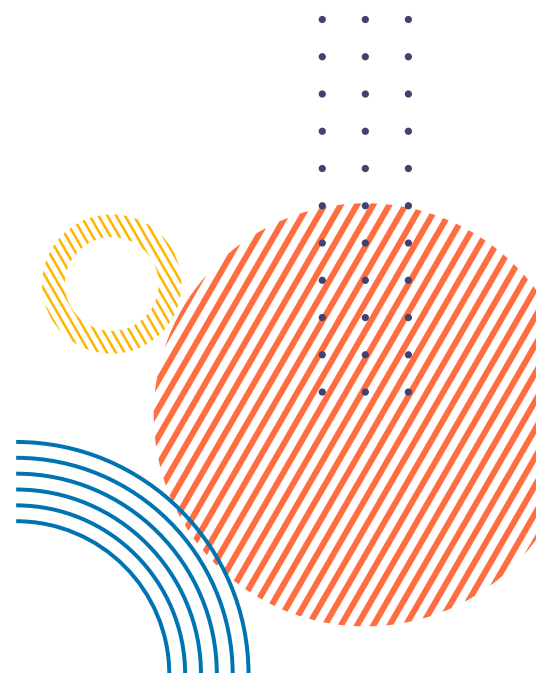
## **The good news is innovation can transform agencies' people, processes and technology.**

Through innovation, agencies can discover faster, affordable and more efficient paths to mission wins.

If your agency lacks the inspiration it needs for innovation, look no further than this guide. The analysis, news and thought leadership we provide can help you and your teammates immediately blaze trails and break ground.

- First, we will summarize the dates, events, statistics and soundbites that encompass 2020's sweeping innovation.
- Second, we will investigate how agencies' cultures, cybersecurity, digital services, processes and workforces changed, and where they might head next.
- Third, we will explain how our annual Next Generation of Government Training Summit — and its annual NextGen Public Service awards — evolved during its 11th consecutive year.
- Fourth, we will share best practices for innovation to make your agency more resilient and future-proof.

Overall, this guide will explore the top 20 innovations that emerged from federal, state and local agencies in 2020. No matter what form these inventions take, we hope they'll encourage similar results at your agency. Predicting what lies beyond the horizon is hard, but one thing is certain: The spirit of government ingenuity is livelier than ever.



# At a Glance: The New World to Come

## 5 Innovation Terms to Know

*The following terms will help your agency participate in discussions about innovation's cutting edge.*

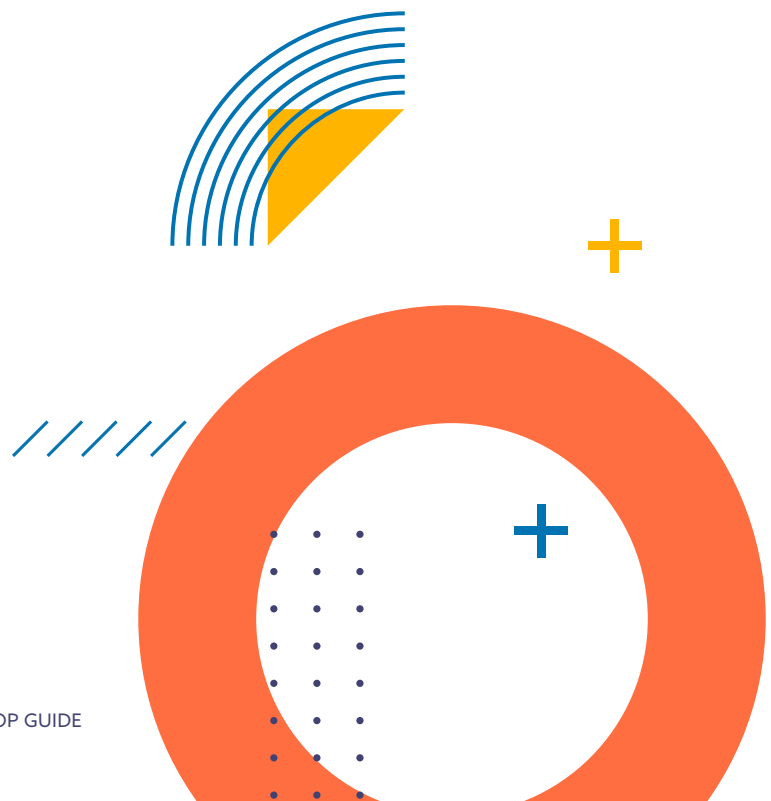
**Artificial intelligence (AI)** — AI involves machines imitating human cognitive abilities such as planning and reasoning. AI could revolutionize innovation and scores of other fields. It might assist agencies with brainstorming new tactics and tools. Simultaneously, humans would expend less energy thinking up pioneering strategies alongside their machine counterparts.

**Cloud computing** — The cloud delivers resources such as computing power and data storage using decentralized IT distributed across multiple locations. Cloud services are typically available on demand and require little to no physical IT infrastructure. Many agencies have adopted cloud as a platform for innovation because of its flexibility and scalability. Additionally, cloud enables such innovations as reliable remote work over large distances.

**DevSecOps** — DevSecOps is a business methodology that combines software development, IT operations and security. By putting security at the beginning of the process, the goal of DevSecOps is shortening the development lifecycle of systems; agencies that use DevSecOps aim to continuously deliver high-quality software. DevSecOps often enhances innovation as it thrives with agility and collaboration.

**Virtual learning** — Virtual learning educates users through digital activities, interactions and resources. Often, these learning assets are delivered through a single web-based platform. Virtual learning is not only the cornerstone of remote education, but it can boost recruitment, reskilling and upskilling efforts. Reskilling involves people learning new skills, while upskilling happens when people add to the skills they have.

**Zero trust cybersecurity** — Zero trust cybersecurity means automatically distrusting anything inside or outside an agency's network perimeters. Further fortifying security, users and other entities must be validated before accessing sensitive data or networks. Together, these measures enable agencies to continuously monitor their networks to stop potential threats.





# 7 Federal Innovation Facts to Know

**\$142.2B** — The amount invested in federal research and development (R&D) in the President's FY 2021 Budget, a 6% increase from the President's FY 2020 Budget.

Source: [The White House](#)

**\$90.9B** — The projected amount of governmentwide IT spending across federal agencies for FY 2021.

Source: [Federal IT Dashboard](#)

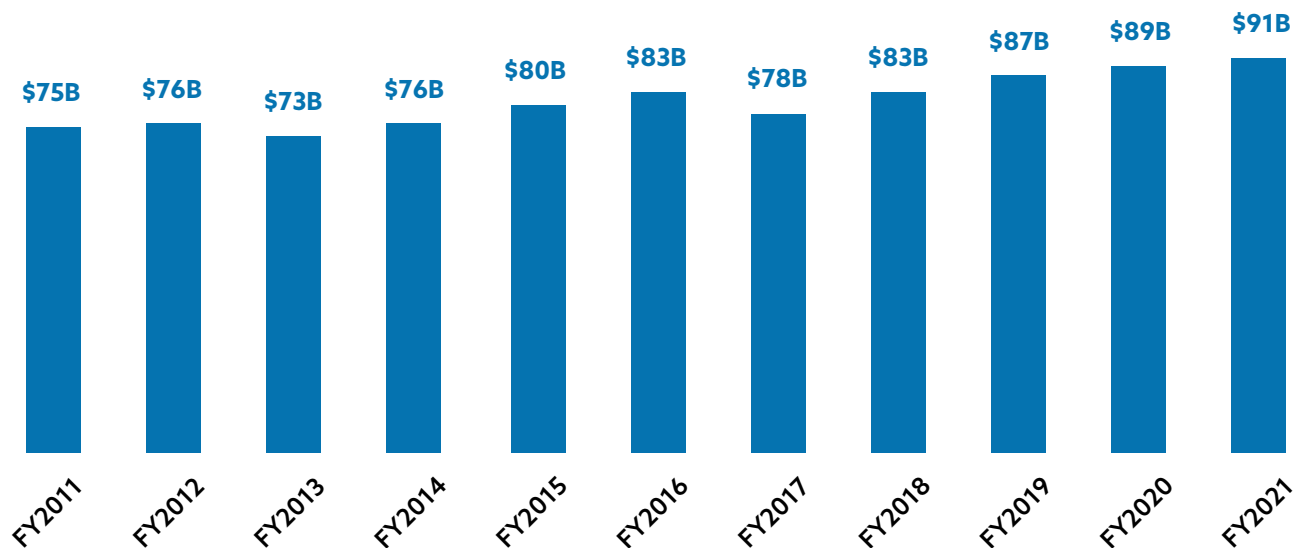
**\$89.3B** — The projected amount of governmentwide IT spending across federal agencies for FY 2020, a difference of \$1.6 billion.

Source: [Federal IT Dashboard](#)

Here is how federal IT spending changed between FY 2011 and FY 2021:

## IT Spending FY 2011-2021 (\$Billions)

● Government-wide IT Spending



Source: [Federal IT Dashboard](#)

**1,000%** — The increase the Veterans Affairs Department (VA) experienced in telehealth video appointments using its VA Video Connect application between February and May 2020.

Source: [VA](#)

**120,000** — The number of video appointments booked weekly during the same period, which occurred as VA addressed the coronavirus crisis.

Source: [VA](#)

Here are the top 10 most innovative large federal agencies in 2019 and 2018, according to employees. They rated agencies based on how they perceived efforts to improve how work is done, including their own personal motivation to promote change and the support and rewards they received for promoting new ideas:

Rank ↑	Agency	2019	2018	Change (2018-19)
1	National Aeronautics and Space Administration	82.6	81.9	0.7 ↑
2	Intelligence Community	75.5	72.7	2.8 ↑
3	Department of Health and Human Services	70.6	70.0	0.6 ↑
4	Department of the Air Force	67.0	65.8	1.2 ↑
4	Department of the Army	67.0	65.7	1.3 ↑
6	Office of the Secretary of Defense, Joint Staff, Defense Agencies, and Department of Defense Field Activities	66.6	65.6	1.0 ↑
7	Department of the Interior	66.3	65.7	0.6 ↑
8	Department of the Navy	66.2	65.6	0.6 ↑
9	Department of State	65.6	65.1	0.5 ↑
10	Department of Commerce	65.5	65.2	0.3 ↑

Quartile Key:

Upper Quartile (75-100%)	Above Median (50-75%)	Below Median (25-50%)
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Source: [Partnership for Public Service](#)

# 7 State and Local Innovation Facts to Know

**1%** — The amount state government employment, excluding education jobs, fell between March and May 2020 during the COVID-19 pandemic.

Source: [The Pew Charitable Trusts](#)

**7.9%** — The amount local government employment, excluding education jobs, fell between March and May 2020 during the COVID-19 pandemic.

Source: [The Pew Charitable Trusts](#)

**No. 1** — The place where state chief information officers (CIOs) ranked cybersecurity and risk management in their top 10 priorities for 2020.

Source: [National Association of State Chief Information Officers \(NASCIO\)](#)

**No. 2** — The spot where state CIOs ranked digital government in their top 10 priorities for 2020.

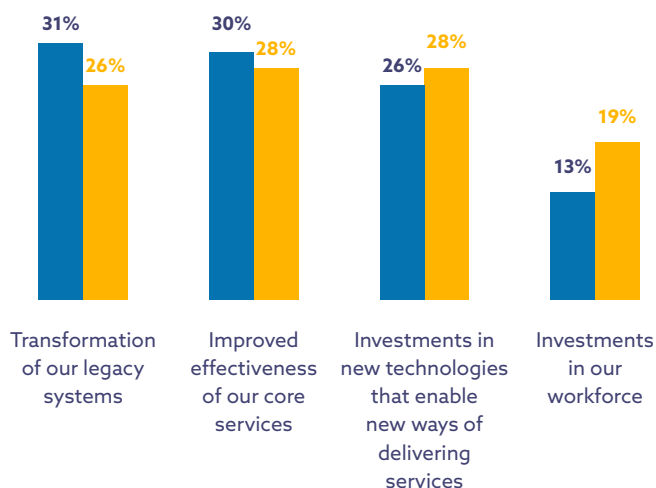
Source: [NASCIO](#)

**160** — The amount of solutions for addressing COVID-19 submitted to Sacramento, California's innovation portal as of September 2020.

Source: [GovLoop](#)

In January 2020, state CIOs estimated how much of their innovation efforts and investments were dedicated to the following activities:

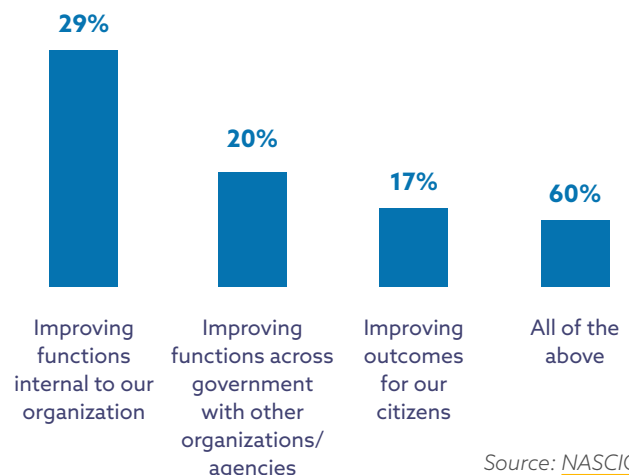
To the best of your ability, please estimate what percentage (adding up to 100%) of your innovation investments and efforts are dedicated to each of these activities:



Source: [NASCIO](#)

In January 2020, state CIOs described the primary focus of the innovation initiatives their agency had implemented:

Thinking of innovative initiatives your organization has implemented, what has been your primary focus?

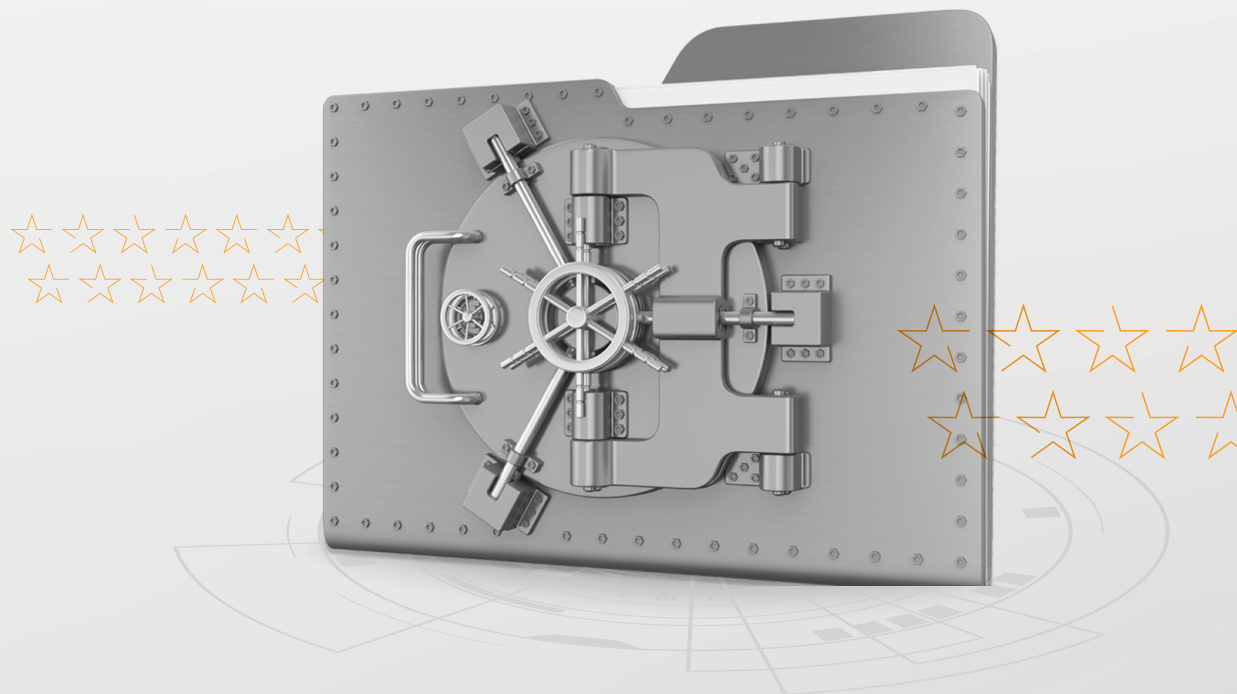


Source: [NASCIO](#)



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APPLICATION  
MANAGEMENT



# Working Securely Everywhere With Zero Trust

*An interview with Brandon Shopp, Vice President of Products, SolarWinds*

For employees, one silver lining of COVID-19 is agencies are expected to be more open to telework after the pandemic. For agencies, however, this means defending a wider attack surface, with applications, data and devices reaching far beyond the network perimeter.

That's where zero trust security comes in. Zero trust requires agencies to authenticate, authorize and continuously monitor everything accessing their resources. Whether it is devices, users or other entities, zero trust covers everything outside — and inside — agencies' network perimeters.

To learn how agencies can weave zero trust cybersecurity into their daily operations, GovLoop spoke with Brandon Shopp, Vice President of Products at SolarWinds, a zero-trust security software provider.

Shopp revealed three tips for making zero trust cybersecurity a given in agencies' routines.

## 1. Change Mindsets

Face it — agencies have long assumed their perimeters would keep external cyberthreats away from their resources. Many of these agencies have also historically assumed that everything inside their perimeters is friendly. According to Shopp, the zero-trust mentality begins with discarding both ideas about cybersecurity.

**"Zero trust cybersecurity is a more cautious approach," he said. "It is the inverse of the way things have been done in the past."**

Consider changing roles within agencies; firings, hirings and promotions can leave people with permission to access key resources they should no longer have. With zero trust, agencies constantly revisit their employees' access rights to keep their resources safe and sound.

## 2. Revisit Endpoint Security

Overall, zero trust is about increasing cybersecurity analysis and visibility agencywide. To achieve this state, agencies must evaluate their attack surfaces and endpoints before updating their cybersecurity strategies accordingly.

Shopp said the increase in remote work nationwide made this notion especially relevant. With scores of remote workers using different devices and networks to complete their work, zero trust security can monitor and maintain all this traffic.

"The perimeter of the network has changed," Shopp said. "There are a lot more entry points and risk points in your environment."

## 3. Give IT a Hand

Many agencies struggle to compete with the private sector for talent; this includes cybersecurity personnel who prefer to work with the latest programs and technologies. According to Shopp, automating zero trust security can relieve some of the pressure agencies' workforces are facing.

Automation involves machines performing manual tasks with little to no supervision from humans, and it can be a gamechanger for agencies.

Automation can assist agency personnel with configuring networks, patching software vulnerabilities and authorizing users for access to IT assets. Gradually, the result is a world where cybersecurity staff can do more with less people.

"IT staff are not growing — if anything, they're shrinking," Shopp said. "Our platform will plug certain holes you may have."



## 4 Innovation Levers Agencies Should Pull

The Massachusetts Institute of Technology (MIT) Sloan Management Review researches how businesses, including agencies, can transform their innovation and leadership. According to its Winter 2019 issue, these are the four levers agencies need to pull for consistent, organic and significant innovative growth:

### 1. Invest in innovation talent

Innovation requires creativity and dedication, so whom agency leaders choose to nurture it matters. To lead the charge, agency leaders can cultivate innovation by caring for program managers, project directors and team leaders who pursue inventive initiatives. From there, agencies can split their workforce skills into two camps.

First, agencies should make it easy to develop skills such as presenting by making them cornerstones of training. Next, agencies should look for new recruits who have more difficult-to-obtain qualities such as a consistent focus on the public's needs as end users.

### 2. Encourage prudent risk-taking

Traditionally, most agencies are cautious risk-takers. In contrast, many innovators gamble on their chances en route to lasting success. Agencies looking for more rewards than losses should consider three components of quality risk-takers.

First, many risk-takers learn more from closely examining their mistakes than their victories. Second, many innovators share the risks and rewards of their ventures with their development partners. For instance, innovative agencies often distribute accountability for new programs agencywide. Finally, small staged bets often help innovators by nudging them to do more with less, quicker and more efficiently.

### 3. Adopt customer-centric processes

The private sector can teach agencies plenty about innovating with customers in mind. At any agency, the people they serve should drive how they deliver products and services. Agencies where the public's needs are not a factor will struggle for mission wins.

To innovate for citizens, agencies should initially assess what needs those people have and whether employees have the skills to meet them. Agencies missing skills can recruit, reskill and upskill their workers.

### 4. Align innovative incentives and metrics

Individual and group metrics provide detailed records of progress about concerns such as innovation. In the short term, metrics such as how effective processes are can help agencies track innovation. In the long term, measures such as the percentage of services delivered over three years might be more informative.

Using the right mix of short-, medium- and long-term metrics, agencies can create the best targets for their innovation efforts. Once those benchmarks are established, agency leaders can create incentives to inspire workers to reach those heights.



# Forecasting Government's Future

Government has an enormous impact on society, so thought leaders and the public alike frequently speculate about what the next round of innovations might look like for agencies. While gazing into the crystal ball is imprecise, recent events offer evidence about what is on the horizon for contemporary agencies.

Innovation always starts at agencies with their people. Subsequently, any examination of government innovation must begin with agencies' culture and workforces.

After that, how agencies' workforces operate becomes significant. The processes agencies use frequently evolve; analyzing their latest iterations can yield valuable insights into agencies' innovations.

Lastly, technology is a common force behind innovating agencies. Consequently, the ways agencies adapt their cybersecurity and digital services are worth exploring.

**Innovation can take many forms, but some of the most exciting varieties are appearing in cybersecurity, digital services, government culture, processes and workforces.** Below are four of the most thought-provoking developments in each of these categories.





# The Modern Data Platform for Government

Founded by the team that built Apache Kafka®, Confluent delivers an event streaming platform that enables agencies to easily access data as real-time streams, unlock legacy data, and meet modern government application requirements.

Learn more visit: [Confluent.io/government](https://confluent.io/government)



# Event Streaming: The Future of Data Management

*An interview with Will LaForest, Public Sector Chief Technology Officer and Jason Schick, General Manager for U.S. Public Sector, Confluent*

For agencies, data is not just the engine for innovation — it is the engine for everything. Agencies that use data effectively can better collaborate with one another, deliver stronger services to citizens and achieve more mission wins.

Despite this, many agencies have taken a passive approach to managing their data, resulting in disconnected data silos and outdated applications and practices.

Event streaming can help agencies handle these issues with active data management and sharing. GovLoop spoke with Will LaForest, Public Sector Chief Technology Officer (CTO) and Jason Schick, General Manager for U.S. Public Sector at Confluent, an event streaming platform provider, to understand what this approach is and how it works.

LaForest and Schick shared the following three best practice tips for integrating event streaming into agencies' operations.

## 1. Change the Data Culture

Traditionally, agencies have processed data in batches, which means any data set is essentially a snapshot in time. Event streaming, on the other hand, treats data as a never-ending stream of events, with data being updated in real time as changes occur.

**"The idea is simple: every time there is a change to a source database, that change is distributed to everyone who cares," LaForest said.**

Gradually, event streaming improves how agencies analyze their data, boosting the productivity their workforces derive from this information.

## 2. Share the Wealth

Ultimately, agencies want simple and rapid access to all the data available in their various environments at any time. Connecting every form of data is crucial for agencies, whether it is historical data from repositories, such as legacy databases, or new, real-time data. Event streaming platforms ensure all data sources are constantly available and up-to-date. After that, the platforms enable agency employees to engage with any data they need.

**"You remove the institutional friction of sharing data: negotiating with other organizations and finding out what the schema of the data is," Schick said.**

Overall, event streaming platforms boost cooperation inside agencies while fostering more collaboration between agencies, their staffs and the outside world. This collaboration stems from the fact all parties are working with the same data.

## 3. Act Proactively

Event streaming can become a building block for agencies' futures, according to Schick. Agencies that have readily available data can anticipate and prepare for problems, such as natural disasters, more intelligently. The more informed agencies are, the wiser their decisions can be.

**"You can recognize things faster and put that data into motion to produce a lot of benefits from everything to safety and defense to improved voter registration and transportation," Schick said.**





## + The Top 4 Culture Innovations

*Promoting a Healthy and Inclusive Remote Workforce*

COVID-19 has not just altered government. The coronavirus has also damaged the economy. Alongside rising social and financial stresses, communities nationwide are reevaluating how their residents and police forces interact.

Race is a powerful undercurrent in these discussions, and many conversations have focused on elevating diversity and inclusion. Following suit, many agencies are studying how their workforces can become more welcoming and multicultural.

Now, agencies are paying more attention to how their offices can become more respectful and harmonious for their entire workforces. Whether in-person or remote, the switches agencies are making could lead to a more tolerant and accepting public sector.

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### 1. Build culture for the new normal

It's difficult to talk about employee culture without acknowledging COVID-19.

This new normal hasn't just changed how teams hold meetings, complete tasks or conduct daily operations; it fundamentally changed how employees connect with one another. Where does this leave us and the relationships we've worked hard to build?

The answer is we are still focused on our teams' daily culture. Before the coronavirus and now, building culture has not only been about happy hours, daily check-ins or team lunches. It's also about creating a sense of belonging.

Although the methods may have changed, the goal is still the same. And that is encouraging in the sea of other changes agencies have faced this year.

### 2. Create belonging with the community

When Colorado's governor signed an executive order in August 2020 prioritizing diversity, equity and inclusion in state government, it was a commitment to create an inclusive workplace for all. What many might not know, however, is the people and culture that prompted this order.

The Colorado Equity Alliance, a group of representatives from state agencies and community organizations in the business of operationalizing equity, catalyzed the change. The group empowers community voices to provide feedback and guide the strategic direction of state-funded, equity-building initiatives.

Through the alliance, the state is addressing historic inequities as issues that affect both government and the communities it serves.





### 3. Tap into empathy

Many of us were taught empathy as a core value at a young age. However, exercising empathy in the workplace is a whole other challenge. Although empathy may not be innovative, this year's racial reckoning and general election have made it clear that it's a sorely needed professional skill.

We aren't often trained to practice empathy at work as individuals, managers or leaders, and this can lead to a breakdown in communication, unfair circumstances and inequality among peers.

Empathy is not saying, "I know how you feel." Rather, it is saying, "I want to know how you feel" and asking, "How do you feel?"

### 4. Fail forward

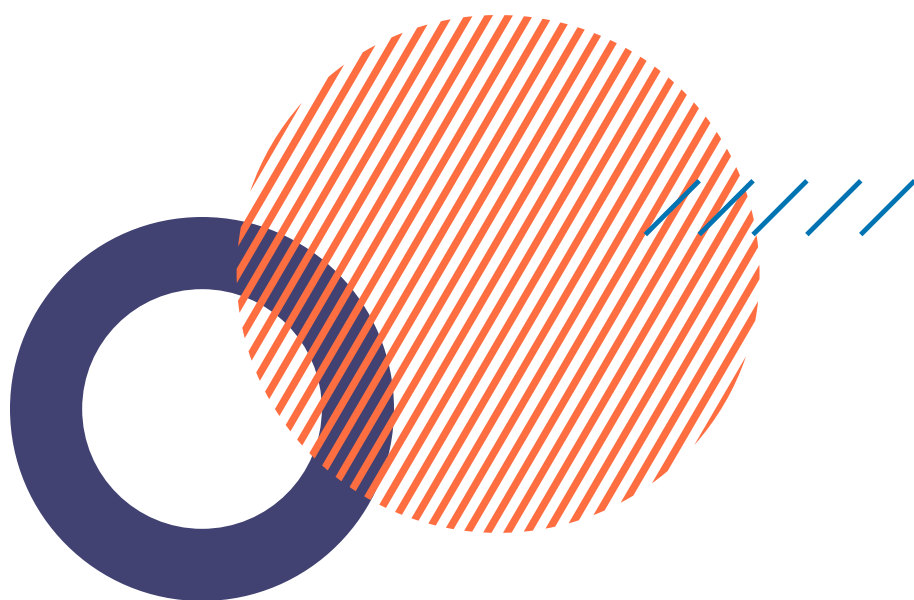
The Centre for Public Impact's report on failure gets at something: It's difficult to deal with failure in any organization, and it's especially difficult in government.

Dealing with setbacks is often problematic for agencies; successful ventures are sometimes uncelebrated, but failures always get attention.

The truth is, failure is inevitable in any complex system. And it's a necessary step for innovation.

Failure in government organizations doesn't happen because government itself is bad or wrong, said Andi Mirviss, the report's co-author. It's a fact of working in any complex system.

That's why ignoring failure can cause more harm than good. Fortunately, failure can be used as fertile soil for innovation and improvement.





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# Re-thinking Your IT Strategy With Best-of-Breed Cloud Architecture

*An interview with Sonny Hashmi, Managing Director, Global Public Sector, Box*

Modern agencies must often do more with less. Whether it is tightening budgets or shrinking manpower, the pressures agencies face keep growing.

These challenges require agencies to re-think how they automate processes and architect solutions for scalability, flexibility and user experiences. Cloud computing can help agencies with these concerns. While cloud's affordability, flexibility and scalability are well established, different agencies have different needs. Many agencies are now adopting multi-cloud architectures to create an IT architecture that is right for them.

Multi-cloud architectures combine several cloud solutions into a single architecture. Using multi-cloud architectures, agencies can design an environment that fits their mission requirements best, said Sonny Hashmi, Managing Director, Global Public Sector at Box. Box is a cloud content management solution, enabling digital mission-critical processes like case management and field operations.

Unstructured data, such as forms and videos, comprise about 80% of the data agencies manage. This data often includes the information needed to make informed decisions. By integrating cloud services into their overall system architectures, agencies can seamlessly process, manage and understand their data while automating business processes.

Hashmi detailed three ways agencies can build the right multi-cloud architecture for serving citizens.

## 1. Streamline IT

Frequently, agencies must try reducing the cost and complexity of their IT infrastructure. By leveraging pre-vetted, secured and scalable IT services designed to integrate with each other, agencies can dramatically reduce the time and complexity involved with delivering business solutions to their stakeholders.

With a multi-cloud architecture, agencies can be selective about which services are needed to deliver

results, only pay for what they consume and rapidly deliver solutions iteratively without worrying about future scalability.

## 2. Embrace Microservices

Microservices are the various services each cloud application offers. For instance, one microservice securely authenticates users, while another microservice enables payment processing.

Thanks to multi-cloud architectures, agencies can choose the most suitable micro-services for a specific business need, instead of repeatedly building commoditized capabilities.

**"By consuming the right microservices in the right way in the right sequence in the application, agencies can deliver complex capabilities quickly, securely and cost-effectively," Hashmi said.**

Take a common public service such as child support services. Using microservices, agencies can quickly build applications that enable citizens to digitally submit applications for benefits and other related activities. Such an application can be built and deployed within weeks, rather than months or years.

## 3. Embrace Emerging Technologies

Agencies are looking to deploy promising emerging technologies such as artificial intelligence and machine learning in cloud. Machine learning (ML) algorithms gradually improve through experience, while AI mimics such human cognitive abilities as reasoning.

Multi-cloud architectures can easily add one or both tools. Gradually, agencies using AI and ML can remove many mundane tasks their workforces perform daily.

By using Box, agencies can get the instant insights they need — about everything from 911 calls to audio and visual data — for mission success.



## + The Top 4 Cybersecurity Innovations

### *The Next Generation of Tools and Tactics*

Agencies fend off cyberattacks daily. These incidents could come from any direction, and the criminals behind them are often fiendishly creative. Whatever their motive, cybercriminals are always ready to prey on agencies' sensitive data.

These circumstances have pushed agencies to become increasingly ingenious about cybersecurity. From the federal layer down, agencies are refreshing cybersecurity concerns ranging from education to technology.

For every tactic or weapon cybercriminals obtain, agencies must acquire even better defenses. In cybersecurity, safety is never guaranteed, and agencies are only as safe as their latest defenses.

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### 1. Virtualize exercises

For the first time, the Army conducted an annual cybersecurity exercise virtually in September 2020 because of the COVID-19 pandemic.

Like past editions, Cyber Shield 2020 aimed to increase the Army's cybersecurity preparedness and response capabilities. It trained more than 800 Army and Air National Guard members from federal, state and local agencies nationwide.

Participants encountered simulated hacking, malware and phishing attacks during this year's campaign. Malware is software designed to intentionally damage computers, networks and other technology, while phishing attempts to obtain sensitive data such as passwords using deceptive emails and other electronic communications.

### 2. Acquire allies

In September 2020, the FBI announced its innovative new strategy for countering cyberthreats. According to Director Christopher Wray, the strategy intends to make the bureau an "indispensable partner" to federal counterparts, private-sector companies and foreign partners.

Going forward, the FBI will lead the National Cyber Investigative Joint Task Force, which includes more than 30 intelligence community and law enforcement agencies.

The group's information sharing will be two-fold. Defensively, the FBI will help its partners protect their networks and attribute malicious activity to attackers. Offensively, it will impose sanctions for bad behavior and engage in offensive cyberactivity overseas.



### 3. Leverage volunteers

Cybersecurity and election security are increasingly intertwined because of the potential for hackers to interfere in contests such as the 2020 presidential race.

Still, state and local agencies sometimes lack the security assets and personnel of their federal counterparts because of their typically tighter budgets. To mitigate this, the University of Chicago Harris School of Public Policy launched [the Election Cyber Surge](#) in August 2020.

The program pairs state and local election administrators and officials with volunteer technologists who can advise them on various cybersecurity issues.

Furthermore, agencies can search a database of the volunteers for the cybersecurity experience, skillsets or subject-matter expertise that would best meet their needs.

### 4. Secure new tools

5G refers to the fifth generation of wireless networking technology. Using 5G, devices such as smartphones will obtain faster speeds and stronger connectivity than before.

In 2020, the Cybersecurity and Infrastructure Security Agency (CISA) [released its strategy](#) for protecting this potentially revolutionary technology. CISA's plan considers risk management, stakeholder engagement and technical assistance as core components of 5G safekeeping.

To help protect 5G, CISA will expand awareness around risks to the technology's supply chain. CISA will also promote trusted vendors to assist with 5G innovation. Additionally, CISA will work with state, local and private-sector partners to find and fix 5G vulnerabilities.





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# Developing a Data Culture to Drive Innovation

*An interview with Oliver Wise, Director of Recovery Solutions, Tyler Technologies*

For years, agencies have heard data is the new oil. But much like oil can flood an engine, data can overwhelm an agency's innovation. When agencies have more data than their workers can comprehend, it can become an obstacle to ingenuity.

Fortunately, agencies can develop workforces capable of understanding and acting on organizational data in real time. Agencies with effective data practices can innovate quicker and more efficiently for citizens.

For these data cultures to thrive, agencies need feedback loops among the public and their employees and leaders, said Oliver Wise, Director of Recovery Solutions at Tyler Technologies, a public-sector software provider.

Using Austin, Texas, as an example, Wise shared three ways agencies can become more data-savvy.

## 1. Go After Goals

Wise recommended agencies draft strategic goals based on the data they have. Using this information, these agencies can make the adjustments necessary for reaching their objectives.

**"The power of data is when it can help agencies learn and adapt to the situation on the ground," Wise said. "Strategic plans become living documents."**

Take Austin's sustainability programs. Municipal employees routinely analyze the latest data about the city's sustainability, so they can make initiatives more beneficial to residents, Wise said.

"If Austin's data tells them they're missing the mark, or they have a pain point, they can enlist their performance management apparatus to attack those problems," he said.

## 2. Collaboration Is Key

Healthy data cultures also need boundless collaboration. By eliminating internal and external data silos, agencies consider more perspectives on the information they have. In turn, this diversity can make agencies more innovative.

"Different agencies collect data around the same places and businesses," Wise said of one mistake agencies frequently make. "They have to be able to connect the dots between those different data silos."

Imagine Austin's economic recovery after the COVID-19 pandemic. About 12 agencies are connected to the city's businesses, Wise said. Starting now, these agencies will need to cooperate, or businesses might not experience the best possible rebound going forward.

"If you have a strong data culture and the infrastructure to share data across the entire enterprise, you are going to find opportunities to collaborate," Wise said.

## 3. Keep Citizens Connected

Ultimately, agencies exist to serve the public. People can provide agencies with the input they need to improve public services.

"Data has to be shared with the public to earn the public's trust," Wise said. "In any successful government program, you have to put the citizen in the center of it and make sure their needs are addressed."

Tools such as Tyler Technologies' Socrata data platform, built on the Amazon Web Services (AWS) Cloud, can link citizens, employees and leaders into informative feedback loops for agencies. Once established, these feedback loops can anchor the sturdy data cultures agencies need for optimum public services.



## + The Top 4 Digital Service Innovations

### *Modernization Makes Waves in Technology*

COVID-19 proved necessity is often a catalyst for change. With many offices closed or operating at reduced capacity, agencies fast-tracked the development of numerous digital services and public-facing modernization projects. These transformations were auxiliary goals before, lacking urgency and backing. But as COVID-19 necessitated online alternatives to in-person activities, leaders prioritized digital services, advancing them with increased funding.

The public has been asking for many of these changes for a long time. People have long sought more user-friendly websites through which they can easily file forms and find information. Now, it looks like their wish has been granted, and the changes are here to stay.

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### 1. Consider the user experience

By late May 2020, more than 40 million Americans had filed for unemployment. Many of them had the same story: When they went to their state's website, it crashed.

Delaware residents experienced better luck. The state's IT department worked to increase the processing power of high-traffic websites — such as the Unemployment Insurance Division's page — before it became an issue. Delaware additionally boosted transparency on the customer side with automated status updates that declared when applications were received, reviewed and decided.

"It's going to be a win for those people who need to access those resources to know that benefits are being processed," said James Collins, Delaware's CIO at the time.

### 2. Make content relevant

Think back to when we all searched "coronavirus" and "social distancing" online to learn the meaning of these now-common words. The Centers for Disease Control and Prevention (CDC) became the hub for COVID-19 education, and website visits spiked.

As the CDC's website passed traffic numbers the Internal Revenue Service (IRS) sees before Tax Day, it debuted thousands of new pages and increased usability. By thoroughly analyzing common search terms, the CDC was able to redirect users to relevant information even if they had a typo or incorrect phrasing. For example, both "face coverings" and "face masks" lead users to the content they need.



### 3. Debut Dashboards

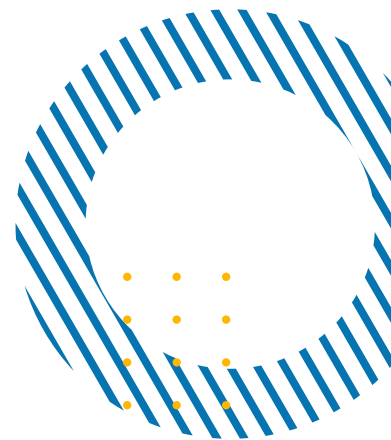
Data dashboards — online interfaces that show stats, graphics and visuals that are easy for a broad audience to understand and interpret — aren't new, but many people might be interacting with them for the first time as governments widely rolled them out to track COVID-19 information.

Most COVID-19 dashboards aren't static; they're updated with fresh data to track trends, or users can filter and sort variables, such as magnifying COVID-19 case information for their location. "We want that quick snapshot of data that when you look at the dashboard, you can tell what's going on," North Carolina Deputy CIO John Correllus said.

### 4. Develop digital alternatives to physical services

In March 2020, the VA expanded its telehealth and telework capabilities to continue administering health care to the 9 million military veterans it serves across thousands of outpatient sites and medical centers.

Thanks to several important initiatives, VA telemedicine has been a success, said David Catanoso, Director of the VA's Enterprise Cloud Solutions Office. The department moved to a cloud environment that supports up to 5,000 concurrent conference sessions — used for patient appointments — and includes high-definition video and live image display.





As government agencies move towards a more mobile workforce, improved infrastructure is paramount. That is why more agencies are looking at transitioning from a legacy wide area network (WAN) to a next generation software-defined WAN (SD-WAN).

*Learn more about the benefits of SD-WAN in this Research Brief, "To Extend the Enterprise, Fix the Foundation," based on a recent GovLoop survey of government agencies.*

**Get Research Brief**





# Extending Innovation's Borders With SD-WAN

*An interview with Marlin McFate, Public Sector Chief Technology Officer, Riverbed Technology; and Sean Applegate, Chief Technology Officer, SwishData*

The COVID-19 pandemic has increased pressure on agencies in two key ways. First, they are facing unprecedented demand for remote work. Second, this push has strained their IT networks with historic burdens.

Many agencies have discovered that their legacy networks are not as agile, flexible and scalable as they need. Unfortunately, they have also discovered that haphazardly adding new tools only slows them down.

Looking ahead, agencies realize they need to modernize their networks, both to better support a remote workforce and as a foundation for innovation.

GovLoop spoke with Marlin McFate, Public Sector Chief Technology Officer at Riverbed Technology, an IT network performance management and monitoring provider, and Sean Applegate, CTO at SwishData, a technology and engineering solutions provider, who offered these three tips for modernization planning.

## 1. Start with SD-WAN

Because of widespread remote work, more devices are connecting to agencies' networks than before. Networks sometimes struggle with reliability and security, which escalate when agencies add more tools to their legacy systems to work around potential shortcomings.

**"Networks over time have become these bolt-on environments," McFate said of legacy IT systems. "The more we bolt on, the more complicated, inflexible and fragile networks become."**

Enter software-defined networking in a wide area network (SD-WAN). WANs enable networking and data transfer across large distributed environments, often with great distances between remote locations, and SD-WAN simplifies WAN operations and management with virtualization software.

SD-WAN initially reduces the complexity of agencies' IT systems, which boosts the productivity and security of agencies' networks. Eventually, SD-WAN will help agencies experience productivity gains that accelerate mission wins.

## 2. Embrace TIC 3.0

The original Trusted Internet Connections (TIC) policy of 2007 aimed to secure the federal government's external network connections by reducing the number of connections as much as possible. Since then, TIC has struggled to evolve in tandem with emerging technologies such as cloud computing.

In 2019, TIC 3.0 was released to remove regulatory barriers to modernizing agencies' technology. TIC 3.0 acknowledged that mobile technology and wireless networks have reshaped modern work and public demands. Subsequently, TIC 3.0 seeks to secure external network channels such as cloud for handling agencies' applications, data and systems.

**"Mission is the most important thing and productivity around mission is critical," Applegate said.**

When aligned with TIC 3.0, SD-WAN routes traffic more directly and logically to handle agencies' workloads wherever they are.

## 3. Scale up Security

Cybersecurity is a big concern for remote workforces. After all, people produce most cybersecurity missteps.

SD-WAN helps fortify cybersecurity by creating shorter, simpler paths for data, reducing unpredictability and network traffic bottlenecks.

**"The aim is to oversee security in a more centrally managed, centrally distributed way so that you can remove a lot of the human error," McFate said.**



## The Top 4 Process Innovations

### *The Way Agencies Work Evolves*

Don't pave a cow path. That was a saying in the 1990s in the era of the Reinventing Government initiative. In many cases, agencies were investing in the latest automation tools, but they were automating outdated, inefficient processes, paving a winding cow path rather than building a better road.

The problem is that developing new processes is not nearly as interesting as building new systems or delivering on a mission. Calling someone "process-oriented" is generally not seen as a compliment. But process matters. Taking an innovative approach to legacy processes can help agencies address longstanding problems that otherwise seemed unfixable.

Here is a look at four examples of how agencies might reap the benefits of being process-oriented.

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#### 1. Involve subject-matter experts in hiring

When interviewing someone for a position, who is better qualified to evaluate the candidate's subject-matter expertise than another subject-matter expert (SME)? Yet in government hiring, SMEs are rarely part of the process. In the federal government, that could soon change.

The U.S. Digital Service (USDS) and the Office of Personnel Management (OPM) are working with a handful of agencies to test a process for SME-based qualifications assessments to determine if applicants are indeed proficient in the required competencies. SMEs are involved both in resume review and interviews. USDS and OPM also are testing a process in which multiple agencies take part in the assessments at one time, with qualified candidates being ready for placement in any participating agencies.

#### 2. Build teams without borders

Let's face it: In traditional office environments, we have a bias toward proximity. Teams seem to work best when everyone can gather in a room together. But remote work broke that model, possibly for the better. With teams forced to gather virtually, they have had an opportunity to tap into a wider range of experts.

This idea predates 2020's remote work environment. In a 2009 article, researchers at MIT Sloan Management Review noted that in most organizations, a given office tends to have many specialists in a given field — but not many outside that field. Working in a virtual environment makes it easier to increase the diversity of perspectives. "Such diversity can be highly valuable for teams, because it exposes members to heterogeneous sources of work experience, feedback and networking opportunities," the researchers wrote.



### 3. Rethink bureaucracy

Tim Bowden, a recent Featured Contributor at GovLoop, argues that the remote work environment exposes the limitations of a highly bureaucratic organization that relies on centralized authority and strict process controls. Such organizations have trouble responding to crises or tackling problems that require fluid thinking.

Bowden cites management expert Josh Bersin, who said effective leaders aim for “distributed control with centralized coordination.” Bersin himself draws on the work of retired Gen. Stanley McChrystal and his “team of teams” paradigm. “We need to distribute authority fast, make sure responsible owners have strong capabilities and experience, and coordinate the response,” Bersin writes.

### 4. Make disruption work for you

Disruption comes with opportunities, according to some organizational experts. The idea is that when everything is topsy-turvy, it’s much easier to make sweeping changes.

In an interview earlier this year, Theresa Szczurek, former CIO of Colorado, referred to a three-stage model of change posited by Kurt Lewin, a social psychologist in the first half of the 20th century. Lewin said that organizations tend to “freeze” in certain patterns, even when those patterns prove unproductive. But when disruption occurs — during a pandemic, for example — those patterns “unfreeze,” making it possible to introduce change.

“You don’t want to waste a good crisis,” Szczurek said.


“If you want change, you need to unfreeze the situation — like melting ice cubes — so that you can align with the positive forces that encourage change and get rid of some of those negative forces that resist it. ”

-Theresa Szczurek, former CIO of Colorado



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# Unstructured Data: Untapped Fuel for Innovation

*An interview with Dallas Nash, Senior Director of Sales, Unstructured Data Solutions, Dell Technologies*

Data is fuel for innovation. It can give agencies incredible insights about everything from their mission wins to how their products and services help the public. Just one of these revelations can produce the spark agencies need for creative, game-changing solutions.

But many agencies do not see the full scope of the large data deposits they are sitting on. Data comes in so many forms that attempting to harness it all can perplex any agency.

One key solution is data management, said Dallas Nash, Senior Director of Sales, Unstructured Data Solutions at Dell Technologies, a technology and information security solutions provider.

Nash shared three ways agencies can craft data management strategies that drive powerful innovation.

## 1. Understand Data Structures

Typically, data comes in two forms: structured and unstructured. Structured data fits a predefined format, such as the rows and columns of a traditional database. Unstructured data does not, often involving video, audio, images or text.

Devices such as smartphones are producing more data than ever and this rapid growth is overwhelming agencies that cannot organize their data cleanly and rapidly, Nash said.

"Storage systems are having an exorbitant amount of pressure put on them because of this data increase," he said. "This data growth is most focused around unstructured data."

## 2. Scrap Data Siloing

At many agencies, data hides in silos established by different teams. Cut off from the entire agency, this information may ultimately benefit no one.

"Stop siloing data," Nash said. "The value to your organization is locked up in that data. Most of the most important data exists on the edge of the network."

Tools such as those that Dell Technologies provides can help agencies get a grip on their unstructured and structured data through data lakes. Data lakes store information in a single raw format, letting agencies access and structure it however they like.

**"We need to be more proactive," Nash said of how agencies use data. "Don't manage your data like it's 1999. Data lakes break down these individual silos."**

## 3. Modernize Data Interpretation

Data lakes are only the first part of strong data management; data analytics are the other piece of the puzzle. Through data analytics, agencies can find, assess and share any patterns they encounter in their information.

"It will help with the customers' understanding of where that data rests," Nash said. "Go to a single, scale-out vendor where you can get all that data into a data lake and run analytics against it."

Over time, data analytics tools shed light on the innovative business ideas agencies might have otherwise missed.

"That's where the rubber really meets the road for some of our customers," Nash said.



## Workforce Innovations

### *People Adjust to Rapid Shifts*

COVID-19 has many government employees working under immense constraints. There's the looming pressure of budget cuts, particularly for state and local workforces, coupled with the reality or threat of furloughs. Add to that public demands for new and existing services, with social distancing requirements prompting the need for more online offerings.

It's thus never been more critical to ensure that government workforces are staffed and skilled to ensure minimal disruption to agency objectives. COVID-19 has challenged agencies to innovate, pivot and scale at an unprecedented speed and to reimagine new ways of working.

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### 1. Prioritize data-driven hiring

NASA is one of a growing number of agencies that increasingly relies on behavioral data to find the most suitable job candidates.

"It is part of our larger effort to do whole-person assessments," said James Illingworth, Personnel Psychologist at NASA. "We're so technical that there's a tendency to focus on just those technical skills."

Understanding a candidate's behavioral traits, commitment to serve, decision-making abilities and empathy doesn't always shine through on traditional job applications. But agencies such as NASA are revising assessments and making data available in real time to make more strategic hiring decisions.

### 2. Maximize temporary rotational opportunities

Following surging demands for medical professionals and critical expertise to support the coronavirus response, OPM expanded its temporary rotational opportunities to match current federal employees with agencies and offices that had immediate needs.

"The COVID-19 Surge Response Program will allow agencies to quickly realign their workforce, so they can better accomplish their mission for the American people," Acting OPM Director Michael Rigas said in March 2020. "Dedicated civil servants will be able to go to one place and apply for a mission-critical position to support the public during this national emergency."





### 3. Form training partnerships

What began as a city reskilling program in San Francisco aimed at redeploying civil servants to work as contact tracers and case investigators evolved into a statewide effort to limit the impacts of COVID-19.

The University of California San Francisco (UCSF) developed the online program and trained 240 people in three weeks. Trainees included city librarians, assessors and attorneys impacted by the COVID-19 lockdown.

In May 2020, the university and the California Department of Public Health joined forces to launch the workforce training and technical assistance program statewide, with the goal of training thousands of individuals in contact tracing, case investigation and administration.

### 4. Streamline hiring for job seekers and agencies

In April 2020, the federal government launched a hiring pilot to attract more customer experience (CX) professionals to its ranks.

It was initially a small use case that widened to include multiple agencies after many shared their challenges in recruiting talent. This work led to the creation of a “CX strategist” position. Using the set criteria, a panel of experts convened to review the best candidates for participating agencies.

The results: More than 800 applicants applied for 30 new positions at more than a dozen agencies. The panel reviewed, interviewed and selected a cohort of CX strategist candidates in six weeks.





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## 3 Aspects of Strong Zero Trust Security

*An interview with James Yeager, Vice President of Public Sector and Healthcare, CrowdStrike*

Cybersecurity is tough for governments to solve as cybercriminals invent new ways to harm agencies daily. Think of ransomware, which blocks access to or threatens to leak the victim's data unless a ransom is paid. In recent years, this malicious software has targeted major cities such as Baltimore — and more attacks are sure to come.

How can agencies become just as innovative about cyber defense as bad actors are about cyber offense? Zero Trust security might be exactly the protection agencies need against attacks that are evolving in sophistication. Zero Trust cybersecurity assumes that every system, user and entity is untrustworthy and does not warrant access to agencies' valuables until proven otherwise.

According to James Yeager, Vice President of Public Sector and Healthcare at CrowdStrike, a leading provider in the cybersecurity space, Zero Trust security is about achieving outcomes rather than implementing projects or tools.

Here, Yeager walked agencies through the three components they need to achieve Zero Trust cybersecurity.

### 1. Enhance Visibility

Complete and total visibility into an agency's resources are the most foundational part of any successful Zero Trust security strategy, Yeager said. Whether it is conventional endpoints such as data, laptops, servers or cloud workloads, agencies must continuously monitor their sensitive assets.

"An organization's ability to get high-fidelity information about the technical footprint of their enterprise is key," Yeager said.

### 2. Manage Identities and Access

Identity and access management (IAM) establishes a framework of policies and technologies for

ensuring the right people have the correct access to the appropriate materials for their jobs. Yeager said IAM is the second part of the journey toward innovative Zero Trust cybersecurity.

"If you lack confidence in the story your tools are telling you about your enterprise, you're going to be challenged with identity and access management," he said.

Consider implementing multi-factor authentication, a security process that forces users to provide two or more pieces of information verifying their identity before they can gain access. By wielding tools such as multi-factor authentication, agencies can become more vigilant about their cybersecurity.

### 3. Put Policies in Place

Defining, implementing and enforcing policies for conditional access to treasured materials is the final stage of healthy Zero Trust cybersecurity, Yeager said.

Look at continuous monitoring, which can give agencies knowledge about every activity on their networks in real time. Using this information, cybersecurity teams can make better decisions about dealing with potential threats.

Cybersecurity platforms, such as CrowdStrike Falcon®, help with implementing the principles required for a successful Zero Trust architecture: continuous monitoring and visibility, IAM and strict policy governance. After that, agencies can customize the tools they need to fit their unique mission needs.

**"There's no singular way to achieve Zero Trust," Yeager said. "But if our security programs are to be successful, we must innovate and start adopting the characteristics most commonly associated with the adversary — speed, agility and adaptability."**

# NextGen Innovators

Each year, GovLoop conducts the NextGen Government Training Summit, a two-day professional development event for public servants. Although past editions physically gathered attendees in Washington, D.C., the 2020 version occurred virtually to reduce risks associated with COVID-19.

Although the circumstances around NexGen 2020 may have shifted, the spotlight still shined on the event's latest Public Service Award winners. Given annually, these prizes recognize public service community members whose dedication, exuberance and intelligence are improving and invigorating government. In August 2020, GovLoop named 12 individuals deserving of Public Service Awards across six categories.

Here are biographies of each winner, the categories they competed in and what achievements distinguished them from their peers. The originality each recipient brings to their responsibilities illustrates multiple kinds of public-sector innovation.

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## Exemplary Leaders

*The Exemplary Leader Award acknowledges government leaders who have demonstrated benevolence, competence, integrity, dedication and commitment to improving and inspiring our communities.*



### Lester Claravall

*Child Labor Program Administrator, Oklahoma Department of Labor*

Claravall is responsible for enforcing child labor laws and educating young people about worker safety throughout Oklahoma's 77 counties. Broadly, Claravall's efforts help young people dealing with workplace abuse, exploitation and endangerment. As the Child Labor Program's only employee, Claravall must also find efficient and effective budget solutions to ensure its continuing success.

"When it comes to protecting the nation's youngest workforce, I just want to do everything can to make sure that those kids are safe," he said. "I love the job, and I just want to do what I can every day to try to make a difference and to save lives."

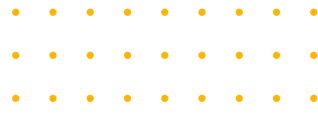


### Venus Eagle

*Product Manager, Environmental Protection Agency*

Eagle says her role as a product manager at EPA's Office of Pesticide Programs ranks as "one of the coolest jobs in the agency." Eagle's division licenses and regulates chemicals, and she takes an innovative approach to managing these substances. Whether she is dealing with chemical registrants or the science community, Eagle also assesses how products might present risks to the environment and human health.

"I knew I wanted to make a difference in protecting the environment and decided that the EPA was a place where I could do it," she said. "When I go to work every day, that makes me proud."



# Innovators of the Year

The Innovator of the Year Award honors government leaders who have identified new opportunities and improved their organization in innovative ways. The recipients have reimaged and improved processes to change norms and drive results.



## Terry Lee II

Talent Acquisition Manager, Georgia Department of Juvenile Justice

Lee’s office handles recruitment, onboarding and offboarding for his entire agency and its 4,500 employees. When Lee was hired, his agency had more than 1,000 vacancies across essential position areas. Six months later, Lee orchestrated a job fair that led to more than 300 direct hires, immediately swinging his agency’s momentum.

“I see firsthand the evolution and change within government,” he said. “When you’re in government, you can see what’s going on, and you can see that government workers are concerned about being fiscally responsible with the tax dollars that we’re assigned. Government workers are concerned about executing quality programming and services for all of our constituents.”

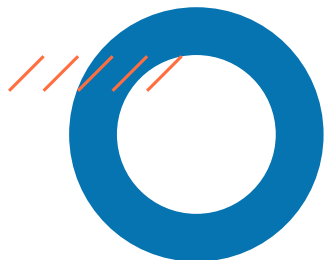


## Col. William Mamourieh

Director of Analysis and Innovation, Air Education and Training Command, A9 Directorate

The command recruits, trains and educates Air Force personnel. Mamourieh’s duties include developing and delivering independent and objective analytical solutions for its various concerns. The command boasts 660,000 workers, so the command studies, evaluations, tests and training acquisitions Mamourieh deals with influence many lives.

“I enjoy giving back to other people, as well as the ability to bridge the gap from the government to the commercial sector and helping those that are not in government on opportunities and ways to work with the government,” said Mamourieh, who formerly worked in the private sector. “It really is a privilege and an honor for me to wear the uniform, and to be associated with these folks who also wear the uniform while serving our great country.”





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# Three Ways to Prepare Yourself for the Unexpected

*An interview with Damien Eversmann, Staff Solutions Architect, Red Hat, Inc.*

The challenge with expecting the unexpected is no one can predict the unknown. In 2020, agencies have learned the hard way that disaster comes in many forms. The COVID-19 pandemic has demonstrated even the best recovery plans do not cover every catastrophe.

No matter how much turbulence surprises the public sector, they can weather it through flexibility, innovation and resilience. The more agile agencies are, the more prepared they are for tomorrow's challenges.

Enterprise automation can boost agencies' elasticity and nimbleness, said Damien Eversmann, Staff Solutions Architect at Red Hat, Inc., an open source software provider.

Eversmann provided three tips for rebounding from COVID-19 using innovation, determination and an open mind.

## 1. Embrace Agility

Ten months in, the coronavirus crisis has exposed many disaster preparations as short-sighted. Agencies did not anticipate a viral infection lingering longer than harmful weather conditions such as hurricanes. For scores of agencies, COVID-19 has revealed how they are only prepared to quickly rebound from setbacks and nothing else.

"Disaster planning is perpetually chasing our tail trying to figure out what the unknowns are," Eversmann said. "We're not going to figure out all the unknowns."

As agencies become more agile, their workers can react to hurdles such as COVID-19 with fewer disruptions to the products and services they deliver. Agencies can grow more agile by analyzing and making decisions about their data quicker and more efficiently.

## 2. Find Silver Linings

Obstacles can be opportunities for growth. According to Eversmann, the unanticipated can jolt agencies into innovation and transformation.

**"Troubled times are when we change, and they are when we change the best," he said.**

Take the shift to remote work that many agencies implemented as COVID-19 spread. While trying, the switch helped many agencies improve the processes and technology involved in working remotely.

"Everything is jumbled up, you might as well reorganize it," Eversmann said.

## 3. Automate Enterprise-wide

Automation performs processes and procedures for people with little to no human help. When applied enterprise-wide, automation can make agencies more efficient, reliable and speedy.

Using automation, agencies can free their workers from chores such as changing users' passwords. Gradually, these employees gain more time to brainstorm solutions to the public's problems.

"Enterprise automation looks at everything from a higher level and asks, 'How can we connect these together?'" Eversmann said.

Enterprise-wide automation not only clears more space for innovation, it makes agencies more agile. Leaning on enterprise automation, agencies can roll with the punches thrown this — or any — year.

"If we're going to put a positive spin on 2020, there are a lot of people with more of an open mind for change," Eversmann said.

## Silent Heroes

*The Silent Hero Award praises public-sector leaders who have operated behind the scenes to lay the foundation for stellar public service results and community change at the local, state, national or international levels.*



### John Arrington

*Branch Chief of Network and Telecom, Labor Department*

Arrington oversees network engineering, which often seamlessly transitions between development and operations to launch and maintain products. Telework ranks among Arrington's top priorities, so he aims to improve his agency's experience with it. Arrington also attempts to redefine his organization's office while boosting productivity. These goals are more critical than ever during the COVID-19 pandemic.

"It is to keep people safe, to enhance people's experience, and to enhance people's jobs and everything else," Arrington said of his contributions. "I feel a sense of pride in providing the backend for that. Public service is a family tradition. I've never not been around government workers."



### Steven McAndrews

*Senior Cybersecurity Policy Analyst, Office of Management and Budget*

Cybersecurity must always be top of mind for agencies as they protect sensitive public data. At OMB, McAndrews plays a key part in crafting federal cybersecurity policies. From technology upgrades to workforce development, process to policy initiatives, McAndrews is involved in every corner of cybersecurity.

"I'm in public service because I've always been drawn to helping others," he said. "I found in the federal government a place where I can use my talents and passions and have a meaningful impact on my country. One of the truly rewarding parts is really getting to work with the agencies to get their input, to craft policies and then help them implement the policies."



## Advocates

*The NextGen Advocate award praises individuals who relentlessly promote their projects and teams to advance their agency's mission. The recipients may also be dedicated to cultivating, mentoring and guiding future leaders in any segment of government.*



### Stephen Buckner

*Assistant Director, Digital Marketing, Marketing and Strategic Communications, Census Bureau*

Buckner communicates information about the bureau's data and programs to the public. Over time, this knowledge enlightens Americans about how to improve their business and personal decisions. During the 2020 Census, Buckner's work rose in stature due to disinformation circulating on digital platforms and social media outlets. Buckner's team works to correct such deceptions and ensure accurate content reaches the public.

"I'm in public service to be part of the solution of making a government not only more accessible, but more efficient for all Americans," Buckner said. "It is to help those that don't necessarily have access to government services and to help every single person in terms of how their local city or neighborhood functions."



### Kim Wittenberg

*Health Scientist Administrator, Agency for Healthcare Research and Quality, Health and Human Services Department*

Wittenberg oversees HHS' contracting on reports about health care topics ranging from research funding distribution to clinical practice guidelines. Besides this task, Wittenberg also works as an Interagency Agreement Coordinator by facilitating collaboration among agencies on various research topics.

Wittenberg additionally launched a program that provides free training seminars to federal employees either in person or virtually. Currently, the program assists about 4,000 federal workers inside and outside HHS with professional development.

"Our goal is to help Americans live longer, healthier lives," Wittenberg said of HHS. "I'm really honored to be a federal employee and be able to serve the public."

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# Unveiling the Second Generation of Cloud

*An interview with Steve Prescott, Executive Program Director Public Sector, Oracle*

For all the success that agencies have had with cloud computing, many experts say that the original clouds did not realize the full potential of cloud computing.

Unquestionably, the first generation (Gen1) of cloud offered many benefits: innovation came from the ability to rapidly spin-up and explore new services; scale came from elasticity; lower costs came from cloud service provider (CSP) “economies of scale” at a level unachievable by agencies’ IT.

Despite this, Gen1 clouds rarely or poorly addressed management and security challenges. The second generation (Gen2) of cloud tackles both problems with automation and groundbreaking security features, said Steve Prescott, Executive Program Director Public Sector at Oracle. Oracle developed a Gen2 cloud which addresses the shortcomings of Gen1 cloud architectures.

Using three lessons, Prescott explained how Gen2 clouds improve upon their predecessors.

## 1. Reduce Complexity

The Gen1 cloud created several unintended consequences. The IT architectures of these clouds were often static, requiring significant investments in energy, money and time to change.

**“First generation clouds often didn’t make it easy to make changes along the way,” Prescott said.**

In comparison to Gen2 clouds, Gen1 clouds required many more skills with much deeper knowledge within those skills. As a result, Gen1 clouds did little to address the proliferation of shadow IT. Shadow IT is any technology used without explicit approval from IT management.

## 2. Redesign Security

Unfortunately, bad actors in the cybersecurity world are growing in number and in skills. This has resulted in a continuous rise in the number and types of attacks. Consequently, Gen2 clouds must adopt fresh tactics to keep their data safe.

Take hypervisors, which host virtual machines (VMs) that emulate physical computer systems. In recent years, hackers have proven they can break through VMs and exploit hypervisors to access the network of virtual environments that are physically linked together.

Gen2 clouds utilize a technique proven popular and effective at the Defense Department (DoD). The DoD physically separates control over its cloud’s administrative functions from the applications and data that run inside the agency’s cloud environment.

“We created our second-generation cloud with a security-first mentality,” said Prescott. “We want to make sure the government has the proper safeguards in place.”

## 3. Augment With Automation

Rapid innovation depends on translating innovative thinking into action. Thankfully, automation is a staple of Gen2 clouds that can create more space for creativity and collaboration by carrying out repetitive tasks with little or no human intervention.

For instance, automating tuning, patching and general administrative functions can greatly reduce workloads for an agency’s IT staff.

“We take the day-to-day drudgery of these activities off the shoulders of systems administrators,” Prescott said.

Overall, Gen2 clouds offer agencies automation and simpler, more secure architectures. At agencies that embrace these clouds, the result is workers having the ability to blaze new trails toward mission success.



# NextGen Innovators



## Courageous Champions

*The Courageous Champion award spotlights public servants who are blazing a path for their generation with courage and determination in local, state, national or international government.*



### Amanda Ames

*Chief Engineer, Louisiana Department of Health*

Ames monitors Louisiana's sewage treatment and the provision of clean drinking water statewide. She has also worked to improve public perception of Louisiana's Safe Drinking Water Program. In five years, Ames has additionally increased staff training and improved morale at the agency. Ames eventually became the agency's Chief Engineer after completing an engineering internship there after graduating from college.

"What we do touches all people of Louisiana, including the people that visit our state," she said. "And so, I feel like I make a difference on a very broad scale. Whenever you can implement a change in government, it's the ultimate reward."



### Robert Nunnery

*Coordination Center Manager, Transportation Security Administration*

Nunnery was one of the first people recruited to TSA following the agency's formation in 2001. Since then, Nunnery has become an Emergency Preparedness Coordinator at TSA's Coordination Center at Dallas/Fort Worth International Airport in Texas. Working at one of the world's largest airports, Nunnery handles incoming communications from the public and other agencies.

Before joining TSA, Nunnery worked at city, county and federal agencies. After a foray into the private sector, Nunnery signed on with TSA and reentered public service.

"President Kennedy once said, 'Ask not what your country can do for you, but what you can do for your country,'" Nunnery said, quoting former President John F. Kennedy when asked what inspires his commitment to government.

## Dedication During COVID-19

*The Dedication During Covid-19 award salutes individuals who have gone above and beyond during the COVID-19 crisis or worked to ensure business continuity and accomplish their agency's mission. Recipients have demonstrated a commitment to improving and inspiring their agencies.*



### Vira Ross

*Registered Nurse, VA, Southern Nevada Healthcare System*

Ross started caring for military veterans in 2012, and she now has direct patient responsibilities as a resident nurse. When not assisting patients, Ross also improves their quality of care and monitors her agency's compliance. Once COVID-19 reached her area, Ross began serving as a staff nurse to assist with a surge in patients.

"I'm in public service because I want to make a difference in the life of veterans," she said. "I want to use my skills to educate veterans, advocate for them, and encourage and empower them to be engaged in their own healthcare. Do the best you can each day and make positive differences in the lives of every person you interact with."



### Theresa Sokol

*Assistant State Epidemiologist, Louisiana Department of Health*

Sokol was inspired to enter public service by her mother, who worked as a nurse supporting critically ill patients. Now based in the agency's Infectious Disease Epidemiologist section, Sokol monitors about 80 infectious diseases, including COVID-19.

No matter the illness, Sokol works with communities, patients and public health partners on education, prevention and control. Amid the COVID-19 pandemic, Sokol and her team are making a difference in fighting the disease.

"I find that the people who dedicate themselves to public service are goal-oriented, hardworking and enjoy being part of a team and working together," she said. "And I'm proud to work alongside them."





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# Building Ubiquitous Communications Into Transit

*An interview with Nathan Wade, Strategic Account Manager, Public Sector, Digi*

In the coming years, handling data for issues such as transportation may look dramatically different for agencies due to the shift from wired to wireless technology in devices such as cell phones.

For example, connected vehicles that collect data from outside sources, such as road-side sensors, navigation systems or other vehicles, are growing in popularity. Autonomous vehicles that drive themselves use even more data and will likely dominate tomorrow's transit networks.

**"The No. 1 requirement for autonomous and connected vehicles is ubiquitous communications," said Nathan Wade, Strategic Account Manager, Public Sector at Digi, an Internet of Things (IoT) company.**

IoT networks contain devices that can collect, exchange and analyze data with one another.

Wade explained three ways agencies can create innovative transit systems using current and emerging communications technology.

## 1. Create Connected Traffic Networks

Transportation networks cover everything from the roadwork to the vehicles. According to Wade, a major difference between connected and autonomous vehicles is the amount of data they need about every facet of transportation.

"Autonomous vehicles would use a considerable amount more data than connected vehicles," he said. "With autonomous vehicles, the idea is to eliminate or reduce the driver's input."

Subsequently, forward-thinking agencies may need IoT networks that touch every aspect of transportation and related topics. Whether it is maps, traffic flows or weather patterns, agencies may need IoT networks capable of sharing and understanding data everywhere.

## 2. Refine Reliability

Effective IoT networks are reliable and connect everything. For example, IoT systems that constantly assess traffic lights help agencies best when they are consistently online and accessible. According to Wade, resilient IoT can help agencies create smart communities where data flows freely and consistently.

"If you don't have 100% uptime, you don't really have 100% connectivity," he said. "The more reliable the information you collect, the more informed the decisions you make will be."

## 3. Overcome Environmental Obstacles

Every community has unique transit qualities — consider the urban canyons present in large cities such as New York City. Urban canyons are man-made corridors composed of densely packed skyscrapers alongside congested roads. In large population areas, agencies will need IoT networks capable of navigating municipal features such as these. Without location data constantly flowing, the potential for collisions involving connected and autonomous vehicles rises.

Fourth-generation (4G) cellular technology may be sufficient for IoT systems today, but fifth-generation (5G) cellular technology will be better suited for autonomous vehicles in the future. 5G technology is faster and boasts more bandwidth than 4G technology.

IoT providers such as Digi can help agencies craft reliable and ubiquitous 4- and 5G networks for their transit needs. The results are transit systems full of connected and autonomous vehicles in any environment.



# NextGen's New Look: Going Virtual for 2020

Like many organizations, COVID-19 disrupted GovLoop's normal operations. Consider [NextGen 2020](#). Like many traditionally in-person events, NextGen switched gears and occurred virtually last August. The experience revealed many truths about innovation that can also guide agencies.

**Here are seven ways your agency can become more innovative:**

## 1. If you build it, they will come

NextGen was among scores of events in 2020 that traded a physical lineup for a digital one. At first glance, such a drastic overhaul may have seemed impossible. A second look, though, suggests public servants must meet the moment they reside in.

In the coming years, agencies shouldn't let the fact they have not tried something stop them from experimenting. For multiple agencies, 2020 offers evidence they can serve both the public and employees in the context that best fits their circumstances. Hundreds of agencies had never conducted events virtually, but they were able to learn how when the opportunity presented itself. Innovation thrives with open minds, and the COVID-19 pandemic inspired unexpected ways to deliver the same beloved content and services to people hungry for them.

## 2. Failure is an option

All too often, agencies are afraid of taking risks that do not pay off. Virtual events are no exception, and many agencies have shunned them for everything from low attendance to technical difficulties.

But anyone who wants an omelet needs to break eggs. During preparations for NextGen, GovLoop recognized technology disruptions were possible. So, our team developed contingencies for handling

such unpredictable moments. While no one could guess how NextGen would go, these preparations smoothed many bumps in the road.

Similarly, agencies attempting to navigate the unknown can steel themselves by planning for surprises. Whether it is technology, processes or peoples' reactions, adaptability can help agencies navigate twists and turns.

## 3. Give people what they want

As the pandemic drags on, fighting COVID-19 hasn't been easy. How do agencies take setbacks such as COVID-19 and make them more tolerable? The answer is perfecting the possible. Virtual events may not seem ideal for every training, but agencies have discovered multiple ways to make them more stimulating for users during the coronavirus pandemic.

After all, videoconferences are now synonymous with social distancing. Many meetings have extra pictures and videos to make them more engaging. Tweaks such as these can make initially uncomfortable situations such as working remotely more tolerable.

## 4. Teamwork makes dreams work

Like it or not, innovation often requires more than one person. Virtualizing NextGen, for example, would have been significantly harder without all hands on deck. All told, conducting NextGen digitally required coordination and teamwork.

Similar collaboration should guide innovation at agencies. To innovate effortlessly, agencies cannot allow their teams to be disconnected from one another. Breaking down internal silos frees agencies to communicate quickly and efficiently about ongoing developments.



Why is collaboration so crucial for innovation? The reality is inventions are only as good as the full range of ideas, opinions and skills involved in crafting them.

## 5. Don't neglect diversity

Across government, diversity and inclusion are gaining traction. Recognizing this, many government community members have taken steps to become more varied and welcoming.

After all, the price of exclusivity and uniformity can be steep. At events such as NextGen, skipping over portions of the government community could leave important opinions unheard. Even worse, long-term conformity can make any organization static and inflexible. To that end, NextGen 2020 aimed for a schedule that reflected the diversity present in every corner of government.

Gradually, agencies that diversify their workforce will better reflect the communities they serve. With public trust in government historically low, diversity and inclusion might be one step for improving ties with the public.

## 6. Take advantage of tools

Digitizing NextGen required several new tools that were not previously involved in staging the summit. For instance, video presentations and user surveys are staples of modern virtual events. Although past versions of NextGen dabbled in these features, none completely relied on them.

Agencies ready for reinvention, then, should take stock of what capabilities are at their disposal. What do these agencies want to do, and what do they need to do it? Frequently, seemingly unlikely goals have simple technology solutions that can enable them.

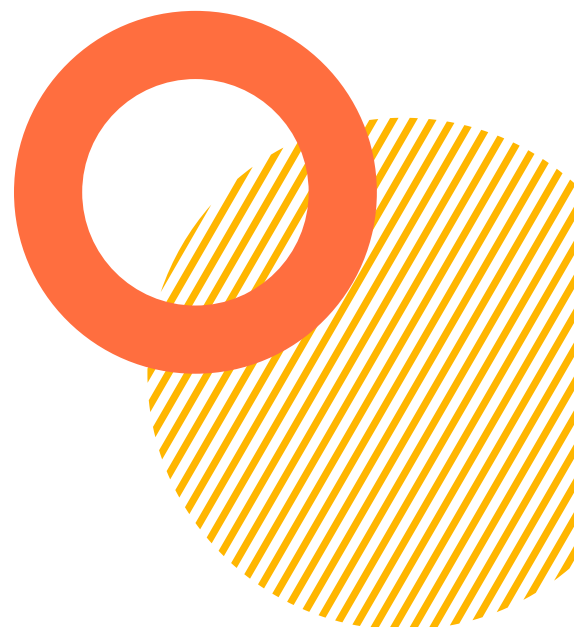
Envision an agency that struggles to quickly process paper applications for its services by hand. Using cloud computing, the agency could rapidly digitize its documents and remove many of its slow, manual processes from the equation.

## 7. Change with the times

There is no denying many agencies have not typically conducted events virtually. In comparison, the private sector has a long record of supporting videoconferences and other digital options. For better or worse, many activities can now occur remotely.

Embracing this paradigm, however, does not mean events cannot take place across multiple mediums. Whether it is NextGen, a corporate convention or an agency conference, different circumstances sometimes require different tactics.

Moving forward, agencies can take advantage of innovation without sacrificing tradition. COVID-19 presents an example of this realization; after all, agencies can host events either physically or virtually in the future. The choice belongs to agencies, and there is no wrong answer if it accomplishes their missions and serves the public.





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# Establishing Safe Zones With Zero Trust

*An interview with Ian Pratt, Global Head of Security, HP, Inc.*

The rise in remote work due to the COVID-19 pandemic is making agencies think about protecting endpoints in new ways.

When endpoints, such as laptops, are brought home, they typically don't benefit from many of the protections provided to them by security tools in the enterprise network, and hence must defend themselves to avoid giving a foothold to attackers.

Enter a more innovative approach to cybersecurity: a zero-trust architecture. Practicing zero trust security, agencies only grant access to networked resources after verifying the user's identity, the device they are using, and evaluating the security posture. Zero trust protects agencies by making access control decisions on a fine-grained and informed basis.

To learn more about implementing zero trust cybersecurity, GovLoop interviewed Ian Pratt, Global Head of Security at HP, Inc., an IT provider.

Pratt shared three ways agencies can apply the principles of zero trust to their endpoint architecture.

## 1. Isolate Risky Activities

Pratt said today's most secure networks use "micro-segmentation" to enable control over which endpoints and services can communicate, preventing breaches from granting cyberattackers access to all areas. "Micro-virtualization," meanwhile, is a similar approach that can be used on the endpoints themselves.

"Each task a user performs – such as opening email attachments – can be performed in a disposable virtual machine (VM) created just for that task," Pratt said. "The VM only exists for the task's lifecycle and has access just to the resources needed to complete the task, so if the task turns out to be

malicious, there's no harm done – nothing to steal, no way for the attacker to move laterally, and no way for the attacker to persist."

"Micro-VMs use modern virtualization capabilities, so they are transparent and don't change the user experience, but they safely contain and mitigate the impact of the user clicking on something bad," he said.

## 2. Protect High-Value Tasks

Zero trust principals can also be used to protect the data and applications that agencies care most about. Micro-virtualization can be used to isolate and protect high-value tasks, even if the underlying machine becomes compromised, or the users or administrators are malicious.

"A zero-trust approach to endpoint architecture enables you to safely maintain operational integrity even in a compromised state" Pratt said. "The security posture of high-value applications can be assured and cryptographically attested."

## 3. Think Proactively

Pratt suggested the biggest benefit of a zero-trust endpoint architecture is the way it shifts agencies from mainly detecting and reacting to breaches, to a more proactive, resilient approach to cyberattacks.

**"Security products in the market today rely on detection. It's inevitable that they all miss things, Pratt said. Application isolation through micro-virtualization enables you to design resilience to attacks, so you are still protected when detection fails."**

Ultimately, attackers are much less likely to breach agencies guarded by zero trust cybersecurity. Over time, these agencies focus more on innovation and strategy than routine cybersecurity.

# Best Practices for Innovation

Technology is a common factor in innovation. Yet agencies cannot obtain innovation simply by flipping a switch. Repeatedly, the mindset behind agencies' attempts at innovation matters as much as the tools they use.

How does innovation take root at agencies? After researching this guide, four major takeaways emerged about how innovation journeys usually unfold for agencies.

First, agencies should set clear goals that directly align with their missions. Second, they should evaluate how their people and processes operate while pursuing those objectives. Third, agencies should consider what technology — if any — might aid the actions involved in their targets. Fourth, agencies should reform their workforces and workflows to suit whatever technologies they adopt.

**This sequence can prime any agency for innovative results. If your agency wants to embark on an innovation journey, here are seven tricks for starting its travels right:**

## 1. Start small

Completely reimagining an entire agency can seem so intimidating it appears impossible. Innovation may require an ambitious size and scope, but that does not mean it should scare agencies off.

One strategy agencies are using more regularly is breaking innovation into manageable chunks. Rather than innovating everything, they focus on lone departments, processes or programs. As a result, the innovations at such agencies are usually cheaper, easier and less time-consuming.

Eventually, agencies that rack up small innovation wins feel more confident about reaching bigger victories. Even better, managing this momentum can help agencies prioritize the outcomes they are seeking en route to permanent alterations.

## 2. Leverage DevSecOps

DevSecOps has long benefitted the private sector, and, at last, agencies are taking notice. Getting developers, IT personnel and security teams into the same room not only elevates cooperation agencywide but also generates higher-quality products and services for the public.

The core of DevSecOps is giving agencies more space to innovate. Developers can take more chances by coding, building, testing and releasing programs quicker and more effortlessly. IT operations, for their part, can make sure the final product thrives once it is out for public consumption. And by including security from the get-go, agencies minimize the risks associated with their experiments.

The more DevSecOps they practice, the nimbler agencies become while approaching innovation.

## 3. Tilt toward continuous training

Innovations do not matter if no one understands them, making the trainings agencies use to demystify them vital to establishing long-term trends.

Continuous training can erase some of the learning curve around novel innovations. By offering employees in-person and virtual classes, agencies can ensure that no one is left behind when implementing unfamiliar technology or methods.

Recall the heaps of agencies that had never extensively used videoconferencing when COVID-19 appeared. The agencies that taught their staff how to embrace this communications style were more prepared for entrenching it in their routines. This lesson is one agencies can apply to any procedure or tool their workers are struggling to comprehend.

#### 4. Look outside government

Agencies are not on their own when it comes to caring about the public. Academia, businesses, nonprofits and others are also invested in improving the public's lives.

Collectively, this outside world can become a fountain of innovation for agencies. Looking beyond themselves and their peers, agencies might see the visionary spark they need.

The COVID-19 moment shows this notion in practice. Agencies could have pursued answers to the coronavirus on their own, but they have brought the financial, health care and intellectual communities into the fold instead. Someday, this diverse range of opinions may help society defeat COVID-19.

#### 5. Anticipate the unintended

Occasionally, the cutting edge can draw blood. When settling new frontiers, agencies should remember their moves might have ripple effects. Countering these surprises is the difference between fantastic and flawed innovation.

Printers were one landmine hidden from agencies during COVID-19's first outbreaks. On switching to remote work, the Small Business Administration (SBA) recognized printing sensitive financial information on paper might not be wise. To cope, the agency amended its remote printing policies for specific exceptions.

Realizations such as these can make or break innovations. Keeping ripple effects in mind, agencies will not be startled when heading in uncharted directions.

#### 6. Nurture talent

Behind every amazing invention is an equally amazing team. When said and done, the agencies that identify and encourage creativity are the most likely innovators.

Visualize an ingenious employee who works hard and cooperates with everyone. When possible, agencies should locate and hire them. And, once they have such employees, agencies should reward all the attributes that made those people attractive in the first place.

In contrast, static, unmotivated and standoffish workers are unlikely to reform. Agencies should keep tabs on the individuals who can accomplish their innovation aims and plan accordingly.

#### 7. Have fun

Public service might be a noble profession, but that does not mean it cannot be entertaining. Innovation can prove exciting, and agencies that harness that enthusiasm will reap better rewards.

Brainstorms, competitions and games are some of the enjoyable ways agencies can make innovation work for them. Even a pleasant icebreaker before a staff meeting can produce exhilarating breakthroughs.

Charts, deadlines and reports will likely always drive agencies' innovation. But adding unorthodox ingredients to the mix — say, including a team normally outside a process — can give agencies innovative insights they were sorely lacking. Plus, the spirit of innovation is never healthier than when agencies act innovatively.



# 25 Ways Governments Innovated Their CX Strategy During COVID-19

For some governments, a crisis is an opportunity for improvement. While business as usual has proven to be impossible, this Forrester report details 25 distinct innovations from 21 countries, demonstrating necessity is the mother of innovation.



Download the full report to see exactly how countries around the world are creatively rethinking how to support individuals and businesses.

**See the 25 innovations from 21 countries**

Read more reports like this:

[A three-step approach to jump starting CX transformation in government](#)

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# Innovating During COVID-19's Second Wave

*An interview with Maria Country, Regional Vice President East/Public Sector, Zendesk, Inc.*

The COVID-19 pandemic has made the customer experience (CX) top of mind for agencies. After all, public services such as health care benefits are growing more critical as communities nationwide battle the coronavirus.

Consequently, managing citizen communications, expectations and safety will be of the utmost importance for agencies in the months ahead. To deliver the most innovative CX possible, agencies are considering cloud-based customer service to ensure citizens get the assistance they need during difficult times.

According to Maria Country, Regional Vice President of East/Public Sector at Zendesk, Software-as-a-Service (SaaS) is the best model for cloud-based customer service because it can deliver software on demand.

Zendesk is helping agencies simultaneously manage public health and remote work with cloud solutions that centralize communication, streamline workflows and analyze trends. Country provided three reasons why cloud-based customer service might aid agencies in the future.

## 1. Streamline Workflows

During emergencies, agencies cannot afford jams in their workflows. Should agencies' workflows stall, citizens might not receive precious public services such as financial aid.

"It is possible to get a proven, secure, enterprise-grade software up and running in weeks, not months, to get ahead of any looming backlogs," Country said of SaaS clouds. "In terms of agility and ease of use, SaaS clouds can generate quick wins that have a substantial impact on your customers, your workforce's productivity and overall agency efficiency."

Cloud environments are flexible and scalable, meaning agencies can meet surging citizen demand during trying circumstances.

## 2. Promote Self-Service

Often, the best way to help constituents is to let them help themselves. Agencies with self-service offerings improve trust with the public while operating quicker and more efficiently.

"A thoughtful support strategy, particularly one rooted in helping constituents help themselves, can mitigate a backlog of requests and thereby reduce constituent frustration during the second wave," Country said of the coronavirus situation. "Simple adjustments to the self-service can free up agents to focus on more complex inquiries."

Agencies with robust self-service options not only free up personnel to resolve more complex matters faster and better but can also devote more talent to innovating. The outcome is win-win for agencies and the public.

## 3. Deliver More Services Digitally

Nowadays, people want agencies to deliver products and services digitally like most private sector companies do. Without these expectations, some constituents are also eager for less in-person encounters so they can practice social distancing more often.

By using SaaS platforms such as those Zendesk provides, agencies can also make the email, forms and social messaging they use to support constituents streamlined through a single platform.

**"The first wave of COVID-19 has shown us how agencies need to invest in shifting away from reactive customer experience to proactively offering digital solutions," Country said.**

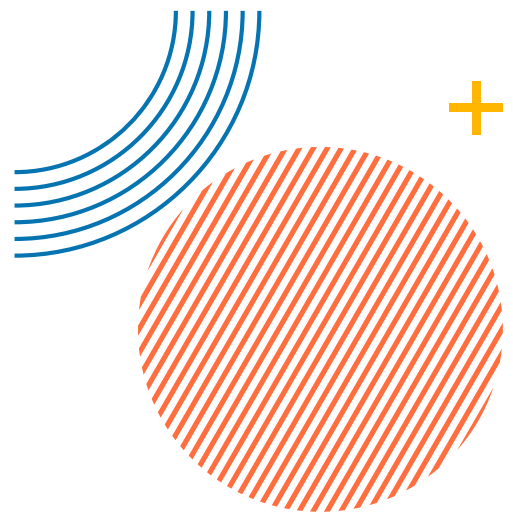


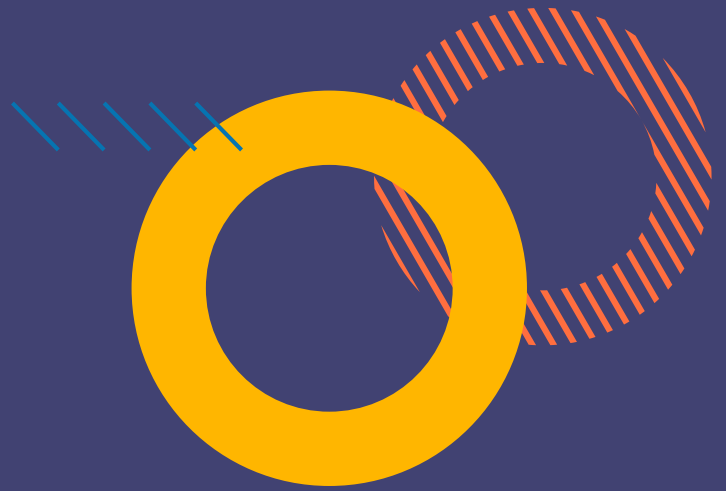
# Conclusion

COVID-19 has undoubtedly cast a dark cloud over 2020, but a silver lining remains for agencies. Discouraging though it may be, this shock to the system has made agencies more innovative.

In less than a year, many agencies took an innovation seemingly out of reach — remote work — and grasped it tightly. As the pendulum swung between office and remote work, agencies made it work through trial and error. As 2020 closes, remote work ranks among many inventions agencies have mastered during this trying year.

The record books may say many things about COVID-19, but one detail that seems likely is 2020 marks where government's people, processes and technology began constantly innovating.





## 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.

For more information about this report, please reach out to [info@govloop.com](mailto:info@govloop.com).

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