Taking Government Cloud Adoption to the Next Level:
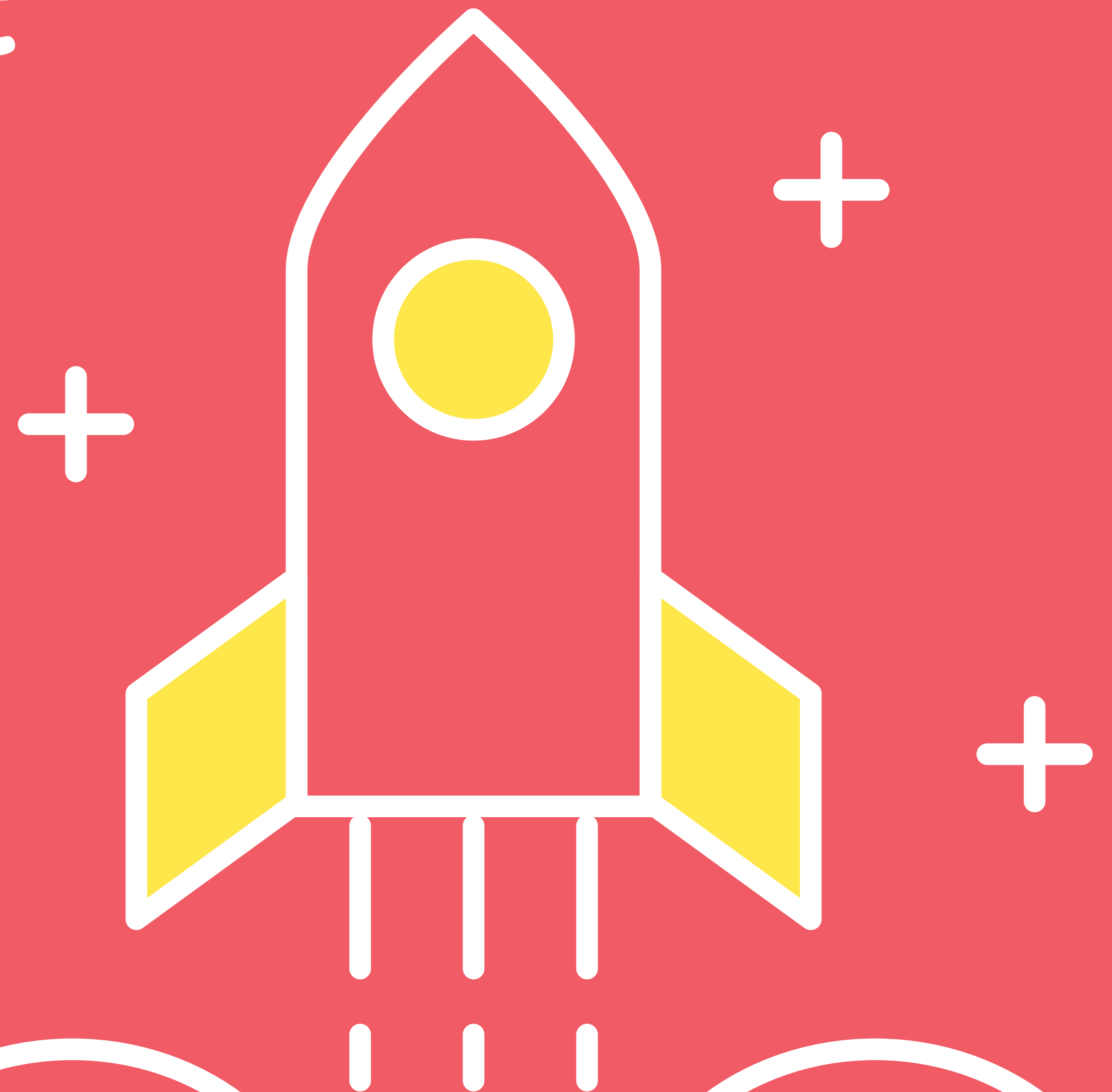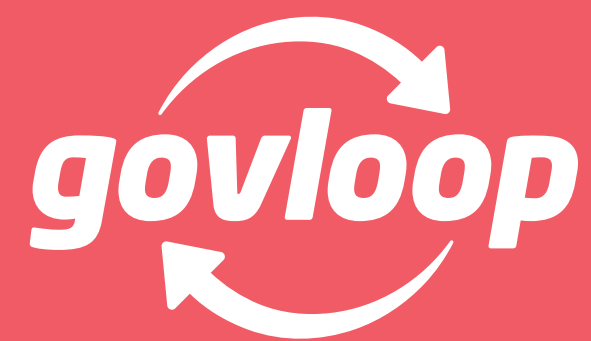## In Brief

Quick tips & facts about cloud adoption from GovLoop

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Executive Summary

With cloud firmly established in government, agencies are looking at taking cloud to the next level. Cloud is supporting other technological advancements, such as big data analytics, machine learning and the Internet of Things, for example. As with any evolution in technology, however, these new use cases bring new challenges.

This GovLoop In Brief can help you understand key issues by talking about ways you to us cloud technology to meet mission need. In this In Brief, we will take a look at seven ways government agencies are evolving in their use of cloud computing – and overcoming the stumbling blocks associated with that.

"I think today the better bet is get to the cloud as quick as you can because you're guaranteed almost to have better security there than you will in any private thing you can do."

-Federal CIO Tony Scott

Cloud Computing:
A Timeline

2010
The General Services Administration opens the Cloud Computing Services Program Management Office

Feb. 2010
The Federal Data Center Consolidation Initiative (FDCCI) is announced to reduce the number of data centers

Dec. 2010
Then-U.S. Chief Information Officer Vivek Kundra issues the Federal Cloud Computing Strategy

Dec. 2011
Then-Federal CIO Steven VanRoekel issues a memo establishing FedRAMP

Jan. 2014
Reps. Darrell Issa (R-Calif.) and Gerry Connolly (D-Va.) launch the Cloud Computing Caucus

Oct. 2014
The National Institute of Standards and Technology issues the final version of the U.S. Government Cloud Computing Technology Roadmap

2015
To help make cloud technologies easier to buy, GSA adds cloud to its Schedule 70

Aug. 2016
The Office of Management & Budget issues a memo establishing the Data Center Optimization Initiative to supersede FDCCI

2010   2011   2014   2015   2016

Cloud as a Mission Plan

Agency officials are realizing that cloud is not just the IT department's responsibility. Now, agency divisions and employees at all levels are joining the conversation to collaborate on ways cloud computing can help meet missions.

Whether it's employees gaining access to telework or a complete revamp of how an agency operates, cloud now touches everything. One place that's especially evident is in agencies' business offices, where officials are implementing cloud technology to ensure that services are being delivered so that the use of cloud meets the mission and business need first.
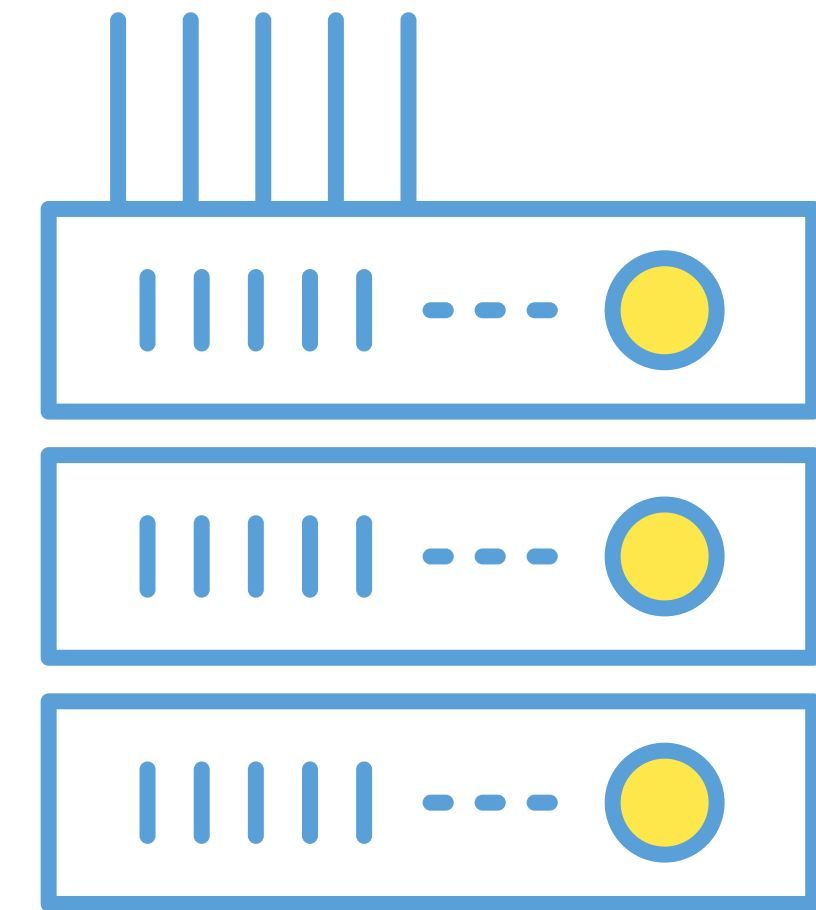
Tip: A business case analysis is a crucial step in the decision-making process when evaluating cloud readiness. A solid analysis includes an executive summary introducing the strategy, an overview focusing on the reasoning for the strategy, assumptions and constraints, a list of the applications under consideration for migration and a concept of operations.

Cloud, Big Data & Machine Learning

Individually, these three technologies have been revolutionizing the IT landscape, enabling agencies to provide more services faster and at lower costs. But they also work well together – and the whole is greater than the sum of its parts.

Without cloud's scalability, storing and analyzing vast amounts of data would be next to impossible. Machine learning, or artificial intelligence, draws on both technologies to fuel yet another growing field: predictive analytics.

Tip: Know that you can't plug in a new technology and immediately start making forecasts. You need a foundation of historical data that algorithms can study and learn from to make predictions.

FedRAMP, Security & the Cloud

Security tops IT shops' list of cloud concerns, so government officials decided to make buying secure cloud services easier by putting them through a rigid vetting process before agencies procure them.

FedRAMP's goal is to make it easier for federal agencies to procure vetted, trusted cloud solutions from third-party vendors. In short, it takes much of the guess- and legwork away from already overstretched government workers. In 2016, FedRAMP released additions: High Baseline Requirements to help agencies use cloud services for their most critical data, and FedRAMP Accelerated to reduce authorization wait time from six to 12 months to three to six.

Tip: To initiate a FedRAMP authorization, take inventory of all your cloud services and create effective cloud computing contracts. Update contractual requirements and determine the path each cloud system will take in order to become FedRAMP-authorized.

Different Cloud Models for Different Workloads

#4

You wouldn't wear a pair of stilettos to run a marathon, right? Cloud works the same way. Agencies need to find the model that best fits their workloads because it might not be the same one for every need.

Agencies are turning more frequently to hiring more than one vendor to provide various cloud services. One reason for this is to regain some of the control they feel they lose after migrating to the cloud, and it allows them to mix and match the best-of-breed services from different cloud providers to create the most suitable solution.

Tip: Identify your specific needs – public, private or hybrid cloud environment, for example – and determine which providers best meet each need.

Contracting With Multiple Vendors

#5

One size doesn't fit all. Set clear service-level agreements and see how they match up with what providers offer. This helps avoid vendor lock-in and can be a fail-safe if things don't work out with one.

Using multiple cloud environments for various workloads has several benefits, including driving better value and flexibility, providing redundancy and avoiding vendor lock-in. Of course, there are challenges, too, such as integrating those different clouds and tracking costs and billing in pay-per-use setups.
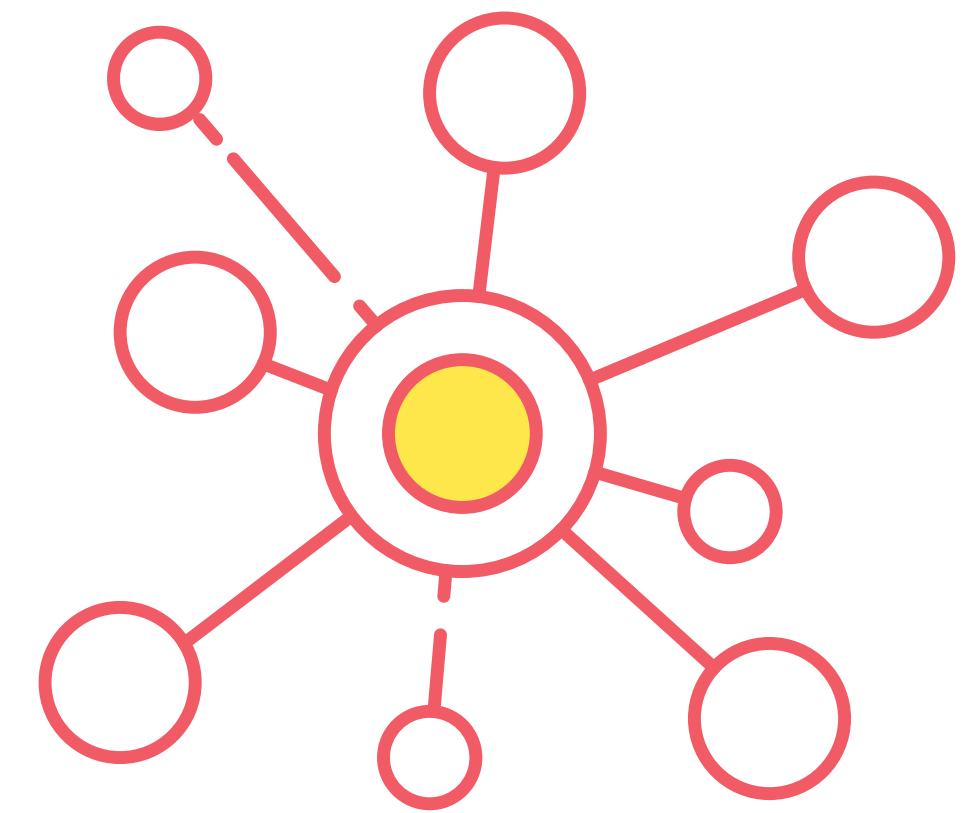
Tip: Create clear service-level agreements that set attainable and measureable requirements for cloud providers – and have an exit plan if the vendor doesn't meet them.

Expansion of as-a-Service Offerings

#6

Cloud is enabling more aaS offerings, which in turn means faster development, fewer barriers to use and more efficient operations for government agencies.

As more offerings become available as-a-service, or via the internet, the cloud's role also grows. More aaS offerings mean faster development, fewer obstacles to implementation and simplified, less costly operations, making cloud even more impossible for agencies to ignore.
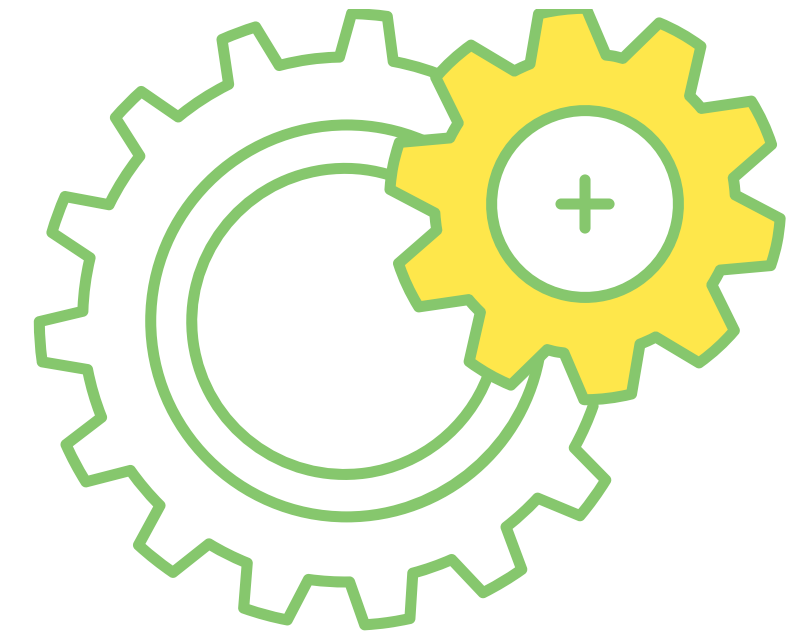
Tip: Determine and communicate your as-a-service strategy, which should include information on what processes will go to the cloud, in what time frame and order and what characteristics should be streamlined across adopted solutions.

Tech to Watch

Containers-as-a-service and serverless computing are emerging as the next cloud-based technology to make IT managers' jobs easier and more effective. By taking more off IT managers' plates, these technologies free them to focus on mission-critical tasks.

Although agencies are starting to see the value of containers – the Agriculture Department's new website is based on them, along with about 15 other public-facing websites – the as-a-service part is still emerging.

Tip: For CaaS, establish a work plan between the development and operations teams so that applications can be built and run anywhere, and define and set up your containers through your cloud vendor's container service. For FaaS, consider how many applications are cloud-compatible because FaaS might be a better complement to existing delivery models than a replacement.

Conclusion

No matter what approach you take to get the most out of what cloud has to offer now and in the future, the one certainty is cloud can't be ignored. As cloud computing matures to enable additional use cases, government must remember: a new wave of technology stands at the ready to take advantage of cloud's benefits to bring about even greater modernization initiatives, and it's up to agencies to pursue it.

Thank you to Genesys for their support of this valuable resource for public sector professionals.