Forecasting Cloud’s Future

Conversations with Federal, State, and Local Technology Leaders on Cloud-Driven Digital Transformation
We’ve reached a critical juncture in our cultural lexicon. The term “cloud” doesn’t just refer to those fluffy white things in the sky anymore; it’s also increasingly recognized as the future of database storage, application hosting, and computing capabilities.

This mentality, already well-established within the private sector, is catching fire across government. The public sector is racing to modernize its approach to technology, and in order to explore how organizations are harnessing cloud computing solutions, Government Business Council (GBC) interviewed technology leaders from federal, state, and local government on the benefits, challenges, and potential best practices associated with cloud adoption. Together, their perspectives offer an essential glimpse into cloud’s present and future impact on mission effectiveness, citizen engagement, and beyond.

**Big Changes in the Small Business Administration**

Chief Information Officer (CIO) Maria Roat may have just onboarded at the U.S. Small Business Administration (SBA) in October 2016, but she’s already knee-deep in spearheading the agency’s cloud migration effort. Roat’s decision to switch over to the cloud was actually catalyzed by what happened the week before she arrived: SBA’s data center was flooded following a storm, prompting the agency to conduct its first full-scale inventory of its existing data infrastructure.

“We dug in and really got a sense of what we have,” says Roat, “and in the end, I turned to my team and said, ‘We’re getting out of the data center business in this building.’”

Since then, the agency has shut down a hundred of its servers, with more scheduled in the coming months. Despite her far-reaching vision, Roat is taking a methodical, measured approach to carrying out the transition: “We’re not doing any sort of lift-and-shift; we’re going to modernize our platforms before we move. I don’t want to put old applications into the cloud.” Once migration begins, Roat expects to start seeing tangible benefits — including backup capabilities, automated upgrades, and new dev-test environments — fairly quickly. “And that’s all in the short term,” she adds.

In the long term, Roat is expecting even greater outcomes. “The cost factor, for me, is a big deal,” she says. “Shifting from a capex to opex model, not having to pay for hardware all the time, not having to pay for software upgrades, cutting down on labor requirements — I’m already seeing its effect in the work we’re doing in our inventory.” There’s also the potential impact on citizen experience: “For our customers — we work with small businesses all over the U.S. — this common platform means unified communications, greater accessibility, being able to engage anytime and anyplace.”

Roat maintains that being in the cloud can bolster security — a perspective that’s informed by her previous role as Federal Risk and Authorization Management Program (FedRAMP) Director. “I’ve been working in this space for four years now,” she says, “and I’ve met with all the major cloud providers —
understand their architectures and security footprints. They’re much better at providing security in their environments than the federal government is.” Roat’s stance on cloud’s security advantages is echoed by many across the federal government: Jennifer Kron, Deputy CIO of the U.S. Intelligence Community (IC), notes, “Cloud can be an enabler of security. We’ve long said the cloud environment can be seen as secure as or more secure than the traditional environment if it’s properly managed and designed.” Jason Hess, the National Geospatial-Intelligence Agency’s Chief of Cloud Security, similarly notes that the IC’s shared cloud environment reduces infrastructure complexity, prompting more “consistent security across the board.”

Of course, any cultural shift is accompanied by a degree of internal resistance — Roat speaks of challenges with change management and organizational buy-in — but at the end of the day, SBA’s jump to the cloud is happening. The key, she says, is to “be smart about it — put the operational pieces in place for managing the environments, and report back to the customers. Make a plan...and then just go and do it.”

**Pushing the Envelope in Hawaii**

According to Chief Innovation Officer Todd Nacapuy, Hawaii’s present status as a cloud-first government is borne largely out of necessity.

“We’re geographically isolated,” Nacapuy explains, “and we’re also competing against entities like the Department of Defense for skilled IT workers. This makes it very hard for us to attract talent.” These workforce gaps are anathema to large-scale technology projects; hence, the state has turned to a less labor-intensive solution: “What we’ve found is that it’s way more cost-effective for us to host applications in the cloud — it frees up our employees to focus on higher-value initiatives.”

Thanks to cloud, Hawaii has been able to successfully embark on several transformative IT initiatives. This includes its eSign service, which launched in October 2015. “The state never allowed electronic signatures before, and we wanted to find a hosted solution for that,” says Nacapuy. “Being able to do this via cloud provider has really changed the game for us. Our elected officials don’t have to be in the office in order to manually sign something; they’re able to sign on their phone, on any device they choose — and it works seamlessly.” As of April 2017, the eSign service has processed approximately 150,000 electronic transactions — and counting.

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Equally ambitious projects lie on the horizon. Hawaii is preparing to roll out Platform as a Service (PaaS) to its citizenry, meaning that anything constituent-facing across all departments will be launched on the PaaS. According to Nacapuy, this is a game changer for anyone seeking to do business with the state: “Right now, department backends aren’t connected, so if you want to sign up for a vocational license and then get a permit, you have to deal with two separate systems with two different logins.” The PaaS solution will merge these siloed processes into a common experience, radically streamlining customer service.

That’s not to say that cloud doesn’t come with its own
host of challenges. Hawaii’s physical distance from the contiguous U.S. makes latency a consistent problem; there are also the unforeseen kinks that crop up with any new solution. Nacapuy brings up the state’s geofencing service as an example, which has some end users squaring off with the system’s well-intentioned safety protocol.

“If someone logs in from Honolulu, there’s no way they can be logging in from somewhere in the U.S. mainland in the next thirty minutes,” he says, “so the system will block them.” But here’s what’s actually happening in this scenario: the user logs in at the office, then goes to another meeting thirty minutes away, and from there logs into a MiFi device that has an IP address based in, say, California — an action which then promptly gets them locked out. “So we’re running into a lot of these situations,” says Nacapuy, “where some of the features we’re leveraging aren’t quite production ready.”

Still, he points out, such growing pains are to be expected with regard to Hawaii’s shifting IT landscape. “You’re not going to hit these issues unless you’re really testing the limits and trying to take advantage of all the technologies offered,” Nacapuy asserts. “That’s going to happen as we keep pushing the envelope on what the platform can do.”

**Revolutionizing Arlington with Cloud**

Home to a huge population of federal employees and contractors, Virginia’s Arlington County is essentially required to reside at the bleeding edge of technology — and its cloud-first philosophy is part and parcel of this future-ready mindset.

Since its adoption of a cloud-based enterprise resource planning tool back in 2004, Arlington hasn’t looked back — and according to CIO Jack Belcher, this is due to the multitude of advantages offered by cloud technologies. First, the cloud’s subscription model is attractive from a budgetary perspective: rather than having to continuously justify opex and capex expenses year by year, the department needs only to justify the initial cloud investment decision. “It’s removed a lot of complexity from the budget process,” says Belcher. “You either pay for the service, or you lose it.”

The sheer scope of resources cloud providers have at their disposal also serves as a major selling point. Belcher points out that technical issues will always be inevitable, regardless of whether you’re relying on an on-premise solution or an external vendor: “The difference is that when we experience a problem, there are maybe one or two staff members who can address it. The provider has a thousand engineers who are on it within seconds. You can’t replicate that.”

Resource constraints are often identified as one of government’s chief barriers with regard to innovation, but by leveraging cloud, Belcher suggests, organizations can have their cake and eat it, too: “We don’t have the resources to make every available software update, so if it were just up to us, we would have to prioritize implementing mandated software.”

— Jack Belcher, Arlington County CIO

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before making any of the other upgrades we’d like. As a result, what frequently ends up happening is that organizations defer updates to the point where they’re just falling further and further behind.” With cloud solutions, Belcher says, that’s no longer an issue — providers automatically update and refresh products, leaving government employees free to tackle their work with streamlined tools.

Belcher notes that cloud’s role in enhancing employee productivity and collaboration has been “exceptional.” The creation of a virtual work environment has helped propel connectivity, continuity of operations, and flexibility to previously unachievable levels — and, Belcher adds, “We’re barely scratching the surface there.”

It is cloud’s contribution to citizen engagement, however, that may hold the most exciting possibilities for the future. Belcher believes that there’s a digital revolution taking place: “The way we work, the way we interact with one another, the way we seek out services — that’s all changing right beneath our feet. You see it every day in the commercial sector, where traditional business models are being uprooted. People are at the point where they want to see the same thing happening across government.”

Cloud, says Belcher, is very much a part of this revolution. “We’re experimenting with how cloud-based voice activation technologies can transform service delivery, we’re streaming board meetings and commission meetings — whether it’s about where we’re putting a new building or what’s going on with immigration policies, citizens can take part in the conversation.”

This could never have happened in the past, Belcher notes, but it’s happening now — and this is just the beginning: “You consider the potential, and it keeps going, going, going...until finally, you find yourself headed in directions you never thought were possible.”

Notes from an Industry Expert

According to Kevin Paschuck, Senior Vice President & Chief Operating Officer of Salesforce’s Public Sector and Aerospace Industries, many government organizations are running into a “digital dilemma.” “There’s a widening gap between where organizations are forced to spend their time — in legacy systems — and where they want to spend their time — in agile cloud solutions,” he observes.

This divide, says Paschuck, is becoming increasingly unsustainable. First, there’s the enormous cost of managing and attempting to integrate hundreds of applications running on different software and hardware. There’s also the changing face of citizen expectations: “In this digital age, everyone and everything is being connected, and the convergence of cloud, social, mobile, and data science is transforming how businesses can connect with their customers. Every organization needs to put their customers at the center of their business.”

By offloading IT maintenance and operations to the cloud, governments can focus more of their limited resources on delivering value to citizens and ensuring mission success. However, he cautions, organizations need to carefully consider their selection criteria before embarking on any cloud initiative — and this means choosing platforms that are innovative, open, fast, easy, and trusted. These elements, Paschuck maintains, are key to ushering in next-generation service delivery.

“From online banking to on-demand transportation, citizens enjoy technology-driven conveniences in every aspect of their lives,” he says. “They expect similar easy-to-use, transparent, and frictionless experiences when working with their governments — and cloud can help them get there.”
Research Methodology
GBC and Salesforce launched a qualitative research campaign in March 2017. From March 27, 2017 to March 30, 2017, GBC conducted 15- to 20-minute interviews with federal, state, and local government technology leaders on topics such as organizations’ cloud initiatives, adoption benefits and challenges, and implementation processes. The list of featured interviewees is as follows:

Maria Roat — Chief Information Officer, Small Business Administration

Todd Nacapuy — Chief Innovation Officer, Hawaii Office of Enterprise Technology Services

Jack Belcher — Chief Information Officer, Arlington County Department of Technology Services

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