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PANEL OF EXPERTS



Ron Bewtra,
Chief Technology
Officer, Department of
Justice



David Bottom,
Chief Information
Officer, Securities and
Exchange
Commission



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Grandt-Nesher,**
Director, Infrastructure
Optimization, Centers
of Excellence,
Technology
Transformation
Services, General
Services
Administration



Steve Harris,
Senior Vice President
& General Manager,
Public Sector, Dell
Technologies



Edward Mays,
Executive Director,
Enterprise Data
Management &
Engineering
Directorate, OIT, U.S.
Customs and Border
Protection



Pritha Mehra,
Vice President,
Information
Technology, United
States Postal Service



Brian Merrick,
Director, Cloud
Program Management
Office, Department of
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Bill Rowan,
Vice President,
Federal Sales,
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Chezian Sivagnanam,
Chief Enterprise
Architect, National
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Maturing the Cloud Smart approach to IT modernization

BY JASON MILLER

To understand just how far agencies have come over the last nearly 10 years with moving to the cloud, it's not about numbers or savings or even governance. It's about how agencies are impacting mission by understanding what belongs in the cloud, what should stay on-premise and how the hybrid environment works best for the agency.

And there may be no better examples of this maturity than the U.S. Postal Service and the State Department.

With tens of thousands of employees spread across the nation and the world, both agencies are taking approaches that puts the needs of the business first and created a set of standards to better control cloud creep and secure data.

Pritha Mehra, the vice president of IT at USPS, said decisions around IT modernization and cloud migrations are driven by a specific architecture framework.



"We do a complete overview of everything, the business objectives, the data flows, the entire architecture is laid out. When you do this assessments, you have a strong guidance of what is going to the cloud, what is going to the edge and what will stay on premise," Mehra said during a panel discussion sponsored by VMware and Dell Technologies. "We tend to engage in sandbox approaches. There are many things that come out with cloud like hidden costs. We wanted our entire IT cloud group to understand what the impacts would be both from the business value and from the promises that cloud offers in the way of scalability, elasticity and more."

Mehra said this architecture-focused approach through large sand box pilots becomes more important as USPS rolls out more online services, which become more popular. For instance, the Postal Service ran a sand box pilot for the Informed Delivery application, where users can see pictures of their mail every day, and now has more than 26 million users.

She said one big goal of using the sand box approach is defining what the right architecture is for the applications, whether it's managed kubernetes or a more traditional software-as-a-service approach.

The State Department is on a similar journey as the Postal Service, but instead of doing large pilots, it is creating a set of standard platforms that mission areas can build applications on top of, and also provide back-office common services.

Business side driving priorities

Brian Merrick, the director of State's cloud program management office, said the agency is focused on prioritizing business needs of the more than 110,000 users around the world.

"In order to really be effective in meeting those IT needs, we've allowed the business side to drive the priorities and the movement to certain tool sets and business capabilities that we're trying to enable with the cloud. So instead of trying to be prescriptive about which particular application workloads end up in which environment, what we're trying to do is provide a multitude of multi-cloud environments with access to multiple platforms. We are also including enterprise license agreements, and we also have the same connective tissue for these different pieces," Merrick said. "In regards to access management, we have the same access role capabilities to support internal and external users and the same security settings and the same data management procedures. So by doing that, we're allowing our business users to choose the right platform to best meet their business requirement, while still understanding that there are going to be things beyond just a technical that will impact decisions."

Those non-technical issues were lost on many agencies when the Office of Management and Budget first introduced the cloud first policy in 2010. But with the introduction of the cloud smart policy in 2019, OMB is encouraging agencies to take a broader view of IT modernization strategies.



Bill Rowan, the vice president of federal sales at VMware, said the paths that USPS, State and many other agencies are doing down are part of the maturity of cloud computing across not just the public sector, but the private sector too.

He said the data center optimization effort helped agencies begin to understand both the benefits and the potential of shifting applications to the cloud.

"There's a lot of applications out there that are now helping clients focus on where does the application really belong, and how often are we revisiting that application to ensure that the decision we made today may not necessarily be the right looking decision in 6 months or 12 months down the line? Maybe want to shift it back on-premise, maybe we want to shift it to another cloud provider, so it's kind of an ongoing iterative process as we learn more and more about how the application people interface with the application, how the optics are growing," Rowan said.

Cloud two-step: Lift-and-shift, then optimize

That iterative process that Rowan referred to is something the Justice Department has experienced.

Ron Bewtra, the chief technology officer at Justice, said his agency closed down dozens of data centers and then lifted-and-shifted a lot of applications to the cloud.

"There are some big tenants that we have to have. We have to be thinking about the full life cycle when

you move in to think about what we're optimizing to; whether it should move into a cloud and on-premise data center or a hybrid approach. And that includes what is the final disposition of the system and the data so that you can incorporate and think about strategic long term cost," he said. "With the diversity of approaches, there's going to be a lot of different threads that we're going to deal with everything from do you want the computing at the edge? Do you want it in the cloud? What data has to be on-premise? With what we're dealing with today, especially with what you're hearing about the workforce, a lot of this comes down to allowing the missions with the right structure to make the best decisions for the mission. It's evolving all the time. Sometimes it's going to be in the cloud, sometimes it is going to be on-premise."

Those decisions of where applications should reside become more complicated as you add in factors like where the employees have to do their jobs or the interaction between citizens and the agency and, of course, the sensitivity of the data.

These are among the drivers leading agencies down a specific path.

Edward Mays, the executive director for Enterprise Data Management and Engineering Directorate in the Office of IT at U.S. Customs and Border Protection in the Homeland Security Department, said his agency has more than 20 petabytes of data on-premise, runs 9,000 virtual machines and handles billions of transactions a day.



Mays said supporting all the trade and travel means understanding the best approach to modernization through a portfolio rationalization effort.

"We've done an analysis of all of our applications with recommendations of which cloud environment they should go to based on the business perspective, based on an architectural perspective, and that includes a network analysis that's required," he said. "We're doing a lot of change in terms of pushing bandwidth to the edge that our customers, especially in some of the bandwidth challenged areas, have better access than they've ever had previously."

CBP is planning to move further into the cloud through a new contract vehicle. Mays said the Enterprise Cloud and Integration Services contract (ECIS) will provide a hybrid-cloud approach with a specific focus on moving toward an "infrastructure-as-code" environment.

CBP released the draft solicitation in April that seeks a vendor to manage their current multi-cloud environment in a more standard, consistent and through an as-a-service model. Mays said the final solicitation should come out in the fall.

Data drives cloud decisions

The Securities and Exchange Commission is facing a similar but different kind of challenge with moving to the cloud than CBP. While the SEC manages a lot of sensitive data, it's done in a much more controlled and consistent environment as opposed to CBP, which collects data at the edge.

David Bottom, the SEC CIO, said the data is driving his agency's cloud decisions.

"The trust there is both in terms of the sensitivity of the data that companies and the public and trusted that with the SEC, and the fact that we're also regulating companies in the financial sector," he said. "What I found there is the data is really the first consideration in terms of what type of environments, whether it's on-premise or in a managed service somewhere."

Chezian Sivagnanam, the chief enterprise architect at the National Science Foundation, said the move to the cloud has given researchers and other agency partners a standard experience.

He said NSF is using the hybrid cloud model, but wants to move toward a software-as-a-service environment.

"We're talking about moving services seamlessly from one provider to another, and also, when you're running a service with provider A, you want to enable an intelligence plug in from provider B so you want this highly seamless environment," Sivagnanam said. "As you set up an architecture to migrate your services in this environment, you definitely need to understand that this may be an infrastructure service today, but there could be another provider who was offering it as a service. So how do I migrate my data? We just need to think comprehensively and build a long term strategy vision and a big picture is very critical."



Steve Harris, senior vice president and general manager for Federal, Dell EMC, said for many agencies as they align their business and IT needs, they have to focus on providing an agile, cloud agnostic, secure platform.

“The desire is to fix what’s broken and I think that’s a primary catalyst to move workloads off premise,” Harris said. “To look at a secure, cost efficient repatriation strategy is a conversation we are having an awful lot. It has to do with the platform you are using to build software. It has to do with the tools you are using to create micro-segmentation, deliver on zero trust attributes to your IT environment, and with legacy IT have a long ways to deliver on best practices on those things.”

He added agencies have started to move away from moving applications to the cloud just because they can, and are better at understanding the long-term goals of the mission and how to modernize around those objectives.

Acquisition as the common thread


Adam Grandt, the infrastructure optimization lead for the IT modernization Centers of Excellence initiative at the General Services Administration, said there is a common thread that runs through all of these cloud migration and modernization efforts—acquisition.

He said the way agencies buy cloud and other enterprise services need to change to an as-a-service model.

“When you get to the point where you can start offering artificial intelligence or machine-learning-as-a-service for the rest to the organization,” Grandt said. “Then you get to the point where the business lines can actually direct the product side and you start creating that separation. The products are managed, controlled and pushed by the business line and our job as technologists is fulfillment by making the tools that they should be using as a service.”

He said it’s also incumbent on the CIO shop to make sure the business side knows what technology tools and platforms are available to solve their challenges. It’s a matter of developing and socializing the solutions.

VMware’s Rowan said the progress agencies are making in understanding the role of the cloud, in determining the value of on-premise versus commercial cloud versus government cloud services and the ability to secure their data is accelerating.

“We’re both learning from each other’s experience and taking those savings and dropping them back in to making us more agile,” he said. “As we see more and more applications developed in this new dev/ops perspective with containers that’s going to become even more important because some of the ability in the ways we manage containers, especially in Kubernetes, which supports N-plus-on type of environment, that constant cadence is going to be even more critical to ensure the infrastructure is the same across the board.” 

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