

EXPERT EDITION

DIGITAL IT MODERNIZATION

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There is no recipe for digital modernization. What works for one agency may not work for another. And that is at the heart of why the path toward modernized services and technology infrastructure is wrought with challenges, failures and gaping pot holes that agencies, and really most organizations, fall in time and again.

The one common thread that cuts through successful projects seems to be leadership.

As Alex Pandel, a design and product strategist at the General Services Administration's 18F organization, found out, bringing mission and technology together under a strong leader provides for a successful outcome.

This e-book highlights Pandel's finding in a report from 18F as well as other examples of agency digital transformations.

Each of these use cases reinforce certain leadership truths about what it takes to deliver digital services.

At the Small Business Administration, Guy Cavallo, the agency's deputy chief information officer, said modernization has been a long journey, but the payoff came during the recent coronavirus pandemic.

The other common thread that emerged during these e-book interviews is the understanding of the technology and what it can and can't do.

Allen Hill, the General Services Administration's acting deputy assistant commissioner for category management, said networks that are agile and can adjust to the mission needs are key pieces to the digital transformation puzzle.

This is why there is a growing demand for software-defined wide area network (SD-WAN) capabilities to underpin modernization efforts.

The end of the path of the digital transformation journey is to uncomplicate systems, data and services so citizens are served and missions flourish.

Jason Miller
Executive Editor
Federal News Network



Creating a 'safe space' for trying new modernization techniques

BY PETER MUSURLIAN

Government agencies, some more aggressively than others, are looking for ways to modernize their digital practices and make them stick.

Alex Pandel, design and product strategist at the General Services Administration's 18F organization, led a team which investigated what leads to positive and long-term modern digital practices within a government entity beyond a single innovation project.

"A diverse perspective" is very useful," Pandel told Federal News Network Executive Editor Jason Miller.

She said that while working on the report, it was interesting to hear the perspectives of all levels of workers and management. Although not conflicting, from the ground level to the leadership level, things are viewed with different eyes.

"At the end of the day, there's no better motivation to try a new approach or think creatively about a problem than actually having to witness someone ... struggling with that problem,"

— ALEX PANDEL, DESIGN AND PRODUCT STRATEGIST AT THE GENERAL SERVICES ADMINISTRATION

"It definitely did yield some different perspectives, but they kind of reinforced each other in a way that was really natural," she said on *Federal Monthly Insights – Digital IT Modernization*.

She said one person is not going to transform an agency.

"It takes multiple levels and multiple folks working together," Pandel said.

The goal of the research was to be precise, specific and produce a product that could be "actionable." They also wanted people to know what the 18F team meant by "digital transformation."

"We also wanted to make sure we grounded our findings in specific examples, rather than just ending things with sweeping generalizations," she said.

The end product of 18F's research was a report on "The Best Practices in Digital Transformation."

Pandel said a few things stood out. First, when teams have extreme technical debt or infrastructure debt, that makes it impossible for teams to iterate rapidly. Next, there were challenges to articulate the benefits and value of transformation and make it concrete so you continue to invest in it.

The "hierarchy of government" can make it challenging to have empowered teams, which can make project-level decisions without having to run it up the leadership chain. Pandel also said failing to connect with the end users "is a really big deal."

"At the end of the day, there's no better motivation to try a new approach or think creatively about a problem than actually having to witness someone ... struggling with that problem," she said.

"The agencies that we worked with, who have been the most successful, after our engagement has ended, are the ones where they really had a strong product leader inside the government ...who was running the show and calling the shots and how the product evolved..."

— ALEX PANDEL, DESIGN AND PRODUCT STRATEGIST AT THE GENERAL SERVICES ADMINISTRATION

GSA

The work of transformation is time-consuming and it's good to have direct feedback. Pandel added that watching users interact with a service that makes tasks easier is especially motivating, and that it's important to build long-term, cross-functional teams.

"Traditionally in government, different functions are often

kind of siloed across an agency. The policy folks work separately from IT folks, who work separately from the procurement folks and then the vendors are off in a different part of the agency," Pandel said. "And we've seen it time and time again, how important it is to actually bring all of these diverse perspectives together to work side-by-side – not just like at a meeting here or there – but like actually as one team, day-to-day, from the very beginning of project."

It is imperative, Pandel said, to "create cross pollination" as you "create a safe space for trying new things." Cross functionality helps expose the user needs and push the agency forward together.

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Big thinking at SBA prepared the agency for the pandemic telework scenario

BY PETER MUSURLIAN



There were not many people who could have foreseen what America would be like, at home and in the workplace, during the first 100 days of the stay-at-home pandemic. But the work Guy Cavallo initiated at the Small Business Administration (SBA) now seems prescient.

Cavallo, the SBA's deputy chief information officer, laid the groundwork modernizing the agency's IT infrastructure.

"We had been working on providing more mobile devices to the workforce, so moving away from desktop towers and desktop computers and giving the staff a choice of either a convertible laptop or a tablet, so they'd be able to take them home," Cavallo told Tom Temin on *Federal Monthly Insights – Digital IT Modernization*. "SBA is pretty used to responding to emergencies and needing to go places, where you weren't expecting to work."

So SBA was modernizing, anticipating almost any kind of emergency that could take employees into the field.

"We had the hardware in place. Of course buying stuff is easy. Getting the rest of the infrastructure ready was a lot harder," he said on *Federal Drive with Tom Temin*.

Cavallo said he knew his current virtual private network provider could not handle everybody teleworking at once.

"We had already started a move to software-defined wide area network (SD-WAN) and were actively pursuing [secure internet access] as an alternative and we had about a thousand of our users already there when this (pandemic) hit. And then we already were in the cloud with Office 365, so basically everything that was on the premise that typical users would need, we already had ways to get through the cloud," he said.

SBA now has nearly 4,000 users.

"Not only did we do this before the crisis hit, but we're continuing to modernize and make connectivity more secure and easier for the users, during the crisis," he said.

"We had the hardware in place. Of course buying stuff is easy. Getting the rest of the infrastructure ready was a lot harder."

When SBA started the modernization four years ago, Cavallo said he felt strongly about the cloud, but the agency was not "cloud savvy" at all.

"The data centers that we had, the primary ones, were rapidly approaching end of life or already there with some of the equipment, and it would have required a massive capital expenditure to replace it all," he said.

Cavallo returned to the public sector nearly five years ago, first at the Transportation Security Administration, where he led the effort to turn to the cloud.

"So I was able to immediately take what I had done at TSA and apply it to the SBA. And in 82 days, from start to finish, we were in the cloud and ready to start moving services there instead," he said.

"And then we already were in the cloud with Office 365, so basically everything that was on the premise that typical users would need, we already had ways to get through the cloud..."

— GUY CAVALLO, DEPUTY CHIEF INFORMATION OFFICER AT THE SMALL BUSINESS ADMINISTRATION

He advised against using technology just for technology's sake, adding that people sometimes forget, as they're changing technology, they need to change the agency's governance model.

"Something I did at TSA, and I replicated at SBA in our cloud effort, was to have one of the teams from day one start working on how do we change the way we do change control, our governance decisions, how we do security. That all needs to be factored into it, because the technology is easy," Cavallo said. 🚫

To modernize IT, agencies should start with their networks

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The wide area network, or WAN, has been a foundational block of enterprise computing ever since the first six-bit facility connected airports in the 1960s. Today many federal agencies rely on WAN architectures far removed from what they might have had decades ago, but that may not be fully suited to the requirements of today.

For a look at where federal WANs are headed, or should be, Federal News Network spoke with two companies that are leading the way. Riverbed Technologies and its implementation partner SwishData supplied experts in why the software-defined wide area network (SD-WAN), is best suited to environments

that include agency-owned data centers and commercial clouds, lots of mobile and internet-of-things end points, and the need to incorporate the emerging Trusted Internet Connections (TIC) architecture from the Homeland Security Department.

Sean Applegate, the chief technology officer at SwishData, and Marlin McFate, the public sector chief technology officer at Riverbed Technologies joined Federal News Network for the discussion. They explored the typical federal WAN and the ideal to-be state; benefits of SD-WANs for cybersecurity,

“In SD-WANs, there are a broad variance of capabilities ... For federal networks you can integrate quality of path and quality of service. You can also integrate advanced security policies like next-gen firewall intrusion prevention system capabilities.”

— SEAN APPLGATE, THE CHIEF TECHNOLOGY OFFICER AT SWISHDATA

analytics, performance and a better employee user experience.

Beyond that, SD-WANs, panelists said, can enable advanced application acceleration. That can be particularly useful when large numbers of people are working remotely. SD-WANs redefine the network away from a packet-centric phenomenon to an application-centric one. And isn't the purpose of networks to carry application logic and data?

Applegate addressed the many possibilities SD-WANs offer.

“In SD-WANs, there are a broad variance of capabilities,” he said. “For federal networks you can integrate quality of path and quality of service.

You can also integrate advanced security policies like next-gen firewall intrusion prevention system capabilities.”

Above all, said McFate, SD-WAN can uncomplicate networks that have grown increasingly complicated.

“The straightforward networking of the past has turned into a spider web,” he said. “Using traditional network technologies ends up creating a fragile [state] – meaning very small changes in one area can create large, unforeseen problems in other areas.”

By rendering the network in software, instances can be created and retired easily. Deployment and management requires fewer people and physical resources, freeing

up both people and hardware investments for redeployment on modernization, digital services and cloud deployment.

By beginning modernization with the network, McFate said, subsequent efforts for cloud adoption, application virtualization, and software-as-a-service will go more smoothly and with greater agility.

“When it comes to modernization as a whole, the limiting factor is your network,” McFate said. “You need to look into SD-WAN and TIC 3.0 first. Modernization of the network is the first step. [Otherwise] you're going to find many of the things you have already done would have been much simpler if you had addressed the fact that you are working on a traditional network first.”

“When it comes to modernization as a whole, the limiting factor is your network.”

— MARLIN MCFATE, PUBLIC SECTOR CHIEF TECHNOLOGY OFFICER AT RIVERBED TECHNOLOGIES

Rebuilding your IT infrastructure for today but, more importantly, for tomorrow

BY PETER MUSURLIAN

Federal agencies are updating their IT infrastructures with the goal to better support improved operational efficiency, user productivity and digital services deployed to the public. For those who want to know about the technologies available to support digital transformation, Allen Hill is the man.



"Federal networks need to become agile and smart so information can move on demand without the human element having to make it happen," said Hill, the acting deputy assistant commissioner for category management at the General Services Administration, on *Federal Monthly Insights – Digital IT Modernization*. "It's a balancing act for agencies. Agencies have to trade off what they have to do to modernize because of limited budgets while they manage their costs of their operational mission."

Hill said small- and medium-sized agencies that have had success are those which have implemented some current capabilities, like the Small Business Administration, that has moved from multiprotocol label switching (MPLS) to software-defined wide area network (SD-WAN).

"Large agencies are not that simple," he said on *Federal Drive with Tom Temin*. "Those organizations are much more difficult because they have infrastructures and applications that are diverse and complex."

He acknowledged that from the outside, some people may question why aren't agencies moving faster, but he insisted that's easier said than done.

"At my previous agency, the journey to modernizing the infrastructure was a multi-year journey. When I left, there was still more to do," Hill said. "That was a medium agency. We cannot sacrifice mission capabilities that support the public."

He also addressed the outdated technology that still exists in the federal network, like how, in some cases, analog is still in use.

"Those types of technologies are still out there because of some of our older systems that still exist throughout the federal government," he said. "That's part of the balancing act agencies have to deal with is how do they take out some of that older technology that is not IT-based, that needs to be changed out in order to move."

He said an agency that has some form of monitoring tool for a building which is analog based needs to be moved, and that takes a lot of time and planning. He also discussed what can be used now and what will be available years in the future.

"We talk about 5G for example and the capabilities," he said. "But how many of those devices that are out there, that are really 5G, can really leverage the 5G technology? You still have to build out." 🚧

"Federal networks need to become agile and smart so information can move on demand without the human element having to make it happen,"

— ALLEN HILL, ACTING DEPUTY ASSISTANT COMMISSIONER FOR CATEGORY MANAGEMENT AT THE GENERAL SERVICES ADMINISTRATION

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Smooth switch to telework was years in the making

BY PETER MUSURLIAN

IT modernization became an even higher priority for federal agencies once the coronavirus landed on the United States like a ton of bricks. Two people leading the IT Modernization charge in the nation's capital can both be found at the Office of Management and Budget: Federal Chief Information Officer Suzette Kent and Deputy Federal CIO Maria Roat.



Roat, who left the Small Business Administration last month after nearly four years, said SBA's digital transformation, over time, prepared the agency for the coronavirus pandemic.

"We were able to very easily flip to telework, which allowed us to focus on all the activities in the surge related to the disaster activities ... the CARES Act ... the Paycheck Protection Program, and the

"I can't say enough about our vendor partners. That was one of the lessons learned. We had established contracts, established vendors. And they really came through when we needed them to move very fast."

— MARIA ROAT, FORMER CIO AT THE SMALL BUSINESS ADMINISTRATION

[Economic Injury and Disaster Loans] and grants," Roat said on *Digital IT Modernization month*. "And part of the lessons learned is we had a lot of existing and cloud-based capabilities. And we have the staff already that understood that technology. So as we ramped-up to meet the demands of both EIDL and PPP, the staff was there, our vendors were there. So we were able to turn up capabilities and add more capabilities very fast."

Roat said that they were adding a couple of thousand people, while simultaneously teleworking and getting everything squared away for their "vendor partners."

"I can't say enough about our vendor partners. That was one of the lessons learned. We had established contracts, established vendors. And they really came through when we needed them to move very fast," Roat said on the *Federal Drive with Tom Temin*.

Kent also pointed to preparation that led to a smooth road during the chaos of the pandemic's early days.

"We've been talking about modernization for a long time," Kent said. "We made progress on using commercial platforms for key business processes and changing both. Not just the tech, but the business."

Kent said they were talking about IT modernization every day, leading some people to assume and "take for granted" that all was well.

"So what this particular challenge did was put all of that up top of mind," she said. "The need to act quickly and scale quickly became mission critical. The ability to reach into things that we were going to do, maybe later in the year, and pull forward and expand those across all agencies happen very quickly."

Kent also discussed her role as chairwoman of the Technology Modernization Fund, which evaluates project proposals submitted for funding in accordance with the Modernizing Government Technology Act.

"When we talk about broad scale transformation, modernization, those are things that we do in a single year. That doesn't take six months," Kent said. "Those are multi-year commitments that engage the business and the technology team, in most cases citizens and mission-serving individuals. And so the technology modernization fund is a vehicle to do that." 🚀

"We've been talking about modernization for a long time," Kent said. "We made progress on using commercial platforms for key business processes and changing both. Not just the tech, but the business."

— SUZETTE KENT, FEDERAL CHIEF INFORMATION OFFICER

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