

Shifting from Operational to Transformational

How to Modernize Government Apps for Long-Term Success

A purely operational perspective may not be optimal for government agencies wanting to modernize their IT ecosystems. Instead, IT leaders should consider a transformational approach that uses today's best technologies and remains adaptable to tomorrow's innovations.

For all the potential of transformation, government IT leaders cannot ignore two realities: Modernizations should be customized to address agencies' specific pain points and goals, and data security must be a top priority. Fortunately, two pillars of modernization — cloud computing and automation — can help agencies tailor their systems while upholding the highest security standards.

"A modernization strategy involves two components: ensuring your systems are well architected and having a strong cloud adoption plan," says Byron Schaller, solution architect for Amazon Web Services (AWS).

While cloud and artificial intelligence/machine learning (AI/ML) technologies hold tremendous potential for core agency IT systems, successful transformations are ultimately driven by strong guidelines, best practices, and a culture of empowered IT professionals.

Customization guidelines

Public sector IT leaders should consider confronting the full scope of the challenge before them when modernizing core IT environments. "It's not just flying the plane

as you build it," says Doug Schneider, managing director with Deloitte Consulting LLP. "It's jumping from one plane to the next."

To meet a challenge of this magnitude, agencies should look beyond day-to-day operations and adopt a transformational mindset. "You need to understand how to get people to move to a new way of operating," Schneider adds.

Schneider and his colleagues encourage a strategy centered on reducing complexity and driving faster speed to mission. This type of strategy hinges on the following actions.

Planning and prioritizing. Transformation requires careful forethought to accelerate time to value. "Trying to solve every problem and achieve every goal at once is a recipe for disaster," says Chris Ostrander, principal with Deloitte. Thus, agencies should set clear priorities about what must be done first, second, and so on.

Deloitte and AWS encourage defining a mission first and then aligning priorities with the mission. And it's not just about crafting policies and procedures. "You've got to make room for people to learn and shift," Schneider says. Otherwise, people burn out and projects bog down.

Modernizing and migrating. Modernizing can mean simply lifting mainframe code and refactoring it for the cloud. Or it might mean completely rewriting a legacy application so it can operate in the cloud.

Some applications are relatively easy to migrate to the cloud, while others are prohibitively difficult. Moreover, agencies need to decide whether the public cloud is the best fit for their needs.

"For agencies that want to reduce hardware and operational costs, migrating off the mainframe and using the cloud can save money over time," Ostrander says.

Agencies should also ensure they have the skillsets to migrate apps to the cloud and modernize them. "The shortage of skills in this area is immense," says Bjoern Langmack, global app modernization and migration leader with Deloitte. Colleges are training more people to use cloud platforms, which means embracing the cloud can make it easier for agencies to narrow these talent gaps.

Automating and standardizing. The scope of transformation requires automation and standards that allow public sector IT leaders to focus on their most pressing priorities. Deloitte encourages a "software factory" framework that emulates mass production.

"It's about commoditizing and industrializing what you can to reduce complexity and make it easier for product teams to focus on the mission output of the software most of the time — and not on underlying dependencies that can slow teams down," Schneider says. A factory framework can also include reusable apps, components, and accelerators to jumpstart custom cloud-native solutions for public agencies.

“New technologies like robotic process automation (RPA) can remove the bottleneck of tedious jobs like forms processing and other repetitive tasks, completing them hundreds to thousands of times faster than humans can,” Schaller says.

This approach sets the stage for deploying AI/ML across government agencies. “AI/ML can save the government millions of working hours and billions of dollars while improving the speed and precision of processing information and allowing agencies to make quicker decisions,” Ostrander says.

Customizing and contextualizing.

“Every agency has unique challenges with managing systems and hardware,” Ostrander says. In other words, transformation should be tailored to each agency’s specific needs. Modern applications must also be user-friendly and deploy learning algorithms that can understand the context of constituents’ actions and objectives.

AI/ML uses sophisticated pattern matching learned from observed user behaviors and enables customized constituent experiences. “That’s where modernization really brings applications to the next level,” Langmack says.

Security guidelines

Public sector transformations must account for ransomware, data breaches, and other security risks. Cloud tools and a DevSecOps approach help agencies manage these threats.

“What’s incredibly exciting about the cloud is you’ve got the ability to sense and monitor more than ever before,” says Anil Ramcharan, principal Deloitte specialist in security and cloud managed services.

AI/ML applications are critical to cyber risk reduction. “They’re a huge accelerator in helping us parse through data, sift

out false positives, and focus on things that matter most,” Ramcharan says.

Ramcharan advises agencies to merge security, operations, and software development under the umbrella of DevSecOps. “This approach lets us engineer and design systems to help us deal with security threats upfront,” he says.

Services like AWS GuardDuty and Macie take advantage of a combination of machine learning and security, with new features being frequently added to help organizations manage change.

Agencies also need to test their security strategies to set up extra layers of data protection. “We often advise our clients to have both belt and suspenders,” Ramcharan says. “As we deal with sensitive workloads or workloads with high availability requirements, we need a clear understanding of what happens when things operate as expected — and also what happens in various failure modes.”

Leading practices

Public agencies should keep several practices in mind when modernizing.

Strategize. A sound modernization plan is the essential first step. Agencies can’t accomplish their goals all at once, so they must prioritize. Be sure to explicitly include mainframe apps in your plan. “I have seen a lot of cloud strategies exclude mainframe workloads,” Langmack says.

Automate. The less you have to do manually, the more you stand to gain by preventing human errors across the modernization, development, and migration processes.

Optimize. Break big projects down into smaller ones that can demonstrate results. Streamline the flow of software development processes, and don’t forget to provide observability and transparency.

Test. Proper testing of security controls strengthens the impact of DevSecOps. “Testing helps us get workloads into production much more rapidly,” Ramcharan says.

Establish culture. Take care of your people and build a supportive culture. “It’s just not about the tech,” Schneider says. “That alone will not succeed.” Try to avoid doing too many things too soon, which causes burnout and turnover. Above all, nurture a culture that drives happiness in your IT team: Deliver tools, policies, and processes that help inspire staff members to stay in their current jobs.

Conclusion

All agencies should eventually consider modernizing due to brain drain and a lack of legacy system developers. One key is taking advantage of cloud and AI/ML capabilities to achieve quicker time to value, better security standards, elastic computing that scales and contains costs, and improved constituent experiences. Agencies that partner with transformation experts to customize and secure their solutions improve their chances for long-term success.

Just remember that everything flows from getting the culture right — empowering people and listening to their perspectives. “What you want is a direct understanding of every person who has a hand-on-keyboard moment in building software,” Schneider says. “Are they happy with their job? Would they recommend this job to somebody else? Do they have ideas about how the job could be improved? If you don’t give engineers a voice, they will not speak.”

This piece was written and produced by the Government Technology Content Studio, with information and input from AWS and Deloitte.

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