

Overcoming Internal Roadblocks to Infrastructure Modernization

Highlights from a Roundtable hosted by the Advanced Technology Academic Research Center (ATARC) in partnership with Zscaler, January 2024

Successful modernization involves both human and technology elements — people, culture, processes, and systems. But with any project, bottlenecks can form that impede and delay progress. At this roundtable, Federal experts discussed the various roadblocks interfering with modernization efforts, and the strategies agencies are using to overcome them.

Internal Roadblocks

Roundtable participants emphasized the connection between IT infrastructure and agency mission. For many agencies, service delivery and customer service are at the mission forefront, which now requires fast and modern technology to be successful. As technology advances, agencies are moving further away from physical infrastructure towards the services and integrations that enable them to take advantage of state of the market capabilities.

“Unless physical infrastructure is required, we’re getting out of the infrastructure business”.

While some agencies are still working within on-prem legacy systems, largely due to security precautions, many are further along on their modernization journeys and heading into maturation. Other agencies are able to modernize front-end systems more quickly than back end systems. Regardless of where agencies land on the modernization scale, the human element remains a critical aspect of any infrastructure modernization project.

One challenge to infrastructure modernization is successfully hiring the skilled talent needed for these projects. Panelists noted the cultural differences of newer Federal employees compared to career veterans. A majority of new hires stay in the government for only a few years, rather than committing to a lifelong career. These workforce changes impact the level of employee buy-in agencies need to successfully upgrade infrastructure.

To accommodate the changing workforce, agencies should consider simplifying their infrastructure in order to reduce the learning curve for new employees. Old, legacy infrastructure is simply not going to excite and energize younger generations entering the workforce.

“We've got to make things interesting. We've got to simplify things, and we've got to reduce the learning curve so people can more hit the deck running when they come into the workplace.”

Developing Employee Buy-In

However, new employees aren't the only ones whose buy-in is needed. Panelists note that new technology is often daunting to seasoned employees who have found career success within legacy systems. Lack of internal buy-in slows down implementation, but through training and education, agencies can engender buy-in from hesitant employees.

“I've talked about professional development and upskilling more in the last two years than I ever have, and it's not working.”

While professional development and upskilling programs are important, roundtable participants don't consider them to be effective at scale. Engaging one-on-one with employees seems to be more effective at appropriately matching person to skill. Upskilling also requires personal desire from an employee to learn a new skill set.

Agencies can foster this individual learning through rotation programs, which enable employees to temporarily work in other roles and explore different fields. In some cases, these temporary 60- to 90-day roles turn into permanent positions.

Agencies are also supporting employee development by providing secure sandboxes where they can experiment with new technology. These programs may not be FEDRAMPed, but within a secure area employees can vet new technology without introducing risk to the agency. This has also been shown to expedite the ATO process and fast track technology adoption.

Some roundtable participants are supporting employees with periodic lunch and learn sessions, which offer bite-sized pieces of information for busy employees to consume. Introducing employees to big changes incrementally through these smaller sessions drives up excitement about the changes being made.

“We have good people. We just need to get them working on the things that are really important. You have to meet people where they are. Don't push, but pull them.”

Panelists note that when people are resistant to change, many times it's fear holding them back.

However, resistance can also come from not seeing the big picture. Leadership must communicate clearly and often about the role new technology will have in completing the mission. Buy-in is more likely when employees understand how modernization moves the mission forward.

Any training should be worthwhile, productive, and ideally solve a real use case. Agencies should rely on vendors to provide lunch and learns or other training sessions to help engage staff. By the end of any hands-on training, staff should receive a solid deliverable. These quick wins are critical for developing buy-in.

Overcoming Roadblocks

Roundtable participants discussed other strategies for overcoming internal roadblocks hindering infrastructure modernization. One agency started incorporating IT modernization efforts into annual performance reviews to encourage forward-thinking decisions that benefit both the agency and taxpayers.

During major IT transformations, agencies maintain business coverage through strong communication practices. Creating a feedback loop between end users of the system back to decision makers develops a shared vision within the agency.



Panelists also underscored the importance of gaining buy-in from middle management. Executives control the bigger picture, and end users learn the technology, but middle managers implement the change. The messy middle is where roadblocks form, and where leadership should pay close attention to. Middle managers especially will need to understand what's in it for them.

Agencies also see roadblocks develop when important stakeholders are brought in too late. This happens often when security is brought to the table after development has occurred. This not only causes issues with the actual technology, but can also affect the morale of security personnel. Ultimately, successful infrastructure modernization requires the support, collaboration, and buy-in from employees, leadership, and vendors.

Roadblocks can come in various shapes and sizes, but often they are a result of inefficient processes and not technology. Similarly, technology may not be required to solve the problem. One agency on the panel always considers people first, policy second, and technology last when approaching a problem.

Other agencies are avoiding the lure of shiny new tools to solve problems, and focusing more on capabilities of existing technology. Technology sprawl and the complexity it's created can be the enemy in itself. Agencies are interested less in adopting new platforms and more in finding solutions that integrate into an existing enterprise solution.

“The only thing constant in IT is change. It’s our job to better effect change.”

Final Thoughts

Every employee, customer, and stakeholder has an independent relationship with technology and different interpretations of what is modern. Agencies are working to stay current, so that each interaction someone has with the agency is a modern experience. But ultimately, it's the agency's job to protect the mission above all else.



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