
govloop
HOW TO
KICKSTART
MODERNIZATION

Introduction

No one doubts the importance of updating or replacing outdated legacy infrastructure, from networking, storage and servers to applications and services. The challenge is making a case for modernization funding that agency leaders and legislators find sufficiently compelling.

In this guide, Part One of a two-part series, we look at factors shaping modernization efforts in 2024 and beyond, at the shift from wholesale modernization to more targeted initiatives. We explore agency pain points — areas that cry out for reform — and we examine primary targets for improvement. When resources are limited and expectations are high, where are agencies dedicating their time and funding?

We also hear from a government expert, who offers practical advice on when, where and how to modernize, and from industry partners who support agencies along their modernization journeys.

Winston Churchill said, "Someone's sitting in the shade today because someone planted a tree a long time ago." Here's a look at how your agency can make tomorrow better.

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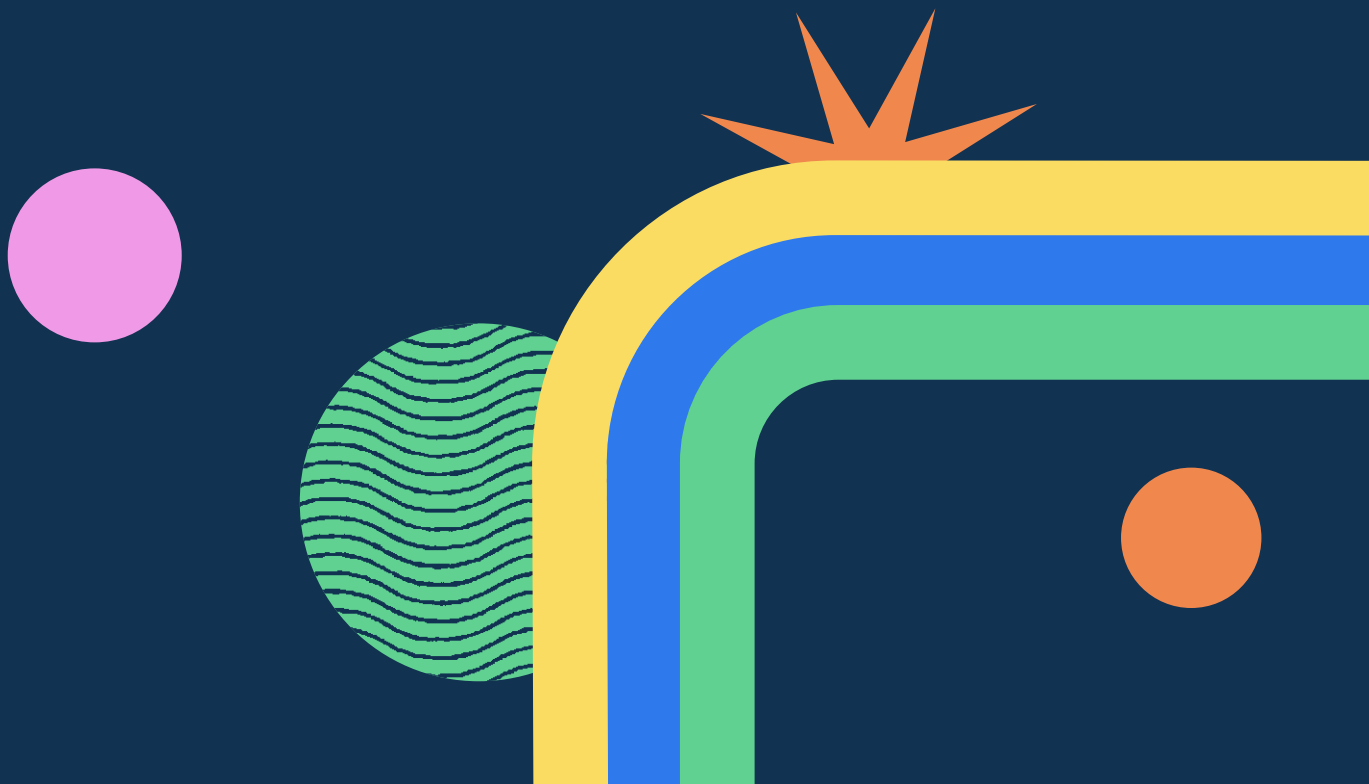
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5 Ways That Agencies Are Ailing From Legacy Systems

The idea of "legacy" systems can seem a bit abstract, especially since the systems involved typically sit in a data center far removed from daily work. But they're like your appendix or wisdom teeth: They're of little interest until they hurt.

Here are five symptoms of legacy systems that should be updated or replaced before they cause problems.

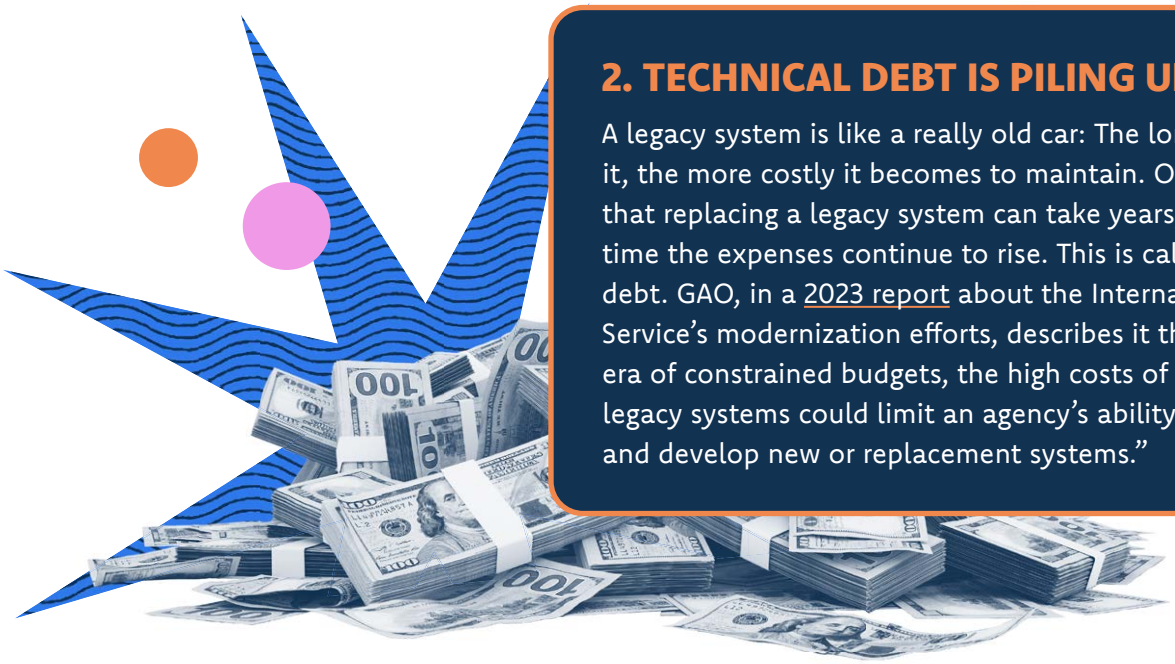
1. COBOL IS STILL IN PLAY

Some government agencies still run programs based on COBOL, a programming language dating to the 1950s. Those systems are still around because they run large, critical programs that are difficult to rewrite without causing major disruptions. But maintaining those systems comes at a cost. "Agencies have had difficulty finding employees with such knowledge and may have to pay a premium for specialized staff or contractors," according to a recent report on modernization from the Government Accountability Office (GAO).



2. TECHNICAL DEBT IS PILING UP

A legacy system is like a really old car: The longer you own it, the more costly it becomes to maintain. One difference is that replacing a legacy system can take years, during which time the expenses continue to rise. This is called technical debt. GAO, in a 2023 report about the Internal Revenue Service's modernization efforts, describes it this way: "In an era of constrained budgets, the high costs of maintaining legacy systems could limit an agency's ability to modernize and develop new or replacement systems."



3. CONSTITUENT SERVICE TAKES A HIT

In August 2023, three members of the Senate urged the Social Security Administration to accelerate its modernization efforts. Applicants for Supplemental Security Income (SSI) "face significant administrative barriers to accessing this critical lifeline," Sens. Ron Wyden (D-Oregon), Robert Casey Jr. (D-Pennsylvania) and Sherrod Brown (D-Ohio) wrote in a letter to the agency. Case in point: The SSI application is 20-plus pages long, and in paper form. "It is more important than ever that the SSI program is modernized and accessible to all Americans," the legislators wrote.





4. AGENCIES CAN'T ADAPT TO CHANGE

Many legacy systems were developed with the theory that basic operation requirements would not change dramatically. That's proving to be a costly assumption as those systems remain in place. For example, during the pandemic, many states struggled to meet the surge in demand for unemployment demands because of outdated systems, according to a May 2023 report from the U.S. Department of Labor. Many of those systems, the report notes, are based on "monolithic software, [which] is designed to operate as one big chunk rather than as a series of independently managed parts," as modern software is, leaving them "brittle and inflexible."

5. EMPLOYEES AT RISK OF MISSING PAYCHECKS

Let's call this a worst-case scenario, but the point is clear. After years of receiving too little funding and other support, the National Finance Center (NFC), which manages human resources (HR) services for many federal agencies, could find itself unable to deliver paychecks, according to a July 2023 report from the National Academy of Public Administration. The problem is that HR services and the underlying technology have evolved, but NFC has not. "NFC's leaders ... now need to take strategic, determined action to catch up and then keep pace with these developments," the report states.



How to Accelerate Government Modernization

*An interview with **Francisco Ramirez**, Chief Architect of State and Local Government, Red Hat*

Government is under pressure to update its legacy technology systems.

"Modernization is crucial for agencies to stay agile, secure, and responsive to evolving needs," said Francisco Ramirez, with Red Hat. "Agencies need to transform their legacy systems, leveraging contemporary technologies and methodologies."

Getting there, however, has often proven problematic. Agencies struggle with budget constraints, and it can be difficult to demonstrate a practical return on investment for IT infrastructure upgrades.

Then there's complexity. "You're trying to modernize legacy systems that are still providing value to the agency," Ramirez said. "How can you advance in this modernization journey, without affecting the services you're delivering?"

BE STRATEGIC

To get there, agencies need to formulate a modernization strategy. That starts with gathering not just IT leaders and other high-level decisionmakers, but also business-line leaders and end users.

"There has to be a plan in place, but you can't put a plan out in front of people without first getting stakeholder involvement," Ramirez said. "People need to feel like they are part of the process."

As that plan comes together, it will make sense to articulate some clear criteria about what kinds of technologies will best advance the agency mission.

"You want to make sure that you're leveraging scalable and adaptable technologies," Ramirez said. **"The technologies you put in place should allow you to future-proof your investment, and in some cases even allow you to leverage the current investments that you have."**

CLOUD TALK

With those goals in mind, "most people will think: cloud," he said. While that's a part of the answer, it's not the whole modernization solution. "Certain workloads need to run in certain places. You might want to keep some applications and services on premise, whether for security or other reasons."

Open hybrid cloud offers a way forward, offering the ability to keep some applications in-house, and to scale when necessary in the cloud, without the risk of over-subscribing to services you aren't using.

"It's about finding that balance, understanding what you currently have and what you're trying to achieve," he said. That may mean "architecting the right solution to include cloud as a destination, but also making sure that the infrastructure you have on premise can support that as well."

AN OPEN APPROACH

Red Hat's open source solutions can help agencies strike that balance.

"The beauty of open source is that you have a lot of collaborators working to solve problems, develop new solutions, and innovate faster," Ramirez said. "At Red Hat, we take the innovation that comes from open source and provide it back to our customers in a way that is supported and enterprise-production ready."

For one state health-and-human-services agency, Red Hat applied this approach to create a consolidated view for caseworkers across multiple, disparate systems — in just 30 days. "Now the caseworkers can enroll vulnerable citizens for services in days, instead of months," he said.

That's what effective modernization can do.

Red Hat

Agencies Seek Gains Through Precision Modernization

Recognizing that legislators and executive leaders have little appetite for sweeping modernization plans, many agencies are opting for a more targeted approach, focusing on initiatives that deliver tangible benefits. For example: A lawmaker who might not understand the need to upgrade network infrastructure will likely see the value of providing constituents with more reliable and secure services.

Here is a look at some of the key areas in which agencies are injecting modern technologies and strategies.

1

DELIVERING BETTER CX

In making the case for prioritizing modernization projects that improve customer experience (CX), the Technology Modernization Fund (TMF) Board refers to the "time tax" that constituents and employees pay when they must use outdated systems or processes. CX is a tax cut that everyone can agree on.

CASE IN POINT: Minnesota created a TMF program for reviewing agency funding requests that makes CX is a key criterion. "The systems that once served us well have been adapted to respond to laws or business processes that they weren't built to support," the program description states. "The TMF will help meet our customers and residents where they are and respond with agility to changes in customers' needs and expectations."



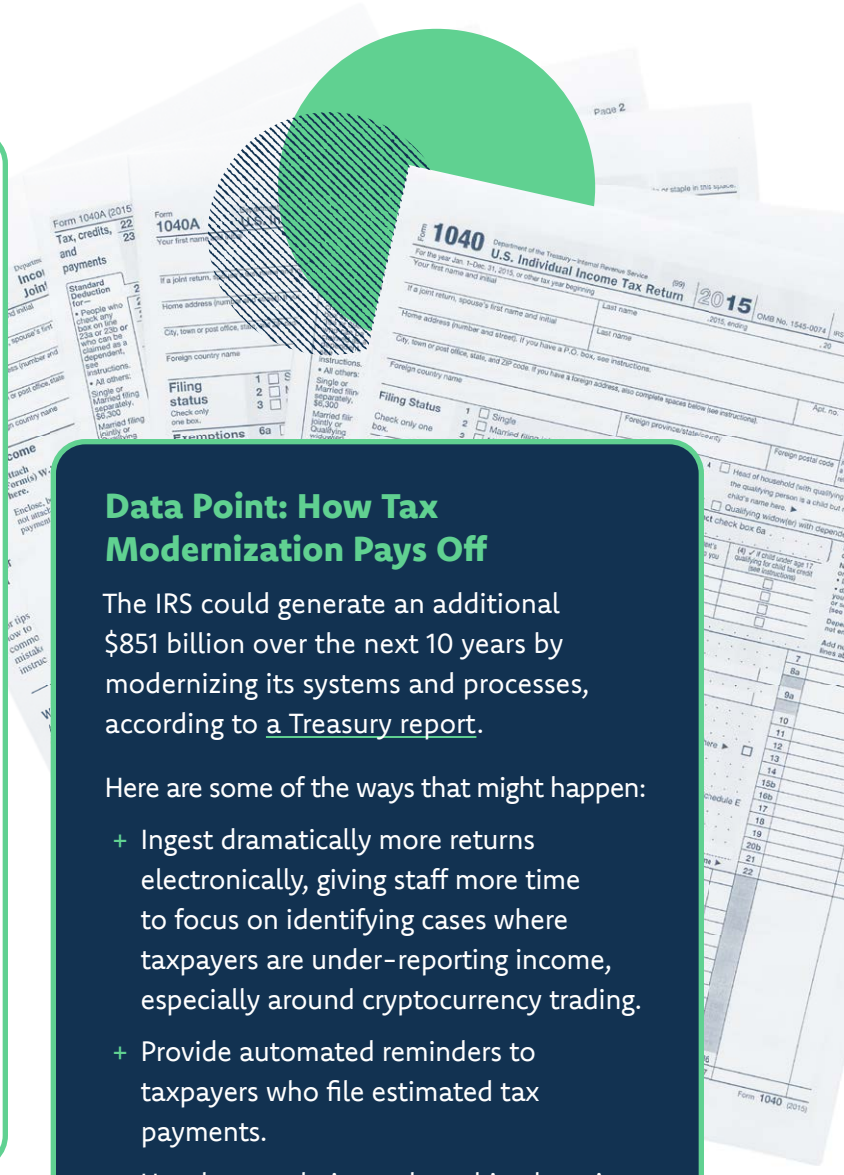
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CAPTURING MORE REVENUE

Legislators often question what return on investment modernization projects will deliver. But for tax agencies, it may be easier to pinpoint: Any solutions that help employees work more effectively and quickly will translate into more revenue and/or less fraud.

CASE IN POINT: That's the gist of a recent report from the U.S. Treasury Department on Internal Revenue Service modernization funding. By modernizing its core business systems and providing employees with new tools, the tax agency could make big strides toward closing the tax gap, both by identifying individuals or organizations not complying with the tax code and by detecting fraud. Additionally, more modern systems would make it easier to implement tax code changes that affect revenue, the report states.





Data Point: How Tax Modernization Pays Off

The IRS could generate an additional $851 billion over the next 10 years by modernizing its systems and processes, according to a Treasury report.

Here are some of the ways that might happen:

+ Ingest dramatically more returns electronically, giving staff more time to focus on identifying cases where taxpayers are under-reporting income, especially around cryptocurrency trading.
+ Provide automated reminders to taxpayers who file estimated tax payments.
+ Use data analytics and machine learning to boost enforcement efforts.

3

TIGHTENING DATA SECURITY

Modernization is a linchpin of the March 2023 National Cybersecurity Strategy. The problem is that legacy systems often do not work with modern cyber solutions or strategies, such as a zero-trust architecture, leaving those systems vulnerable to modern malicious actors.

CASE IN POINT: As part of its 2023–2026 IT Strategic Plan, the U.S. Office of Personnel Management (OPM) plans to adopt a zero-trust architecture and to deploy an enterprise-level identity, credential and access management (ICAM) solution. Together, these initiatives will help OPM provide much tighter controls over the data it keeps on federal applicants, employees and retirees. "Ultimately, OPM must be viewed as — and serve as — a trusted entity for that data," the strategic plan states.

Modernization vs. Technical Wellness

Over time, agencies might want to rethink their approach to modernization altogether, according to a recent report from Deloitte, a consulting and advisory firm.

Instead of modernizing its systems periodically, an agency could develop a "technical wellness" strategy for keeping IT infrastructure up to date on an ongoing basis. The goal is to "work progressively to incorporate more modern technologies and techniques like automated management and self-healing to improve service to the mission," according to the report.

In addition to helping IT managers stay on top of aging systems, this approach reduces the need for "recurring 'big bang' modernizations," the report states.

4

ADVANCING AUTOMATION THROUGH AI

Automation has always been one of the most tantalizing benefits of modernization, as new technology typically makes it easier to implement digital processes that don't require human intervention. But the latest generation of artificial intelligence (AI) has agencies thinking about automation in new and bigger ways.

CASE IN POINT: Oklahoma Gov. Kevin Stitt recently said the scary part out loud: AI can, and should, be used to reduce the size of the government workforce, freeing up talent for the private sector. Among other benefits, AI-based automation can optimize document handling, "reducing manual errors and processing times for permits, applications, and other government documents," according to a state task force report. AI chatbots also can use natural language processing to provide quicker, more accurate responses to many constituent queries.



Data Point: Call Center Operations

A task force appointed by Oklahoma Gov. Kevin Stitt sees a big opportunity to reduce the cost of call center operations by adopting AI.

According to its report, a human-staffed call center incurs costs of $5 to $8 per call. But agencies can reduce those costs by 85% by using AI-based automation to automate routine inquiries and responses.

Additionally, the report states, "AI allows for a more consistent, round-the-clock service, reducing wait times and improving the overall customer experience."

Delivering What the Public Expects

*An interview with **Jonathan Alboum**, Federal Chief Technology Officer, ServiceNow*

In our private lives, we interact every day with brands and services that shape our expectations of how government should engage with us. Applying for public services should be as easy as online shopping. And when agencies fall short, we remember.

"When you have an experience that's less than satisfactory … with government, it impacts how you feel about [it] and decreases trust," said Jonathan Alboum with ServiceNow, a company that facilitates agency transformation. But as organizations improve how they engage with us, "we begin over time to really see the government as confident, as capable, as an entity here to help us," he said.

"The more we think about a person's experience with government, and we demonstrate empathy … the better we can align the way we serve them to the things they most need," he said.

METRICS MATTER

That's difficult. Even when funding is plentiful, agencies often launch projects before understanding how work and data flow through the organization. "We oftentimes need to take this step back and show humility around the process or thing we design, and recognize that it might not be right," Alboum acknowledged. When things go well, you need metrics as proof.

You need a good baseline, he said, for what you replaced or improved: hard data that shows how the modernization qualitatively enhanced someone's life. Previously, did it take three days to process a transaction, and now it takes three minutes? With metrics, he explained, "you [can] go tell that story to Congress, to your constituents, to whoever wants to listen, that you made [something] better."

FIELD WORK

Technology is not the end goal: It's a vehicle to serve the public. Alboum believes government employees should see their agency's mission in action whenever possible. "I was a CIO for the Department of Agriculture," he said. "I went to farms, to meat processing plants, … to embassies to see foreign agriculture service at work…. **Because you have to understand what it means for people to be using the technologies that you're offering as an organization.**" When someone comes to you with a requirement or request, you appreciate the reason why.

SEAMLESS TECHNOLOGY

Constituents want seamless, frictionless experiences, what Alboum described as, "let me go to one place, express what I need, and get everything I need." To achieve that, agencies should follow human-centered design concepts and adopt a scalable platform, such as ServiceNow's, that integrates disconnected systems and processes and uses automation to help drive outcomes, he said.

With the ServiceNow platform, "you're able to create a modern user experience very quickly, one that supports mobile devices," without waiting to modernize the underlying legacy tech, he said.

The U.S. Fish and Wildlife Service, as shared during the 2023 Federal Forum, uses the ServiceNow platform to develop an e-permits system, so people can visit one website and apply for various public-land licenses. It's an example, Alboum said, of "ServiceNow embrac[ing] the idea of, 'let's make government as simple as possible.'"

servicenow



Knowing When, Where and How to Modernize



*An interview with **LeAnn Oliver**, Director of Corporate Business Systems, U.S. Department of Energy's Offices of the CFO*

A leadership expert once said, "Change is hard at first, messy in the middle and gorgeous at the end." The principle holds true for public and private entities alike: At times, they all suffer from excessive bureaucracy and other challenges. Modernization can be a game-changer for both sectors, but in government, it can be uniquely difficult.

WHAT IS CHANGE MANAGEMENT?

A systematic approach to dealing with the transition or transformation of an organization's goals, processes or technologies. The objective is to implement strategies that effect and control change and help people adapt to it.

Turning a project from idea to reality requires identifying and planning for likely obstacles, said LeAnn Oliver with the U.S. Department of Energy. For instance, people are naturally resistant to change. "It's work above and beyond what your normal status quo work is, which you have to keep doing, too," she said. Modernization funding is almost always a concern, especially for longer-term projects. And the new technology has to work, which is a complicated and expensive endeavor when agencies have many network-connected devices.

For example, a system upgrade can slow employees' computers if they're dated and need reconfiguring and budget constraints have prevented an agency from replacing older equipment. "When you have hundreds of thousands of endpoints in your system," Oliver said, "it's really hard."

6 STEPS TO SUCCESS

But great rewards are possible with effective change management. It requires a **disciplined project manager**, akin to an orchestra conductor who ensures that all pieces of the project work in harmony, Oliver said. You also need a "**really good project plan** because if it is a big modernization, there are lots of tiny pieces to it, and you need to keep track of every single one," she explained. "The cliché about the devil being in the details is really true."

Your outcome depends on good **cost-benefit analysis** — what will give the most return on the dollars you have to spend? — and **support from higher-ups** helps overcome employee resistance, especially when a project affects people outside your immediate control. "In a perfect world," Oliver said, "[modernizing] in a collaborative way is probably better because people have buy-in. But sometimes you need the hammer."

Achieving "**quick wins**" is helpful — they build momentum, she said — and **speaking with all stakeholders** early on, to minimize surprises and reluctance, is vital.

KNOW YOUR AUDIENCE

Plain language and people skills come in handy. "Technical people need to be able to explain [changes] in nontechnical language, so folks understand what's going on," said Oliver. That means acknowledging other employees' levels of IT understanding. It's the IT equivalent of having a good bedside manner. Does your IT "doctor" know how to deliver difficult news?



> *"You can be successful at [modernizing], but it's not easy, it's not quick, and you need to make sure you dot all the i's and cross all the t's because if you don't, that will come back to haunt you."*
>
> **LeAnn Oliver**
> U.S. Department of Energy



WHAT AND WHY

"Sometimes you can have a visionary leader who says, 'Yeah, we need to do this,'" Oliver continued. But often, as with cybersecurity, mandatory reforms can have unintended downstream effects on systems and architectures. In some cases, agencies undertake a de facto modernization, driven by the sad truth that software and hardware don't last forever. When software is no longer supported, an agency must replace it.

Improving customer experience is usually a proactive goal, however. Clunky, old, public-facing systems frustrate constituents and reduce engagement, she said. But backend changes matter also. "You can have a great portal," said Oliver, "but once you [enter] whatever you're [entering] into the portal, it's got to go somewhere and be used appropriately."

Just like members of the public, agency workers don't enjoy waiting for their computers to process data, for the little circles on their computer screens to stop spinning. "Government employees are people, too," she said.

Making Connections, Modernizing Recruitment

*An interview with **Charlotte Lee**, Strategic Lead for Customer Experience and Innovation, Granicus Experience Group (GXG), Granicus*

When it comes to recruitment, government has a wonderful story to tell, but trouble getting people to listen. And yet individuals, especially from younger generations, want mission-oriented careers that align with their personal priorities. The government "brand," so to speak, would be a natural fit.

To attract and retain a dedicated, talented, modernized workforce, agencies must say "the right things to the right people at the right time," said Charlotte Lee with GXG, a team within Granicus that helps government entities connect with customers using its digital citizen-engagement platform. "There has to be more of a concerted effort to … make people aware of … the impact and mission of government…"

STRATEGIC COMMUNICATION

In general, major federal programs need roughly 6,000 job applicants in order to hire eight candidates, Lee said. So, if you think of the hiring process as a funnel, agencies must broadcast job opportunities to a very wide audience and then use what she calls the "power of nudges" — i.e., reminders and status updates — to guide people down through the hiring process.

It's a broad yet targeted strategy, and it breaks down into what Lee calls **"four phases of communication" that trace the employee experience: awareness, consideration, decision, and engagement and retention.** Granicus supports public agencies through all four stages, she said.

For instance, Granicus helped the Oregon Department of Transportation (ODOT) modernize its external recruitment efforts for specialized roles, such as bridge engineers, by using Granicus' govDelivery, network benefits, and solution consulting.

Recruitment messages became more engaging, featured personal employee stories, and generated a more enthusiastic response from recipients. It was an innovative approach that reached audiences in modern ways, and it ultimately made hiring easier.

THE ROLE OF DATA

Granicus also helped ODOT with other constituent communications that benefited the public and modernized the work of department staff. Engagement rates jumped by 64% — in part, because ODOT analyzed data to understand what resonated with its audience.

Engagement also creates a positive experience "when employees are given technology and information that is relevant at the right time," said Lee. Audiences soon see that agencies are respecting how people want to receive and submit information and actually remember the information that people already provided. **It's the idea of "respect me, remember me, respond to me,"** she explained.

And survey responses are only one way of gauging sentiment. Lee suggests that looking at live metrics actually better indicates who's being engaged and how they are responding.

While government will always struggle with bureaucracy, and public-sector hiring may lag that of private industry, agencies often can do more to draw talented people to government and compel them to stay.

The employee experience can be personally and professionally transformative, Lee said. Individuals just need to know what's available.

GRANICUS



ABOUT GOVLOOP

GovLoop's mission is to inspire public-sector professionals by serving as the knowledge network for government. GovLoop connects more than 300,000 members, fostering cross-government collaboration, solving common problems and advancing government careers. GovLoop is headquartered in Washington, D.C., with a team of dedicated professionals who share a commitment to the public sector.

For more information about this report, please reach out to info@govloop.com.

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