



# GOING DIGITAL

**Your Guide to Becoming a  
Modern Government**



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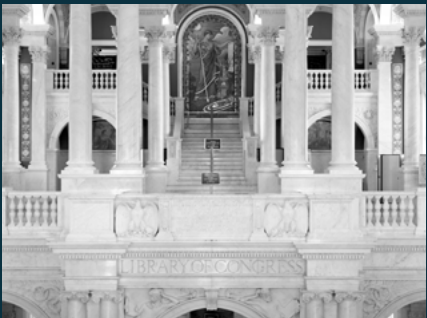
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# Executive Summary

You hear it all the time: Governments are going digital. But what exactly does a digital transformation entail?

Well, it depends on whom you ask. For some, it’s about making websites more modern and user-friendly and incorporating chatbots to proactively help visitors find what they need. For others, it’s about digitizing internal processes, whether that’s time and attendance sheets for employees or the approval process for routing documents that require multiple signatures. Yet for others, digital transformation means all of the above and much more.

Or maybe your office doesn’t use the term digital transformation at all. That’s OK. This movement is less about defining a term and more about embracing a digital mindset that is focused on using technology to improve transparency, access to services and information — for internal and external users — and challenging assumptions about the way old processes have been done. Digital transformation is about doing, and chances are your agency or office is in the thick of it.

**Whether or not you have a direct role in digital efforts at your agency, every employee plays a part and should understand how technology is changing the nature of their jobs and the communities they serve.**

And that’s where we come in. For this guide, GovLoop heard from chief information officers (CIOs), digital services and innovation leads, program managers, geographic information system (GIS) professionals, and frontline employees nationwide who are impacted by digital transformation in government — or the lack thereof.

Going digital is the key to cost savings, improved customer service and a more mobile, capable workforce, but it has to be done right, with policies and a culture to match the technologies. We explore the top barriers to digital transformation that agencies face and the techniques that can address those issues.

In the following pages, you’ll learn:

- **How others across government define digital transformation**
- **How various groups in government manage and experience digital transformation**
- **What transformation looks like through case studies and examples from the Library of Congress; Veterans Affairs Department; Louisville, Kentucky; and more.**

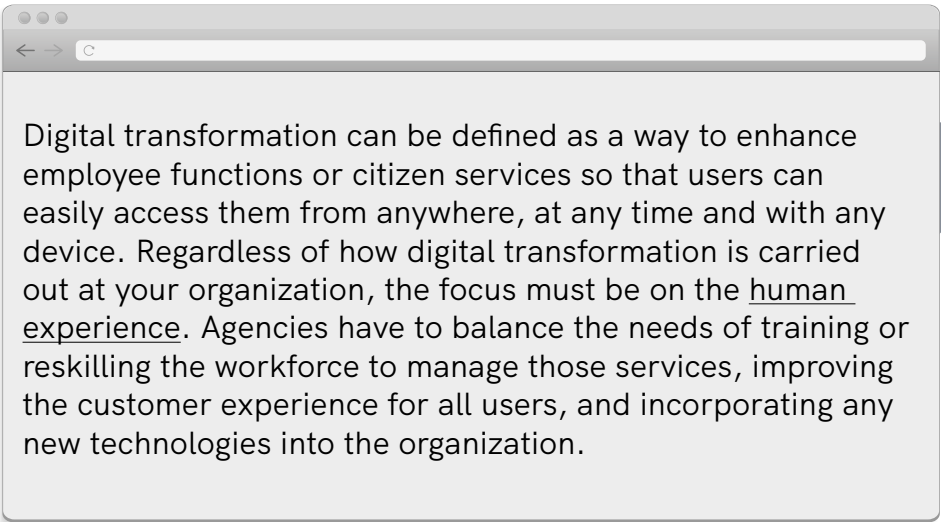
Before we dive into the specifics of transformation success stories, let’s level-set and provide a baseline description of digital transformation.

# Digital Download

## What You Need to Know About Transformation

### What is Digital Transformation?

If it feels like everyone has a different definition for digital transformation, your intuitions are right. To ensure everyone is on the same page, we at GovLoop use this working definition based on a synthesis of countless interviews with government leaders and partners helping to drive transformational change.



### Related Buzzwords

Your agency may or may not use the term digital transformation, but it’s likely that it’s taking place. In talking with government employees about the topic, we heard terms such as digital services, IT modernization, IT transformation and web services. You’re also likely to hear how technologies such as cloud computing and GIS support digital enhancements in government.

Some see digital transformation as an umbrella term that touches each of those areas — and more. “It’s a broad, sweeping term that includes ... [enterprise resource planning], unified messaging, single-sign-on, citizen-centric services 24/7, just to make things easier, better and more efficient, and it may not always save money,” said Alan Shark, Executive Director of the Public Technology Institute.

Benefits of Digital Transformation

Cost savings can be a deal-breaker for agencies considering digital transformation, but the reality is not every change will reap tangible or immediate savings. Other benefits such as cost avoidance or enhancements, improved cybersecurity and efficiencies for staff are invaluable and should not be overlooked or minimized. We will delve into more of these benefits throughout the guide.



How is Digital Transformation in Government Being Discussed?

"Digital transformation is more than a matter of IT modernization. Rather than simply upgrading outdated technology, agencies need to develop an infrastructure that actually improves the capabilities of the workforce and performance of the workforce."

Guy Cavallo,  
Deputy CIO,  
Small Business Administration

"We're thinking about ways that people are using computers to do computational analysis. We want to enable that research by making sure our collections are available in machine-readable ways, that we are providing access to our material through APIs and other bulk data interfaces."

Kate Zwaard,  
Director of Digital Strategy, Library of Congress

"Americans deserve better digital services from their Government. To effectuate this policy, the Federal Government must transform and modernize its information technology and how it uses and delivers digital services."

Executive Order 13794,  
Establishment of the American Technology Council

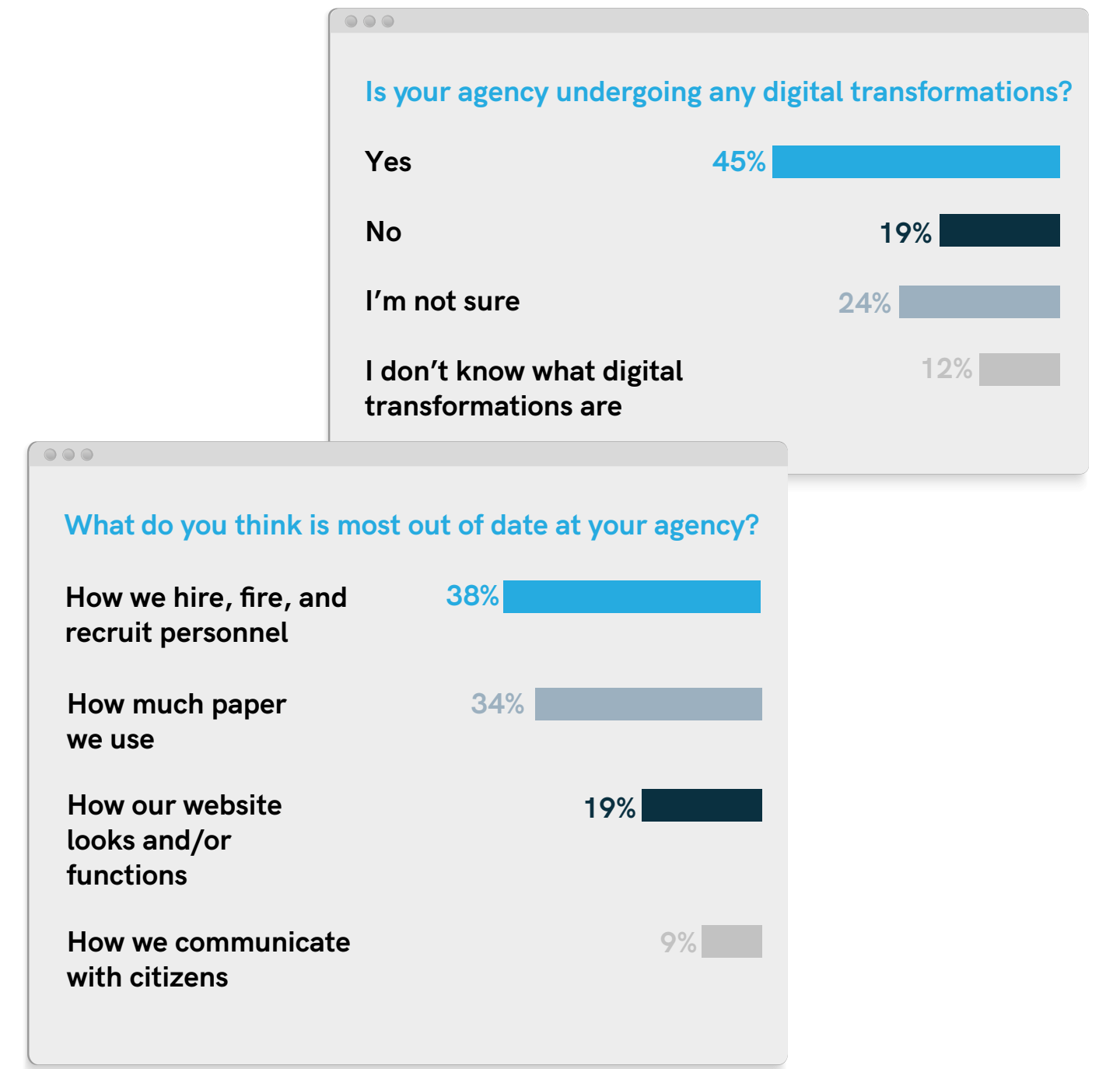
"It's really maximizing our digital assets and agreements that we have with our vendors to provide better services, more modernized services, to not only our employees but our constituents."

David Herlihy,  
Head of Digital Innovation,  
Arlington County, Virginia

What the GovLoop Community is Saying About Digital Transformation

In a recent online poll, we asked the GovLoop community about digital transformation efforts at their agency. Nearly half of respondents — 45% — said digital transformation is happening, while 19% said it's not. Twenty-four percent said they are unsure, which could mean they are not directly involved or the impact of transformation has yet to permeate the agency.

In a separate poll, we asked about outdated processes at agencies. Thirty-eight percent of respondents cited workforce issues, such as hiring, firing and recruiting — much of which happens online today. Paper processes followed at 34%.



# Digital Transformation: Then and Now

This timeline includes major advances in digital transformation at the federal level, plus some key strides that occurred in state and local governments.



## 2001: NASCIO Shifts Focus

The National Association of State Information Resource Executives changed its name to the National Association of State Chief Information Officers (NASCIO), signaling a shift in states' focus toward digital transformation. The group stated that the name change reflected their developing role in implementing new technological innovations at the state level.



## December 2002: E-Government Act of 2002

The E-Government Act of 2002 was an initiative to improve the federal government's electronic services. The act included heightened security measures, established the Federal CIO and promoted use of the internet for government functions. This was an early digital transformation effort.



## May 2012: Roadmap for a Digital Government

Former President Barack Obama issued an executive order requiring government agencies to dedicate resources for innovative technologies that would streamline services and lower costs. The plan included an emphasis on mobile access to government services and better data management.

## August 2014: United States Digital Service (USDS)

USDS officially launched as a small group of private-sector designers, engineers, managers and other specialists recruited to do short stints in government, with a focus on modernizing immigration, veterans' benefits, and HealthCare.gov. The team has evolved and grown since its early days. Projects include modernizing the Medicare payment system, identifying and remediating security vulnerabilities at the Defense Department, and helping veterans upgrade their discharge status.

## April 2017: Establishment of the American Technology Council (ATC)

ATC is a federal council made up of 19 government officials to promote IT best practices. The council was specifically tasked with modernizing government IT processes to improve digital services. ATC released its first major report in December 2017, drafting a plan for modernization efforts and improved cybersecurity.



## December 2017: Modernizing Government Technology (MGT) Act

The MGT Act established the Technology Modernization Fund, created the Technology Modernization Board and directed all Chief Financial Officers Act agencies to implement IT Working Capital Funds. The legislation pushed federal agencies to invest in current technology solutions through financial resources and technical expertise.



## March 2018: Trump on Transformation

President Donald Trump's 2018 Management Agenda highlighted IT modernization and improving the data strategy as goals for creating a 21st-century government. The administration explained how updating federal strategies would improve federal cybersecurity while increasing productivity.

## December 2018: 21st Century Integrated Digital Experience Act (IDEA)

This recent digital transformation law requires federal agencies to make the public experience a priority when implementing IT strategies. By digitizing forms, expanding use of electronic signatures, and updating websites, the law aims to transform how citizens interact with the federal government.



## March 2019 and Looking Ahead: Digital Service Act Introduced to the Senate

The Digital Service Act was introduced in March 2019 to push state and local governments to invest in better digital services. The act would provide additional funding for USDS and funding at the state and local levels to encourage hiring of digital teams to update and rebuild government systems.





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# Open Source: An Answer to AI's Black Box Dilemma

*An interview with Chris Sexsmith, Solutions Sales Specialist, Cloud Practice Lead for the Public Sector, Red Hat*

For government agencies, there is arguably as much intrigue as there is angst about using artificial intelligence (AI).

On one hand, AI is dramatically changing the way government operates. For example, law enforcement officials are using AI to fight crime, while others use it to conduct geospatial reconnaissance. What makes AI such a sought-after tool is that it can augment human expertise and detect trends within petabytes of data. That said, agencies are keenly aware of the potential dangers of completely removing humans from the loop when drawing conclusions.

Along those lines, there are real concerns about the proprietary nature of AI and the lack of clarity around how algorithms and data are used to inform human decision-making. "We're still scratching the surface on some of these "Black Mirror"-esque questions," said Chris Sexsmith, Solutions Sales Specialist and Cloud Practice Lead for the Public Sector at Red Hat, a leader in open source technology. "Black Mirror" is a sci-fi series that explores a twisted, high-tech future in which humanity must contend with the unanticipated consequences of new technologies.

Federal agencies are facing a similar dilemma. They must weigh the benefits and consequences of AI adoption, especially as the technology is used to help make high-stakes decisions. In a recent interview with GovLoop, Sexsmith emphasized the importance of agencies incorporating open source in their AI and machine learning strategies to ensure greater transparency. He also explained that Red Hat is playing a critical role in promoting collaborative and open development of AI tools.

One example of that work is a project called Open Data Hub that runs on Red Hat's OpenShift platform. Open Data Hub is an ecosystem of projects meant to drive community involvement in AI and machine learning while simultaneously providing enterprise solutions derived from open source. "There are big concerns that are generally alleviated when we move to a fully open source model," Sexsmith said. "Open Data Hub provides that level of clarity and control, without forcing agencies to adopt our methodologies."

In addition to addressing concerns about AI transparency, agencies must also ensure that they have the ability to sift through influxes of data to determine what's important. This is especially true in the cybersecurity space. Legacy systems send agencies dozens or hundreds of incident alerts, and most people become immune to them or turn them off. To address that, AIOps is a smart platform focused on distinguishing the signal from the noise and providing relevant information to act on, Sexsmith said.


For now, many agencies are reticent to go full speed with AI because rules and policies around the technology are still being developed at the White House and agency levels. There are ethical implications of how data is fed into AI systems, accumulated, distributed and processed.

"By definition, a proprietary system is not transparent or open, making it a potential factor of concern for agencies that require a full understanding of the data, the system and how conclusions are formed," Sexsmith said. "That's why open source is absolutely critical for any agency looking at AI and machine learning."

**Takeaway: Open source should be a key part of your agency's AI and machine learning strategy to promote greater transparency and understanding around algorithmic decision-making.**

# A 360° View of Digital Transformation

Government employees manage and experience digital transformation differently, depending on their position, roles and responsibilities, expertise, the quality of the service, and many other factors. Here we highlight benefits and challenges of digital transformation from the perspective of those going through it.




**Rajive Mathur**  
CIO, Social Security Administration

### Benefits

You can't have digital transformation without making customer experience a priority, and SSA gets it. The agency is steadily adding to its flagship website and adding internal capabilities for employees. In fiscal 2017, the most recent numbers available, the public completed 155 million transactions using the SSA website, Mathur said during a [September 2018 congressional hearing](#). New features include Click to Chat, a live chat for website visitors to receive help from an SSA employee, and the ability to electronically file a request for review of a hearing decision involving retirement, survivors, disability insurance benefits and more. The agency's digital backbone literally took a quantum leap when it increased the network bandwidth capacity of additional field offices. This increased computer speed and performance to 100 megabits per second from between 3 and 10 megabits per second (about as fast as a single iPhone 6 on a 4G network), Mathur said.

### Challenges

Like many government agencies, SSA's digital future is still plagued by its past. Its core systems are more than 30 years old and rely on COBOL, a programming language created in the 1950s. "While these systems have performed capably — allowing us to provide uninterrupted services for many years — this old foundation limits what we can accomplish and our ability to adapt to changes, and has forced us to deliver IT functionality that gets the job done but does not keep up with either the public's or our own employees' expectations," Mathur said. Many of SSA's experienced IT employees are approaching retirement age, especially those who are COBOL experts. "We will be losing the expertise of our existing systems that they have built up over time," he said. "Our newer employees are highly skilled and capable of maintaining our level of service, but many have not developed the in-depth knowledge of our existing systems that is necessary to add incremental improvements or help us recover if a significant software issue were to arise."




**David Herlihy**  
Head of Digital Innovation, Arlington County

### Benefits

Transformation isn't a big bang approach, but you can determine the pace of change depending on your organization's needs. For Arlington County, Virginia, a major focus of digital transformation is using an Agile approach to prioritize and tackle the county's backlog of IT projects. Herlihy and his team are using six-week sprints to tend to IT requests from offices county-wide. Herlihy expects that setting timelines and clearly stating priorities will help staff coalesce around what's important rather than stretching themselves to tackle everything at once. For example, they're working closely with the county's Department of Environmental Services to launch a virtual assistant or chatbot in August 2019 that aims to ease high call volumes and help residents get answers to their questions faster. Only three people staff the call center, which receives about 60,000 calls a year. "That's our first foray into [artificial intelligence] while we redo our public website," Herlihy said.

### Challenges

One challenge that Arlington County faces in its digital transformation journey is consolidating citizen-centric data. "We've got about 450-plus applications scattered around the county that we don't control that we know of," Herlihy said. "We're starting an effort to try and consolidate key pieces of that," which kicked off in January 2019. The county is still in the early phases of tackling some hefty transformational projects.



**Ricky Santiago**  
Innovation Programs Manager, Office of Performance Improvement & Innovation, Louisville

### Benefits

What good is digital transformation if the intended audience can't benefit from it? That's what Santiago's focus on eliminating the digital divide in Louisville, Kentucky, is all about. His work involves making the community aware of low-cost connectivity options and access to the hardware required to take advantage of digital transformation. Equally as important is training the community to build the necessary digital and computer skills. It's a three-pronged, integrated approach that works only if residents have the right tools at the right price point and understand how to effectively use them. "Digital inclusion is the sum of all these parts," Santiago said. The mission of his office is to build data and technology platforms that ready the government for the community's digital future.

### Challenges

As communities such as Louisville become more digital, the pace of change is often too fast for all residents to keep up. Cities must consider the under-connected. Twenty-eight percent of households in Louisville don't have access to fixed internet, and 22% don't have access to a home computer. That number is increasing with the rise of mobile options. Although mobile devices offer access to digital resources, they aren't ideal when applying for jobs, creating resumes and doing complex tasks with multiple forms. "Technology is what tech has always been — a tool," Santiago said. "But we need to make sure everyone has equitable access."

# Cutting Bureaucratic Tape to Bring Better Services to Veterans

The Veterans Affairs Department (VA) attempts to ensure that on re-entering civilian life, veterans are welcomed with the “world-class benefits and services they have earned,” and it looks for ways for that to happen efficiently. For that reason, VA has embraced the [Presidential Innovation Fellows \(PIF\) program](#) to speed service delivery and ensure veterans receive personalized treatment from VA. PIF is a competitive, 12-month fellowship that pairs talented innovators outside the federal ecosystem with top civil servants to tackle some of the nation’s toughest challenges.

“What we want is to make sure that when you walk into the VA, we know who you are,” Nelson Colon, a PIF detailed to VA’s Office of the Chief Technology Officer (CTO).

## The Problem With Disability Claims

One of VA’s most important responsibilities is offering benefits and compensation to soldiers who have borne disabilities for their service. To receive compensation, veterans submit an application detailing the extent of their disabilities, and VA reviews necessary records, offering medical examinations and assisting veterans in finding proof to back up their claims. The application, Form 21-526EZ, can be accessed [here](#).

On average, VA receives 1.7 million of these forms a year from veterans applying for disability compensation and related benefits. Sixty percent, or more than 1 million, are received in the mail. For veterans, the paperwork involved in these forms delays the time until they receive their benefits, and forms that are received in the mail are especially laborious. Veterans have to wait an average of 100 days for forms to be processed, and many forms can take far longer.

VA wants to follow up on benefits applications as quickly as possible, and in its era of digitization, forms submitted online can be processed through language-reading software. The forms submitted by mail, however, almost always have to be manually sorted, evaluated and logged before they can be acted on, requiring significant costs and time from VA employees.

The department has used software to speed the process for mailed applications, digitizing the forms and then scanning them automatically to detect types of disability. With language recognition capabilities, software can recognize phrases such as “hearing loss” and classify the form appropriately.

Unfortunately, the program is very limited in scope — capturing just 1% of the applications submitted through mail, or 10,000 of 1 million — as it fails to account for misspellings and alternate phrasings or descriptions. Currently, the system understands only 111 phrasings of disabilities, so if a veteran writes “difficulty hearing” instead of “hearing loss” or misspells a disease, the form couldn’t be automatically processed and would need to be reviewed by a VA employee, even though the disability is apparent.

## Fielding an Innovative Solution

VA has embarked on a mission to modernize, which has been advanced by thinking outside the box and outside VA headquarters — in a rectangular 10-story building a block from the White House’s north lawn.

About a half mile away is the General Services Administration (GSA), a familiar resource for VA IT. Every year, GSA welcomes a class of PIFs and connects them with departments and offices throughout the federal government for a yearlong sprint to tackle specific problems – a program of which VA is a primary benefactor.

PIF classes are designed to infuse innovation into the public sector from outside sources to offer a fresh approach to intractable challenges within the federal government, which is often maligned for getting too stuck in familiar ways of operating. PIFs’ 12-month tenure requires them to select a project that can be accomplished in a limited time frame.

VA CTO Charles Worthington is a PIF alumnus, and his office currently houses four fellows. Three are assigned to other offices within VA, Colon said.

Colon sat down with Worthington to discuss VA’s modernization journey in general, and they decided to pursue a way to update the processing of disability forms.

“We chose this machine learning project, and I think that one was mainly because I’ve worked on the whole process of developing software from building the models, building the containers, taking that into production,” Colon said. “I had a really good idea of how long that would take, so I was confident that we could do that in less than a year.”

Colon partnered with Bennett Gebken, a VA employee at the Veterans Benefits Administration who came up with a solution on his own time on a personal laptop. However, lacking a development or data science background, he’d been unable to apply his model to VA’s Form 21-526EZ conundrum.

Coming from the private sector, Colon had most recently worked at Microsoft developing machine learning products and at a cybersecurity startup working with natural language processing.

The previous language processing program at VA that picked up on 1% of submissions was to be replaced by a machine learning solution that Colon, Gebken and a small team worked on, benchmarked for 70% recognition of the different disabilities. By identifying disabilities from root words and classifying them, the team’s invention would save VA \$20 million if it ran at 70% accuracy.



Putting it in Motion and Completing the Bigger Picture

With the timeline in place, Colon’s team got started on the project. The first step was to analyze the language, which involved cleaning up data and applying the right labels to ensure that the system could understand and sort words people wrote.

“It’s actually one of the things I enjoy the most,” Colon said. “I think it’s like playing with a puzzle. You start playing around and trying to figure out how can I make this better.”

After considering different language patterns, Colon and company needed to actually code the software. They worked with VA employees who handled the application programming interface (API) and development sides of the solution, enabling machine learning and natural language processing capabilities that Colon built into programs. By teaching the software to recognize language roots and misspellings, they could automate the classification and processing workload.

The team then pilot tested the solution, and the first model reached 70% accuracy, the expected outcome for the project as a whole. Not resting on its laurels, the team added more methods and protocols for analyzing language to obtain higher accuracy.

Six months after starting the project in January 2019, the final solution reached its final test. The team’s run-through during the last stage of development returned 92% accuracy, meaning that VA should save more than the \$20 million leaders hoped for and veterans will have to spend less time waiting for the processing of benefits forms.

What’s Next?

Making use of the PIF program is just one way that VA has targeted modernization and accessibility. In 2014, VA hospitals made headlines for reportedly long wait times that resulted in veterans’ deaths. Colon’s project is one way that VA is lowering barriers to access.

VA Secretary Robert Wilkie made customer experience his No. 1 priority for 2019. A new VA website, centered around customer experience, has increased the number of online health applications by 50 percent, officials [said in January](#).

VA has also been exploring ways to connect struggling veterans to help through social media, Keita Franklin, National Director of Suicide Prevention at VA, [said in January](#) at the AFCEA Health IT Summit. With the deployment of AI software, social media language that hints at self-harm or suicidal thoughts can be brought to the attention of suicide prevention professionals.

Of the 20 veterans who die by suicide every day, 14 are not under VA care, Franklin said. Getting veterans access to VA systems is one of the most important steps to helping those who are struggling with mental health. Mental health resources for veterans are available [here](#).

These efforts culminate in a departmentwide strategy of accessibility and modernization — one that Colon’s project is just a small part of.

But he’s connected with the mission on a deeper level. Colon said that he came into government with an expectation of stagnancy within the workforce. Six months in, he views it very differently.

“I thought I was going to come in, and I was going to have to fight my way through things and that I was going to encounter a lot of resistance to get things going,” Colon said. “And then I got to VA, and I realized that everyone wants to provide better services. Everyone wants to do better. And it’s just sometimes people have great ideas, but they don’t know how to move them forward, which was the case with Bennett Gebken.”

Working in government, Colon said, is his way of giving back. He hopes to extend his public-sector career and stay at VA longer than the promised year to help further transformation efforts and deliver services to veterans.

As his natural language processing program matures, he is also updating VA’s veterans database and supporting the cybersecurity desk, trying to shield veterans from fraud. Colon credited the PIF program for putting him in a position to make an immediate difference in the public sector.

“I would love to stay with the VA,” Colon said. “But if I don’t, then I would like to have some time to train someone to keep updating this and keep looking after this project.”

50%  
increase in online  
health applications



Cut  
Copy  
Paste

# An Interview With the Library of Congress Director of Digital Strategy

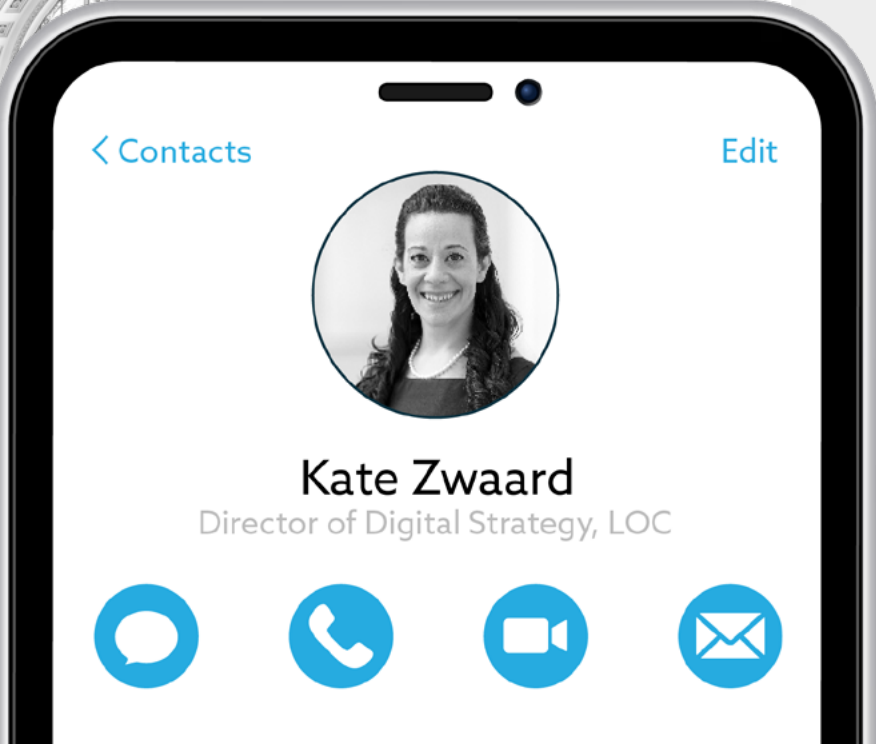
Imagine being responsible for elevating the digital planning and initiatives for the largest library in the world. For Kate Zwaard, Director of Digital Strategy at the Library of Congress (LOC), that is both her reality and passion.


Zwaard is spearheading a collaborative three-year directional plan that harnesses technology to bridge geographical divides, expands LOC’s reach and enhances its services. She has a small team of five people that collaborates with Library staff to tackle massive projects and serve millions of visitors.

LOC currently provides machine-readable access to metadata and items on LOC.gov, 25 million downloadable bibliographic records and the text of 13 million digitized newspaper pages. In 2018, the Library welcomed 114 million visits to its websites and 1.9 million to its physical buildings.


Zwaard recently sat down with GovLoop to discuss the [Library’s Digital Strategy](#), which came out October 2018, and how LOC is taking a collaborative and human-centered design approach to serve visitors in this digital age.

*The interview was lightly edited for brevity and clarity.*





What’s your elevator pitch about the digital transformation work happening at LOC?




Broadly speaking, our vision for the next five years in terms of a digital strategy is really captured in these points. One is that we want to throw open the treasure chest. And, in libraries, that’s our major focus. That’s the reason we wake up in the morning. We’ve collected this material on behalf of the American people, and we want to be able to share it. And there are a couple of different ways we’re thinking about doing that. One is that we’re exponentially growing in our collections. So, even as we’re constantly digitizing physical material, we’re also collecting born digital material through various programs, including web archiving.

We’re thinking about ways that people are using computers to do computational analysis. We want to enable that research by making sure our collections are available in machine-readable ways, that we are providing access to our material through APIs and other bulk data interfaces.

The second big section of the digital strategy is about connecting. The vision of the Library of Congress is that all Americans are connected to the Library of Congress. And we think technology’s going to be a really important part of that. We want to be where people are asking questions. In a way, structuring our data to make it machine-readable makes that even more possible. We want it to be attractive to the folks who are building the knowledge interfaces of the future. We want to inspire lifelong relationships with every visit. We get a lot of traffic from websites to interesting items in our newspaper collection, for example. We want to use that to draw them into deeper research and deeper knowledge.

Can you briefly talk about your role in implementing the strategy?




I feel really lucky that I started here as an engineering manager, working on software, making software to manage digital collections. That gave me the opportunity to meet people throughout the Library, understand their needs, understand what they wanted. I think that has led to our team taking a very collaborative and consensus-driven approach. We invited members from different parts of the collections, and also from the copyright division and the Congressional Research Service, to work together to articulate the Library’s vision.

Each one of the service units, which are the different high-level components of the Library, is using the digital strategy in their near- and long-term planning. And similarly, the Digital Strategy Office — my office — is taking a more facilitative role. So, we are going to focus in the next years on three main things. One is the strategy itself, so the digital strategy, making sure that’s current.

The other is culture — facilitating the continued development of an innovative culture here. That means bringing new ideas into the Library, hosting meetings, making sure that the innovation that’s happening in the broader community is threaded through into the Library.

And the third one is experimentation, and I think this is where we’ll be putting a lot of our resources. This is thinking about how we can responsibly try new things, so that we can make sure that we’re investing the resources of the Library wisely. An example that I’d like to share is we wanted to try something around crowdsourcing. The Library of Congress was really excited about the idea of using crowdsourcing to reach people where they are. I think it’s a really lovely way of showing people that they belong.





Accessibility was a big theme throughout this strategy. How do you ensure everyone is included when you go digital?



We are incredibly lucky to host here at the Library the National Library Service for the Blind and Visually Handicapped. That is a service by which any U.S. resident or U.S. citizen living abroad can access audio books or braille books at no cost. We have had a long history here at the Library of thinking about how people can access information regardless of their abilities. That has given us a huge advantage in terms of focus. In fact, they're doing some really exciting things in thinking about how we can leverage technology to, for example, use voice interfaces to search their catalog. The crowdsourcing project I mentioned earlier and also optical character recognition give access to our historic collections to people who use screen readers in a way that I think is really exciting. We're testing the accessibility of that right now.

Inviting the public to become virtual volunteers to improve search and accessibility of Library of Congress digital collections.



What would you say are the biggest challenges that you face with digital transformation at the Library?



We're the largest library on planet Earth. The scale of it is really kind of astronomical. Just to give you a number, we have 5.5 million paper maps in our building, and the stacks, when you walk through, go on for two football fields. So, thinking about how we could make our material maximally available to any American who could use it, it's just an enormous challenge, and it's also an opportunity. Another challenge is that we were one of the first libraries to the web. That means that we have a lot of systems and websites that have been made and now need to be rationalized into modern web applications and modern software.

How do you prioritize? With so much, how do you decide when to do what, and what should the focus be?



The Library has had a lot a practice in this. We've been digitizing for a long time. There is a working group that is made up of representatives from throughout Library services, which is the part of the Library that is responsible for collections and services. They review proposals, and what they focus on is material that is rare and unique to the Library. We focus on the personal papers of presidents, for example.



How is the Library embracing human-centered design?



There's a team at the Library that leads the user experience work here. They are incredible, and they actually just wrapped up a project with the University of Maryland using human-centered design to think about how we might provide access to the Constitution Annotated. The Congressional Research Service here works with some of the most prominent lawyers in the country, and they annotate the Constitution with all the Supreme Court decisions that have referenced it. So, lawyers, scholars and others who are interested in seeing something can go look at it and see all the pertinent case law that has applied to those very cases. The students at the University of Maryland came up with a prototype for that material.

It sounds like there is a big focus on customer experience. Can you share updates?



We are almost complete with the effort to take what was hand-coded HTML pages with links to collections items and to put them into a modern framework. That has taken many years. Like I said, we were early adopters of the web, so it meant that we had a lot of material that needed to be transformed and much of it had to be done by hand. Now that that's in a modern web framework, we can take advantage of things like responsive design and API access to our collection.

We launched our API maybe a year and a half ago. We find that people are using it both to analyze the collections but also to build applications on top of it. A researcher used the API to track the use of Bible quotes in historic newspapers over time, and in the experiment section of the [labs.loc.gov](https://labs.loc.gov) website, you can see more examples of this. We're exploring machine learning as a possible mechanism for processing our material and services here. We have a solicitation that just closed for a short machine learning experiment. We're reviewing bids on that now, and we will be engaged in that research project at the end of this year.

What tips or talking points can you share that would be helpful for others embarking on this journey of digital transformation?



I think that making friends is probably the most important thing you can do in a role like this. Approach everything with empathy, and realize that big institutions like this don't change on a dime and that's OK. It is actually a huge strength that we are built to endure. Find ways that small changes can have exponential impact.



# Location-based Data Powers State and Local Transformation

*Below we highlight two case studies showing how GIS technology is helping local governments serve the public in a more dynamic, efficient way.*

## Honolulu Taps GIS to Improve Land Development

Honolulu was an early adopter of GIS; its program dates to the 1980s. Over the years, there has been a growing focus on developing a system to help examine the land development patterns and impacts of what’s happening in the community. The goal is to promote and conduct better planning and decision-making about proposed developments and site-specific construction occurring throughout the city and county of Honolulu, said Ken Schmidt, the city’s GIS Administrator.

Honolulu is using GIS tools to determine the potential effects of a proposal that would change the zoning height restrictions for apartment complexes without elevators from three stories to five. In this instance, engineers and planners can view web-based, shareable 3D models to determine the number of housing units that might be created under the proposed regulation change. These efforts are part of a larger push to support healthy community development and address housing affordability using data.

“This can be used to empower the communities to be more engaged in some of these planning practices, so that they’re just not reacting to plans that are being proposed and providing comments,” Schmidt said. “They could actually get involved and ... make their own scenario.”



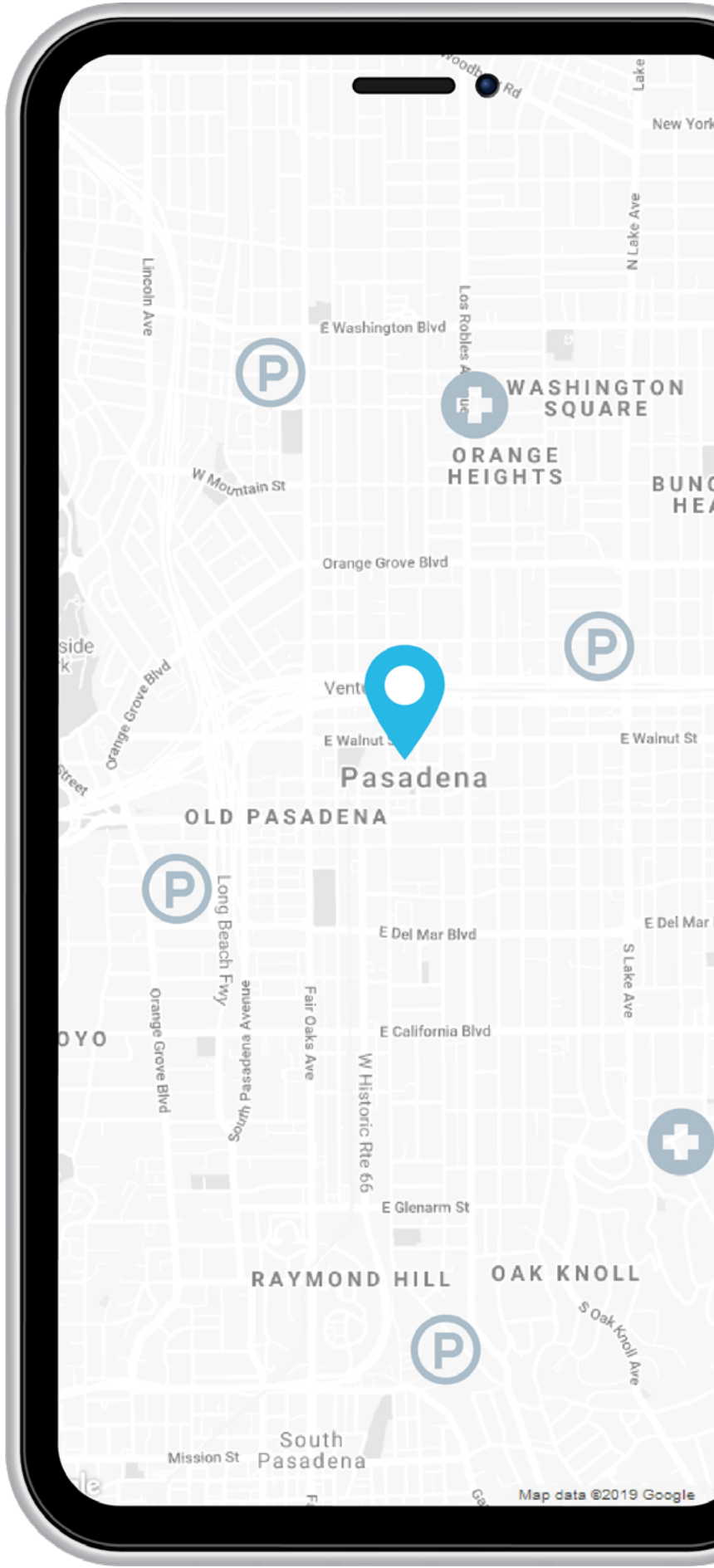
## Pasadena Digitizes Rose Parade Planning With GIS

Planning for the annual Tournament of Roses Parade is a year-round activity for the city of Pasadena, California. The GIS staff and fire and transportation departments work especially close to properly and efficiently prepare the city to support and protect millions of parade attendees.

Everything from traffic to parking to street closures and the location of emergency vehicles must be coordinated and communicated across public-safety organizations. Thanks to web-based GIS tools, officials were able to process and analyze this data visually. They had operational visibility across easy-to-use dashboards in the city’s Emergency Operations Center during the event, and via tablets and mobile devices personnel used in the field, said Pasadena CIO Phillip Leclair.

The city also experimented with an application that allows officials to quickly locate personnel, fire trucks and other equipment during the parade and use that data to drive response efforts.

“Everything I talked about was on paper [before],” Leclair said. Not everyone had access to the data because information was tracked in binders full of plans and staging documents. Now that data is created digitally, it can be quickly accessed, analyzed and shared by multiple people — all with the goal of improving operational efficiencies and keeping the public safe.





# Talking Transformation

*How can employees effectively communicate the need for and importance of digital transformation? How do they track benefits and show progress? Here we provide talking points and practical ways to communicate digital transformation with various stakeholders.*

*[Tweet @GovLoop if you have tips to share!](#)*

## Tips for communicating and advocating for digital transformation

- **When you’re communicating digital transformation, make sure to answer this question for your intended audience: What’s in it for me?** That’s what people care about, Arlington County’s Herlihy said. Whatever change you’re communicating, always follow up and explain it immediately. To empower IT employees to have these types of conversations internally and externally, several county experts are collaborating to create an IT dictionary with a common language for communicating terms such as cloud computing and multifactor authentication.
- **Don’t take no for an answer.** When somebody tells you no one way, there’s another way in, Herlihy said. “If you firmly believe in the technology, [that it’s] going to be a tool of use to resolve problems or stop problems from happening, don’t take no” for an answer.

- **Create a feedback loop.** Whether it’s a town hall, Slack channel, suggestion box or open-door policy that invites regular feedback, provide a mechanism for sharing and receiving ideas. This involves treating your internal and external customers as your clients, according to former GovLoop Featured Contributor Fredy Diaz. “By having an open dialogue with your customers, they will provide you with valuable feedback that can help determine your path forward to success,” he said. “Use customer feedback to validate your strategy, make tweaks or expand into new areas.”



## Tips for tracking benefits and showing progress

- **Data analytics can be a powerful tool to track progress,** but there must be agreed upon metrics that are presented to decision-makers in a meaningful way. Analytics only gets you as far as your understanding of the underlying issues you’re trying to address, said [Kaegy Pabulos](#), Senior Manager of Mobile Experience at the Education Department’s Federal Student Aid office. Use analytics as a starting point to understand how customers are interacting with digital products and platforms and to design experiences that are nimble and agile.
- **The fundamental step is trying to understand who your customers are** and mapping their journey across the life cycle of interactions with your agency. For example, determine what pain points they face during each interaction, whether it’s logging into an online account or searching for information online. Understand what their goal is at each touchpoint and use those interactions as the basis for creating and defining metrics, Pabulos said.
- **When presenting data to decision-makers, don’t let the data steal the show.** Don’t show data without providing context, leaving it to tell its own story. Generally speaking, leaders have limited time to focus on many things. Data is their best approximation of what is happening at the ground level, and they put a lot of faith in it. “That means that we need to stack the deck toward communication,” said Dave Uejio, Chief Strategy Officer at the Consumer Financial Protection Bureau. It’s important that you take not just what is interesting about the analysis, but what is imperative about the information and frame that in a narrative way.

## Tips for putting customers first

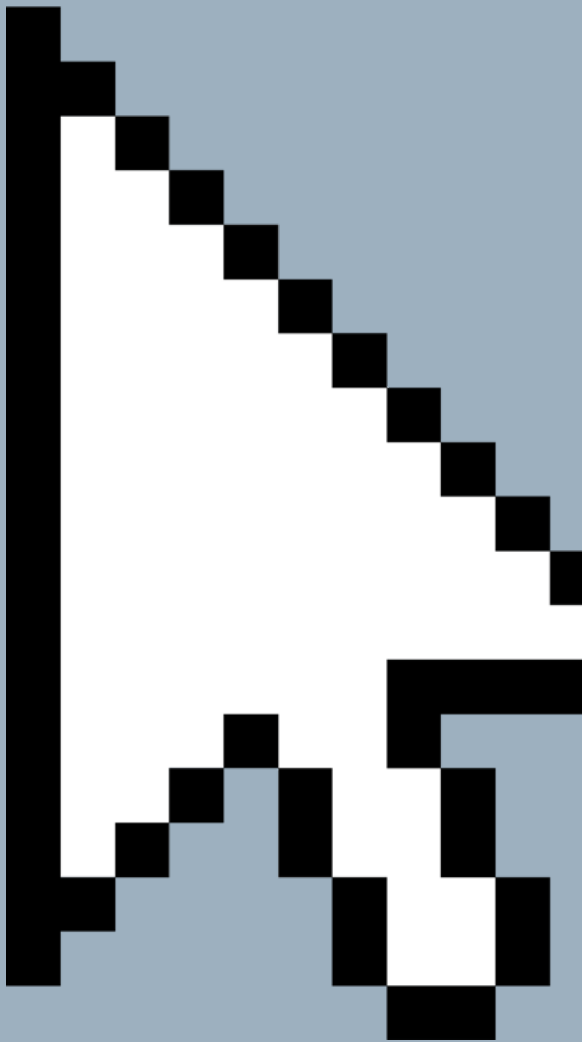
- **Customer service should be at the heart of digital services.** A common question that Louisville’s Santiago asks organizations is how many of their tools are online, including job applications portals. He follows up by asking how many end users — in his case, community residents — are aware of those resources and know how to take advantage of them. Putting the user first is about more than making tools available, but also ensuring people know where to find them and how to use them.
- **Align your budget with customer needs.** Unfortunately, agencies are not funded to say, “We will look at every dollar invested through the lens of our customers,” said Marcy Katz Jacobs, Executive Director of Digital Service at VA. Because funding and efforts are siloed, the question becomes how do you connect the dots across an organization when everyone has their own motivations and metrics that they track?
- **Think bigger than your responsibilities of improving customer experience.** “I would encourage everyone who is responsible for a piece of the [customer experience] puzzle to think about what is the thing that happens before and what is the thing that happens afterward,” in terms of their role in providing a good experience for customers, Katz Jacobs said.

# Conclusion

The greatest takeaway we want government employees to glean from this guide is that digital transformation is more than a buzzword. It has the power to drastically improve the way employees and the public interact with digital tools and services — when done correctly. And when employees are empowered to do their jobs, the customers they serve inevitably benefit.

To successfully implement any digitally focused initiative at your agency — whether it’s rolling out a new chatbot to offset high call center volumes or digitizing forms and workflows — you must keep the end user in mind. Digital transformation must be intentional and based on sound insights about who your users are and what they need. It isn’t a one-time event but rather an evolution of digital initiatives at your agency that should improve over time.

Use the case studies and tips in this guide as a starting point on your road to digital transformation or as fuel to reimagine what’s possible for the future of your agency.



## 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.

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## THANK YOU

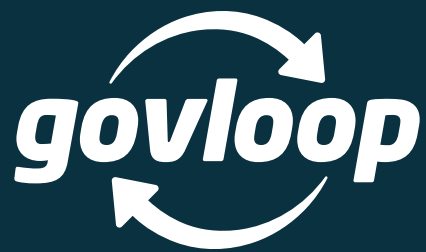
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