



MAKING **IT WORK:**

A PRACTICAL GUIDE TO MODERNIZATION IN GOVERNMENT



TABLE OF CONTENTS

3	EXECUTIVE SUMMARY
5	HOW NETWORK MODERNIZATION SUPPORTS BETTER IT SERVICES
6	TECHNOLOGY MODERNIZATION FUND: WHAT IS IT AND WHO'S USING IT?
7	MEET THE WINNERS
9	FIRESIDE CHAT WITH A TMF BOARD MEMBER
11	SUPPORTING A MODERN WORKFORCE WITH SECURE, DIGITAL WORKSPACES
12	PITCHING A MODERNIZATION PROJECT
15	USING AI TO MODERNIZE INFORMATION MANAGEMENT
16	ENGAGING PARTNERS AND SUSTAINING THE PROJECT
19	HOW A FLEXIBLE, HYBRID CLOUD DRIVES IT MODERNIZATION
20	RESKILLING EMPLOYEES TO MANAGE CHANGES UNDER IT MODERNIZATION
23	TURNING UNWIELDY DATA INTO STRATEGIC AGENCY ASSETS
24	CONCLUSION
25	WORKSHEET: MAPPING YOUR MODERNIZATION PROJECT

EXECUTIVE SUMMARY

If you've ever done a home improvement project, then you know the struggles of modernizing the old and embracing the new. Depending on the scale of your task, you may need to make continuous updates, adjust the scope, acquire new tools, hire additional help, demolish and rebuild, or manage an environment in which old and new must coexist.

In many ways, these personal projects are like the decisions government agencies face — but on a much smaller and far less bureaucratic scale. “Agencies have attempted to modernize their systems but have been stymied by a variety of factors, including resource prioritization, ability to procure services quickly, and technical issues,” according to the [2017 IT modernization report to the president](#).

There are also fears — both real and perceived — that change will be too hard, too messy and too uncertain. But when these hurdles hinder government employees from approving disabilities claims, administering child protective services, securing transportation systems and completing other critical tasks, the costs and risks of forgoing modernization become far too high.

That's why government agencies must commit to updating or replacing outdated systems and processes with innovative and modern solutions. **To run a more effective and efficient government, employees need modern IT that helps them meet citizen expectations and keep data and systems secure in the digital age.**

In this GovLoop guide, we explore three key factors to launch and sustain a successful modernization project. They include:

- **Pitching a modernization project**
- **Engaging partners and sustaining the project**
- **Reskilling employees to manage changes under IT modernization**

You may not be the person spearheading modernization efforts, but it helps to understand how IT decisions are made, particularly because they can either enable or hinder the way you work.

For each of the three challenges we detail in the guide, we provide practical tips plus insights from rank-and-file employees in the trenches of modernization, chief information officers and other government executives. We also include questions and prompts about IT modernization throughout the guide for you to consider and a final worksheet to help you map out your IT modernization journey.

Featured Experts



Dorothy Aronson
CIO, National Science
Foundation



Vicki Hildebrand
Former CIO, Transformation
Department



Alan B. Thomas Jr.
Commissioner, General Services
Administration's Federal
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Chris Tonjes
CIO at the Office of the
Attorney General for the
District of Columbia



Levi Worts
Technical Writer, Montana
Motor Vehicle Division



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we stand today. And to where we will go
from here. One company. One promise.

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the bridge to get you there.



The bridge to possible

INDUSTRY SPOTLIGHT

HOW NETWORK MODERNIZATION SUPPORTS BETTER IT SERVICES

An interview with Dan Kent, Public Sector Chief Technology Officer, Cisco

For agencies that have started down the path of IT modernization, they've quickly learned that updating legacy technology is less of a sprint and more of a steady journey that requires thoughtful planning.

In a recent interview with GovLoop, Dan Kent, Public Sector Chief Technology Officer at Cisco, discussed why agencies should take a multi-layered approach to modernization and how it leads to a strong IT network that supports more robust citizen-facing services.

Kent explained that the first and most critical layer to modernization is building a solid network foundation. The network and its multiple components ensure that employees can connect to their devices and that citizens can access the services they need. The foundation also includes next-generation data centers and the IT architecture. This is the blueprint that guides how an organization's IT elements work together to accomplish its mission.

As a networking hardware and telecommunications provider, Cisco plays a critical role at that foundational level by helping agencies to create a secure, reliable network that allows them to roll out applications faster and with greater reliability. These types of investments are critical for governments at all levels

because citizens are demanding more mobile, intuitive and dynamic services.

On top of the network sits a common platform or shared infrastructure to develop applications. A shared approach enables development and operations teams to work collaboratively using a DevOps approach. Agencies can also manage shared resources better and make improvements centrally and faster when issues arise. When a solid network and platform are in place, application performance also improves.

But the challenge many agencies face is that network modernization isn't flashy. It doesn't make headlines until the network fails, and there is rarely funding put aside to address issues. Agencies must be willing to take funding from high-visibility areas to ensure they have a strong IT foundation for improving services down the road.

To keep pace with rising demands, agencies must also enable their network to constantly learn, adapt and protect. It's called intent-based networking, and it's ushering in a new era of government. With these networks, agencies can build in security and analytics to digitally transform the way they work, meet business needs and enable their workforce — all while delivering better citizen services.

"It's all about integrating security and being able to protect everything that sits on top of the network," Kent said. "But you have to start with the right foundation that enables you to reach everywhere your constituents are."

– Dan Kent, Public Sector Chief Technology Officer, Cisco

MAIN TAKEAWAY

As agencies modernize their IT environments, they must focus on building a solid network foundation to support secure, robust and user-friendly applications.

TECHNOLOGY MODERNIZATION FUND: WHAT IS IT AND WHO'S USING IT?

WHAT IT IS

New to 2018, the Technology Modernization Fund (TMF) is the federal government's fresh and bold attempt to modernize agencies' legacy technologies. Offering loans and flexible repayment options, the Technology Modernization Board reviews agencies' proposals and dispenses money to selected projects. The fund was established by the Modernizing Government Technology Act of 2017 and received an initial \$100 million to fund agencies' modernization projects.

HOW IT WORKS

Phase 1: Initial Project Proposal

Agencies submit Initial Project Proposals (IPPs), which the Technology Modernization Board reviews.

The Board assesses IPPs based on established criteria, such as feasibility and impact on the agency's mission. The Board provides agencies a written memo highlighting its decision to move forward or not.

Phase 2: Full Project Proposal

If the Board accepts an IPP, the project team presents its Full Project Proposal (FPP). FPPs allow the Board to review all financial aspects of the project and ask the project team pointed questions.

If the Board approves an FPP for funding, the General Services Administration program office and agency project team finalize a written agreement. That agreement acts as a contract between the agency and Board and lists specific requirements and milestones.

Funds are distributed incrementally to project teams and are tied to performance against targets and milestones the agreement established.

Source: tmf.cio.gov

MEET THE WINNERS

As of December 2018, agencies have submitted 40 proposals totaling \$500 million in requested modernization funding, according to Federal CIO Suzette Kent. More than \$30 million remains in the fiscal 2018 fund. In this section, we highlight the six award winners, the challenges they faced and how they will use the funds.



WINNER: Housing and Urban Development Department (HUD)

AMOUNT: \$20,000,000

PROJECT:

HUD's most critical grant, loan and subsidy systems were stuck in on-premise, mainframe databases, which were siphoning off agency funds with ever-increasing legacy maintenance costs. The critical applications are central to the agency's mission and support 30,000 users and more than 100 programs that pay out \$27 billion annually.

A limited budget prevented HUD from undertaking cloud migration until now. HUD expects to save \$8 million annually once the project is complete, which it will use to repay the TMF loan and to assist the agency in other legacy transformations. HUD's new platform will be a Java, cloud-based application suite.



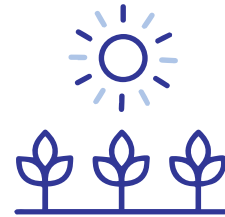
WINNER: Energy Department (DOE)

AMOUNT: \$15,217,096

PROJECT:

Across DOE, multiple on-premise email environments were ratcheting up costs for the department and compromising security systems. Of the 64 separate email systems, 45 were on-premise. Officials knew something had to be done and planned to migrate 19 on-premise systems to the cloud.

After applying for and receiving a TMF grant, DOE can migrate the remaining 26 on-premise email systems. The project is expected to be completed in three years, and the new email system will be in the cloud as a Software-as-a-Service solution. DOE expects to both improve cybersecurity and reduce operational costs as a result.



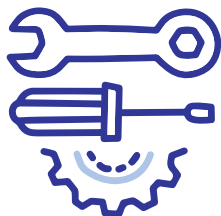
WINNER: Agriculture Department (USDA)

AMOUNT: \$10,000,000

PROJECT:

USDA has undergone dramatic changes in the past year, garnering two TMF awards and serving as the pilot IT Modernization Centers of Excellence (CoE) agency. Secretary Sonny Perdue committed to modernizing the agency, promising to "build a website designed with our producers in mind," and he did just that.

Farmers.gov launched a Citizen Experience Portal, consolidating and highlighting critical program information that had previously been scattered across multiple agency websites. USDA will streamline and simplify the conservation financial assistance process for farmers and ranchers throughout its website offerings to reduce difficulties with disbursements. Previously, there had been incorrect payments and repeated financial audit findings.



WINNER: Labor Department (DOL)

AMOUNT: \$3,500,000

PROJECT:

For some employer work visa applications, DOL still relied on a paper-based process to issue labor certifications. Inefficient, the process also proved costly because unique and specialized paper were required to ensure authentication. In addition to dedicated printing rooms, the documents – and follow-up paperwork – had to be mailed to employer applicants overnight.

With the TMF loan, DOL will eliminate the back-and-forth mailing between employer and agency. Applicants will receive labor certifications through a secure “E-Certification” document. In addition to saving money, the new project will also save significant time by improving the ease of data input and access.



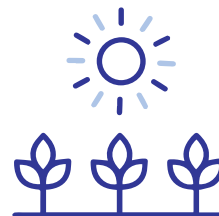
WINNER: General Services Administration (GSA)

AMOUNT: \$14,997,667

PROJECT:

Despite housing the innovative TMF program, GSA struggles with legacy application management as much as any other federal service. With 88 applications in need of modernization, GSA runs primarily on legacy proprietary technology, which leads to both inflexibility in application adoption and costly maintenance.

With the nearly \$15 million award, GSA plans to deploy a pilot program for full-stack application modernization and transform systems that depend on legacy proprietary software. GSA hopes to move to more open source technologies and modernize hardware, databases and applications. Using Agile methods, a Solutions Team will not only transform GSA technology but also generate a modernization playbook for other agencies to use.



WINNER: USDA

AMOUNT: \$5,000,000

PROJECT:

Tying directly into CoE goals, USDA has tried to increase its efficiency across locations and branches. With outdated and labor-intensive technology, USDA has had to grapple with security concerns, decentralized infrastructure upkeep and widespread system performance problems.

With a focus on shared services, a cloud platform model will enable USDA to move 10 applications to the cloud. The specific applications were selected for readiness and impact and evaluated for structural commonalities. Recognizing that incoming data would be more complex, diverse and voluminous, USDA leaders decided to pursue this foundational migration with TMF funds. USDA hopes to construct its base for future cloud migrations with this project, developing commercial cloud “landing zones.”

FIRESIDE CHAT WITH A TMF BOARD MEMBER

Now that you've read about the TMF winners, you may be wondering if the fund is a good fit for your agency. TMF is still a relatively new concept, so there is some hesitancy among agencies to dive right in. But whether your agency is considering it as a funding source or not, you should understand how senior leaders evaluate and select projects to fund.

GovLoop's Managing Editor, Nicole Blake Johnson, moderated a fireside chat with TMF Board Member Alan B. Thomas Jr. during the [Federal Technology Modernization Summit](#) in Washington, D.C., in December 2018. The nonprofit organization ATARC hosted the event. Below are highlights from that conversation with Thomas that were lightly edited for length and clarity.

What types of conversations are you having with the initial TMF award winners?

What type of insights are they sharing with you?

THOMAS: We want to see, who's the project manager, who's the lead technical person on the project from the government side, who's going to come in and execute on this [project]. For the quarterly review, we like to know, 'Hey are those people still in place?' Have you made changes? Have you augmented the team? Because part of what we're betting on are the actual people. So are you hitting your milestones, and how are the people doing?

And then, obviously, just are there any things you didn't foresee when you made your proposal that have now popped up that might be blockers or hurdles that the Board could potentially help with?

What unique perspective do you bring to the Board, and what are the key things that you're looking for when you're determining who gets funding?

THOMAS: I am focused on the finances. I like to dig into the numbers a little bit and make sure that they're realistic. I like to know how agencies are thinking about generating cost savings. Given my role, I'm curious about how they're going to contract with the private sector, if that's what they're proposing to do. We like to know what they're doing from an acquisition strategy standpoint. Are you just adding funds to a vendor that you already have on contract? Are you doing something competitively? Are you looking at using small business?

What is the timeline associated with the proposals to the Board?

THOMAS: I would say super quick might be a 30- to 45-day process, and probably more typical it's around 60 days or so from submitting an initial project proposal to presenting to the Board. Part of it is availability, too. The Board meets pretty regularly, just about every Monday, and sometimes the agencies have to get different people engaged. That can add some time to the process.

Are there types of project proposals that you haven't seen but would like to see?

THOMAS: From our perspective, it would be great to see the small agencies sort of band together and think about how to solve the problem that's common across many of the small agencies. TMF seems like a great place to go get funding to do that. We haven't seen that to date. We'd love to see the small agencies get together, maybe through the Small Agency Council, and come forward with an innovative idea or two.

How does the TMF repayment model work?

THOMAS: There's a repayment schedule. There's a disbursement schedule for how we give the money. If you get a \$5 million award from the TMF, you're not getting usually all \$5 million at once. That's oftentimes tied with milestones. We think that's a good way to manage the project, [to] tie the money to achievement of milestones. Then, if you're way off base we need to talk about you making some course corrections, or maybe even at some point you could conceive of saying, 'Hey, we've decided to stop this and decided to repay the portion,' because it prevents you from making a \$5 million mistake.



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INDUSTRY SPOTLIGHT

SUPPORTING A MODERN WORKFORCE WITH SECURE, DIGITAL WORKSPACES

An interview with José Padin, Public Sector Chief Technology Officer, Citrix

Today's modern workforce is trading in cubicles and desktops in favor of any-location, any-device work styles. There's also a growing appetite for user-friendly services that make it easier for employees to serve constituents on multiple platforms.

To meet these rising demands from employees and citizens, agencies are investing in IT modernization efforts that improve access to data, resources and services. They're increasingly using cloud computing to support these efforts. But as agencies migrate more systems to cloud, they must also be mindful of the unintended consequences.

In a recent interview with GovLoop, José Padin, Public Sector Chief Technology Officer at Citrix, explained the expectations, advantages and side effects of implementing cloud services to drive modernization. Citrix is a secure workspace and networking company that specializes in creating adaptive experiences for government employees and helping agencies to unify hybrid cloud services.

Padin kicked off the conversation by clarifying a misconception about cloud and IT modernization: The two are not one and the same. "There are a lot of tools that can help with modernization, and cloud adoption is just one of those tools," he said.

Conflating the two can easily lead to what's known as cloud sprawl. When different cloud services are selected that are each the best in what they do, whether internal HR or finance, confusion may arise regarding delivery, management and security of these disparate cloud systems.

While different cloud services may be needed within an agency, Padin emphasized unifying the management of all services under one platform. This gives employees a one-stop shop to access information, whether they're working in the office or remote. Security should also follow employees wherever they go. "You can think of it as a secure digital perimeter," Padin said.

Leveraging solutions like Citrix Secure Digital Workspace allows agencies to provide employees with the right experience at the right time. It's engineered to increase visibility and simplify management of all apps, desktops, data, devices and users across multiple hybrid cloud environments.

Padin noted that agencies need solutions that use open standards, support modern work styles and simplify IT complexities. Using information about the client, network and backend infrastructure, Citrix can create a threat score for user connections based on atypical activity and limit user access automatically before an issue arises.

"We give them the choice to use any device that they want," Padin said. "We give them security that can be applied to cloud, on-premise, or any type of apps or desktops, and we give them a great user experience," Padin said.

"By using a secure digital workspace, users have the great experience they need to get their job done wherever they happen to be."

– José Padin, Public Sector Chief Technology Officer, Citrix

MAIN TAKEAWAY

As government agencies use cloud to modernize the way employees work, they must also adapt a strategy for securing these solutions in a standard and efficient manner.

PITCHING A MODERNIZATION PROJECT

Have you ever watched the T.V. show “Shark Tank?” If so, then you know the best pitches are concise, clear and compelling. Successful entrepreneurs can quickly show the value of their brainchild and clearly articulate what they have already invested, what they need and how that money will be used and eventually repaid.

For the most part, pitching project ideas in government is no different. As mentioned in the previous section, federal agencies are capitalizing on this “Shark Tank” model to pitch and fund high-impact technology projects that will improve citizen services, boost security and reduce outdated and insecure systems.

A solid modernization pitch has sponsorship from higher-ups and shows a strong likelihood of successful outcomes and savings. Admittedly, they are not the flashiest projects, but changes that align with the mission, empower staff to better serve the public, and promise lasting impacts are more likely to garner support.

Depending on your agency’s size and structure and the magnitude of the project, you must account for specific nuances. For example, if you are tackling a smaller project on your own, that will require different resources and a slightly different approach than if you are at a larger agency with multiple governance and review boards. We’ve adapted templates from the TMF Board that you can easily tailor to meet your agency’s needs. For this guide, we want you to use these prompts and questions as a starting point.

The initial proposal outline highlighted at the bottom of the page includes several general questions you should be able to answer when pitching a modernization project. Notice that this is not a lengthy government business case but rather a short document that provides senior leaders with enough information to make an initial determination about the project and whether it’s worth exploring and potentially investing in.

When crafting your responses, avoid using acronyms or terminology that’s likely to be unfamiliar to someone outside your agency and/or program area.

- **What’s the project name?**
- **What’s the name of your agency or the sponsoring agency/office?**
- **Who is the project sponsor? Include name, title, office and email address.** This shows accountability and makes clear who is taking ownership to ensure the project’s success.
- **Who is the CIO sponsor? Include name, title and email.** This shows support from higher-ups.
- **Who is the chief financial officer sponsor? Include name, title and email.** If the CFO is not required to sign off, make sure the right budget personnel are informed and involved.
- **Describe how the project fulfills your agency’s mission, identify the problem this project addresses and explain how successful execution of this project solves the problem.** This should be one to three sentences long.
- **What’s the estimated total project cost and what savings, if any, do you expect to gain from implementing this project?**
- **Describe why the project will succeed.** Cite examples such as executive level support for this effort, the team’s strength or experience, the preparedness to begin executing this project, and/or other relevant factors that will demonstrate the likelihood of project success.



HOW TO DO SMALL-SCALE PROJECT PITCHES

Until this point, we’ve discussed modernization in terms of calculated steps and questions that you and your team should ask before pitching a project. But things are not always that clear-cut. Sometimes modernization is less like a team sport, where you have a deep bench of expertise and multiple layers of leadership.

For state and local governments, where staff sizes are often smaller than those at federal agencies, navigating the modernization landscape can be tough — but not impossible.

Levi Worts, a Technical Writer at the Montana Motor Vehicle Division, is proof. He spearheaded a “rogue” project at his agency that disrupted the entire digital customer service experience — for the better.

The idea to modernize came after Worts moved his office space and began overhearing complaints from customers at the driver’s license station. After determining that the main point of friction was the website, Worts did more homework.

“I knew the website, being tasked with updating information on it; I even compiled a style guide to clear up inconsistencies, but even I had trouble finding information,” Worts wrote in a recent [GovLoop](#)

article. “The need was obvious, so I was determined to do something about it.”

He approached his administrator with a request to redesign the website. She agreed, mentioning that it was on the list of to-dos, but it was toward the bottom. She concluded that he could work with the Montana Department of Justice’s webmaster if he wanted, but he’d be going forward on his own.

This is one of the realities that you are likely to face if your pitch is approved. Managers are hesitant to lend additional time and resources to a project that did not originate with them (or another higher-up) or has not proven its worth.

The initial pitch was not the end for Worts. He later had to pitch the idea of developing a chatbot to integrate into all aspects of the agency’s website. The takeaway here is, in your quest to sell a modernization project, be prepared to offer multiple pitches to shed greater light on what you hope to accomplish and any updates along the way.

For more insights on how Worts pitched his rogue project and transformed the digital customer experience, check out his series of articles at govloop.com/author/leviworts/.

MAIN TAKEAWAYS: PROJECT PITCH

1

The best pitches are concise, clear and compelling.

2

When crafting written pitches, avoid the use of acronyms or terminology that’s likely to be unfamiliar to someone outside your agency and/or program area.

3

Make sure you can explain how the project fulfills your agency’s mission and identify what problem the project solves.



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- ✓ Standards-Based

INDUSTRY SPOTLIGHT

USING AI TO MODERNIZE INFORMATION MANAGEMENT

An interview with Dave Jones, Vice President of Product Marketing, Nuxeo

The multitude of IT systems that many agencies manage today started with good intentions. Someone saw a series of needs, and the answer to each came in the form of an individual system: one to manage human resources, another to maintain citizen engagement, yet another to process invoices and so on.

Individually, those systems serve a specific purpose, but collectively they create silos and one-off databases that typically aren't interoperable and cannot easily communicate with one another. The result: 76 percent of organizations have trouble finding the right information in a timely manner, according to a [report by the nonprofit Association for Information and Image Management](#). At a time when agencies need to make more informed decisions with data, connecting IT resources to support those efforts is proving difficult. So what options exist to modernize information management in this digital age?

In an interview with GovLoop, Dave Jones, Vice President of Product Marketing at Nuxeo, explained how agencies can tap into the power of artificial intelligence (AI) and become better stewards of their data. Nuxeo specializes in making enterprise content services accessible, flexible, scalable and AI-enabled. Jones noted that although AI is being used in

numerous ways, these current applications don't make the best use of the technology.

Today, AI has largely been used to classify content, he said. Let's say you scan a document, AI can identify it as a land use application, what text it contains and highlight specific portions. Although these capabilities are helpful, you're basically using AI to solve a problem that has already been solved, Jones said. "It's almost like using a sledgehammer to crack a nut."

Where agencies should focus their attention is that middle ground between the mundane and more advanced AI use cases. Take the earlier example of the land use application. Rather than merely identifying the document as a land use application, agencies can use AI tools to aggregate detailed identifiers like what ZIP code it's planned for, the size of the lot, or the scale of the project. "The more tagging you can do when content is ingested, the better search capability you have at the end of the day," Jones said.

AI can also be used to automatically identify duplicate or trivial data, or content that's exceeded the retention period that you need to keep it for. At Nuxeo, experts are using what's called domain knowledge to train AI models to identify more granular details and apply a deeper level of analysis to content management.

"People still look at AI to solve point solutions, when actually it can become much more within government agencies and can start surfacing better ways for us to serve the public, store and manage content, and optimize our processes," Jones said.

"We're still looking at AI to solve point solutions, when actually it can become much more within government agencies and can start surfacing better ways for us to serve the public, store and manage content, and optimize our processes."

– Dave Jones, Vice President of Product Marketing, Nuxeo

MAIN TAKEAWAY

AI's potential is far more than basic content classification. When used correctly, AI has the power to help agencies better tag, manage and use their data in new and innovative ways.

ENGAGING PARTNERS AND SUSTAINING THE PROJECT

At some point in our professional careers, we've likely all complained about outdated systems and processes that make our jobs harder — you know, the processes that we have used and will continue to use because we've always done things that way.

But allowing this type of mindset to fester at an agency comes at a high cost. Depending on the agency's mission, it could mean declining citizen services, communication barriers among workers, and wasted time, money and efforts.

These are among the challenges that agencies must confront as they embrace IT modernization to ensure that employees at all levels are invested in the efforts. Will that mean 100 percent cooperation? No. But once you can understand and articulate the current and future state of modernization and what it means for the user experience, you invite employees beyond the walls of the IT department into the fold.

In the previous section, we discussed tips for pitching a project. Now, let's explore how you go about engaging others and sustaining the project.

Capturing the Voice of the People

One of the biggest challenges that agencies face with IT modernization is “getting the voices of the people,” said National Science Foundation (NSF) CIO Dorothy Aronson. The reason? “The same people who complain about the system need to help us understand what they need.”

Potential partners for your modernization project are situated at various levels across your agency. Some will be hands-on, and others will support your project by sharing their feedback — constructive and critical — and evangelizing the benefits of the project to employees.

To help you better understand your potential partners, Aronson recommends grouping people into categories:

- **People who are forward-thinking and want change**
- **People who are indifferent and will accept change**
- **Laggards who do not want to accept change**

“We attack each of those segments,” Aronson said. She uses their feedback and thoughts to help inform requirements for any new solution that will be implemented. NSF often asks for volunteers who are also potential users of the technology. This is a starting point to get them engaged and involved in driving change.

Managing Human Capital and Creating a New Culture

For Chris Tonjes, CIO at the Office of the Attorney General for the District of Columbia, the most critical component of his modernization journey has been managing the workforce and creating a new culture. But what exactly does that mean? As CIO, Tonjes had a very narrow mandate to modernize the city's method for managing cases and documents. His team literally had to strip everything down and start over. “We had to decide what to do for file service [and] management,” Tonjes said. “There was a data center in [the] building that flooded several times and didn't have redundant power or cooling.”

His team had to get the lawyers on board who would be using the new system because the old one was 15 years old and used obsolete technology. From an IT perspective, staff were encouraged to recommit to customer service or to learn it. Tonjes also encouraged people to set aside inefficient processes.

“It's better for me to plant ideas in other people's head[s] and for them to come to the same conclusion,” he said. “I planted seeds about modernizing the way [the] operation runs, finance, HR, etc.”

Tonjes took a select group of users, surveyed their needs and developed a minimum viable product. “It is super important not to work alone,” he said. Helping employees rethink how they view transformational change, such as IT modernization, is key to the long-term success and sustainment of your IT modernization project.

Marketing and Branding Change

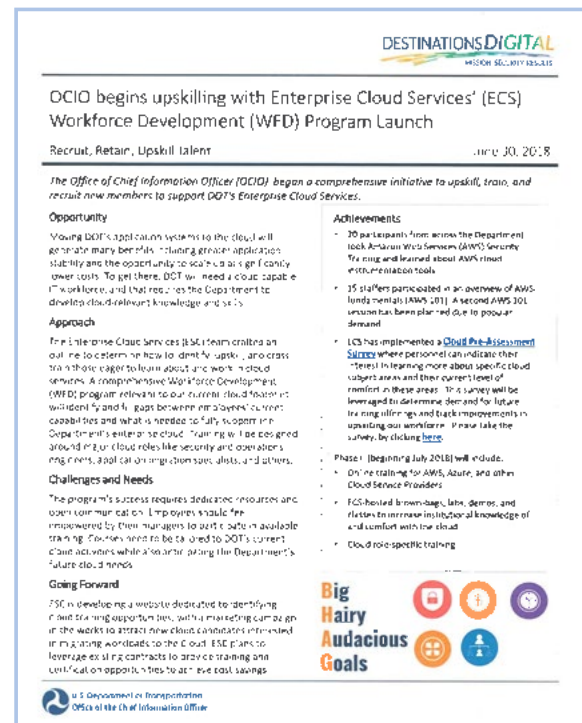
Before launching the Transportation Department's IT modernization plan, Destinations Digital, then-CIO Vicki Hildebrand (Hildebrand left her post Jan. 4.) received significant input from her leadership team on branding the initiative. Hildebrand left her post Jan. 4.

Her team decided to use a transportation focus to frame the vision for modernization. Hildebrand broke that vision down into nine big, hairy, audacious goals that are measured, documented and shared with employees as efforts progress. "When people say, 'Well, what is the end of your plan?' or 'What are you after?' I'm after a culture," Hildebrand said. "And so, what I'm calling it is our modern IT destination. And I asked every one of my employees to put this on their wall."



The actual DOT document is at the bottom of the page, and you can use as a model for branding modernization at your agency. When branding modernization, consider the following:

- **Brand your IT modernization project/plan and ensure it aligns with the mission of the agency and resonates with employees.**
- **Establish a concise and clear vision.**
- **Determine what is most important to leadership and therefore to the agency. Set values that can unify employees and help them focus on what matters most.**
- **Consider using icons or symbols that represent larger goals and can be easily referenced.**
- **Document and share goals, challenges and outcomes internally to build momentum and show progress.**



MAIN TAKEAWAYS: ENGAGING PARTNERS

1

Know your potential users and capitalize on opportunities to get their feedback — both positive and negative — about current and future IT services.

2

Commit to fostering a culture that prioritizes internal and external customer service.

3

Focus on branding and marketing your IT modernization project in a way that aligns with your agency's mission.

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INDUSTRY SPOTLIGHT

HOW A FLEXIBLE, HYBRID CLOUD DRIVES IT MODERNIZATION

An interview with Adam Clater, Chief Architect for Public Sector, Red Hat

When Federal CIO Suzette Kent assumed her role in January 2018, less than 40 percent of agencies had adopted cloud computing. That number has dramatically increased over the past year, with more than 70 percent of agencies migrating to the cloud.

One of the reasons for this shift is that cloud computing has become synonymous with IT modernization. As part of this ongoing effort, agencies are seeking to ditch aging IT systems and applications for modern, user-friendly solutions. But to take advantage of all that cloud offers and what's to come in the future, the conversation must elevate beyond the basics, said Adam Clater, Chief Architect for Public Sector at Red Hat.

Red Hat has been a key player in the government open source movement for years, and is focused on using that technology to enable cloud adoption across government. Clater sat down with GovLoop to discuss how cloud computing powers IT modernization and what agencies can do today to ensure they remain nimble without getting locked into a specific vendor's solution.

Clater explained that despite increased cloud adoption across government, the conversations around cloud often begin with the same lines: What cloud are we going to? What cloud is the workload going to live in?

"That's actually a very limiting way to think about cloud because the goal is to establish utility you can run anywhere, using any cloud at any time," Clater said. "The reality is hybrid cloud, and we help make the journey easier for our customers. By planning ahead for the inevitability of hybrid cloud, you're insulated from vendor lock-in."

Traditional IT infrastructures are typically saddled with a heavy burden of technical debt, or past-generation technologies that require substantial maintenance and management tasks. Agencies often have deep investments in traditional systems and a reluctance to abandon those systems upon which the core of their business operations may reside.

However, when agencies invest in cloud but tightly couple their applications to a specific solution, they are at risk of being locked in or stuck with a single vendor. "They've traded old technical debt for new technical debt," Clater said.

Red Hat uses what's called platform abstraction to simplify tasks for IT and software developers who are building applications. Platform abstraction involves providing a simplified user interface for developers to deploy software code without having to worry about managing underlying middleware layers, runtimes and infrastructure, which drastically impacts their productivity. [Abstraction](#) at

the platform level also allows developers to write applications in such a way that they are based on open standards and can run in any data center.

For agencies, that means greater flexibility to develop modern applications that empower employees, cater to citizens' needs and provide greater opportunities for innovation.

"The future is hybrid cloud, and that's what we're trying to enable our customers with. The reality is, if you're completely locked into a single cloud, then you can't have a hybrid cloud"

— Adam Clater, Chief Architect for Public Sector, Red Hat

MAIN TAKEAWAY

IT modernization is an ongoing process. That's why agencies are adopting open, hybrid cloud environments to eliminate technical debt, enable modern app development and deliver true value to the mission.

RESKILLING EMPLOYEES TO MANAGE CHANGES UNDER IT MODERNIZATION

Imagine that you have the power to chart your own career path and dedicate time each day to executing your current job functions and building the skills you need for your next job. Now, think bigger. Imagine a federal workforce that operates like an agile, integrated team within and between agencies.

Depending on where you work, these may seem like lofty goals, but these are realities that the National Science Foundation wants to instill internally and across government. As CIO, Aronson would rather help lead that change than wait for it to casually happen.

“The way we in the federal government are working today does not really allow us as individuals to both support the current mission of our agencies and also prepare for and implement the changing nature of work,” she said. “That’s because it’s happening so fast.”

As new technologies come online and are implemented at your agency, you have to assess what new skill sets will be needed to operate and secure those tools. For some employees, the nature of their work may drastically shift from paper-based to electronic processes. To account for these changes, Aronson asks three questions before launching a project:

- **What data do you need in order to make a decision?** Data is the lifeblood of any successful IT modernization project because it quantifies outcomes, helps to set benchmarks and can be used as a common language to communicate progress.
- **What tools do you need?** This question is not meant to wed you to one solution for the foreseeable future. Instead, it’s meant to get you thinking about the types of capabilities that you will need.
- **What are you going to do with the people now and after the solution is released?** Everyone should be made aware of the impact that new technologies will have on the workforce, and there must be a plan in place to retrain or transition those employees accordingly to other tasks.

For example, if your modernization project includes automating processes, you have a responsibility to explain to people how their jobs will be affected. Will the new technology free them up to do other work? If so, you need to overcommunicate that.

“If you deploy a solution that takes away or changes someone’s job, you need to start training them now in what that future work is going to be,” Aronson said.

Governmentwide Efforts to Retrain Employees

On a larger scale, employee reskilling is a staple of the President’s Management Agenda, which provides a long-term vision for updating antiquated government systems, enabling agencies to make better decisions around data, and providing federal managers with the tools to hire top talent, retrain employees and deal with poor performers.

Along those lines, the Trump administration rolled out a new program aimed at retraining federal employees to fill open cybersecurity positions in the government. The goal of the [Federal Cybersecurity Reskilling Academy pilot program](#), which launched Nov. 30, 2018, is to provide a three-month training course for non-IT professionals in government and prepare them to ultimately [work as cyber defense analysts](#). As of December, more than 400 people had applied.



WHAT MAKES A GOOD RESKILLING CANDIDATE?

If you are considering launching a reskilling program at your agency or are curious about how applicants with no prior experience are selected for a program, here are some notes from the federal reskilling effort that will provide some clarity.

If applicants meet the General Schedule (GS) classification and other eligibility requirements, then they'll be asked to complete an aptitude assessment. No prior cybersecurity knowledge is necessary to complete this assessment, but only applicants that pass it will be considered for the program. For example, some companies use a test called the Criteria Cognitive Aptitude Test, or CCAT, to measure potential employees' abilities to problem solve, use new information and think critically. *See sample questions below.*

Although the federal pilot program is focused on cybersecurity for now, security isn't the only area that will be impacted as agencies modernize. They will also need more skilled and targeted expertise to help them manage these new technologies. One example is in the area of cloud computing.

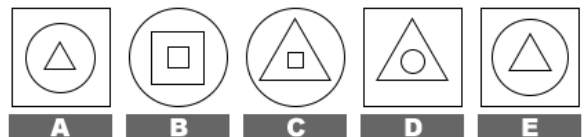
At DOT, for example, Hildebrand took several employees out of their previous roles and trained them to be cloud computing experts. DOT's Enterprise Cloud Services is developing a website to identify cloud training opportunities, and there's a marketing campaign in the works to attract new cloud candidates who are interested in migrating workloads to the cloud.

A group of 3 numbers has an average of 17. The first two numbers are 12 and 19. What is the third number?

- A. 17
- B. 19
- C. 20
- D. 23
- E. 30

Correct Answer: C

Which of the following groups of shapes does not belong?



Correct Answer: B

MAIN TAKEAWAYS: ENGAGING PARTNERS

1

Engage employees who have a passion for the work your agency is doing and new projects/initiatives.

2

Provide certifications and hands-on training that will help them develop their skill sets.

3

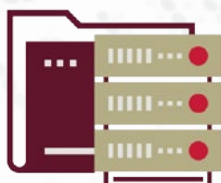
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INDUSTRY SPOTLIGHT

TURNING UNWIELDY DATA INTO STRATEGIC AGENCY ASSETS

An interview with Jonathan Alboum, Chief Technology Officer, U.S. Public Sector at Veritas Technologies, and Kurt Steege, Chief Technology Officer at ThunderCat Technology

In the digital age, government agencies are producing and consuming unfathomable amounts and types of data. Lacking proper visibility, most of the information remains unorganized and therefore inaccessible.

In a recent interview with GovLoop, Jonathan Alboum, Chief Technology Officer, U.S. Public Sector at Veritas Technologies, and Kurt Steege, Chief Technology Officer at ThunderCat Technology, discussed the challenges associated with ever-increasing data and how a data governance strategy can help.

“The amount of data out there is expanding at a frightening rate, and it continues to grow exponentially,” Steege said. In addition to its sheer size, unorganized data poses several other risks to government.

For one, unwieldy data storage patterns increase upfront costs — costs that can be eliminated if the data is disposed of when obsolete or unnecessary. Furthermore, that same data proves costly down the road if organizations need to spend countless man-hours retrieving what they already have to fulfill a Freedom of Information Act (FOIA) request or complete an archival project. Lastly, organizations with poor data visibility can lose track of sensitive information, lacking the policies or access credentials to protect and account for it.

Given new technological capabilities, it doesn’t have to be this way, and that’s where data governance comes in. A data governance strategy puts the policies into place to take stock of data, standardize reporting, implement security procedures and discover potential use cases.

“One way to start the conversation is for IT to explain data governance in terms that leadership can understand,” Alboum said. “Leaders understand costs, and they understand risks.” Once leaders understand the relationship between these drivers and data governance, a top-down enthusiasm can be suffused throughout an organization.

A data governance committee is another must for improved data management. With a steady mix of IT and business leaders, agencies can ensure that committee and organizational goals align, and that the committee has the IT savvy to turn goals into reality.

Fortunately, industry partners, like Veritas and ThunderCat, can help. Veritas and ThunderCat can make backup and recovery easy, all the while preparing agencies for the next wave of data privacy. Using the Veritas 360 Data Management Suite, agencies can leverage a single solution to visualize, protect, access and migrate their data across diverse technological environments - without hardware or cloud vendor lock-in.

Although managing data can seem like an uphill struggle — because of its sheer size and unfamiliarity — the first step is accounting for what you have. With the right data management solutions, organizations can turn data from a morass of indecipherable zeroes and ones into important, usable assets that open new windows for mission growth.

“One way to start the conversation is for IT to explain data governance in terms that leadership can understand. Leaders understand costs, and they understand risks.”

– Jonathan Alboum, Chief Technology Officer, U.S. Public Sector at Veritas Technologies

MAIN TAKEAWAY

A data governance committee is a must for improved data management. With a steady mix of IT and business leaders, agencies can ensure that committee and organizational goals align, and that the committee has the IT savvy to turn goals into reality.

CONCLUSION

Government agencies at all levels are making great strides to replace outdated systems and processes with innovative and modern solutions. But making that leap requires leadership support, cultural changes and a clear strategy.

If your agency has never planned for or committed to a continuous state of modernization, this guide is a great starting point. Use these resources to develop a strong request for IT modernization that aligns with your agency's mission and goals. Review each of the sections on sustaining a project and reskilling employees with your colleagues, direct reports and senior leaders.

Remember, the risks associated with staying the same are far greater than the risks of not embarking on a modernization journey.

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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THANK YOU

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WORKSHEET: MAPPING YOUR MODERNIZATION PROJECT

Pitching and sustaining a modernization project is no small feat. To help you effectively sell the benefits of your project, we've adapted this slide deck that federal agencies are using to request seed money for modernization projects. The template contains suggestions for what you could include, but what you decide to cover and in what order is up to you.

PROJECT NAME

One-sentence elevator pitch description of your project

THE PROBLEM

Tell (and show) your story. Be as narrative as possible.

What problem are you trying to solve? How is this problem related to the mission of your agency? Include project or product history that is relevant, data that demonstrates the scope of the problem, and/or images, including legacy product images, that help explain the problem.

THE SOLUTION

Focus on outcomes. If this project is successful, what will change?

How do you plan to address the problem? Why did you choose this solution? Why is this a good idea? Why is now the right time for it?

RISKS

A thoughtful, detailed list of potential risks and how to address them is considered a positive, not a negative, when determining whether or not to fund a project. (A helpful list of types of project risk.)

What risks do you foresee to this project? What could fail and why? How might you address these risks? What is the risk to the government? If we don't fund this project, what happens?

SPECIAL SAUCE

What's unique about this project that makes it an especially appealing option for the government to pursue?

If your project has elements that are interesting or unusual that make this project particularly notable, share them here. Examples include but are not limited to: aspects of your business model, implementation approach, procurement approach, opportunity for agency reuse, or opportunity for the vendor community.



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