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# **Executive Summary**

The term "digital transformation" is often thrown around government as the next big way agencies will innovate to better engage and serve citizens, and agencies are expected to implement a variety of digital transformation projects. For example, by 2018, 10 percent of government digital services will use bots to personalize workflows and/or channels through which citizens and businesses access services. By 2019, 15 percent of government transactions, such as tax collection, welfare disbursement and immigration control are expected to have embedded analytics. In addition to improving services, digital transformation is expected to yield major savings for government. In fact, it's estimated it will reduce procurement costs by up to 24 percent.

These are just a few of the ways in which government is going digital to improve efficiency and provide better services. While digital platforms and applications can change the way agencies operate, they shouldn't be applied as a one-size-fits-all solution. Digital transformation will look different at every agency, whether federal, state or local and will also depend on a variety of factors, including current information technology (IT) capabilities, services provided, stakeholder preferences and agency mission. For agencies embarking on a digital transformation journey, it's important to remember that it's a marathon, not a sprint. Agencies need to consider the long-term lifecycle costs of new technology, potential savings or cost avoidance of moving away from current infrastructure.

To help with this journey to digital transformation and determine how it should look at your agency or department, GovLoop's created this guide, "Preparing for the Era of Digital Transformation." This playbook will help you explore five key trends in digital transformation: IT modernization, mobility, data analytics, the Internet of Things (IoT) and digital citizen services. These trends are broken into plays that your agency can implement.

In addition to practical case studies that highlight how governments applied their own digital transformation, this playbook provides step-by-step instructions for defining and deploying digital solutions, along with several worksheets to help you bring those action items to life.

Digital transformation is a critical next step for government, but how your agency gets there is up to you. Use this guide to help you set your own path in going digital.

# What Is Digital Transformation?

#### Definitions of Digital Transformation

Digital transformation is a big buzzword in government right now. But what does digital transformation mean exactly?

Forrester defines digital transformation as a way to enhance customer experience while driving agility and efficiency through your operations. The U.S. Digital Service (USDS) defines digital services as technology projects relying on "user-centered design framework to prioritize user needs and modern software development practices to enable iterative development and the ability to rapidly respond to change and feedback." And Deloitte recently published a survey of more than 1,200 government officials from 70plus countries on digital transformation. The results showed that more than 96 percent of respondents characterized the impact of digital technologies on their governments as significant. Deloitte defines digital maturity as "the extent to which digital technologies have transformed an organization's processes, talent engagement and citizen service models."

Essentially, digital transformation in government can mean many things, but the goal is the same: Government must meet citizen expectations by delivering services that users can easily access from anywhere, at any time, with any device.

#### The Legislative Background of Government Digital Transformation

Because agency websites and digital services act as the face of government by which the public receives information, they should always maintain high standards of effectiveness.

Several key pieces of legislation concerning digital services address this need. On May 23, 2012, the <u>Digital Government</u> <u>Strategy</u> set forth a roadmap to help agencies improve digital services with emerging technologies. In August 2014, the White House built on that effort by releasing the <u>U.S.</u> <u>Digital Services Playbook</u>, containing 13 plays drawn from successful practices of the private and public sectors.

The plays help agencies address the whole digital experience from start to finish and what internal and external users need. Additionally, the <u>playbook emphasizes</u> making digital services simple and intuitive. According to USDS' <u>July 2017 report</u> to Congress, the agency is helping seven others improve how the American people can

interact with their government online. These agencies include the Defense, Veterans Affairs, Homeland Security, Health and Human Services and Education departments and the General Services Administration and Small Business Administration.

Lastly, the <u>Office of Management and Budget's M17-06</u> memorandum supports building effective and user-centric digital services.

By adhering to these legislative standards, agencies can better navigate their digital services while ensuring compliance as well as effectiveness.

#### The Importance of Cloud and Cybersecurity to Digital Transformation

With any digital transformation project, it's important to consider two elements: cloud and cybersecurity.

Cloud computing efforts, such as moving to a hybrid environment or software-as-a-service not only factor in digital transformation plans but are also <u>a pillar of</u> <u>transformation</u>. In fact, cloud has been defined as an <u>enabler</u> of digital transformation projects. Cloud can offer the speed and scale agencies need to transform. Additionally, cloud is about moving away from legacy IT infrastructures to more modernized systems.

Digital transformation has led to an explosion of connected environments where perimeter protection is simply not enough anymore. That's why cybersecurity is equally important to every digital transformation project, which must be built into technical solutions and plans from the beginning. As agencies embrace new technologies and trends like IoT, big data, mobility and cloud, security <u>focus must</u> <u>shift</u> from securing network perimeters to safeguarding data spread across systems, devices and the cloud.

One way agencies can ensure security while digital projects are under way is to follow the guidelines of the <u>National</u> <u>Institute of Standards and Technology Cybersecurity</u> <u>Framework.</u> The CSF focuses on business drivers to guide cybersecurity activities by considering risk as part of the process.

Digital transformation boils down to modernizing technologies, improving services and increasing productivity. And no digital transformation project is possible without some element of cloud or cybersecurity.

# Understanding Your Digital Transformation Playbook

To help your agency compete in the era of digital transformation, GovLoop designed this playbook so you can navigate the key steps for each of the five digital trends in government: IT modernization, mobility, data analytics, IoT and digital citizen services. Every agency's path to digital transformation will look different, which is why these plays are broad enough to apply to every agency's unique needs and mission requirements. The plays in this guide are inspired by <u>Forrester's Digital Business Transformation Playbook for 2017</u>, which lays out a comprehensive business strategy for digital transformation. Additionally, this guide draws on GovLoop's recent playbook, <u>"Your Roadmap to IT Modernization."</u>

Forrester recommends enhancing the digital customer experience while also driving agility and efficiency through digital operational excellence. To achieve this, Forrester's playbook lays out four stages of digital transformation: discover, plan, act and optimize:





### Discover

Articulate the need for digital transformation to senior stakeholders. Involve senior leadership and convey that the need for change is critical. Engage key supporters and stakeholders like Chief Information Officers to gain their support for transformation.

### Plan

Assess your agency's current capabilities, outline your objectives and develop key strategies. These steps all go into planning a roadmap to help transform your agency's culture, organizational structures and insights.

## Act

Build your digital transformation team, establish processes that enable collaboration among colleagues from across the enterprise and implement an underpinning technology strategy. Then you'll be able to lay the foundation for long-term transformation.



## Optimize

Once execution is complete, improve on daily operations across touchpoints. Use metrics that measure digital business initiatives, establish detailed benchmarks and implement a culture of ongoing optimization to better serve customers in the digital era.

By using these steps, your agency will be able to strategically navigate any one of the five digital plays involved in digital transformation, including IT modernization, mobility, data analytics, IoT and digital citizen services. Additionally, these plays will help you think critically through your own agency's unique challenges and goals to best leverage digital transformation.

# Modernization

IT modernization is more than a hot topic in government; it's a must. Government has been working to modernize its IT infrastructures for decades. <u>The American Council for Technology</u> <u>and Industry Advisory Council (ACT-IAC)</u> defines IT modernization as the continuous evolution of an organization's existing application and infrastructure software. The goal is to align IT with the organization's ever-shifting business strategies and save costs.

# **3 Facts About IT Modernization**

- **75 to 80** percent of the federal IT budget is spent on operations and maintenance of current systems.
- 2. Federal IT spending on cloud is expected to reach <u>\$2.1 billion</u> in 2018, a 2.6 percent increase from 2017.
- On May 17, 2017, the House passed the <u>Modernization</u> <u>Government Technology Act</u>, which establishes a **\$500 million** central fund to support IT modernization at 24 large agencies.

# Steps to Achieving IT Modernization

Act

## Discover

IT modernization begins with Consider to what extent you assessing where your agency is in terms of legacy systems and innovation. This process helps you identify needs and lay out a vision for what you want your modernization project to achieve. Analyze your agency's current IT state. Understand your IT inventory (i.e., apps and legacy systems) from top to bottom. Loop in your CIO and Chief Security Officer on the vision and how the project can lead to safer IT, improved cost effectiveness and overall efficiency.

## Plan

want to modernize your IT systems. You may want a hybrid approach in which you still maintain some of your agency's legacy systems rather than a mass overhaul to entirely new systems. Conduct a risk analysis of each of your project alternatives. Once you identify your preferred alternative or outcome with the highest payoff and lowest risk, outline a roadmap to get there. Be sure to break the path to your preferred option into manageable chunks or waves.

Once you've detailed the necessary steps to track and deliver your agency's modernization project, it's time to deploy your new technology or applications. Be sure to comply with your agency's system development lifecycle process, which defines the various steps for developing information systems. Address potential security vulnerabilities early on to ensure your system meets agency standards for development and maintenance. Then incorporate early performance tests, especially when moving hardware to a new platform or hosting environment. That way, you can verify that the modernized application will deliver required performance once it's placed into production.

## Optimize

Consider what you'll need after you deploy your new system. For example, be sure you have the relevant team in place to address inevitable glitches, issues or questions users have about the modernization project. Decide how you are going to continually inform and involve end users by setting up a communication plan to ensure they are aware of the entire modernization process. This can be weekly or semi-weekly opportunities for them to provide feedback and ask questions. Lastly, generate a detailed training plan to avoid issues with enduser acceptance.

#### **Social Security Administration Modernizes Case Processing System**

In January 2017, the Social Security Administration (SSA)\_turned its Disability Case Processing System (DCPS) into a modern structure in less than 14 months. Previously, SSA spent almost \$300 million for software with little improvement. Rob Klopp, SSA's outgoing CIO, <u>said</u> the agency did a complete turnaround with DCPS by applying an agile approach and listening to its customers at the state level.

SSA and its state customers have been using a green screen system based on COBOL (an English computer programming language designed for business use) that had been in place for more than 25 years. According to state officers, it took three years for the average employee to learn how to fully use the system and all the necessary input codes.

Under the DCPS modernization effort, SSA took 54 disparate systems across five or six homegrown ones and rebuilt the structure from scratch. Today, three state agencies are using DCPS and eight more are in line to use it in 2017.

The project yielded significant cost savings with better security on a modern IT system. DCPS can also help employees determine disability cases faster and with a higher degree of accuracy and quality controls.





# Mobility

From remote offices to public services available with the swipe of a finger, digital mobility has been taking government by storm. Mobility enhances productivity in <u>several areas</u> for government and citizens. These include helping frontline workers do work from any location to making information available to citizens in real time on any device.

# **3 Facts About Mobility**

- As of 2015, <u>**68 percent** of American adults owned</u> a smartphone.
- 2. About <u>**43 percent** of traffic now comes from smartphones</u> and tablets.
- The General Services Administration's Digital Analytics Program (DAP) predicts that smartphone usage will increase by more than <u>37 percent in 2018.</u>

# **Steps to Achieving Mobility**

## Discover

Strategically assess your current online services for mobile optimization. DAP recommends that developers use a product to test whether sites and services function on all devices. Develop a program that taps other federal employees to test out sites on various makes of devices, operating systems and browsers to confirm they are mobile-friendly. Then engage the public in identifying which services would be most valued on various mobile devices.

## Plan

focus on enterprise-focused or citizen-oriented apps. Enterprise-focused apps are for internal use within a public organization and are only accessible to employees. Citizen-oriented apps, on the other hand, are intended for external use and are accessible to anyone seeking government services. If choosing citizenoriented apps, decide how they can improve the way your agency functions. For example, you may want to provide informational apps that share updated news on the latest events at your agency or health and safety apps to disseminate information when disasters or national crises strike.

# Act

Decide if your agency wants to <u>The type of device</u> (wearable, smartphone or tablet) should be a primary consideration in designing an app. Small devices are easier to carry around but have limited screen space for interaction. Wearables are appropriate for personalized user needs. Smartphones are used for a wide range of communications and activities, while tablets are useful for field-based activities. Operating systems may vary on mobile devices. App designs include native apps (downloaded onto the device's hardware features), web apps (websites using responsive web design features) and hybrid apps (combined features of native and web apps). Decide on the type of device and design to go with based on your outlined plan and intended users.

## Optimize

Be proactive in providing open data policies to make data available in machinereadable formats based on common standards. Open data helps create a range of mobile apps that are socially useful. Additionally, assess the feasibility of standard data structures across and within agencies. Different agencies can provide their various data in a consistent manner. The apps can then use data from the different agencies with little or no customization across jurisdictions.

#### Veterans Affairs' Mobile App Reaches **Veterans Wherever They Live**

The U.S. Veterans Affairs (VA) Department operates one of the country's largest telemedicine programs. Just last year, about 700,000 veterans received medical care and advice via their computers and mobile devices. The VA recently announced a drastic expansion of that program with the launch of a new tool called VA Video Connect. The department intends to expand this tool, a collaboration between the VA and the White House's American Office of Innovation, to every VA hospital nationwide.

VA Video Connect will offer veterans access to doctors from more than 50 specialties, from dermatology to dentistry, with a special focus on providing mental health services. All of these services will be accessible via mobile devices. As of August 2017, VA Video Connect is expected to be offered by 300 medical providers at 67 VA hospitals and clinics nationwide with plans to expand the tool after that.





# Spotlight Interview: Defending the Nation With Digitization

An Interview With Defense Department Officials: John Zangardi, Chief Information Officer, Essye Miller, Chief Information Security Officer, Tom Michelli, Acting Principal Deputy Chief Information Officer

The Defense Department is not only the largest agency in the U.S. government, but also a pioneering force when it comes to digital transformation. From cloud access pointas-a-service (CAP) to mobile enterprises, to transforming its travel systems, DoD is going digital with full force.

GovLoop sat down with DoD CIO John Zangardi, Chief Information Security Officer Essye Miller and Principal Acting Deputy CIO Tom Michelli. The three shared their insights on the department's current digital transformation efforts through IT enterprise and modernization. For some agencies, taking on one digital project at a time is a feat in itself. For other agencies, like DoD, tackling a number of digital projects at the same time means faster digital transformation and increased cost savings and effectiveness.

<u>Digitization for the Defense Department</u> means enabling joint operations on the battlefield; facilitating real-time,

reliable information-sharing for military leaders, and enabling soldiers, sailors aviators and marines operating capabilities at bases worldwide. For an agency as large and complex as DoD, going digital must also mean increased cost efficiency and productivity.

"Overall, the goal is to make DoD more effective and efficient," Zangardi said. "When Secretary of Defense (James) Mattis calls for increasing the lethality of our force, we're an enabler in IT. We generate the efficiencies and we can deliver the capability to the warfighter."

To generate these efficiencies, the DoD CIO is looking to consolidate data centers and move more enterprise services to the cloud. "As we move to the cloud in industry, it frees up resources that could be used in other ways," Zangardi said. "And that helps us meet the expectations from Secretary Mattis to deliver more resources to other needs within the department, whether those are planes, tanks, submarines or ships. It's part of being a good steward of the taxpayer's dollars."

As part of these efforts to meet Mattis' vision and enable a more efficient DoD, Zangardi and his team are overseeing initiatives, including:

**CAP:** Innovating delivery and security approaches to move more data into the commercial cloud.

**Defense Enterprise Office Solutions:** Connecting the workforce through commercial, enterprise office solutions for collaboration and productivity.

**Defense Travel Reform:** Simplifying processes and modernizing security to improve the DoD travel experience while reducing costs.

#### CAP as a Service

<u>CAP is the security conduit</u> through which DoD is connecting to the commercial cloud. It serves as a demarcation between the DoD Information Network and commercial cloud providers.

"The Cloud Access Point is seen as the boundary protection for the DoD Information Network from commercial cloud instantiations," Miller said. "We've had a series of industry engagements with companies that we consider to be at the top in cloud security. We're also determining what security requirements can be provided by industry and which ones are inherently governmental."

CAP ultimately helps to accelerate cloud adoption at DoD by improving the department's ability to protect and defend its data in the cloud. Additionally, it provides advanced protections for virtual data centers and cloud-hosted network enclaves with integrated cyber incident monitoring and response.

#### **Defense Enterprise Office Solution**

The Defense Enterprise Office Solution (DEOS) is an effort led by the Defense Information Systems Agency (DISA) to acquire software-as-a-service at a DoD enterprise scale. The goal is to move 4.5 million DoD users to cloud services with preliminary business case analyses and request for proposals completed by 2018.

"What's especially important to us is that we move to a cloud-like strategy where we use the best practices in industry," Zangardi said. "We are not looking for an onpremise solution that is only driven by DoD."

DEOS will replace the current Defense Enterprise Email, Defense Enterprise Portal Service and Defense Collaboration Services. The <u>suite of services</u> will provide a path to replace existing disparate legacy systems while using cutting-edge technology to automate daily business functions. The move to this suite is expected to increase productivity and efficiency while offering users new methods of collaboration both with the enterprise and with other federal partners. "Moving to the future in office collaboration and productivity systems will enhance our ability to do things more efficiently and effectively across the department," Zangardi said.

#### **Defense Travel Reform**

As of the beginning of January 2017, DoD is following the President's direction to restructure how DoD does travel for its employees. So far, the department has reduced policy guidance that is directly relevant to travel from more than 240 pages to fewer than eight.

"Getting it to eight pages allows us to move to a 100 percent commercial system," Zangardi said. "Rather than being on a proprietary, higher-cost system, we're going to use exactly what commercial industry would use for their own system."

Reducing the complexity of the travel system helps improve convenience for users. "When I would talk to government workers, I would ask their thoughts of the Defense travel system and usually get a negative reply," Zangardi said. "So we want to use industry to bring in a greater degree of user-friendliness."

In addition to convenience – and even more important – Defense Travel Reform offers heightened security for traveler data. This is because commercial capabilities offer DoD the opportunity to perform frequent security reviews and audits. DoD and the vendor are launching a pilot test in 2017 to ensure data is well-protected.

"The advantage here is that we're going to be able to focus our energy and use money appropriately for things that fall in the basic hygiene category, thus improving our overall security," Zangardi said.

"We've been at this for about 25 years now, and it's been a tremendous effort for us to understand and increase our awareness on cyber hygiene and posture," Miller said. "The key, though, is that it is all self-reported, so it's manpower-intensive. The intent is to move to something more automated that's readily available for leaders and commanders to understand the security posture."

The digital projects seem complex, but DoD stands to gain benefits in cost savings, efficiency, security and modernization with all the ongoing projects.

Ultimately, digital transformation at DoD relies not only on the power of modernized technology, consolidation and automation, but there is also significance in the people behind the IT.

"Digital transformation relies on our workforce, for the civilian and military, as well as contractors," Michelli said. "It really is about the workforce side as we transform digitally in DoD."

# EMBRACE DIGITAL BUSINESS TRANSFORMATION

# It's Time to Transform Your Security Culture

#### COMPLY WITH MARKING STANDARDS

Easily comply with government marking standards such as CUI, NIST SP 800-171.

#### **CLASSIFY SENSITIVE DATA**

Identify data at the time of creation, so that your organization can make intelligent, deliberate decisions on how that information is handled.

#### **PROTECT PII**

Identify and protect personal data stored in unstructured information, including Social Security Numbers, health information.

#### **CHANGE USER BEHAVIOR**

Promote a culture of security by making users aware of their responsibilities when handling corporate information.



Learn more - visit <u>www.**TITUS**.com</u>

#### **Industry Spotlight**

## Why Data Classification Should Change the Way You Think of Cybersecurity

#### An Interview with Stephane Charbonneau, Co-Founder and Chief Technology Officer, TITUS

For many years now, cybersecurity has focused on strengthening security tools and networks. Whether that materialized in data encryption, hardware improvements or tighter controls on the backend, the emphasis has always been more on machine-based upgrades.

Even with the rise of cybersecurity trainings in the workforce, employees may still have gaps in cybersecurity education. How, then, can a government organization that handles sensitive data keep its workers engaged and alert?

To improve cybersecurity posture, agencies should think differently about data classification. Rather than isolated training sessions, they should look to incorporate safer practices in the daily workflow. GovLoop spoke with Stephane Charbonneau, Co-Founder and Chief Technology Officer of TITUS, a provider of data classification solutions, to get a better idea of how government can think differently about data classification.

"You have to be able to change the way people think about the information," Charbonneau said. "Agencies must transform people's thinking around data — what this information is, what's the usefulness of the information? That way, we can engage users to be part of the solution and not just rely on the backend system to do it."

More often than not, the problem starts with employees who either lack education or awareness about cybersecurity best practices. In fact, <u>recent studies</u> show that 66 percent of data protection and privacy professionals felt their employees were the weakest link to developing a strong security posture.

"It's simple mistakes that lead to big problems, like a worker emailing a document home to finish up an assignment."

An ideal data classification strategy should be similar to that of a "data custodian." Rather than lock down information, an agency should try to boost awareness. When an employee forwards an email or attaches a document, for example, the system asks a simple question: "Are you sure you want to do that?" An agency can then log these warnings and monitor employee progress to help manage risk.

"Instead of having a yearly training webinar that employees might just click through, you need training on a daily basis," Charbonneau said. "Think of cybersecurity training as a seatbelt that people put on. There was resistance at first. Now, you don't even think twice about putting on that seatbelt when you get in a car. Even though the chances are really low that something might happen, you're really happy it's there when that accident does happen."

Agencies and companies should also pursue data classification practices that comply with regulations like the <u>Controlled</u> <u>Unclassified Information</u> program which standardizes the way the executive branch and other government entities handle unclassified information that requires safeguarding or dissemination controls consistent with government-wide laws and policies. It's especially critical that your agency's data policies remain compliant with such laws and security regulations. Even beyond potential fines, non-compliance would open the door to data breaches and the resultant loss in public trust.

Data classification solutions should ideally operate in a hybrid setting as many government agencies are still in the process of migrating to cloud. Solutions like TITUS Classification Suite can help an agency protect sensitive information and classify and valuate data both on premise and in the cloud.

Additionally, consulting services provided by TITUS can help agency leaders educate their workforces on where data should be stored, rather than having the onus of choosing where to store information fall to employees. The crown jewels of data (highly sensitive information) for example, might be more safely kept within the on-premises storage, while less sensitive information would be safe in cloud storage.

Solutions like TITUS Illuminate can also help agencies discover, classify, protect and analyze a company's data at rest. To keep up with the demands of a mobile workforce, the company also offers TITUS Classification for Mobile.

User-friendly data classification practices will only become more important in the coming years. In 2025, the total digital data on Earth could reach <u>180 trillion gigabytes</u>. If government wants to run as efficiently and securely as possible, rethinking data classification, cyber education tactics and modern hybrid cloud solutions are excellent ways to start.



# **Data Analytics**

The most commonly used definition of big data is high-volume, high-velocity and high-variety information that requires new forms of processing to enable enhanced decision-making, insight discovery and process optimization. The analysis of this information involves vast amounts of structured and unstructured data, which helps government use sophisticated algorithms to drive decision-making.

# **3 Facts About Data Analytics**

- In 2012, the Obama administration launched a \$200 million
- **<u>program</u>** to investigate the use of big data and analytics at five federal agencies.
- 2. By the year 2020, about <u>**1.7 megabytes** of new information</u> will be created every second for every human being on the planet.
- **5.** In 2013, Gartner predicted that by 2020, analytics would also reach **75 percent** of potential users.

## **Steps to Achieving Data Analytics**

Act

## Discover

Find your agency's data. There are multiple public data sets and tools that any government employee can use to get started. For example, FedScope provides human resources data for the entire federal government, as well as basic analytics tools. DigitalGov.gov offers ideas for how to use your agency's data. Data.gov offers data, tools and resources to conduct research and develop web and mobile applications. You will also need a data platform – whether it's a simple tool such as Microsoft Excel or a more sophisticated one such as STATA or SPSS - to sort and correlate your agency's data.

## Plan

Because the analytics process will create more data, you'll need a governance strategy to dictate where and how that new information is automatically managed, without your constant intervention. Translate early results to stakeholders. To get others on board with your data analytics project, explain the value in relatable terms. Make sure your project is one that impacts multiple cohorts, and explain the results in simple quantitative and qualitative terms.

IT managers must effectively provision what agencies already have to support high-priority data projects. At the same time, consider how future technology acquisitions can help support data analytics. IT managers will use operational and network data to understand how resources are used, both within departments and across the agency. Especially as on-demand, cloud-based services become the norm, you need data to monitor the requirements of individual systems and users. Then compare that demand to your current supply architecture to determine how you should shift your resource allocations. This will ultimately save time and money for your agency.

## Optimize

For many employees, data analytics will be a new endeavor. As a result, they may be reluctant to dedicate time or other resources to a project where outcomes may be uncertain. Agency leaders should reassure them that early failures on low-risk projects are not only acceptable, but ways for them to learn and move analytics forward. Additionally, integrate data from such projects into future decisions for the agency. Not only will data analytics help you make better decisions regarding strategy, they will also help increase transparency to outsiders as to what your agency is doing and why it's doing it.

#### Data Analytics Success Story: Federal Trade Commission

In the summer of 2015, members of the Federal Trade Commission's (FTC) Office of Public Affairs web team worked with FTC colleagues to use the <u>Digital Analytics Program (DAP)</u> for <u>FTC.gov</u>. FTC found that many visitors were coming to the site to perform tasks such as filing a complaint or reporting identity theft. Most of those tasks, however, were hidden under the global navigation menu, making them difficult to locate and access. At the same time, most of the homepage was informational rather than task- or customer-oriented.

With this new information, FTC revised its homepage in October 2015 by adding a clearly displayed new area called "Take Action" at the top of the page. Citizens can now quickly find the "top tasks" that motivated them to visit FTC.gov.

The commission measured success by comparing data from the months before and after the changes. Overall, the results were positive. Traffic from the homepage to the tasks in the "Take Action" area jumped dramatically – 47 percent for "Complaint Assistant," and 54 percent for "Do Not Call," and up 9,691 visits for ID theft. Additionally, site searches for these terms and top tasks dropped dramatically, indicating that people were able to quickly find the tasks they needed to complete on the homepage.





GovLoop's <u>recent guide</u> on the Internet of Things defines IoT as the integration of computers, sensors and networking in physical devices. IoT fuses the physical and digital worlds to develop new capabilities and services, which creates new jobs, businesses and opportunities in government. The technology is creating opportunities in everything from public transportation to workplace automation to public safety efforts.

## **3 Facts About IoT**

- From fiscal 2011 to fiscal 2015, the <u>federal government spent</u> <u>almost **\$35 billion**</u> on IoT solutions.
- 2. Government invested the most in device-based apps, at \$10.7 billion, during the period between fiscal years 2011 to 2015.
- 3. It's expected that we will see <u>50 billion devices connected via</u> <u>IoT by 2020,</u> with the global IoT market growing to \$1.7 trillion.

# Steps to Achieving IoT

## Discover

According to Forbes, the success of an IoT solution is squarely dependent on the clarity of your desired outcome. The first important step is to define the solution your agency wants to offer. For example, are you trying to better connect to citizens through their apps and devices? Maybe you want to create automated text alerts from your agency for natural disasters. Or IoT could improve the way your agency gathers and collects data in your local jurisdiction. Find out how your IoT solution will impact productivity, efficiency and customer satisfaction in the long run.

## Plan

Develop an inventory of devices for your IoT solution by identifying the hardware, equipment and machinery your agency already has. This is because enterprise IoT solutions often don't allow organizations to start from the ground up. Based on your agency's goals and desired outcomes, you may have to partner with vendors to source appropriate sensors, actuators, adapters and other hardware. The combination of existing devices and new components becomes the source of the comprehensive data acquired by the platform you choose. By the end of planning, you should have identified everything it takes to onboard physical devices to the connected platform.

Strategically use the information your IoT project generates. Prepare the data points and metrics aligned with your desired outcome. The sensors attached to the devices generate multiple data points that translate to massive datasets. Choose the right data points that contribute to the metrics you want to use. Decide which data points from your devices should be analyzed in real time and which should be stored for long-term analysis. For example, with a connected car, statistics about an engine are monitored in near real time while fuel consumption data is archived for calculating aggregated values at a later time.

Act

## Optimize

Implement security, governance and security policy across each layer. Datasets must be carefully anonymized, encrypted and compressed before processing. You'll need a comprehensive governance model to restrict access to sensitive data and reports. Policies will help you define which roles and personas are allowed to control the devices and access the business intelligence dashboards. For your project to work, IoT security must be tightly integrated with existing guidelines and security best practices.

#### Los Angeles Uses IoT to Become a Smarter City

The city of Los Angeles already has many Internet-connected amenities, including <u>145,000 streetlights and 4,500</u> <u>intersections.</u> But for L.A., these connected utilities were only "Smart City 1.0." The next step is to upgrade to Smart City 2.0 by gathering information from and sending data to multiple sources such as smartphones and watches.

For example, the city and the California Institute of Technology (Caltech) developed a project called "Quake Alert," which uses sensors to detect the nearly constant tremors in the area. Today, that data is used to visually depict an earthquake in progress. Now, the city is developing a system to send alerts to citizens' smartphones to give them 15 to 30 seconds to take cover. The application could not only save lives, but also prevent millions of dollars in damage.

L.A. is also using sensors to monitor environmental factors, including the health of trees. In its "Internet of Trees" project, the city is combining data from Google Street View with a machine-learning algorithm developed by Caltech. This project is being used to inventory the city's urban forest of about 700,000 trees scattered over 469 square miles, saving the city approximately \$3 million.





# Spotlight Interview: How Nebraska Is Driving Change in IT Consolidation

#### An Interview With Ed Toner, Chief Information Officer, Nebraska

Digital transformation is all about thinking outside the box. But the payoff is even better when such creativity can help government save money and generate efficiencies. In state and local government, for example, many CIOs intuitively know they could be getting significantly more from their IT environments in terms of cost savings and efficiency. They also recognize the untapped savings potential in IT consolidation.

Although consolidating government data centers and the people who manage them is essential, it's also very <u>tricky</u>. As a state CIO, you must prove that your ideas are going to work better than the status quo while navigating consistency in messaging, transparency and accountability in the process. States like Nebraska, however, are changing the IT consolidation game through hybrid centralization, where agencies use the apps that are familiar to them and the IT staff manages the backend – think servers and networks.

In an interview with GovLoop, CIO of Nebraska Ed Toner shared the lessons he learned as a fairly new public servant coming into government. With more than 20 years of private industry experience, Toner also discussed how his team successfully implemented hybrid centralization as part of their IT consolidation efforts.

"Change is never easy," said Toner. "It isn't any easier in the private sector than the public sector. The biggest challenge is when you're making change, someone has already put those processes, procedures and structures in place, and you could be stepping on toes."

But despite such challenges and having only started the job in 2015, Toner has been able to already successfully initiate a <u>hybrid centralization roadmap</u> to consolidate data centers and infrastructure.

#### **Hybrid Centralization**

As Toner previously <u>wrote</u>, "[Nebraska's] decentralized structure has created duplication of tools and resources over time. Even more concerning, it has created an unhealthy competition among IT operations, which interferes with achieving our common goal of a seamless, efficient, customer-centric IT environment."

Centralization is the consolidation of an organization's technology resources that, when done correctly, can improve administrative tasks and security, and make data management easier while saving costs. Toner's hybrid centralization model is consolidation with the yielding of all agency-specific IT functions to the agencies. At the same time, enterprise functions and applications are moved to the central IT group. This allows the agency to maintain autonomy over its application enterprise while leaving the IT grunt work to the experts.

The hybrid centralization model is based on collaborative management between Nebraska's Office of the CIO (OCIO) and any agency's IT management. The office performs in enterprise functions, including overseeing a consolidated data center, network and infrastructure operations, procurement reviews and standards and enterprise help-desk support. The agency IT management maintains authority over agency-specific activities and functions, including agency help desk support, agency application development and IT strategy and planning specifically for the agency.

"The OCIO's core business is making sure the apps are running and that we provide good service," Toner said. "Our primary focus is the network and servers."

<u>Nebraska's Department of Roads</u>, for example, designs roads for the state. It focuses on the core services it provides while Toner and OCIO provide the infrastructure to help the department achieve its business goals. "Roads are their core business," said Toner. "They have an application that sits on infrastructure that sits on our network within our data center. They pick the application they want and manage it the way they want. I make sure it's available and responsive from our end."

#### **Making IT Happen**

Toner said starting by creating metrics around infrastructure already in place was especially helpful to enabling hybrid centralization and IT consolidation. A central focal point of these metrics was customer service with self-service portals for internal users (state employees) and citizens.

"I spent the first year making sure my group was following basic standards like Information Technology Infrastructure Library (ITIL) and having my service management well-documented," Toner said. "This included change management, problem management and asset management." ITIL is a set of detailed practices for IT service management that focuses on aligning IT services with the needs of business. In developing a business-minded IT environment, Toner emphasized the importance of creating reports to monitor the quality of state-offered services.

"In getting ready to launch hybrid centralization, we had to answer one question and be very clear," Toner said. "What problem are we trying to solve? And how do we provide a more efficient, cost-effective and customer-focused state government? Then we had to make sure it was backed up with facts and guidelines. I then used the reports and metrics to check exactly how we were doing on a monthly basis and then give those to the governor."

In addition to documenting metrics, Toner emphasized the importance of documenting the wins of IT consolidation. "By documenting wins you can also continue them as best practices," Toner said. "Because if you don't have those wins continuously throughout the process, excitement dwindles. You need to have consistent wins."

So far, the hybrid centralization project is providing many wins for Nebraska. The project has cut some rates by as much as 20 percent with faster service and increased efficiencies, and has eliminated 70 servers so far through consolidation.

#### **Best Practices**

In addition to laying the groundwork through metrics and documentation and communicating successes, Toner's biggest piece of advice to other state IT leaders is to care about IT consolidation more than anyone else. "That's the only way you can get buy-in," he said. "Don't give up and keep persevering."

For any state government, IT consolidation is no easy feat, but hybrid centralization is a way to help cut costs and drive efficiency while fostering collaboration among state entities.

Although hybrid centralization is no silver bullet to IT consolidation, Toner's commitment to digital transformation in Nebraska's IT environment demonstrates how hybrid centralization can create big wins for state IT environments and digital transformation for government.

# Digital Citizen Services

Digital transformation is not just about technology innovation or connecting smart apps and devices. For government, it's largely about <u>helping citizens</u> <u>help themselves.</u> As part of improving digital citizen services, agencies are looking into more self-service options, where people can find the things they need for themselves. Digital citizen services is also about responding to citizen needs and requests in real time through online platforms or social media.

# **3 Facts About Digital Citizen Services**

- 1. Citizen digital interactions cost <u>80 percent less than non-</u> digital interactions.
- 2. <u>63 percent of citizens</u> feel digital interactions will make the government more easily accessible.
- 3. 49 percent of citizens think digital services would <u>make</u> government more transparent.

# Steps to Achieving Digital Citizen Services

## Discover

Define your constituent base and consider different knowledge levels. No matter what service your agency is providing, you'll want to make it accessible to different users with different levels of technical and service-specific knowhow. Tailor your messaging and processes to various levels of understanding. You can also <u>read up on</u> digital citizen engagement (DCE) as a practice. Learn how to evaluate DCE and compare non-digital alternative outcomes to digital outcomes.

## Plan

Forge the partnerships you'll need to make your digital services possible. Industry partners can help your agency harness the modern technology, as well as other costly resources, you'll need. Look at what other agencies have done with their websites and digital platforms. You may even wish to partner with other government organizations to share costs while providing better web and technology services to your citizen base.

#### Whether you're offering five services or 50, don't leave users guessing how to start each process. Provide a single portal or information source from which users can access a variety of different but related services. Additionally, provide real-time automated support to help citizens use self-services. Rather than waiting for your users to finish a procedure or form to qualitycheck their data, establish checks throughout the process. Automated information inspection can help offer stepby-step assistance to users, without dedicating additional staff time to the service.

## Optimize

Listen to your citizens or customers. Solicit feedback, whether via traditional surveys, user groups or social media. Whether the feedback is negative or positive, be ready to receive it and respond in a timely manner. Using social media or data analytics for your communities tunes into what citizens are saying about your agency's digital services. As you continue to release information on your digital project, make sure it's tailored to each audience, keeping in mind the levels of detail and knowledge and preferred method of engagement (i.e., social media, device, website, email).

#### **Digital Citizenship Services at USCIS**

Every year, millions of people interact with the U.S. Citizenship and Immigration Services (USCIS) website and staff seeking citizenship, permanent residency, refugee status and help getting relatives into the country. The process can be long, intimidating and confusing. Individuals have to fill out detailed forms and meet very specific legal requirements, often while overcoming language barriers.

To assist individuals, the Customer Service and Public Engagement Directorate at USCIS is working on an online portal called <u>myUSCIS</u>. This portal offers users a one-stop shop for immigration resources. It also includes a help center with up-to-date information about the application process, tools to prepare for naturalization and resources to find citizenship preparation classes and doctors in the community.

The number of myUSCIS visitors grew exponentially when the portal was implemented in 2015, from 209 distinct users that January to more than 182,000 in December of that same year. During 2015, the site had more than 1.8 million visits. Central to such success is "Emma," a virtual assistant that helps nearly 5,000 unique users a day find answers to their questions in plain language.



# Go Digital Worksheet

Use this worksheet to brainstorm your agency's digital transformation project and get started.



# Conclusion

What does digital transformation mean for government? There's no single answer. Whether it's at the federal, state or local level, every journey to digitize will look different. And while government continues to face a number of challenges to digital transformation, the benefits are clear. Citizens expect the same digital services they receive from the private sector. Additionally, digital transformation can help government save costs while yielding greater efficiencies. Preparing for the digital future is not only a means to keep up, but also essential to the functionality of government.

By navigating important trends such as IT modernization, mobility, data analytics, IoT and digital citizen services, government can better prepare for the era of digital transformation.

# About GovLoop

GovLoop's mission is to "connect government to improve government."

We aim to inspire public-sector professionals by serving as the knowledge network for government. GovLoop connects more than 250,000 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 connect and improve government.

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## Thank You

Titus for their support of this valuable resource for public sector professionals.

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