State and Local Government:

8 Tech Challenges and Solutions
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Executive Summary

Every state, city and county has its own set of challenges that may seem unique on the surface, but when you peel back the layers they have more in common than they do differences.

Maybe your county is struggling to buy emerging technologies via an arduous and heavily manual procurement process. Or maybe your state is brainstorming ways to proactively defend against and respond to cyberthreats.

Whatever the challenge, know that you’re not in it alone. Governments nationwide are tackling the same issues, and they’re making strides. They’ve waded through the bureaucratic waters of government regulations and the growing pains of guiding employees through change, all while meeting citizens’ expectations.

In this guide, we showcase eight case studies that highlight common challenges state and local governments face and the technology solution they used to solve them. You’ll hear from several visionaries, including Michigan's Deputy Chief Security Officer, who is building the nation's first team of volunteer cybersecurity experts, and Santa Clara County's Chief Procurement Officer, who is streamlining and automating procurement in the cloud.

Other topics covered in the guide include increasing efficiencies through IT consolidation, improving citizen services with artificial intelligence and visualizing community issues with data.

To kick things off, we’ve highlighted some of the key issues and challenges that are top of mind for state and local governments.
Tech Stats

To better understand where state governments are focusing their attention and technology resources, we’ve compiled key stats from the National Association of State Chief Information Officers (NASCIO).

The NASCIO 2017 State CIO Survey includes responses from 42 NASCIO member states and territories.

NASCIO’s Top 10 Priorities for State CIOs in 2017
1. Security and Risk Management
2. Consolidation/Optimization
3. Cloud Services
4. Budget, Cost Control, Fiscal Management
5. Legacy Modernization
6. Enterprise IT Governance
7. Data Management and Analytics
8. Enterprise Vision and Roadmap for IT
9. Agile and Incremental Software Delivery
10. Broadband/Wireless Connectivity

What is the current role of your CIO organization in administering the statewide cybersecurity program?
- Leading or participating in policy-setting 98%
- Setting overall direction 88%
- Oversight 83%
- Execution 64%

Does your organization have a strategy to migrate legacy applications to the cloud?
- No, but cloud migration strategy in development 55%
- Yes, cloud migration strategy in place 28%
- No cloud migration strategy planned 17%

What emerging IT area will be most impactful in the next 3-5 years?
- Internet of Things (IoT) 43%
- Artificial intelligence/machine learning 29%
- Digital assistants 10%
- Blockchain 9%
- Other 7%
- Connected/autonomous vehicles 2%

How would you characterize the current status of your enterprise cybersecurity metrics program?
- Program underway, but not complete 57%
- Program delivering significant value 14%
- Program in the planning stage 12%
- Program complete and fully operational 12%
- Ad hoc/not defined 5%
CIO Insights

In this section, we provide advice and lessons that CIOs shared at the NASCIO 2017 Annual Conference in Austin, Texas.

When launching a pilot, start with an issue that affects all agencies and one that will have a big impact. Make the first project an easy win. Nebraska, for example, started with enterprise content management. The pilot group is largely composed of millennials who are familiar with agile development.

Ed Toner, CIO, Nebraska

Diversity isn’t valuable unless there is inclusion in the workforce. Diversity for diversity’s sake creates conflict, but inclusion is what makes diversity work. Focus on the outcomes and the value of diversity. Don’t simply focus on the numbers.

James Collins, CIO, Delaware

As you are learning about and using agile development, focus on transforming processes first. But know that the real magic of agile is the psychology aspect. A good team is one that is empowered, and that starts with having a scrum master who is a great servant-leader.

Denis Goulet, Commissioner, Department of Information Technology, New Hampshire

When it comes to cybersecurity, you need an ecosystem where everyone can thrive. You can’t make cybersecurity and compliance too difficult for the workforce. The state is bolstering its cyber capabilities through a volunteer civilian cyber corps.

Rajiv Das, Chief Security Officer, Michigan

When it comes to shared services, agencies always want to protect their overhead, but many budget directors consider shared services overhead. When you construct your financial structure, make sure you’re not cutting from shared services money. Cockrill recommends characterizing shared services by the revenue they generate.

Michael Cockrill, former CIO, Washington state
The State of Michigan: Creating a Volunteer Cyber Response Unit

An interview with Paul Groll, Deputy Chief Security Officer of Michigan and Executive Sponsor of the Michigan Cyber Civilian Corps

It’s become something of a recurring nightmare. A malicious computing force finds a crack in your system’s defenses, squeezes through it, then moves around as it pleases. Sometimes it shuts down integral services, sometimes it takes off with sensitive user information.

These realities weigh heavily on the minds of IT professionals across the country, and maybe none more so than those within government. And although no amount of resources can guarantee absolute immunity from an attack, more money would always be nice.

But that’s not realistic for many agencies, so some have tried to combat the issue with more creative solutions. Michigan is among this group. Since 2013, when Gov. Rick Snyder proposed the idea at the North American International Cyber Summit, the state has worked to assemble the nation’s first team of volunteer cybersecurity experts: the Michigan Cyber Civilian Corps (MiC3).

“As the landscape became more and more peppered with cyberattacks left and right, the question is, if we really get a devastating attack on critical infrastructure, does the state have the resources to respond on our own?” said Paul Groll, Michigan’s Deputy Chief Security Officer and MiC3’s Executive Sponsor. “Or is something else needed above and beyond?”

Because there was little in the way of a roadmap for creating this kind of emergency response unit, MiC3 had to begin setting its own foundation and working out kinks along the way.

“Challenge: Preparing for a Cyberattack

“The concept of this cyber civilian corps was floated with the idea that they would function pretty much after the model of a volunteer fire department.”
— Paul Groll
As of late September 2017, MiC3 consisted of 63 volunteers, with more in the pipeline. It’s a fast-growing group of cybersecurity experts, spurred by Snyder’s ambitious objective to grow MiC3 to 200 volunteers by the end of 2018.

Each member must satisfy a set of requirements before being welcomed to the corps. First, all applicants must have at least one major certification in a core security competency. In addition to that, MiC3 prefers its members to have at least two years of hands-on cybersecurity experience.

If they meet these requirements, applicants must take a series of online tests to prove comprehension of networking and security concepts. If they pass four of the five tests, they’re offered membership, which comes with a .gov email address and an impressive amount of training resources. If they pass only two or three tests, MiC3 tries to set them up with a plan to further hone their skills.

“We’re eager to foster the development of cyber skills in Michigan, and we will assist them in getting a curriculum put together so that they can study what they’re missing and try again,” Groll said.

That sort of speed in crisis management lends itself to another analogy — that of an emergency room. MiC3’s purpose is to stabilize the IT system under attack and keep it upright. After the immediate threat has been withstood, the corps can then pass things off to a more conventional commercial service team, Groll said.

This idea of a statewide volunteer cybersecurity team has attracted interest from about 15 other states, he said, and there’s been far-off talk of establishing a national network of state teams. If the concept stays on this trajectory, community-based volunteer corps could become a new norm in American cybersecurity.

The team hasn’t had to respond to a crisis yet, but Groll explained how that would happen. In the case of an attack, the state would first blast an email out to MiC3’s members, then post on the group Slack channel. If the response required specific expertise or geographic locations, Groll said his co-workers would begin calling individual members.

“The concept of this Cyber Civilian Corps was floated with the idea that they would function pretty much after the model of a volunteer fire department,” Groll said.

Tips for Success

1. Cultivate strong, high-level support. Groll considers the support from Snyder crucial to MiC3’s development, especially from decision-making and budgetary perspectives.

2. Develop a funding plan. Be prepared to have conversations with any partners about expenses and how they will be paid.

3. Establish a strong marketing plan to ensure that you recruit individuals with the highest level of expertise.
The City of Asheville: Driving Conversations With Dashboards

An interview with Eric Jackson, Digital Services Architect, Asheville, North Carolina

You don’t have to look far for government websites dedicated to making data publicly accessible.

Many of these open data portals were launched with much fanfare, as a clear indication of government’s commitment to openness and transparency. But the cities and states leading this effort soon learned they had to fine-tune their approach to ensure everyday citizens could access data and make sense of it.

“One of two things happen when you put data out there,” said Eric Jackson, Asheville, North Carolina’s Digital Services Architect. “One of the things that happens is nobody uses it and nobody cares. That happens far too often. It’s one of the reasons why you want to actually think about what data’s useful and maybe engage with people who might use it before you bother putting it on your open data portal.”

“The other possible outcome is that they will use it,” he said. “When people outside the city use city data, they sometimes use it to challenge what the city is doing — as they should.” When that happens, the question becomes how communities can use data to shape constructive conversations about important issues, especially contentious topics.

That was a reality Jackson and other Asheville employees had to address recently, when a local data activist combined city data with public records requests to draw attention to police arrests among the city’s homeless population.

The findings led to a highly contentious debate that played out in the newspapers and in front of the Asheville City Council.

“The reality is when the data gets out there, people in the public have the ability to work with that data and do analyses,” Jackson said. “And if what they’re doing is looking at parking data, or even budget data, then everybody says, ‘Yeah, that’s great.’ But when it starts to get into things like homelessness and policing, emotions get higher.”

The situation is further complicated when users don’t have the proper context around the data and are left to decipher it on their own, often drawing inaccurate or incomplete conclusions. But Jackson is hoping to change that by powering constructive conversations with data.
“What we ended up doing was bringing all the parties together, both internal and external,” Jackson said. “We had officers there from the police department and homelessness advocates and data activists and facilitated a conversation around … what the different perspectives were.”

One of the action items that came out of the meeting was the need to release general data about homelessness in Asheville. That information included point-in-time counts showing the size of the homeless population at a given time, how many people are sheltered and unsheltered, enrollment numbers for homeless programs, a general overview of the data sources and more. For now, the data is updated monthly because that’s how often Jackson’s team gets updates from external sources.

“Homelessness data is one of the areas where there are a lot of restrictions on what you can do because of privacy issues,” Jackson said. “But we basically committed to getting a dashboard up that would provide some grounding and context around homelessness that would at least give that basic [data].”

The city used a similar dashboard approach to release budget data and information about capital projects.

Whenever possible, the city uses an open process to develop its dashboards, meaning the public can view the software code in a public repository and see the live dashboard while it’s being developed.

When projects are developed in the open, it changes things, Jackson said. “You consider yourself always under scrutiny, and that’s not a bad thing.” It also provides a way for government to bring the public into the fold from the beginning.

The dashboards were designed to be user-friendly and easy to update so that the technology changes as the conversations change.

“This is very much a work in progress because we don’t see this as the answer to a question,” Jackson said of the dashboards. “We see it as one of the tools we use to support and facilitate conversations.”

“Dashboards are one of the tools you use for communication [and] conversation. But we’re really focused on the conversation side of this.”
— Eric Jackson

8 employees on the business and public technology team
2 web developers on that team
60 hours to build the first iteration of the dashboard

Tips for Success

1. Make people the priority, not the technology.
2. When using dashboards, understand the story you’re trying to tell and be transparent about it.
3. Don’t work in isolation. Embed yourself in the communities that are using your resources.
INTEGRATION AND THE DIGITAL ENTERPRISE

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Improving State and Local Public Safety With Information-Sharing

An interview with David Taylor, Vice President of State and Local Solutions at Software AG

The ability to quickly and effectively share information across the criminal justice system can be a matter of life or death. State and local justice and public safety agencies require that accurate and complete information is delivered to the right people at the right time.

Ineffective information sharing can lead to everything from a warrant being denied to an improper release of a dangerous prisoner. In order for agencies to break out of their information siloes without reconfiguring their systems, they need a solution that gives them real-time access to information they need.

To learn more about how public safety agencies can adopt an information-sharing solution that ensures public safety, mitigates risk and improves collaboration, GovLoop sat down with David Taylor, Vice President of State and Local Solutions at Software AG, a company that specializes in enterprise software. Taylor discussed how public safety agencies can overcome their information-sharing challenges and specifically how Software AG is helping them do it.

To overcome the information-sharing challenge in the justice process, public safety agencies must break out of their siloed IT systems and begin leveraging a solution that allows each system to talk to the others.

Traditionally, accomplishing this would require completely reconfiguring each system, a time-consuming and costly endeavor because there are so many agencies in the public safety enterprise, Taylor said. One way to do this without complete reconfiguration is utilizing a software-based integration platform that acts as a “connector” between different agency systems. Doing so provides an easy way to get the right information into the right hands at any point in the justice process.

To enable better information sharing, Software AG offers a standards-based solution toolkit that provides fast integration and a real-time view of data. Software AG’s toolkit is a basic integration engine that offers other components like its Digital Business Platform, webMethods Integration Platform and Business Process Suite that users can plug and play into the framework. With all solutions, security is paramount.

“Security is baked in and is a priority for us, making it perfect for the justice community, which must comply with standards related to the exchange of justice information,” Taylor said.

In San Diego, more than 11,000 law enforcement officers, adjudicators, investigators and analysts at over 80 agencies rely on the Automated Regional Justice Information System (ARJIS) to do their jobs effectively and ensure public safety.

ARJIS provides access to real-time criminal justice information to agencies throughout the San Diego area. As a result, it is critical that the system is leveraging the most up-to-date technology. Recently, the San Diego Association of Governments (SANDAG) wanted to expand ARJIS’s capabilities by improving how information was integrated, shared and re-purposed.

This is where Software AG came in. Through the components of its platform solution, it helped SANDAG take ARJIS from an expensive, hard-coded mainframe-based system into a more cost-efficient, process-central service-oriented architecture, Taylor said. In order to do this, SANDAG employed Software AG’s webMethods Integration Server to move processes of the mainframe to a web-based solution. By reusing existing logic and leveraging modern interfaces, SANDAG was able to preserve its IT investments and make the ARJIS solution easier to use.

The Georgia Technology Authority (GTA) relies on Software AG’s webMethods platform as well as its Business Process Management Suite to facilitate collaboration in agencies at the front end of their projects to quickly and effectively create a solution. With webMethods as its main platform, GTA can offer Data Sharing Services (DSS), which allows agencies to share real-time interoperable data. Through the DSS, agencies can focus more on streamlining their services and meeting citizen needs and less on whether they have access to the data they need.

Through the Business Process Management Suite, GTA is able to better collaborate with other agencies and promote more effective project management. For example, GTA developers can create dynamic what-if scenarios to see how data will be used before integration construction begins. Once a business process is locked in, developers can deploy the model in one simple process.

Looking forward, it’s critical that the justice and public safety system has access to the data it needs to keep the public safe. A comprehensive approach like Software AG’s justice and public safety toolkit can help your agency gain access to the information you need, when you need it, to ensure public safety throughout your jurisdiction.
Government procurement is a complicated subject. In this age of rapid-fire technological advancement, state, local and federal agencies alike still have difficulties acquiring the innovative tools they need.

Even city administrators in San Francisco, a hotbed of technology, face these problems. Recently, they’ve grappled with how best to encourage collaboration between startups and governments, all while providing a platform for more agile procurement.

“Departments have unmet needs for technology that are always incredibly urgent and timely, and yet, in order for them to get a solution, they either have to purchase something off the shelf, or they have to go build it in-house,” said Dee Prasad, Program Manager for the Startup in Residence (STIR) program, a growing network of cities that act as incubators for startups.

San Francisco kicked off a pilot version of STIR called Entrepreneurship in Residence in 2014, and that successful run paved the way for a three-year grant extending STIR to Oakland, San Leandro and West Sacramento. In 2017, the program is poised to scale even further.

The first of the additions came in early October. San Francisco Mayor Edwin Lee and Washington, D.C., Mayor Muriel Bowser announced that the District would join STIR, positioning itself as the program’s East Coast hub.

“Our business is to get to 100 cities in five years. We’re going to start growing from regionally to nationally as a first step in that process. But we’ve seen that this model can be utilized. Obviously it has the right core ingredients.”
— Dee Prasad
STIR is a 16-week process that begins with tech startups applying to work with a city department that's participating in the program. The startups gain access to public- and private-sector mentors and work to address a specific civic problem. At the end, if a startup develops a successful product or platform that meets the agency’s selection criteria, it can go directly into contract negotiations with the city.

So far, the program’s success stories include a mobile-friendly web app for prospective foster parents (Binti and San Francisco), user-friendly technology to engage parents and childcare providers (Preschool2me and Oakland), and a mobile platform that coordinates homelessness information (Appledore and West Sacramento), among others. D.C has announced plans to recruit departments and startups in the coming months.

“Our business is to get to 100 cities in five years,” Prasad said. “We’re going to start growing from regionally to nationally as a first step in that process. But we’ve seen that this model can be utilized. Obviously, it has the right core ingredients.”

It’s not just the government bodies that benefit in STIR by way of streamlined technology procurement. The program has perks for startups looking to sell to departments, too. A growing network of participating cities means a larger ecosystem of agencies in which young companies can sell products and services. STIR will likely look to expand to other East Coast cities, with D.C. serving as a home base.

The program is fairly inclusive when it comes to accepting startup applications, Prasad said. Accepted companies vary in stage of development but share a common thread as fully functioning entities looking to gain government business. If a startup’s platform or application is selected at the end of the 16-week period, the company can also enter into contract discussions with other cities in the STIR network.

For cities looking to join STIR, Prasad and Krista Canellakis, San Francisco’s Deputy Innovation Officer, recommended visiting the program’s website, which includes an application guide and offers a series of webinars to help explain the commitment.

“As the network grows, you’re creating that ecosystem of people who now understand and feel more comfortable working with startups, with approaching their technology challenges in more modern ways,” Canellakis said.
The State of Louisiana: Increasing Efficiencies Through IT Consolidation

An interview with Matt Vince, Project and Portfolio Director at Louisiana’s Office of Technology Services

Matt Vince remembers when IT operations in Louisiana were spread across 16 state agencies.

Each had its own IT shop that ranged in size from three to 100 employees. Because they operated as individual units, it was difficult to have a consolidated approach to technology, let alone implement large-scale modernization projects.

But that started to change in 2014 when state lawmakers created the Office of Technology Services (OTS) to house all IT operations, including personnel, processes, systems, procurement, data centers and project management. Although these operations were consolidated under one roof on paper, the journey to true consolidation is still a work in progress.

Like many state and local enterprises, Louisiana is grappling with various legacy systems. Some are almost 40 years old, and with each comes countless applications.

“All the applications that those agencies support are now things that we need to support,” said Vince, who serves as Project and Portfolio Director at OTS.

One of the primary goals is to improve how employees share and access data to better serve citizens. But there are legal hurdles to overcome.

“Our biggest hurdle so far is just the jurisdictional ownership of some data, [which] makes it very complex and complicated to share,” he said. “While we’ve lowered the technology barrier, we haven’t lowered the administrative legal mine field of federal and state laws that govern some of this data. But where it’s appropriate, we want to be able to share and consolidate and consume it, and that’s where these new platforms come into play."

Those aren’t the only issues that are top of mind for Vince. OTS uses a cost recovery model to provide IT services to all executive branch agencies. The agency doesn’t have an appropriated budget but instead gets funds by charging its customer agencies for services. Per federal rules, Vince’s agency can charge customers only for the exact cost of the service. In other words, it can’t make a profit.

“The need to be very accurate and very transparent in our costs is our biggest priority,” he said.
Although Vince and his 850-employee department are still working through the growing pains of consolidation, they are already seeing benefits. In the first year, the department saved $70 million by consolidating personnel and technology and streamlining operations. The department also secured federal funding to help cover the costs of this massive undertaking.

“What consolidation brought is real, true coordination,” Vince said.

That is a big deal because not all agencies are created equal when it comes to funding. Consolidation enables OTS to provide equal services at an enterprise scale that previously could not be done.

For example, the agency is working to provide a set of shared enterprise-level systems and capabilities. They include data management and single sign-on, or the ability to use one login credential to access multiple applications. These are the types of capabilities that can be reused across the state’s public-facing and internal systems, regardless of size or complexity.

“All the new systems will be starting to roll into the single sign-on platform, to where there’s only one account and it’s the single point of entry for everyone, whether you’re a citizen or a worker, or a partner or whatever role you’re playing,” Vince said.

The state is using Splunk to provide a comprehensive machine data platform. That platform enables OTS to better mine data that its systems are already generating, and to readily share that data with its customer agencies.

For example, the agency used to manually pull data from various sources to do billing for its customer agencies. Today that process is automated and done in real time. The benefits extend far beyond financial data. Having access to current data across various systems enables state officials to make timely decisions and provide better citizen services.

Vince is pleased with the state’s progress but acknowledges there is more work ahead. “The good news now is that we have a vision and a platform to start to really get a lot of new velocity around the modernization effort.”

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**Tips for Success**

1. Don’t be afraid to talk to federal partners and ask questions, especially about funding.
2. Be open to taking big chances because the benefits may far surpass your expectations.
3. Focus on building the systems of tomorrow and anticipating customers’ future needs.

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16 state agencies had their own IT shops before consolidation

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How Strong Business Continuity Plans Empower Employees

An interview with David Smith, National Director for State and Local Government at Citrix

Amid increasing natural disasters and cybersecurity threats, state and local governments need business continuity plans to minimize disruptions to employees, citizens and IT resources.

Organizations have long relied on alternate work methods in the wake of natural disasters and manmade incidents. But this approach often forces people to adapt to unfamiliar ways of working while trying to cope with the stress and uncertainty of the event itself.

In an interview with GovLoop, David Smith, National Director for State and Local Government at Citrix, explained the importance of having business continuity and disaster recovery plans, what those plans should include, and how Citrix networking solutions help agencies maintain operations in the wake of an incident.

“The first step in prioritizing and planning is doing an assessment of potential disruptions and how they might impact the overall operations of an agency,” Smith said. Disruptions can come in many forms and may impact operations in different ways. A disruption may include any event that would prevent employees from reaching their normal place of work, such as an illness, weather or traffic. Other events could be planned system outages for routine maintenance or more severe cases such as power outages, network disruptions or facility damages.

Then there are security-related incidents that can block access to systems and data temporarily or permanently. “You have to look at how these events impact your overall operations before you get into what you should do about them,” he said.

Completing this assessment is critical to developing a strong business continuity plan. Among the questions agencies should address in their plans are which applications and services are critical to their operations. Who accesses the services and how? If services and systems are impacted or shut down, how are you prioritizing which systems should be restored? If an application is offline, what is that costing your agency in terms of time and resources?

For example, if a case management system goes down, it might hinder the courts from conducting hearings or processing cases. Agencies also have to account for services that are hosted by a third party, in the cloud or via a mobile app.

These are a few of the issues that agencies have to consider when developing business continuity and disaster recovery plans. Agencies often use these terms interchangeably. But when there is a distinction, continuity of operations usually refers to smaller, less impactful occurrences. Disaster recovery generally means there was significant loss or damage to infrastructure or services that forced agencies to do things differently.

When a new system is deployed or there is a significant infrastructure change, you need to update your business continuity and disaster recovery plans, Smith said. He recommended that agencies practice their response to a disaster or disruption in operations ahead of time. Doing so will help alleviate some of the stress and uncertainty.

Smith and his team at Citrix work with agencies to ensure they take a seamless and holistic approach to disaster recovery and business continuity. In particular, Citrix enables agencies to provide secure digital workspaces to their employees regardless of location, network or device.

These secure digital workspaces are transforming the way IT organizations in state and local government enable citizen users and empower the agency’s mission. Agencies can focus more on the quality of services they provide, and they are less restricted by where the service is being delivered. They can easily adapt to different scenarios, including providing service to an employee on their personal or government device.

On the backend, data center automation and recovery make on-premises IT resources available to employees. Real-time monitoring, detection and analytics help IT ensure a good user experience, maintain compliance and prevent breaches. With digital workspaces, agencies can use their existing infrastructure without investing in separate business continuity access tools and devices. This reduces the cost and complexity of business continuity planning.

When developing or updating their plans, agencies should think broadly, Smith said. It doesn’t take a natural disaster to trigger the use of a business continuity plan. Something as routine as a doctor’s appointment affects an employee’s normal routine. Having a plan that empowers them to continue working in those and other instances can greatly improve workforce efficiencies and effectiveness.
The State of Mississippi: Improving Citizen Services With Artificial Intelligence

An interview with Dana Wilson, General Manager at Mississippi Interactive; Renee Murray, Procurement and Consulting Team Leader at Mississippi IT Department; and Drew Levanway, Director of Marketing and Operations at Mississippi Interactive

Earlier this year, if a Mississippi resident wanted to know how to obtain a hunting license, he or she had to either find the application process on an information-heavy ms.gov website or call the service desk. And if that help call came after business hours? No dice.

To improve the customer experience, the state, along with its e-government partner Mississippi Interactive, decided to automate some of these search processes.

“We know that a lot of people work during the day, and they get home and they’re coming to ms.gov.” said Drew Levanway, Director of Marketing and Operations at Mississippi Interactive. “They’re searching for driver’s license information or tax information. And, if they do need to speak to somebody about that, well, it’s after hours.”

The team working on the project hoped to solve the problem with something comprehensive and novel but also recognizable to users. After all, if its functions weren’t intuitive, what was the point?

They needed a tool capable of handling the considerable inventory of resources on the site.

“[Missi] can support about a 1,000 iterations of questions right now, [and] I’d like to get that way, way up.”
— Dana Wilson
The team landed on “Missi,” a 24-hour chatbot application that can respond to user questions and direct them to the appropriate web pages.

“It can support about 1,000 iterations of questions right now, [and] I’d like to get that way, way up,” said Dana Wilson, Mississippi Interactive’s General Manager. “Our development team behind it has already been coming up with some ideas that they want to add, especially when it comes to the machine learning part of it, and actually being able to understand and know more questions.”

When you open the application in your browser, Missi introduces herself and asks what you need help with. Then a clickable list of example topics shows up on the screen. If you’re looking for more information about your tax account, for example, Missi can quickly point you to the taxpayer access point.

Aesthetically, the chatbot models a cellphone’s texting screen, with speech bubbles from Missi appearing on the left side and the user’s questions on the right. It’ll be familiar to anyone who’s ever sent a text or instant message.

Since it launched in June, Missi has fielded some 2,000 questions that — were they phone calls — could have cost the state more than $35,000, Mississippi Interactive estimates. And because of Mississippi’s contract with that organization, the building, maintenance and hosting comes at no expense to the state.

“Which, from my point of view, is the best part of it,” said Renee Murray, the Procurement and Consulting Team Leader at Mississippi’s IT Department. “So while it is a vendor and government relationship, it’s a little bit different in that we’re very much partners. We both have to be successful in order for either of us to be successful.”

The chatbot hasn’t replaced employees but rather freed them up for other projects. “We haven’t fired anybody or gotten rid of anybody,” Wilson said, “but we’ve been able to allocate the resources in different ways.”

Missi took just six months to get up and running. And although the team agrees that the plan to incorporate all of ms.gov’s information from the start was probably overambitious, the members consider the end product successful and full of potential for future growth.

### Tips for Success

1. Stay up to date on technology. Follow tech trends to see what’s working for other agencies.

2. Find a good project partner to assist in carrying out your goals.

3. Nurture the relationship with your partner by keeping a constant line of communication.
The County of Santa Clara: Streamlining Procurement in the Cloud
An interview with Jenti Vandertuig, Director of Procurement, Santa Clara County, California

When Jenti Vandertuig became Director of Procurement for Santa Clara County, California, in 2004, the county was experiencing massive budget cuts following the dot-com bubble. At the time, she managed a team of two dozen employees, and much of the county’s procurement process was manual.

That’s starting to change. Her team has more than doubled since then, and they’re now in the third year of a multiphased business transformation initiative that hinges on technology. It’s an undertaking that few government agencies do well because streamlining procurement processes with technology is complex — to say the least.

This type of transformation requires agencies to marry a cumbersome and bureaucratic process with the nimbleness and flexibility of technology. It’s a combination that isn’t readily embraced across government because it requires a major shift in mindset and behavior.

“When change is hard — messy in the middle, gorgeous at the end,” Vandertuig said. As a former IT acquisition specialist, she understands the complexities of the technology. But more importantly, she’s investing in the people side of change that is too often overlooked.

In addition to addressing the personnel challenges that come with change, Vandertuig was also confronting the county’s hybrid approach to contracting. Santa Clara uses both centralized and decentralized approaches to contracting, which means agencies can make purchases on their own or through Vandertuig’s department.

Santa Clara is the sixth most populous county in California and sits at the heart of Silicon Valley. Its budget is upward of $6 billion, and employees must rely on the same procurement process to buy a range of goods and services, including medical patient care supplies and services for the county hospital, IT and facilities commodities.

The focus for Vandertuig and her team is streamlining the procurement process with technology, from planning purchases to electronic invoicing and payments to suppliers.
In 2014, they kicked off the Santa Clara County Procure-to-Pay Project. The cloud-based software by Ariba allows the county to manage suppliers, processes, budgets, approvals and payments for operations. It provides transparency around what is being purchased and the ability to enforce stronger controls over those purchases.

But change hasn’t happened overnight. A project of this size works best when implemented in phases. The system is composed of multiple modules that each serve a unique function. Santa Clara is the first public-sector entity to implement the entire suite of the Ariba P2P software.

In terms of project implementation, the focus for fiscal 2017 is expanding capabilities and embracing digital transformation. “You cannot transform business manually anymore, it cannot be done,” Vandertuig said. “It is a waste of our time.”

As it relates to the workforce, Vandertuig set key priorities: fostering a culture of collaboration, promoting marketing and outreach groups, team-building across departments and functions, training sessions and change management. She focused on building her team’s soft skills, especially as new employees joined her department, and built team unity through retreats and project milestone celebrations.

The work didn’t stop there. Before any new systems were implemented, Vandertuig and her team brought together their agency clients, including the finance and IT departments and suppliers that have contractual agreements with the county. They all shared their procurement pain points in an effort to improve the experience for everyone involved.

In addition to the Procure-to-Pay system, Vandertuig also invested in an e-document signing feature to drive greater efficiencies. The solution replaced manual processes that forced employees to print and sign forms throughout the procurement process. In certain cases, it used to take more than a month for someone to approve a contract or request for goods and services, she said. Today, about 95 percent of those documents are signed electronically and routed for approval within the same day.

When it comes to managing procurement projects of this scale, Vandertuig offered some advice: Leaders provide a vision, but it takes a team to execute that vision. “Everybody talks about relationship-building. I think that’s what made this more than work; it’s a technology transformation.”

### Solution

**Tips for Success**

1. Focus on the four Cs: compliance, cycle time of each procurement, cost savings and client experience.
2. When launching complex projects, assess how employees’ technical and soft skills can complement each other and benefit the project.
3. Don’t assume what stakeholders want and need. Listen to their pain points and use their feedback to make improvements.
3,000 public sector agencies use Granicus to connect with citizens

Granicus helps turn government missions into quantifiable realities. Granicus products connect more than 150 million people, creating a powerful network to enhance government transparency and citizen engagement. By optimizing decision-making processes, Granicus strives to help government realize better outcomes and have a greater impact for the citizens they serve.

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Integrating Customer Experience Throughout Your Agency

An interview with John Duckwitz, Client Success Team Lead at Granicus

While state and local government leaders recognize the importance of providing better customer service, there are a number of challenges to achieving consistent, positive citizen experiences throughout each agency.

According to John Duckwitz, Client Success Team Lead at Granicus, “The biggest challenge is engaging with citizens where, when and how they want to communicate.” Granicus provides strategic support and tools to help agencies engage citizens through digital communications. In a recent interview with GovLoop, Duckwitz explained how state and local agencies can create better services with a targeted, multichannel approach to citizen outreach.

From renewing a driver’s license to filing federal tax returns, there is a full spectrum of services citizens expect from government. It’s up to agencies to figure out how to ensure that each touchpoint meets growing citizen expectations and aligns with their organizational missions.

For the government communicator — the person engaging with the customer and delivering those services — the biggest challenge lies in “owning the touchpoints that are within your sphere of influence, and making sure you’re collaborating with the other departments in your agency,” Duckwitz said.

The first step for agencies aiming to improve customer experience is to clearly define their desired outcomes and priorities. These range from enhancing public awareness, to increasing citizen engagement to transforming online services.

Next, agencies should expand their reach and try to get ahead of the digital communications curve. “Ask yourself if you’re offering the public as many opportunities as possible to connect with your agency,” Duckwitz said. “Communicate via social media, offer people the ability to find and easily access services on your website, and proactively follow up with constituents.”

The third step is growing citizen engagement, which means identifying the right channels to connect with your audience and choosing the right type of content. This means personalizing communications and using clear and relatable imagery that drives your agency’s desired outcomes. Using data analytics — such as testing email open rates at different times of the day or assessing if people are navigating to the correct tools on your website from the information they receive via email or SMS — also plays a key role in helping to iterate content over time and make communications more effective.

To truly improve the way they meet the demands of a wide and diverse citizen audience, agencies must ingrain customer service across every department and ensure that services flow across multiple channels. Creating an agency-wide culture of customer service is the responsibility of every employee.

Duckwitz offered several examples of this idea in action. The County of San Diego’s Health and Human Services Agency, for instance, demonstrates how a collective, multichannel effort can successfully improve digital engagement. The “Live Well San Diego” initiative, one of the winners of the 2017 Granicus Digital Strategy Awards, aimed to encourage more active lifestyles for the county’s 3.3 million residents by partnering with healthcare providers, community and faith-based organizations, businesses, school districts and other departments. Through digital promotion and daily notifications, emails and text messages, Live Well San Diego connected with and empowered thousands of residents to take positive action for their health, safety and well-being.

Granicus also recognized Leon County, Florida, for making a concerted effort to inform and prepare its residents for emergency weather events such as hurricanes and tropical storms. In a far-reaching awareness and digital communications campaign, Leon County sent out over 1 million emergency notifications and communicated the importance of staying connected in times of emergency. As a result, Leon County saw an increase of 5,341 citizen subscribers to its GovDelivery Communications platform — increasing the number of informed and prepared citizens for future emergency-related events.

Finally, Duckwitz described the Tennessee Department of Transportation (TDOT)’s recent campaign. After three TDOT workers were killed by distracted drivers in 2016, the department aimed to raise awareness of highway worker safety to avoid future tragedies. The campaign included multiple digital communications tools, videos, graphics, web-based information, highway message boards and social media posts. These targeted messages have reached more than 269,000 people and garnered nearly 81,000 video views because of their broad scope.

As these state and local examples demonstrate, the key to customer service success is a strategic, multichannel approach to engagement.

“People need to take a multichannel approach to customer experience,” Duckwitz emphasized. “Agency priorities and individual mandates might change, but the most important thing is maintaining a consistent user experience and high level of customer service throughout your entire organization.”
The State of Georgia: Reducing Tax Refund Fraud

An interview with Lynne Riley, Commissioner of the Georgia Revenue Department; Josh Waites, Director of the Special Investigations Office; and Kendra Carroll, Senior Fraud Strategist

Lynne Riley was confronted with a multimillion-dollar problem on the very first month of her new job: tax fraud. It was January 2015, and she had just taken on the role of commissioner at the Georgia Revenue Department. But almost immediately, the system came grinding to a halt, with tax season looming.

“We had an episode, if you will, of a tax software firm that indicated some of their information might have been compromised,” Riley said. “And that forced the IRS and all state revenue agencies to shut down processing, because we were suspicious of every return that was presented to us at that time.”

Revenue departments across the country were potentially hemorrhaging money to fraudulent tax refund schemes. The IRS, in fact, admitted to shelling out billions of dollars in illegitimate refund claims in 2013 and 2014.

A federal agency losing that kind of money is one thing. But for a state agency with a smaller staff and budget to lose millions of dollars by way of tax refund fraud — that’s something entirely different. To put it bluntly, it needed to fix the problem, and fast.

The state was looking for a solution that would allow it to review internal and external data and compare it to the information that was provided by the taxpayer to see if they really are who they say they are, and if they’re entitled to the money they’re asking for, said Josh Waites, Director of Georgia’s Special Investigations Office.

How, they wondered, could the state more effectively verify a taxpayer’s identity? And how could it do that without taking longer to process? At the time, Riley said, it took upward of 60 days to process and release funds.
After a competitive analysis of various solutions, the department implemented the fraud management system (FMS) of GenTax, a Fast Enterprises software package it’d been using for tax processing since 2009. The FMS turned out to be an easy plug. The agency had it up and running within the year, with financial gains streaming in shortly thereafter.

In 2016, Waites said, the department blocked a little over $98 million in fraud, and it’s already surpassed that number this year. That’s compared with the $1.25 million Georgia pays for the GenTax service annually. They saw a 100 percent increase in the amount of identity theft and tax detections.

That’s largely because the program makes it easier for agents to view tax claims and categorize them, said Kendra Carroll, a Senior Fraud Strategist at the department. It takes less time to verify authentic tax refunds and minimizes the chance that fraudulent refunds drop through the cracks.

“The fact that we're keeping $100 million from slipping out the door for a little over a million-dollar investment of taxpayer money is hugely beneficial,” Riley said.

In addition to those financial gains, the agency can now process refunds in seven days — down from the previous 60-day average.

Despite the success, Georgia isn’t resting on its laurels. Riley and her colleagues recognized that because hackers are always evolving, the battle wages on. They cited the recent Equifax breach as real-world evidence of the need to constantly update and refine defenses.

“The fraudsters haven’t been deterred by our defenses,” Riley said. “But we aren’t going to let our guard down, and, unfortunately, it is likely that it’ll be at least the same amount [of fraud] as last year that we successfully block.”

“The fact that we’re keeping $100 million from slipping out the door for a little over a million-dollar investment of taxpayer money is hugely beneficial.” — Lynne Riley

98 million dollars worth of tax fraud blocked in 2016

1.25 million dollars paid per year by Georgia taxpayers for the GenTax system

100 percent increase in tax and identity theft detections

Tips for Success

1. Invest in a technology solution that can be updated daily, if not more frequently, with the latest information to defend taxpayers.

2. Collaborate with peer agencies to stay abreast of relevant incidents or experiences that could be applied to your own fraud defenses.

3. Designate resources for year-round protection. Don’t consider the job a seasonal one.
Make no mistake about it, modernizing any part of a city is a monumental task. Challenges abound, no matter which area receives the upgrade.

This is especially true when it comes to updating and disseminating years’ worth of data to the public. In 2017, most local governments have access to technology that displays public information in an online format, free for all to see. The problem is figuring out how to do it.

Unfortunately, it’s not as simple as having someone on staff who knows how to use Excel. Not only do governments need that kind of expertise, but they need to find a way to publish data without much of a budget — if any. To add to that, it’s crucial to determine what data points are most important and beneficial to the community.

The city of Syracuse, New York, has sought to tackle these issues in the past year.

“There were a large number of issues surrounding how we managed and moved data throughout the organization, including how we give access to the public and different organizations,” said Sam Edelstein, Syracuse’s Chief Data Officer. “There were certain datasets that departments were publishing and sending out to different organizations throughout the city on an ad hoc basis … but it was only based on requests.”

In October 2016, the city partnered with What Works Cities, a national initiative that helps midsize cities enhance their use of datasets. By March, Syracuse had its initial policy and process-oriented details ironed out. By July, Edelstein and his co-workers were ready to launch.

“Talking to organizations around the city, or neighborhood groups or the university … that’s the best way to make sure the data gets used, and that we release what people are actually interested in.” — Sam Edelstein
DataCuse, Syracuse’s open data portal, went live July 26, 2017. Edelstein set a goal of updating the portal about once a month. Thanks to their efforts, anyone can go to the site and find out exactly how many potholes were filled in any neighborhood in the past year, for example.

Residents can also find thorough information on vacant buildings, older buildings that pose a risk of human lead consumption and the exact spots of recent water main breaks. In the span of a few seconds, they can pull up a visualization of their neighborhood, with helpful tips such as when and where roads will close in the near future. It’s easy to see how the site could become a critical tool for the city moving forward.

“Talking to organizations around the city, or neighborhood groups or the university … that’s the best way to make sure the data gets used, and that we release what people are actually interested in,” Edelstein said.

He added that he’s heard from several organizations, such as the school system, about how the portal has brought their attention to datasets they didn’t know existed. The portal also represents a positive step forward for a city increasingly looking to operate under an open government philosophy.

Edelstein explained how the portal was recently used to inform the public. Syracuse obtains all of its drinking water from Skaneateles Lake, about 20 miles away. That lake suffered an especially bad outbreak of toxic algae this summer, and residents worried about health implications. In late September, the city conducted a study of the drinking water quality — which found almost no traces of the algae — and published the results on the portal.

“We may have been able to [put the results online] prior to this portal being there, but it’s certainly allowed us to do it in a way that’s easy to understand [and] easy to contextualize,” Edelstein said. “And if someone wants to download the data, they can do that there too.”

The city uses Esri’s ArcGIS software for DataCuse. Because it already owns a license, Edelstein explained, the portal came at no extra cost.

**Tips for Success**

1. If your city doesn’t have the existing tools to support this kind of data portal, look into free, open source alternatives.

2. Focus on demand-driven data. Make sure your early data entries are the ones people want to use.

3. Take advantage of opportunities to use data in spontaneous situations, like Syracuse did with its water tests. Get as many eyes on the data as possible.
Conclusion

State and local governments are ripe for innovation. Despite tight budgets, they’ve found creative ways to address the public sector’s most pressing challenges.

Whether their focus is customer service or cybersecurity, these agencies are embracing technology to do their jobs better. In many cases, this has resulted in cost savings, faster service delivery and happier internal and external customers.

But technology alone isn’t the answer. That’s why state and local governments are investing in their people, too. Forward-thinking organizations prioritize continuous learning opportunities, cross-training among departments and ongoing communication with the constituents they serve.

Ultimately, the key to lasting and successful transformation requires that agencies make people the priority, using their pain points, concerns and needs to design solutions that will positively impact the workforce and citizens they serve.
About & Acknowledgments

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