TOP CHALLENGES & SOLUTIONS FROM STATE & LOCAL GOVERNMENT
In 1928, while running for office for the first time, former Speaker of the House Tip O’Neill (D-Mass.) uttered the now iconic line, “All politics is local.” Almost 90 years later the phrase still rings true — not just for politicians, but for civilian government employees as well.

State and local government workers are on the ground floor. They work directly beside and regularly hear from their constituents. When the Environmental Protection Agency unveils new air quality controls, comments from those affected stream onto message boards. When city waste removal workers change the trash pickup schedule, they can see the reaction firsthand at their office. Non-federal government workers have a much different relationship with the citizens they serve: It’s personal.

The good part? These personal connections made with this feedback can lead directly to innovations — innovations that could take the federal government years, if not decades, to implement. Luckily, state and local municipalities are often smaller, nimble and more able to be agile, enabling them to innovate in ways that improve citizen services.

In GovLoop’s new guide, Top Challenges & Top Solutions from State & Local Governments, we share 16 stories about challenges that officials at the state and local levels have faced — and the practical, inventive and innovative solutions they came up with to deal with those issues.

We have broken the innovations into eight categories:

1. Open Data Pioneers
2. Workforce Reimagined
3. Partnerships — Federal, Civic and Beyond
4. Infrastructure Improvements
5. Health Care Unmasked
6. Cybersecurity Unleashed
7. Customer Service Pioneers
8. Outside-the-Box Ideas

So settle in, read on and find out how these 16 cities, states and municipalities took on problems common for most folks at the state and local level. We hope their examples will inspire, inform and invigorate you, too.
OPEN DATA PIONEERS

“Our ability as a society to collect data has way outpaced our ability to analyze it,” said Matt Fischler, Deputy Policy Director at the city of Chicago Mayor’s Office. Fischler’s quote comes from a video describing some of the challenges Chicago and other metropolitan cities are trying to overcome when incorporating data-driven solutions into government organizations.
As you try to understand the sheer scope of the data Fischler is referring to, consider this: Every minute YouTube users upload 300 hours of content. That means every day, 432,000 minutes of content are uploaded to YouTube. That is a lot of cat videos.

Not to be outdone, every second 6,000 tweets go out on Twitter, which corresponds to more than 350,000 tweets per minute, 500 million tweets per day and about 200 billion tweets per year.

If YouTube’s and Twitter’s stats weren’t staggering enough, try this: Every second Google processes 40,000 search queries. That translates to more than 3.5 billion searches per day and 1.2 trillion searches per year worldwide. (In case you were wondering, the most searched animals on July 28 were, in order: mosquito, shark, cockroach, dog and chipmunk. Apparently summer in the United States means mosquito bites. Who knew?) State and local governments also host an unbelievable amount of data and many are now opening the proverbial doors of that data to the public, giving the government and the public an entirely new way to communicate.

Take the city of Boston. Beantown had a little issue with pesky potholes. "In Boston you can now report a pothole to the city on your iPhone," said Steven Goldsmith. "The Boston Public Works employee gets a copy of the picture and can apply his or her knowledge about how to resolve that problem. The worker can then send an immediate response back to both the citizen who made the complaint and to a tracking mechanism at City Hall."

Goldsmith is the author of The Responsive City: Engaging Communities Through Data-Smart Governance and director of Data-Smart City Solutions at the Harvard Kennedy School of Government. The record of where the pothole was located and when it was fixed is also open to the public. Bostonians can now track the street repair from start to finish.

For Goldsmith, the power of data is sparking a real revolution for budget-strapped state and local governments. "Cities are facing more demands for services ever and there are fewer resources to provide those services," Goldsmith said. "Yet at the same time, the technological breakthroughs are at a scale we did not even see four or five years ago. With the combination of the use of big data, wireless tools and other technological changes made available to local and state governments, there is an ability to transform services."

In this section, we will look at two cities that are using data to keep on track of workforce, transparency and data reliability issues.
According to a new report from U.S. Metro Economies, Nashville, Tenn., is one of the 10 fastest growing cities in America. The Music City’s gross metropolitan product neared $100 billion in 2013. In the past five years, the city’s population has grown by 1.8 percent, or roughly 30,000 individuals, making it about the same size as Boston. But although the sudden growth is a boon for the local economy, the corresponding new diversity was not reflected in the city’s government.

“In the next 20 years, there will be no majority ethnicity in Nashville. It will be about a third [each] white, black and Hispanic. This represents a pretty huge shift in the overall demographics of Nashville,” said Jon Staples, a Data Scientist and Code for America (CfA) Brigade Captain in Nashville. “So if we really want a government for the people and by the people, it really has to represent the people. So we wanted to use data to make sure that the government was truly representative of the people.”

Enter InCluCivics, a web platform that visually showcases Nashville’s workforce diversity data, both presently and over time.

Using data from Nashville’s Metro Human Relations Commission (MHRC), the Human Relations Commission (a local nonprofit) and CfA’s Nashville Brigade released the first InCluCivics report in January 2015. The data was culled from city employment records, Nashville Census information and the Bureau of Labor and Statistics (BLS). The information was gathered to show not only who worked and lived in Nashville, but also in what areas and capacities individuals were employed.

The initial report found Nashville lacked diversity and had a substantial pay equity gap within metro government.

“InCluCivics is just one piece of a larger effort by the Metro Human Relations Commission to analyze and improve Nashville’s workforce diversity, ensure transparency and better reporting processes,” Staples said. “The real goal with the platform is to be able to track data over time and see a change in demographics.”

Citizen usability was also a major factor in the development of InCluCivics. “The website is actually very simple,” Staples said. “It breaks down the demographics in a way that is pretty easily consumable. As a user, it is easy to see how changes could be tracked over time. Right now we have data on the site going back to November of 2014. But it will continue to be updated as we progress.”

Users can even drill down by department to look at more detailed breakdowns of demographics and pay scales.

Code for Nashville created and maintains the platform for free.

Staples acknowledged that posting diversity demographics could be a sensitive topic. But city officials have said that an open and transparent look at their demographics is beneficial for two reasons. “InCluCivics reports are essential, first, because it is imperative to establish a baseline from which to assess our collective efforts at attaining a more diverse workforce in the future,” MHRC wrote on its website. “Second, to further encourage transparency and public education, this platform will capture the demographic data provided quarterly by Metro HR, render it in user-friendly charts and graphs, and will track changes in the data over time.”

After the initial InCluCivics report was released in January, MHRC unveiled its recommendations to improve diversity and inclusion within city government. The recommendations include appointing a Chief Diversity Officer, creating a team of diversity and inclusion champions, and establishing another team to look at how diversity and inclusion talent can be hired more quickly and efficiently. Officials plan to release updated InCluCivics reports quarterly.
The Motor City recently emerged from bankruptcy. Now you can literally follow the city’s money with their new open data platform.

In July 2013, the city of Detroit filed for Chapter 9 bankruptcy protection. The city had outstanding debt and liabilities of more than $18.5 billion. The filing marked the first time a major metropolitan American city had declared bankruptcy. Many factors contributed to the breakdown of Detroit’s financial solvency, but one of the most debilitating was the lack of financial transparency and accountability.

Eighteen months later, Detroit is officially out of bankruptcy. Although the city is a long way from a budget surplus, the Motor City is making a cautious comeback — a comeback that federal fiscal arbitrators and the watchful media are closely tracking.

In an effort to be much more open and transparent, Detroit Mayor Mike Duggan signed Executive Order 2015-2 in February 2015, establishing the Open Data Portal initiative. Duggan noted in a press release that the initiative “will foster and create a more transparent, open, collaborative, participatory and accountable relationship between the city government and the people it serves.”

In striking similarity to the White House’s open data mandate, Detroit’s executive order also mandated that all city departments take data that’s not restricted by state or federal laws and make it available to residents on the site. The goal was to increase the accessibility and availability of certain data collected or maintained by the city.

To jumpstart the open data initiative, the mayor unveiled three datasets compiled from nine city agencies:

- **Police Department crime reports**, updated hourly once a report has been completed and filed.
- **Building and trade permits**, updated daily, to allow visitors to see who pulled a permit, what type of work is being done and what contractor is doing the work.
- **Blight remediation data**, updated weekly.

But creating an open data policy was just the first step. The executive order also established a task force and advisory commission that will evaluate and determine best methods for design, implementation and monitoring. In essence, the order called for the creation of an open data portal. “This task force and advisory commission pairs agencies and other stakeholders in an engagement process that produces a report on what the best methods are for pushing Detroit forward with the creation of this portal,” reported the Sunlight Foundation, a nonprofit that tracks government transparency.

Detroit’s Open Data Portal is being financed in large part with a grant from the Socrata Foundation. “The grant covers the launch and service of Detroit’s portal for the next three years and is critical to foundation for the city’s data and transparency endeavors,” reported Government Technology. “Socrata’s aid arrives during a time of tight budgets and watchful restraint. After the bankruptcy, Detroit was put under a strict reorganization plan, a policy that permits the city to waive $7 billion of its debts, yet limits spending to $1.7 billion spread across 10 years. For the city’s IT needs, $100 million is already slated for critical IT infrastructure.”

Bus routes, demolition heat maps and data on city school demographics have recently been added to the portal.

“Providing access to information is one of the most important things we can do to keep the public’s trust and establish a sense of accountability within city government,” Duggan said at the signing of the executive order. “Today is an important first step in that direction.”

Detroit wasn’t the first city, nor will it be the last, to create an open data portal. In fact, 40 states and 46 cities and counties have open data portals. Data.gov has created an interactive map to show which states and municipalities feature open data portals.
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A though at first glance data storage doesn’t stand out as a top innovation in government, Pure Storage has taken a unique approach, delivering not just a compelling product but a business model that unlocks cost savings and efficiency.

For more than thirty years, data has been stored on spinning disk, consuming racks of data center space and kilowatts in power and cooling. In an interview with GovLoop, Pure Storage’s Chief Evangelist Vaughn Stewart noted, “Datacenters have long been comprised silicon and software except for disk storage, the lone hold out of mechanical IT technology. Rotating disk can’t keep up with today’s need for serving information; it’s prone to failure and requires significant operational care to function.”

Enter solid flash storage, which has enabled government agencies to take a quantum leap forward. “Compared to disk flash it’s the holy grail. It’s 10 times more performant, and efficient than disk. It’s free of ambient noise and vibrations, and is ultimately much more resilient,” said Stewart.

Many state and local governments are just dipping their toes in to the flash storage waters. “Pure Storage led the innovation to deliver flash at the price of disk storage and since then has gone beyond to reinvent storage. With flash, organizations have the opportunity to adopt a new form of storage that can make a dramatic difference in their ability to deliver modern and next-generation services to constituents.”

Beyond the performance gains introduced by all-flash technology, Pure Storage offers some unique benefits that are transformative for IT organizations.

First, Pure Storage has changed the IT acquisition process. In the past, every time a state or local government refreshed their storage solution, they would have to get multiple bids or RFPs. “An RFP takes enormous amounts of time and labor that governments do not have,” explained Stewart. “Pure Storage offers Evergreen Storage, a new concept that allows customers to stay modern without going through an RFP process and the subsequent ‘ripping and replacing’ migration process every three years.”

“Flash storage is really better in every measurable way, from scale and performance to ‘drag and drop’ simplicity,” said Stewart.

Finally, flash has one-tenth of a footprint of disk storage, and requires a tenth of power in cooling, which helps the environment. “As customers are replacing disk with flash, they’re going to gain decades of capacity and new use from their existing data centers,” said Stewart. “The adoption will allow the repurposing of power from cooling mechanical disk to storing more data without expanding the datacenter footprint.”

For many flash storage government customers, the results have been extraordinary. “When customers adopt Pure Storage their initial responses often focus on performance, ‘Wow, look how fast my application is performing!’ While flash will accelerate every business process it also benefits the end user, as each application becomes more responsive. For many, they think their server was upgraded!” said Stewart.

Concluded Stewart, “Following the immediate gains in performance, customers begin to realize significant operational gains. The simplicity of Pure Storage returns hours of employee productivity, previously lost to storage management, for investment in current and future IT initiatives.” Flash is helping government IT organizations realize tremendous efficiency, while at the same time delivering levels of online service they never thought possible.
WORKFORCE REIMAGINED

The single largest employer in the United States is the government. According to the U.S. Census Bureau, more than 3.7 million people are full-time state government employees. Additionally, more than 10.5 million employees clock in every day to positions within local governments.
However, much of that government workforce is graying and leaving government service. The Society for Human Resource Management surveyed more than 2,000 HR professionals from all sectors of government for its 2014 report Preparing for an Aging Workforce. The society discovered that the number of government employees eligible to retire in the next few years is staggering. Some states report up to 30 percent to 40 percent of their IT workforce is eligible to retire today. Additionally, in five years, 50 percent of the state IT workforce will be eligible to leave.

“To make matters worse, states are spending up to 75 percent of their IT budgets on legacy systems,” said Doug Robinson, Executive Director of the National Association of State Chief Information Officers (NASCIO). “Those types of stats make it difficult to recruit new talent. There is not a lot of budgetary room to do innovative work. We talk all the time about balancing the legacy and innovation agenda. States are spending their time and resources on these major monolithic systems that citizens depend on for entitlement services and unemployment insurance.”

The good news? In 2014, budgets opened slightly to allow for more new hires specifically in the IT field. According to a State and Local Government Excellence Workforce survey, 66 percent of states saw an increase in hiring in 2014.

But state and local governments are not looking to replace retiring employees with carbon copies. They want to invest in the future. State and local governments are looking to hire 21st-century employees to carry out 21st-century jobs.

Two of the biggest areas of job growth in state and local government IT are cybersecurity and the emergence of the Chief Resilience Officer. These mark a large shift in how state and local governments are preparing for the future.

In this section, we will highlight two examples of how states are thinking outside the box when it comes to hiring the workforce of the future.

The following 10 states registered the highest employment-to-population ratios for workers age 55 and older in 2012. (the BLS takes stats every four years)

1. Nebraska: 49.0%
2. North Dakota: 48.9%
3. Vermont: 48.1%
4. Alaska: 47.2%
5. South Dakota: 46.1%
6. Wyoming: 45.4%
7. New Hampshire: 45.3%
8. Kansas: 43.8%
9. Iowa: 43.0%
10. Maryland: 43.0%

Top jobs for state employees in 2012:

- Corrections: 440,724
- Elementary/secondary education: 46,335
- Financial administration: 158,675
- Health: 199,508
- Higher education: 1,711,370
- Highways: 220,486
- Public welfare: 230,607
- Social insurance administration: 84,523
Meet Your New Officemate: The Chief Resiliency Officer

100 cities around the world are hiring Chief Resiliency Officers to make sure their communities are still around in 100 years.

This might come as a shock, but cities are siloed. They often don’t communicate or interact with one another as much as they should, and the lack of collaboration and peer-to-peer learning means workers waste time and resources inventing solutions that already exist.

The Chief Resilience Officer (CRO) position was created to work across government departments, regions and demographics to help cities improve internal communications and efficiencies.

Many cities including Boston, New York and San Francisco have noted the need for this leadership role. Last year the Rockefeller Foundation funded the 100 Resilient Cities Initiative with the goal of filling more than 100 CRO positions by the end of 2015.

One of those new CROs is Norfolk, Va.’s Christine Morris. Morris is thrilled with the possibilities of collaboration, or as she refers to it, “cross-sectioning,” and what it can do for Norfolk. “Maybe we haven’t used [real estate records] as effectively as we might in the future, combining it with economic development data and understanding where opportunities lie at the neighborhood level to help those collaborations we need to have happen across business, university, city and other stakeholders.”

But working across teams is only a piece of the puzzle. According to Rockefeller, CROs should also work across departments to improve internal communications.

Morris agreed. “At its core, the role of the CRO is that of a connector,” she said. “You need to recognize that a city is a system of systems.” It’s Morris’ job to invest in one system in a way that improves the whole. The result is a system that works more effectively to protect people while fostering the city’s economic vitality and social interaction.

For example, consider Norfolk’s transportation department. “We are building a new transportation network,” Morris said. “But our transportation people might not be thinking about how the communications network fits in or thinking about on a daily basis how neighborhood resilience fits in. It’s my job as the Chief Resilience Officer to raise those questions and check back in continually to make sure they are being answered.”

At the same time, the CRO acts as the “resilience point person,” ensuring that the city applies a resilience lens so that resources are leveraged holistically and projects are planned for synergy. This lets the city get the most “bang for its buck” on projects, potentially achieving multiple resilience goals with just one project. For example, a flood barrier could also serve as a bike path, promoting healthy citizens and cohesive communities.

Morris has been in her role for 13 months and has already seen an impact in Norfolk. “We are rewriting our zoning codes. It is a three-year process. We recognized that we want to think of resilient land use in that process,” Morris said. “We were able to get the Rockefeller Foundation to convene other cities that are going through the same process to have a real discussion and share experience. Having that opportunity for our Planning Director and others has been really beneficial.”
In 2015, Pennsylvania State University’s College of Engineering was breached. In Montana, it was the Department of Public Health and Human Services that was hacked. And in South Carolina, hackers accessed the Social Security numbers of millions of taxpayers in the state Revenue Department’s computer system. One of the reasons for these breaches? A lack of skilled cybersecurity professionals.

State and local governments are desperate for skilled cybersecurity workers to help them secure critical systems and sensitive data. According to an annual NASCIO survey, hiring skilled cyber professionals has been the top concern for state Chief Information Security Officers (CISOs) for the past five years.

Posting a help wanted sign is not going to unearth hidden cybersecurity professionals. And even if cyber professionals were just sitting around waiting to be hired, they could choose from a multitude of positions because state and local governments aren’t the only places trying to fill such jobs — the private sector is competing for them as well.

Counties are going back to school — literally.

According to StateTech magazine, Montgomery County, Md., “recently launched two paid internships for college graduates in its Department of Technology Services. Interns work 40 hours per week alongside seasoned IT professionals and get experience handling technical operations, incident response, risk analysis and policy development. Graduates could earn up to $45,914 a year, according to a posting on the county’s website.”

The two interns go a long way in making Montgomery County more secure. As it stands today, the county has only four full-time staff members dedicated to cybersecurity and a $1.2 million budget.

Oakland County, Mich., has a similar internship program. And according to its CIO, Phil Bertolini, the internships don’t benefit only counties. “Most college kids don’t have a lot of hands-on experience upon graduation,” Bertolini said. “The intern program could fill that gap because counties don’t just need cyber interns, they need cyber professionals. If we could train students early, they could have a big impact for years to come.”

Montgomery County Enterprise Information Security Officer Keith Young agreed with Bertolini. He told StateTech that “one of the challenges is that people graduating with cybersecurity degrees need to have experience in order to get a job, but they can’t get a job unless they have experience. This internship is a great way to take someone that has the education but no experience and help them get trained, help them gain experience.”

Montgomery County is not alone in drafting an internship program. In fact, every state and more than 50 counties nationwide have an intern program.

“We know that when we bring a kid into the county to train to become a cyber professional, they may leave after a few years to go work in a higher-paying job in the private sector,” Bertolini said. “But these programs give kids an entry into cybersecurity. The internships give them a chance to make a difference. If we instill that early, we can entice them to come back, to give back and maybe even stick around for a few years.”

Instead of going Greek, many state and local governments are recruiting students to a cybersecurity fraternity by creating formal cyber training programs.
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For the fourth year in a row, the state of California is suffering from record draughts. In March, Governor Jerry Brown unveiled a $1 billion plan to aid communities most affected by the drought. While the aid will go a long way to help beleaguered farmers, it will also stretch a state budget that’s already thin.

One of the organizations tasked with monitoring the draught is California’s Natural Resource Agency (CNRA). CNRA depends on real-time data access to make informed decisions and respond quickly to disasters. Seven years ago the agency decided to place their IT services under one umbrella and cut costs by using NetApp’s private cloud solution for shared services and information. Since then, CNRA has become a model of services in government (read more about that here).

GovLoop sat down with NetApp’s Chip George, Senior Director of Sales for State and Local Government and Education, to learn how moving to the cloud impacted California’s bottom line and how those same solutions could be used by others.

“CNRA chose a private cloud approach that gives them the unique ability to provide multitenant services across various tiers in storage,” said George. Since 2008, the agency has seen a 300 percent increase in data storage capacity by migrating to the cloud.

It is clear that the cloud is an efficient way to obtain IT services for state and local governments because of its potential for low-cost entry and quick turnaround.

However, many agencies are still concerned about security. “The conversation about cloud is not complete without a discussion of the security concerns and what level of control is needed,” said George. “Cloud providers have government-only offerings that satisfy some agencies’ security concerns, but other agencies will use the cloud only for processing and networking while the data itself sits on a storage system and at a site that they own and control.”

NetApp recognizes these security concerns and often advises security conscious departments to leverage a common set of data services that spans a choice of on-premises and cloud resources. They can seamlessly manage, move, and protect their data so that it’s available whenever and wherever they need it. This gives them the freedom to innovate without risk or constraint. Additionally, encryption can be done with NetApp at the disk subsystem layer, or with third-party encryption solutions – whatever a Chief Security Officer deems appropriate. “Encryption can also be done with third party providers that provide software level encryption of different qualities of data,” added George.

The ability to manage and move data around the different environments is particularly attractive to state and local governments “The best cloud services allow IT staff to get all of the utility out of the data while being able to control it,” said George. “What agencies don’t want are multiple methods to control their data. They don’t want their IT staff cut out of the process. They want total control of their data, and they want an exit strategy if even part of that cloud approach isn’t working.”

Enter the hybrid cloud approach. It’s a combination of on and off-premise datacenter solutions. In a hybrid cloud environment, agencies use a public cloud provider for a specific government cloud offering like unclassified email or other standard services. In addition, agencies use an owned on-premise solution, whether a true private cloud offering or in a traditional data center approach for data that is either sensitive or heavily used.

“The key to the hybrid approach is that your workloads will not be static,” said George. “Workloads will be offered only on-premise at some points and then later moved to a public cloud. This movement, and controlling it, is the core of the unique offering NetApp provides.”

One of the ways agencies are turning to the cloud while keeping regulations and security concerns top of mind is the hybrid cloud approach. A little background is useful to help explain the rise of the hybrid cloud. “State and local governments, like their industry counterparts, built pieces of the datacenter as the amount of data continued to grow. This method resulted in tiers of infrastructure both at the processing and storage level,” explained George. “Each tier has different equipment that delivers different services. Consolidating those disparate workloads onto an easier to manage standardized IT infrastructure is a challenge because of the varying requirements.”
Partnerships are the lifeblood of state and local governments. From federal funding to civic partnerships to university support, state and local governments operate in large part because of the financial, workforce and technical support from outside entities. For example, 35 percent of Indiana’s annual budget comes from federal funding.
The Congressional Budget Office (CBO) reported that in fiscal 2011, “the federal government provided $607 billion in grants to state and local governments. Those funds accounted for 17 percent of federal outlays, 4 percent of gross domestic product and a quarter of spending by state and local governments that year. In total, the federal government reported outlays in 2011 for more than 200 intergovernmental grant programs, which were administered by 30 federal departments and independent agencies.”

Successfully navigating the relationship between these partnerships can be challenging. Very rarely are states empowered to use the money at their own discretion. More often than not the funds are designated for a very specific purpose.

There are typically three types of federal grants, each of which provide varying degrees of flexibility, according to CBO:

1. Block grants provide only broad parameters for using funds, leaving state and local government officials considerable latitude when they make spending decisions.

2. Categorical formula grants, by comparison, face more spending constraints. For example, certain criteria govern the types of roads that state governments may build or improve using federal highway grant funds. However, among all possible road projects that meet the established criteria, states can typically choose which ones to fund.

3. Project grants provide state and local governments the least flexibility over spending, as the use of grant funds is typically limited to a specific project. Some grants place additional conditions on recipients that may be closely related to the purpose of the grant — for instance, the requirement that students demonstrate adequate progress for states to remain eligible for certain educational grants. Other grants may have more general spending rules, such as those requiring recipients to complete environmental assessments for many federally funded projects.

State and local governments will also partner with businesses or civic groups on projects. The goal is to extend the reach and resources of the government.

Although there are certainly difficulties in dealing with these partnerships, they can transform the government and the community they serve. For example, California experienced record droughts for the fourth year in a row in 2015. The Latin Times reported that Gov. Jerry Brown asked residents to voluntarily cut their water usage by 20 percent. But the state didn’t stop there. It also teamed with local tech startups to research innovative solutions. Forbes reported that California and at least four companies partnered to figure out where the water is going and how it can be used more efficiently.

In this section, we will highlight how some state and local municipalities are working with the federal, civic and private-sector communities to make strong partnerships in new and different ways.
A GOVLOOP GUIDE

BLS puts the number of open cybersecurity jobs in the United States today at 209,000. To be fair, a lot of those job openings are not in government, but that number still accounts for a 74 percent increase in jobs in five years. Additionally, The Washington Post reports that the unemployment rate for veterans who served after the 2001 terrorist attacks is 10 percent. That amounts to more than 246,000 unemployed veterans.

Officials at the Washington State Commerce Department, the University of Washington at Tacoma and the National Institute of Standards and Technology (NIST) wondered: What if you could pair unemployed veterans and cybersecurity?

The result was the creation of the Cybersecurity Career Pathway Program for Veterans in October 2014. The Washington-based pilot is a public/private/federal partnership among the state, university and the federal government. The program is funded by a $412,000 grant from NIST and is geared at training retiring soldiers for careers in science, technology, engineering and math.

The one-year grant follows a rigid timetable. By December 2015, the team hopes to have:

- Finalized the Cybersecurity Rapid Education Apprenticeship Transition to Employment System (CREATEs), which will recruit, assess and assist active-duty, Reserve service members and veterans interested in working in the cybersecurity field.
- Provide “live fire” internship or apprenticeship experience for program participants through the Public Regional Information Security Event Monitoring (PRISEM) system and move it from a grant-based to a fee-based system accessible to jurisdictions statewide.

Officials hope to not just train new cyber professionals, but inspire them to work for the state of Washington. Amber Siefer, Team Lead at the Washington State Commerce Department, said the region is primed for a cybersecurity skills influx: “More than 12,000 service members are expected to leave the military through Joint Base Lewis McChord in the next 12 months. In Washington, by 2022, we will have a 37 percent job openings rate for cyber professionals. We needed to find a granular way to fix the problem. We needed to reach into our military talent pool to help address the problem.”

“We assess the career pathways for Reserve, active-duty members and veterans. The CREATEs model helps identify and select individuals who can self-sufficiently move through the educational system in a way that is both direct and streamlined,” Siefer said. “Think of it as an accelerated learning curve.”

Once veterans have completed the initial training, they become paid interns for PRISEM. And here is where the state and localities can benefit from the veterans’ cybersecurity training almost immediately.

“PRISEM is currently providing event data monitoring services to 20 different participating local governments in our state,” Siefer said. “PRISEM acts like a visibility tool that monitors cyberattacks from all 20 participating municipalities. What makes this program so unique is that our vets get hands-on training. Our students get the specialized training working directly with state and local staff members in fusion centers, and then they take that training back to the lab at the University of Washington in Tacoma and they actually get to interface with live data and work with their professors to learn on-the-job techniques.”

The grant officially expires in March 2016, but Siefer is confident the program will continue. “We get calls from soldiers every day who are interested in the program. Our university partners are so well trained at this point on how to handle interested service members that when we take our hand off the gas in about a year, I am not worried about the program’s success.”

Washington State, the University of Tacoma and the National Institute of Standards and Technology are joining forces to bring retired soldiers into the cyber profession.

209,000 cybersecurity jobs
246,000 unemployed veterans
Funding public education in the United States is a joint effort among federal, state and local governments — and is the single largest category of state and local spending. To get down to the numbers, on average, about 10 percent of public school funding comes from the federal government. Most of those resources generally go to child nutrition programs and a few other specified areas, according to the Census Bureau. However, the funding model gives state officials very little discretion to spend federal resources in the way they choose. That's mostly because there is no one-size-fits-all school district or community. For example, in California's San Joaquin Valley, air quality for children is a big concern. Those same concerns are not necessarily felt in Bozeman, Mt.

In 2014, the Department of Education, in partnership with the departments of Labor and Health and Human Services, created the Performance Partnership Pilot (P3). The idea was simple: The partnerships would test “innovative, cost-effective and outcome-focused strategies to achieve significant improvements in educational, employment and other key outcomes in exchange for this new flexibility,” reads the Federal Register posting for the Performance Partnership grant.

States and localities that participate do not get additional funding to implement solutions for disconnected youth. What they get is the ability to use appropriated federal funds in the manner of their choosing. The fiscal discretion allows the states to tailor the funding to the most critical need area in their communities.

“P3 allows new flexibility under Federal statutes, regulations, and other requirements to overcome barriers and align program and reporting requirements, enabling applicants to propose the most effective ways to use these dollars,” said Johan Uvin, Acting Assistant Secretary in the Office of Career, Technical and Adult Education, in an Education blog post. States that apply for the pilot can use the funding to “help address the ‘wrong pockets’ problem, where programs that see improved outcomes or other benefits due to an intervention are unable to provide funds to support that intervention based on program restrictions,” the application for P3 states. “P3 funds may also help to build additional evidence that an intervention is successful or to strengthen a foundation of data capacity and performance management. If this hypothesis proves true, providing necessary and targeted flexibility to remove or overcome these hurdles will help to achieve significant benefits for disconnected youth, the communities that serve them, and the agencies and partners that are involved.”

Often one of the biggest barriers to this type of funding flexibility is accountability. The federal government is fiscally and legally liable to ensure that states and localities appropriately use the funds. To make sure states and localities were still being fiscally responsible, the pilot program mandated that the 10 participants would enter into a formal agreement with a participating federal agency. That agency would take the lead — or, in other words, oversee the pilot.

“The heads of participating federal agencies must determine cost-effective oversight procedures that will be used to maintain accountability, an appropriate, reliable and objective outcome-measurement methodology that all parties will use to determine whether the pilot has achieve the specified objectives and finally determine the consequences of failing to meet pilot goals and corrective actions that will be taken in order to increase the likelihood that pilot will succeed,” Education said in the request for proposals for pilot participants.

P3 launched in 2014 and the first 10 pilots are expected to be finalized in late 2015.

A pilot program from the Census Bureau gives 10 states the freedom to spend federal resources on education without restrictions.
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Teens and young adults are often accused of being addicted to their phones, but they are not alone: 90 percent of Americans own a mobile device with text messaging capabilities. And more than 60 percent own a smartphone. The average smartphone user checks their phone 110 times a day.

If you want to reach a specific population and reach them fast, text messaging is the easiest and most effective method. And that's not just for parents trying to keep track of their teens. Governments are also seeing a powerful increase in engagement by going mobile.

GovLoop spoke with Natalie Fedie, GovDelivery’s Vice President of Client Success. GovDelivery is a digital communication platform provider for government.

“Governments are using mobile technology to offer real-time information to people where they are,” explained Fedie. For example, King County Parks in Seattle has a mobile app where hikers can get map access anywhere, anytime and on any device. “That level of access has been a real benefit to the King County Parks.” Taking it to the next level, organizations like Michigan DNR are allowing hunters to text in and request information on their nearest check location, regardless of whether they have internet service or a smartphone. This provides a better level of service to the DNR’s customers, while allowing the DNR to more effectively monitor and control the deer population.

The key to text notification success is to match the message to the medium – a tactic that is especially critical in an emergency. “The Federal Communications Commission recommends keeping phone calls to a minimum during an emergency. A text message is a great way to communicate warnings, but also tell citizens where to go and other life-saving information,” said Fedie.

With text messaging, government communicators have about three seconds to get a citizen’s attention. “We work with customers to make sure they are grabbing attention quickly and able to maintain that attention throughout the mobile lifecycle,” said Fedie.

For example, let’s say a city was trying to get riders to take a different bus route. After the initial alert asking riders to take an alternative bus route, the city would ask for feedback. Text messages would prompt users to answer: Was the new route successful? Was the alert helpful? How did it impact your commute? “Text messaging allows you to keep the end user engaged throughout the process,” said Fedie.

72 percent of adults are less than four feet from their phones at all times, and 97% of text messages are read within 15 minutes of being sent. Text alerts allow governments to engage citizens in a real-time manner wherever they are. “People are not chained to the desks anymore. They are on the move. What text alerts do is eliminate the barrier to citizens receiving information and services from government,” said Fedie.

It’s not just citizens that get a boost for the easy access mobile provides. “The ability to do two-way communications and receive survey information or instant feedback from users has been really helpful. It’s hard to get people to respond to surveys. So having that ability to instantaneously respond to communications has allowed government to get better feedback,” explained Fedie. For example, One Region Forward promoted a text message survey on bus stops and flyers, engaged the public, and instantly received public input on its proposed plan for the Buffalo Niagara region.

However, text alerts are not perfect in every situation. Fedie said she works with clients to learn when and where text alerts will be most effective. “We’ve found text alerts work best when you’re trying to reach a specific audience, like younger people or low income audiences who may not have internet access.”

Additionally, mobile is used most effectively in partnerships with other communication outreach best practices. “Mobile enhances the other digital channels that governments use. Organizations should be using text messaging in combination with their other digital channels, like email and social, to reach as many people as possible.”

Simply put, text messaging enhances citizen engagement. “People’s satisfaction with government goes up if services are easier to access and they see a return on their tax dollar investment,” explained Fedie. “If they have to go into a office, wait in a long line with a lot of government workers behind the desk, there is a very real perception that the government is not using their tax dollars effectively. But if they get a text alert warning them that wait times are long and they should reschedule their visit online, their customer experience is drastically improved. By seeing government be smarter about investing in technology, it’s really a win/win situation for both government and the taxpayer.”
INFRASTRUCTURE IMPROVEMENTS

We’ve all experienced it. You’re cruising along a road at night when — boom! — your car hits a pothole. The sudden thud makes your heart skip a beat. The jolt raises your body out of your seat, and just as abruptly as you were jarred into the air, you crash back into your seat. The damage to your car might be trivial, but this common experience represents a systemic problem.
As citizens, we don't often notice community services, support and transportation until problems occur. A mountain of unburied garbage, a pothole-riddled road, cement crumbling from underneath a bridge, water bursting from a levee — disasters, natural and unnatural, serve as a solemn reminder of the value of a solid infrastructure.

In 2007, Minnesota's I-35 bridge collapsed, killing 13 people and injuring 145. This case is hardly a unique situation. One in every nine bridges in America is now considered structurally deficient. Nearly one-third of the major roads in America need major repairs. But surface transportation is hardly the only issue.

State and local government infrastructure problems also extend to city services such as garbage pickup. According to a 2014 report from The Atlantic, "each American is responsible for 35 tons of solid waste per year, or 2,700 tons over the course of his or her life. Imagine the weight of all the cars in a big rental-car lot at O'Hare or JFK airport. That's the average American's lifetime solid-waste footprint." That footprint is having an unsustainable impact on the world's finite resources. On our current path, these problems will only increase over time as the population grows.

Despite state and local government efforts to mitigate the issues deteriorating infrastructure presents, federal budget allotments have fallen short of what's needed to address the growing number of problems. And state and local governments' budgets are stretched thin. By 2020, the American Society of Civil Engineers estimates, the federal government will need to invest a staggering $3.6 trillion to fix the nation's crumbling infrastructure.

From our roads and bridges to our waterways and airports and even to our electrical grid and waste management system, America's infrastructure is in desperate need of repair.

In a time of tight federal budgets and growing debt, state and local government officials have been forced to look for cost-efficient alternative solutions. The state and local examples presented in this section have pioneered new approaches to old problems, in part by partnering with the private sector. Using the latest technology in innovative ways, state and local governments are forging sustainable solutions for a fraught infrastructure.

In this section we will look at how two communities are improving infrastructure and making communities safer in the process.
A historic, suburban region outside Detroit, Oakland County has roads that have seen better days. In the past 30 years, the rapidly expanding population increased traffic congestion and accidents. Unsyncronized traffic lights only added to the nightmare. With limited federal funding for road maintenance, Oakland County Road Commission officials knew they would never have enough money to widen all of the county’s roads. They had to come up with a cost-effective, innovative solution — and fast.

Oakland County shifted from traffic engineer-controlled monitoring systems to “adaptive” traffic signal systems that use algorithms to adjust traffic signals in real time. This automated response technology, known as FastTrac, adapts to changing traffic flow, which has cut delays at intersections by up to 40 percent and reduced serious-injury accidents by 50 percent on county roadways.

“The problem spot in any road system is intersections,” said Craig Bryson, the commission’s Senior Manager of Communications and Public Information. The organization theorized that if it could manage traffic signal timing more efficiently, it could lessen many of the traffic and safety issues that older roadways present. Bryson’s organization looked around the world to see what others had done to address these problems and found an answer in — of all places — Australia.

In response to aging roadways, Sydney had implemented the world’s first adaptive traffic signal system. The data gathered from these inductive loops fed into computers, which then retimed the signals to minimize congestion.

Seeing Sydney’s success, Oakland County officials tried to implement the same system. However, Michigan’s cold winters destroyed inductive loops. Forced back to Square One, they looked for technologies more fit for their county’s climate.

Today more than half of Oakland County’s 1,200 intersections have adaptive signals. According to Bryson, the adaptive systems have improved traffic flow, safety, fuel economy and the environmental footprint of Oakland County. “We’ve seen pretty significant congestion reductions,” he said.

Various third-party studies concluded that these intersections reduce drivers’ morning commute times by as much as 20 percent. “Not only has it improved traffic flow, but it also has an environmental impact,” Bryson said. With cars spending less time idling at intersections, Oakland County has been able to significantly reduce air pollution and save residents fuel costs.

Improved traffic, safety and environmental impact — adaptive traffic signals have a great return on investment. But some governments just don’t have the money to invest. To date, Oakland County’s adaptive system has cost $100 million, with most support coming from the federal level. With tight budgets and little federal funding, officials at Utah’s Department of Transportation (UDOT) looked for alternative solutions.

Lisa Miller, Traveler Information Manager at UDOT, explained that in the absence of federal funding, UDOT established private/public partnerships. Working with telecommunications organizations, officials used the state’s existing 1,800 miles of fiber-optic networks to connect 1,400 signals to the UDOT traffic operations centers. This system allows UDOT officials to monitor traffic in real time, gather performance metrics and operate signals remotely from a central location.

Much like Oakland County’s adaptive system, Utah’s interconnected fiber-optic network has reduced traffic congestion, improved air quality and decreased the number of serious accidents on rural roadways. UDOT traffic engineers monitor systems to detect and adjust signals remotely across the state before problems can impact the public. “It’s really helping us keep Utah moving,” Miller said.
In many places, the vast amount of waste produced annually is outpacing the land available to dump it. According to a Duke University report, “55 percent of 220 million tons of waste generated each year in the United States ends up in one of the over 3,500 landfills.”

Phoenix took note. With a population expected to double in the next few decades, officials needed to find a better way to handle waste. The mayor and city council encouraged the local government to create a more sustainable environment for future residents. With limited time and an even more limited budget, they pondered how they could increase environmental sustainability while reducing costs.

To address their growing trash problem, Phoenix’s leadership decided to turn trash into reusable resources. Partnering with private-sector organizations, the city established a new sustainability and waste diversion initiative known as Reimagine Phoenix. With this plan, officials intend to reduce the amount of trash sent to city landfills by 40 percent in the next five years.

How does Phoenix intend to meet this ambitious goal? John Trujillo, the city’s Public Works Director, said that in addition to increasing public awareness about waste sustainability, private/public partnerships are integral to the sustainability plan. Taking innovative ideas from private-sector partners, officials want to improve existing recycling programs and, more importantly, come up with new ones. In the fight against tight budgets, these partnerships are helping Phoenix outsource public services and generate an “entrepreneurial spirit around garbage,” Trujillo said.

Partnering with Arizona State University, Phoenix is creating a Resource Innovation Campus, where ASU sustainability researchers and waste-to-product companies will collaborate to invent new uses for garbage. This “hub for innovation” is facilitating a network focused around new research, technologies and solutions that will turn more everyday trash into reusable resources.

The city launched a “call for innovators,” essentially asking businesses nationwide for their proposals to increase Phoenix’s sustainability. Within weeks, they received 118 proposals using emerging technologies and market-ready concepts to turn trash into a resource. One proposal would convert construction debris into synthetic gas. Another would convert green organics to natural gas and more sustainable construction materials.

“We’re going to take all that material that our residents throw away, and we’re going to create products here that get reinserted into the Phoenix economy,” Trujillo said. For example, the city is currently in negotiation with nonprofits such as Goodwill Industries International over mattresses.

Mattresses present a unique challenge to waste sustainability. They’re bulky, hard to compact and decay very slowly in landfills. Goodwill would deconstruct old mattresses, recycle their wood and metal, and then take the remaining material to create new products. This simple solution would create 60 new jobs in the Phoenix region and recycle 15 tons of waste from mattresses, Trujillo said.

“We want to create a manufacturing process here that utilizes our resources instead of shipping them elsewhere,” he said. By expanding the scope of recyclable materials, the Phoenix government is creating a circular economy that continually uses and reuses its products.

Simultaneously reducing the cost of waste management and increasing the city’s environmental sustainability, Reimagine Phoenix serves as a model for others to follow. Through strategic collaboration, state and local governments can begin to address the looming infrastructure issues garbage presents.
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Flipping on the light switch to illuminate a darkened living room, or turning on the shower to a full stream of hot water are luxuries many of us in the United States take for granted. But powering electricity and water is not a simple feat. Especially when you consider there is more to it than turning on the tap.

The Kansas City Board of Public Utilities (BPU) – a publicly owned administrative agency that serves 130 square miles territory with a population of 160,000 people – manages the water and electricity in Wyandotte County/Kansas City Kansas. And while electricity and water are their main focus, the BPU also has to follow federal, state and local regulations and keep track of the department’s finances.

In 2008, the BPU was struggling to maintain its Enterprise Resource Planning systems for financials. During the economic downturn, the department dropped maintenance on their PeopleSoft ERP – a workforce software system. Kansas City stopped doing patches and upgrades, which left the financial supply chain unmaintained. The BPU was at a crossroads.

GovLoop sat down with Paul Pauesick, Director of Information Technology at the BPU to uncover how moving the department’s financials to the Oracle cloud saved them money, time and effort.

“The cost to upgrade our current PeopleSoft Enterprise Resource Planning system for financials was going to cost a couple million,” explained Pauesick. “We were looking to minimize infrastructure and taking a look at the financial functions more as a utility. Accounts payable, financial, purchasing are necessary services, but if we could minimize infrastructure and not fall back into the every-three-years upgrade process, the organization could save time and money. The cloud seemed like the obvious solution.”

In late fall of 2014, the BPU purchased the U.S. Communities Coop/Oracle/DLT Solutions – a SaaS cloud solution – through a co-op purchasing agreement. “The cloud gives me a datacenter that’s built on International Organization of Standardization (ISO) standards and the construction and security that would take me an arm and a leg to be able to build is already there,” said Pauesick. “My application is encrypted, my data is encrypted, my data in transit is encrypted, and my data at rest is encrypted. For me to be able to provide that kind of security on premise would take me years to do and a lot a dollars. There are some real savings there.”

Pauesick estimates the BPU will save somewhere around $200,000 over the next five years in service costs alone. Additionally, the BPU estimates they will save more than $1.8 million over the next three years on licenses fee and will be able to negate approximately 15 servers that’ll be either reallocated or repurposed away from that application. “What moving to the cloud also does is free up the tech side of the house so that they don’t have to be squirting WD40 on those boxes to keep them running,” Pauesick said.

In other words, think of a cloud solution like an electric company. “All I want to do is plug in my toaster or plug in my TV. I don’t want to have to worry about what’s behind that electric outlet,” said Pauesick. “All I want to do is accounts payable, receivables, project costing, purchasing – those are the kind of things that I need to do for my business. I don’t necessarily want to be intermeshed in the code, or how the disk spins, or what size a server that is. I’m not in that business.”

The savings and ease don’t stop at the hardware and security. “Moving to the cloud helps us to minimize the need for IT maintenance staff and to build a technology model that appeal to a new generation of IT staffers whose expectations are vastly different from those of people who preceded them in our utility and want to work with modern evolving technology vs. maintaining stagnate old business applications.”

However, the biggest benefit of moving to the cloud for Pauesick could come from the disaster recovery sites Oracle provides. “For me to manage a disaster site or even staff, that kind of operations requires budgets and people that really I don’t have. The primary site is a cloud in Chicago datacenter, but the backup site is in Austin, Texas. For me to have a geographic backup site is a big deal.”

In the end, the cloud enables Pauesick and his team to focus on maintaining water and electricity for the community and let their industry partners take lead on standards and technology.
Between January 1 and July 24, 2015, 183 people from 24 states and the District of Columbia were reported to have measles. According to the Centers for Disease Control and Prevention (CDC), 117 cases, or 64 percent, were part of a large multistate outbreak linked to an amusement park in California.
The outbreak left the health and safety of unvaccinated children and adults nationwide at risk. To deal with prevention and treatment, CDC activated its local branches, the National Association of County and City Health Officials, and county hospitals to assess the situation and make recommendations. Data on the outbreak poured in from California and was funneled into the state’s health records.

The disease is so contagious that the Bay Area Rapid Transit System sent a text alert to passengers warning them about the outbreak. A similar alert went out almost exactly a year earlier to riders when a measles-infected University of California at Berkeley student rode the rails. State and local governments were able to quickly and effectively get information out to residents because they relied on outbreak data from hospitals and city health organizations.

The health of a community is about more than defending against disease outbreaks. In fact, state and local governments are in charge of regulating everything including the food you eat, the water you drink and the air you breathe. According to BLS, more than 62,000 state and local government employees work to protect your health and nutrition on a daily basis.

State and local governments employ a large army of health professionals to keep you safe — and now governments are teaming those health professionals with data to help them make smarter and more effective decisions.

Just how tech-savvy are states and localities getting about your health? States are using health data records to create applications to protect both your health and the health of the community. Consider this: NASCIO keeps a running tally of new apps that states develop, and more than 320 are in the health category.

They include everything from Virginia Grown Mobile, an app that geo-locates farm fresh produce, to MyVaxIndiana, which enables users to download their vaccination record from any computer, and myHealthButton, a Michigan-based app that allows users to view their Child Special Health Care Services; Women, Infants and Children; or Medicaid benefits instantly and securely.

In this section, we will highlight how two local governments are using data to make their communities healthier and their costs lower.
Breathing Easy in California

For the past five years the San Joaquin Valley Air Pollution Control District has been issuing air quality alerts to the nearly 1,000 local schools in eight counties across the region’s 250 square miles. The air in the valley can often be hazardous to children’s health, so school administrators and coaches would cancel practices, games and recess depending on the morning forecast. But as all weather watchers know, a forecast is just that — a forecast. What the schools needed was real-time air quality information.

The valley has some serious air quality issues, according to its website. Shaped like a bowl and bordered by mountain ranges, the valley collects and holds emissions caused by the activities of the valley’s 3 million residents and frequent temperature inversions conducive to the formation and retention of air pollutants. In essence, when the weather shifts, it can become hard to breathe.

Enter the San Joaquin Valley Air Pollution Control District, or Air District for short. Five years ago, it created an alert system in which schools would raise a colored flag based on the forecast for air quality every morning. Colored like a stoplight, a red flag represented hazardous conditions.

“We would encourage schools to develop a policy that, depending on the color of the flag for any given day, school activities, both sports and physical education activities, might be curtailed,” said Jamie Holt, Chief Communications Officer at the Air District. “But coaches began to notice that while the valley would have an hour or two when air quality would reach that red, unhealthy level, most of the day, air quality good. They challenged us to put together a tool that would allow them to see what we call real-time air quality.”

So the valley went digital. The Air District developed the Real-Time Air Advisory Network. The tool, which is featured on the district’s website, let parents, coaches and administrators get either an e-mail or text message about current air conditions.

And if e-mail and texts weren’t convenient enough, the Air District also recently launched an air quality app. Users flocked to that. “We already have tens of thousands of subscribers, because what we found was that it wasn’t just parents and coaches that wanted to know about air quality, it was the entire community,” Holt said.

The air quality information is derived from 30 monitors placed throughout the valley’s 250 square miles. EPA and the California Air Resources Board dictate the number and location of each monitor. According to Holt, each monitor costs the valley $200,000 to install and another $50,000 to $100,000 a year to run. Funding for the monitors comes from grants from federal, state and local governments.

Valley officials didn’t want to chronicle air quality only going forward, though. They also wanted a place to store accurate past weather information. That’s how the Web Based Air Quality System (WAQ) came to be.

“The WAQ allows residents to go back in time and see what air quality was like not only at the air quality monitor closest to them, but we’ve taken the entire valley and broken it down into 4-by-4-kilometer neighborhoods,” Holt said. “We’ve used modeling data, meteorological data and monitoring data to look back historically and conclude in your neighborhood the air quality in the winter of 2015 was two times purer compared to the air quality in 2010.”

EPA mandates many communities to track air quality, but San Joaquin Valley is the only locality that is currently sending out real-time data to residents. Holt imagines that will change soon. “I am on the phone or e-mailing all the time with other communities who want to learn how we created the real-time air quality alert system,” he said. “Everyone wants to bring a similar system to their community.”
Three years ago dining in Chicago was a risk. Many of the restaurants were either not inspected or were improperly closed down after an inspection violation. According to the Chicago Tribune, “in 2012 only 32 percent of 4,000 high-risk venues in Chicago were inspected twice. Inspectors visited 78 percent at least once, meaning nearly a quarter — 892 venues — were not inspected at all in 2012.” The city was languishing under a poorly funded, regulated and run Department of Public Health.

According to the Tribune, the department was severely understaffed with only 32 full-time sanitarians who were assigned to evaluate the cleanliness of more than 800 restaurants, grocery stores and food plants.

Back then the sanitarians were assigned groups of restaurants that they would inspect a few times a year. The number of visits directly relates to what the city calls the “assessed risk level.” The assessed risk level factors in the complexity of restaurants’ menu items and how likely the ingredients are to trigger food poisoning. According to the Food and Drug Administration the two foods most likely to spoil and develop listeria are leafy greens and raw eggs.

In 2013, Chicago CIO Brenna Berman and Chief Data Officer Tom Schenk decided to implement a data solution to streamline the process and remove unnecessary bureaucratic holdups.

Berman and Schenk started by identifying the most common reason for critical violations — improper food temperature. With that in mind, they launched a pilot program that used data analytics to quickly and efficiently target establishments with frequent critical violations.

“The city processed relevant data to identify predicting variables associated with violations, developed a model, ran a simulation and then used this forecast to allocate inspections in a way that prioritized likely violators,” Berman told Governing magazine. “This data-optimized trial method sped up the process of identifying critical violations by seven days, meaning that restaurant patrons are that much less likely to contract a food-borne illness.”

The city also maintains an open database of recently inspected restaurants. Now residents and tourists alike can log in and see if their favorite restaurant passed the test. You can see the full database here.

To keep costs to the city low, Chicago teamed with the Civic Consulting Alliance, a locally based nonprofit, and Allstate insurance to share data collection best practices. The city also received a $1 million grant from Bloomberg Philanthropies’ inaugural Mayors Challenge.

The pilot has been a huge success, but Public Health Deputy Commissioner Brian Richardson told The Washington Post that “until the algorithm is more refined, the city will continue to deploy sanitarians based on traditional risk classification; but he noted that the health department is applying a similar predictive model to inspections for other public health risks, such as lead-paint exposure in residential buildings.” Already, restaurant goers are dining with a renewed faith that the food is safe and the experience will not leave them calling poison control.

Chicago has published the code for this initiative on GitHub so that other cities can take advantage of the solution.
Optimize Your Digital Web Experiences

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Acquia THINK AHEAD
There are a host of reasons digital technologies like open source and open cloud are being used by progressive state and local agencies to transform their digital experiences. Cost and resource optimization are at the top of the list, but the major driver of digital transformation is providing a better experience for citizens. With 87% of Americans using mobile phones and 64% of Americans saying they would like to conduct more government-related transactions online, agencies must look at their digital platforms and services in new ways.

Many agencies spend money and resources on digital platforms built on closed-source legacy technologies with costly vendor lock-in or build-it-yourself solutions that agency IT teams must manage, troubleshoot, and fix. IT teams are forced to spend time managing help desk calls and monitoring systems, resulting in a lack of agility to meet changing needs of customers.

When it comes to security, state and local agencies should look at federal requirements like FedRAMP and understand facts about cloud security and the data they protect. At a recent Federal Cloud Computing conference, Dan Doney, the Chief Innovation Officer at the Defense Intelligence Agency (DIA) told the audience that the security of cloud providers is more reliable than government monitoring, and GSA’s Matt Goodrich, who leads the FedRAMP Program, noted that government is good at over-classifying data and only 20-30% is actually data that can’t be stored in the cloud.

In state and local government, the city of Los Angeles and state of Georgia have both successfully transformed their digital presence. They started with understanding the needs of their citizens, what online information and services they wanted, and how they wanted it delivered. Then they evaluated how they could more efficiently meet those needs and maximize the use of internal resources.

Both agencies wanted to transition to modern content management systems based on open industry standards that would provide flexibility and allow for closer citizen engagement. Their requirements included improved reliability, security, and accessibility. Additionally, they wanted support for site monitoring and technology updates so their internal IT teams could focus on mission critical tasks like program and application development.

Both agencies selected a Drupal cloud platform powered by Acquia. Drupal is an open source content management framework that powers over 34% of all .gov sites in the U.S. The Acquia Platform is the leading Drupal-tuned digital cloud PaaS (Platform as a Service) solution that allows agencies the freedom to accelerate site development and deployment. It provides developer tools including version control, build and deploy, and support for multiple environments. It also provides 24 x 7 monitoring and support, all the way up to the application level including custom code.

So what were the results for Georgia and Los Angeles? Nikhil Deshpande, Director of Georgia Technology Authority, estimates $4.7 million in savings since they launched with Drupal on the Acquia Platform in 2011. They have also seen a 43 percent increase in mobile traffic and a consistent increase in page views with 76 million in 2014 and 44 million in just the first five months of 2015. “Georgia is doing its best to make sure constituents have a seamless experience,” Deshpande said. “When mobile reached 20 percent of our traffic, we started a huge project to make the enterprise code base responsive so all of our Web properties adjust to any citizen device.” A great online experience means users are less likely to make a phone call.

For Los Angeles, Drupal and Acquia have been a game changer. Ross reported LACity.org now has a 99.995 percent uptime versus only about 98 percent in the past, gained 60 percent better performance and 100 percent mobile responsiveness while complying with the Section 508 accessibility requirements.

If your organization is ready to make the move to an open-source digital experience framework and a true digital cloud platform, here are three need-to-know basics to help make it happen.

1: Know your audience. To know your requirements, you need to know your audience. Are they looking for jobs or online forms, or do they need city services or traffic updates? Getting this wrong can result in more strain on internal resources like call center and IT staff and the customer needs not being met.

2: Ask another agency. Talk to other agencies and use their best practices and lessons learned to help you with your roadmap and execution strategy, and to learn about their experiences with vendors and solutions.

3: Plan. Conduct discovery and architecture workshops with vendors at the beginning of any project to ensure that the business requirements that you’re trying to achieve are aligned with your objectives.

An interview with Dan Katz, Technical Director, Public Sector at Acquia
Last December, the federal government’s Office of Personnel Management was hacked. The breach compromised the personal information of about 22 million people and eroded trust in the federal government’s ability to keep information secure.
In June 2015, GovLoop’s Nicole Blake Johnson reported, “A joint investigation with the FBI and Department of Homeland Security’s [U.S. Computer Emergency Readiness Team] revealed last month that personal data may have been stolen. How the attack occurred and who was behind it are still under investigation, but reports citing unnamed U.S. officials claim that China is the perpetrator.”

The breach didn’t leave only federal government security officers scrambling to find a solution. It also put state and local governments on high alert. It should come as no surprise that since 2005, cybersecurity has been the No. 1 issue for state CIOs, according to NASCIO.

Erik Avakian, Pennsylvania’s CISO, said he is keeping a close eye on the OPM incident, specifically how and what information was compromised, and what security measures were in place.

The OPM breach emphasized just how critical good cyber hygiene is for state and local governments. And not just in terms of keeping information safe; breaches can have a massive impact on the government’s economic health, too.

A recent study by the Center for Digital Government estimates that government agencies have lost more than 94 million citizens’ records since 2009, and that each lost record represents a cost of $194. A breach of the scale and magnitude of the OPM hack could have serious financial ramifications for many states.

Ohio is one of many states that have created information security offices to focus on protecting government data. In an interview with Government Technology, Ohio CISO Dan Brown said, “We are centralizing information security services within Ohio, so my office provides security architecture, risk management, security compliance, vulnerability assessments and penetration tests, security engineering, cyber intelligence and threat monitoring, incident response and forensics, and overall security management functions.”

In addition to information security offices, many states have created cyber working groups with state departments, industry and academia. The goal of these groups is to meet regularly to share information and make recommendations. “We are also responsible for regularly reviewing and making recommendations for the improvement of cybersecurity throughout the state as a whole, and to assist with the state’s efforts to grow the cybersecurity industry within Ohio,” Brown said in the article.

In this section, we will highlight how state and local governments are changing the security landscape to secure information in new ways.
The Avengers of cyberspace have taken residence in Idaho. The state is now home to the first statewide cybersecurity taskforce focused on enterprise wide security.

President Obama’s budget proposal for the 2016 fiscal year includes a projected 10 percent increase in cybersecurity spending, according to CBO. If Congress approves it, the $14 billion cyber spend would be distributed across the federal government to better protect networks from cyberthreats. Very few state and local governments take that enterprise approach to cybersecurity.


Otter said the task force’s mission is two-fold: Members will be charged to develop policies, programs and strategies to detect vulnerabilities and prevent attacks, and the group will also compile a report annually with findings and recommendations that focus on statistics on current cyberattacks; the most up-to-date preventative strategies; and goals for the upcoming year. The group will also provide educational resources for the public.

The second part of the mission is to better educate Idahoans about cyberthreats. “We have seen dozens of cyberattacks that seem to be increasing in frequency and boldness, costing our businesses and taxpayers untold billions of dollars each year,” Otter said in a press release announcing the executive order. “I believe in the old Boy Scout motto: ‘Be prepared.’ By signing this executive order, I want Idahoans to know that our state continues to prepare to meet any cybersecurity threat, whether from viruses, malware and security breaches to outright theft of personal and private information.”

The task force has already named its leader. Lt. Gov. Brad Little will chair the task force, which also includes members from Idaho’s Bureau of Homeland Security, State Police, Department of Administration, State Tax Commission, Transportation Department, Department of Health and Welfare, state colleges and universities, and other agencies.

Kevin Desouza, Associate Dean for Research at the College of Public Programs and Professor at the School of Public Affairs at Arizona State University, was not surprised by Idaho’s executive order. In a Brookings Institution article earlier this year Desouza praised Idaho’s approach to cybersecurity: “Rather than relying on locally developed plans, Idaho relies heavily on the standards established by groups like the National Institute of Standards and Technology (NIST). Such an approach is the most cost efficient and effective way to enact standards and policies for cybersecurity. Idaho has effectively applied these standards to their cybersecurity policies and, by doing so, are likely to adopt a much more robust and effective cybersecurity protocol.”

The task force will hold its first meeting Sept. 16.

Other states have also set up teams to look at cybersecurity issues. In April 2015, Virginia launched its first information-sharing organization. The goal of the Information Sharing and Analysis Organization is to bolster data sharing between industry and the state.

**Idaho Cyber Security Task Force mission:**

1. Develop policies, programs & strategies to detect vulnerabilities and prevent attacks
2. Provide better education to Idahoans about cyberthreats
Texas Corrals Employees for Cyber Training

One way to prevent a cyber duel is to equip your team with the best training possible. Texas created an academy focused on educating IT pros on cybersecurity best practices.

In this guide, we've already pointed out that there are more than 209,000 open cybersecurity job positions in the United States today. Filling those positions obviously poses a huge challenge for government. But in addition to hiring all the new employees, state and local governments must also train its more than 3.7 million current employees. One-third of those workers are in the IT field.

A 2012 study by the Deloitte consulting firm and NASCIO found that less than a quarter of state information security chiefs felt confident in their employees’ ability to protect data from an outside threat.

And while there’s no guarantee a well-trained workforce can thwart an Internet attack, it definitely couldn’t hurt.

To help train its employees, Texas launched the Texas InfoSec Academy. Developed in 2014 by the state’s Department of Information Resources, the academy is a statewide cybersecurity educational program. The idea was to bring all cybersecurity training resources into one portal. The academy ensures that cybersecurity education is being administered correctly and universally.

The academy educates security officers in six career tracks and prepares them for different industry certifications,” reads a description of the course on Texas’ website.

Those career tracks are:
- IS Management Leadership
- Incident Handling
- Forensics
- Disaster Recovery
- Application & Secure Code
- Penetration Testing & Hacking

Texas crafted the courses after similar programs developed by the Department of Homeland Security and the National Initiative for Cybersecurity Careers and Studies. And just like a college class, the courses are taught by certified professors who give tests and host weekly virtual study halls.

Former Texas CISO Brian Engle — one of the academy’s developers — told Government Technology “the Texas InfoSec Academy is a comprehensive, sustainable, enduring program of not just classes or certification, but true education. It has the potential of being a very capable legacy component.”

Before enrolling in the courses, Texas security professionals must complete one of the fundamental and foundational courses on the InfoSec Academy Course Roadmap.

“The academy is open to state agencies and institutes of higher education, and as of April 2015, is home to 175 enrollees representing 82 organizations, according to Thomas Johnson, a Texas Department of Information Resources chief customer officer,” Government Technology reports.

Texas is not the only state developing cyber academies. Georgia, Ohio, Pennsylvania and Tennessee have all invested in statewide cybersecurity training programs.
Labor accounts for one of the largest portions of government operating budgets. With Kronos® workforce management solutions, federal, state, and local governments are automating and streamlining the way they manage their labor resources.

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In the late 1880s, a jeweler in Auburn, New York invented a rudimentary time recorder – the clocklike device that represented the first foray into mechanical employee time record tracking. According to the inventor, William Legrand Bundy, the time recorder provided each worker a specific key they would use to stamp the date and time onto their time cards. For more than 100 years, many organization including state and local governments continued to track time in a similar way, by punching the time clock and filing reports manually using paper and spreadsheets to log hours.

Today, technology has changed the way we do so many functions at work, but surprisingly, tracking employee hours is often still done the old-fashioned way.

“In 2015, a lot of state and local governments are still doing time and attendance scheduling on paper,” explained Rock Regan, Director of Strategy for Public Sector & Education at Kronos, a leader in the field of workforce management. “Tracking labor hours is a manually intensive process that lends itself to mistakes that can cost an organization millions.”

However, the emergence of new cloud-based technologies is finally rendering the manual processes obsolete. GovLoop sat down with Regan to discuss how the cloud is impacting these processes and bringing them into the 21st century.

Kronos uses the cloud and other technology tools to automate the tracking process. “We take all of those spreadsheets out of the equation. We take the paper out of the equation,” said Regan.

By eliminating paper, organizations using Kronos’ workforce management system can streamline internal processes and reduce the staff needed to verify the accuracy of timecards. For example, in one year, the city and county of Denver, Colorado reduced its payroll staff from 80 to 35 employees. The reduction resulted in a $1.5 million in cost savings. “They needed less people to manually approve pay cards. For the city the technology was a win-win, they had far fewer errors and were able to cut staff and save money,” said Regan.

Automating employee timecards is only one part of Kronos’ workforce management approach. The system can also take into account an employee’s credentials, mandates and restrictions. For certain state and local government employees, especially in the fields of public safety and corrections, scheduling can be incredibly complex.

For example, the California Department of Corrections had a difficult time scheduling correctional officers because the department needed to make sure that if somebody is out, they are replaced with an equally qualified officer.

“A lot of the different types of prison work require different skills and certifications. Our system takes those skills and certifications into account. The system will allow the correctional officers to do their scheduling,” explained Regan. “Using our system, California Department of Corrections has an enterprise view of their workforce for the first time. They’re able to look at their workforce and schedule it in a way that brings the right people with the right skills to the right facilities in real time.”

The California Department of Corrections is poised to achieve $1.5 million in annual savings through greater accuracy and efficiency.

Having an enterprise view of an organization also helps with organizational transparency and budget clarity. “Information like salaries and overtime are a big part of the transparency movement because citizens want to know how their tax dollars are being spent,” said Regan.

“Citizens are going to ask why a department is consistently recording hours of overtime,” Regan said. “Our workforce management system automates that process so we can track trends, and discover in real time which parts of the organization’s overtime methods are good and which deserve further investigation. We can use analytics to highlight problem areas. If you tried to do that in a manual process it could take weeks, if not years to uncover those kinds of trends.”

In addition, since no two state governments or localities are alike, the Kronos system is designed for each individual user.

“The beauty of Kronos is our solution is really built to implement those state and local specific workforce compliance mandates into the system from the start,” explained Regan. “California workforce laws are very different than those worker rules in New York or Massachusetts. When we go into California, we understand that they have very specific rules. We’ll build those compliance reports into the workforce system.”

Time recorders have certainly come along way since Mr. Bundy’s jewelry store. And as citizen and demands remain high and the public sector looks to become ever more efficient, cloud-based workforce managements solutions are leading the way.
There’s no doubt that customer expectations for government services are changing. Gone are the days when lengthy waits at the Department of Motor Vehicles (DMV) was the norm. Gone too are the days when you could reach a government agency only from 9 a.m. to 5 p.m. Today, the government never really closes — state and local government websites offer 24-hour access to services.
Digital services have transformed the way government and citizens interact. Citizens expect the government to act much like any other business in the 21st century. If they can buy books online, deposit a check and hire an Uber driver, citizens feel they should also be able to apply for a fishing license or building permit and pay parking tickets online, too.

The shift toward offering more services online, enhancing digital resources and providing more efficient ways for audiences to engage with government is the new normal for many agencies.

But others are still trying to catch up. ForeSee, a customer experience analytics company, has been measuring and reporting on citizen satisfaction with the digital government experience for the past 10 years. Unfortunately for government, the past four have seen satisfaction numbers stagnate at 75 on the ForeSee's 100-point scale.

ForeSee Vice President Dave Lewan attributes the stagnation to the public's voracious demand for new services. "For years, our research has revealed that citizens want to get information from departments, agencies and programs through digital channels," Lewan wrote in the ForeSee Satisfaction Guide. "Delivering an optimal digital experience provides 24/7 accessibility, consistency of information and — with citizens leveraging an efficient self-service channel — the opportunity to reduce the cost to serve."

The good news is that senior leaders are vested in providing better customer service. In May 2014, Government Technology polled more than 120 government leaders at the state and local levels about customer service. "Not surprisingly, 72% of government leaders agreed that improved customer service is important to their organization’s health," the report found.

One of the first areas governments target for improvement is call centers, including 311, the telephone number for non-emergency municipal services (think broken street lamps or dead animal removal). West Haven, Conn., was the first city to go digital with SeeClickFix in 2008. The web-based tool allows citizens to report non-emergency neighborhood issues, which are communicated to local government, as a form of community activism. Instead of waiting for a government employee to answer the phone, citizens can report issues at any time via their mobile devices.

According to its website, SeeClickFix currently covers more than 25,000 towns and 8,000 neighborhoods, both in the United States and abroad. While it continually expands, the system has built its strongest networks in New Haven and Philadelphia.

In this section, we will highlight how two state governments are on the leading edge of government customer service.
If you’ve ever taken a trip to your local DMV, you’ve probably seen just how far behind the technological curve government agencies can be. Printing and distributing hard documents is costing government agencies at every level millions of dollars annually. In Iowa alone, printing driver’s licenses has cost the state more than $20 million. This doesn’t include the expense of printing state ID cards, replacing lost licenses and providing other crucial identification documents.

In addition to their cost, driver’s licenses and most other IDs implement static security measures in a dynamic environment of security threats, putting everyone’s identities at greater risk.

Aspiring to both serve their customers more efficiently and protect citizens’ identities, officials at the Iowa DOT are looking to bring the DMV into the Digital Age. Iowa DOT is piloting a program that would digitize one of the most costly documents for states to produce: the driver’s license.

“In the last 10 to 15 years, the driver’s license has become the document that verifies who you are,” DOT Director Paul Trombino III said. As a result, it is growing ever more important for these cards to be secure.

“We’re trying to provide another choice for our customers,” he said. “With the movement to electronic data, electronic pay and a lot of people using smartphones, we started talking about moving towards a digital driver’s license.”

Electronic licenses would give individuals more encrypted protection and greater control over how and when they share their information.

The pilot program in development right now would let individuals access their driver’s licenses through a secure application on their smartphones. Wondering what would happen if your phone got stolen? Unlike physical licenses, which have embedded images, barcodes and other static security measures, digital licenses would have dynamic security features. “I can open my phone with a fingerprint,” Trombino said. Why not licenses, too?

Fingerprint scanning is just one of many encryption measures that could be used to secure digital driver’s licenses. Trombino saw facial recognition, gesture verification and iris scanning as distinct measures of a person’s identity that would reach far beyond the security of watermarks and barcodes on traditional licenses.

Although still in the development phase, digital driver’s licenses have the potential to fundamentally alter how we handle personal information. This technology could move beyond driver’s licenses into other forms of identity.

The benefits digital licenses present for both government and citizens abound. With 2.2 million drivers in its state, Iowa alone would save millions of dollars by eliminating the cost of printing. And at some point in the near future, people might not even have to go to the DMV to handle issues with their licenses. “The interaction will be just through your phone,” Trombino said.

The public’s reaction to this plan has been overwhelmingly positive, he said. “People want it; they wanted it six months ago. They are ready to have this option,” he said. In the next year, Iowa DOT officials intend to test digital licenses on their employees first to address any unforeseen technical issues that may arise. If it goes well, they hope to make it available to the public as early as 2016.

The future of driver’s licenses is here. Iowa is piloting a program to transform the static physical driver’s license into a digital identification card.
In 2013, less than 1 percent of consumers used print directories as their primary source of contact information, according to an InfoGroup report. Additionally, the Local Search Association found total consumer references to print directories declined from 12 billion in 2009 to 7.4 billion in 2011.

Even Yellow Pages, the directory once the poster child for printed directories is obsolete. Two years ago the company stopped delivering its big yellow books unless requested. But finding accurate contact information online can be difficult and frustrating for users. And if you thought finding the phone number for the local pizza place was complicated, finding the right contact information for the right government employee can be next to impossible.

So what could states do to improve customer service for their citizens and streamline the communication process?

Officials at the Georgia Department of Administrative Services (DOAS) decided the answer was a digital directory. The state created a web platform that gives residents easy access to government employee contact information.

This new digital directory — Team Georgia Directory — puts the most up-to-date state contact information one click of the mouse away. The directory lists more than 80 state agencies and executive offices. It also has a range of searchable information, including facility locations, phone numbers, e-mail and website addresses, and an index of Georgia’s state leadership. Users can search for employees by name, agency or job description.

Creating the digital directory online was only the first step. The emergence of mobile technologies necessitated that state officials take the directory one step further. According to Forbes in 2013, there were 6.8 billion people on the planet, 4 billion of whom owned a phone with SMS texting capabilities. A quarter of Americans used only mobile devices to access the Internet.

To ensure that those 25 percent still received the best customer service possible, Georgia launched the mobile app version of Team Georgia Directory. “The mobile app allows users to save employees and agencies to their contacts, add them to your favorites, or call and email them directly from search and detail features," according to a press release about the app. All 50 states have an online directory, but only Georgia has moved its directory into app form.

To ensure the directory is as accurate as possible, agency heads can make real-time changes. Additionally, users can note an error and alert agency coordinators by selecting the “incorrect information button” on the directory’s app and desktop versions.

In 2015, Team Georgia Directory developers added geo-locating capabilities to the app. Users can use the map feature to get directions and navigate directly to a particular government office.

DOAS officials think the geo-locating feature will make a big different for Georgians. “As with the other options provided by the Team Georgia Directory, the new GPS feature aims to make Georgia’s state government more accessible to citizens. Moreover, because each agency maintains its own contact information, the details are as up-to-date as possible — allowing state agencies to serve up relevant information and fast customer service!”

No longer are Georgia residents calling the wrong number; a new app allows residents to locate employees contact information with the swipe of the screen.
OUTSIDE-THE-BOX IDEAS

We all know that state and local governments are often the forbears of change and innovation in government. Their successful pilot studies and test cases filter upward to federal government, where change happens slower.
State and local government officials see issues first, at the ground level, where they interact face-to-face with their constituents each and every day. And as the years go on, cities, counties and states continue to deal with the challenges posed by the economy and changing demographics. Amid these and other pressures, expectations to do things in new ways — to innovate — continue to grow.

As you've seen in this guide, those changes and innovations are certainly happening, from technology improvements to process changes that save significant amounts of money.

But there are a few innovations here and there throughout state and local governments that don't quite fit into any one box. They're special cases in which a state govie has taken a risk on a completely new approach or done a special task that nobody at the federal government would have dreamed of. Perhaps they're dealing with a cutting-edge technology or adapting solutions to fix a common yet intractable issue. They're not traditional innovations, but they are ones that have succeeded and changed the way that a state or local government office operates.

These innovations are the ones that we are referring to as outside-the-box — ones that seem a little wacky, but creative, that take a few risks and are imaginative or inspired. They solve problems that are not the classic ones of budget, workforce or IT, but they are important, and they are making citizens' lives better.

The following two case studies — involving states' use of drone technology and how they need to police it and an app that connects owners to lost dogs — are both very different.

Drones, also referred to as unmanned aerial vehicles (UAVs), are expected to be a $91 billion global market in the next decade, with 65 percent of research, development and testing done in the United States. As a result, states need to be setting policies about the use, testing and deployment of this technology.

Then there's the issue of lost pets in the United States. A seemingly small issue that isn't small at all. Nationally, 10 million pets go missing each year. States and counties often struggle with shelter management, adoption issues, euthanasia and finding ways of reuniting lost pets with their owners.

As this guide proves, small groups of dedicated, citizen-oriented individuals can tackle difficult problems creatively and proficiently. And when these individuals think outside the box, even more astounding things can happen. These ideas are meant to solve issues that are close to the hearts of a community's citizenry.
A bird’s eye view is often the best way to survey the land. In Ohio, the state is using drones to get timelier crop data for farmers.

The military refers to them as UAVs (Unmanned Aerial Vehicles) or Remotely Piloted Aerial Systems. But to most folks, they are simply drones. And their use at the state and local levels is increasing exponentially. The only issue? Most states are not yet prepared for all of the implications that will come with increased use of drones.

Earlier this summer, NASCIO created and released a policy brief on state government use of unmanned aerial systems. “State CIOs, if they’re not already, need to be thinking about this issue today,” said Stu Davis, Ohio’s CIO and Assistant Director, and head of NASCIO.

The paper, “Unmanned Aerial Systems, Governance and State CIOs: On the Radar,” details the many ways unmanned aerial systems (UAS for short, and another term for drones) are deployed in state government and why state CIOs should become engaged in the governance and use of them.

“UAS are already in use nationwide and if state CIOs don’t take an active role in addressing these important policy issues sooner rather than later, they will likely be asked to deal with a host of complicated issues in the near future. We particularly need to address privacy, security, safety and data standardization as soon as possible to avoid a mess down the road,” according to the press release about the paper.

Though use and awareness of drones is generally on the rise, in NASCIO’s 2014 State CIO Survey, 63.5 percent of respondents said that UAS were “not on my radar at this time.” This means now more than ever states need to start assessing their policies and use of drones. Some states are getting ahead of the game, and others now need to play catch up.

Ohio is ahead of the game. In 2014, Ryan Smith, who served 23 years in the Air Force and then worked at Boeing as an engineer test pilot, became Director of Unmanned Aerial Systems operations for Ohio. He’s been heading up statewide efforts for drone development ever since.

Ryan noted that the top industry in Ohio is agriculture, an industry that has been using drones for a variety of things. UAS already can be used to provide more timely crop data and higher-resolution aerial imagery for farmers.

“Think about attempting to increase crop yield,” Ryan said. “If you can increase crop yield through UAS data by even 5 percent, you are looking at $1 billion worth of economic activity for Ohio.”

Secondly, Ryan said that Ohio is exploring uses of UAS at a variety of agencies in the state.

“We want to help our state agencies better use drones in jobs that may otherwise be very dangerous for a person to do,” he said. “That could be anything from working in a storm drain to emergency response.”

UAS is already being used to track chemical runoff in old mining areas in southeast Ohio. This is allowing the state to better assess the environmental impacts.

Both Ryan and Davis said that states need to start thinking about governance when it comes to the use of drones.

“We are very lucky in Ohio to have a governance structure in place about drones,” Davis said. “All states and even local governments need to figure out a governance process about the use of UAS. Today is the time to get started.”
Reconnecting Lost Pets with Owners in Miami-Dade County

Can’t find Lassie? Don’t worry. Miami-Dade County in Florida has created a new facial recognition app to help pet owners find their lost animals.

A nybody who’s lost a pet knows the pain of that experience. The endless searches, nights spent posting fliers and the hope that you will be reunited with your pet are agonizing.

Emotional impact aside, the challenge of dealing with lost pets is also difficult and demanding for state and local governments. About 7.6 million companion animals enter animal shelters nationwide every year, according to the American Society for the Prevention of Cruelty to Animals. About 649,000 animals who enter shelters as strays are returned to their owners. Of those, 542,000 are dogs and 100,000 are cats. Of the dogs entering shelters, about 35 percent are adopted, 31 percent are euthanized and only 26 percent are returned to their owner. Of the cats, about 37 percent are adopted, 41 percent are euthanized, and less than 5 percent are returned to their owners.

In Florida, the number of lost pets is staggering as well. Every year, the Miami-Dade County Animal Services department provides care and refuge for more than 27,000 abandoned dogs and cats. Alex Muñoz, Director of Animal Services, told GovLoop that daily, the department’s staff and volunteers are working diligently to find life-long homes for abandoned animals by facilitating onsite adoptions, hosting off-site adoption events and working collaboratively with more than 70 rescue organizations that share the shelter’s goal of a No-Kill Miami-Dade County.

The solution? Miami-Dade Animal Services this spring partnered with Finding Rover, a free mobile app that helps pet owners find their lost dogs in real time using a surprising new tool: facial recognition technology.

“We hope everyone who has a dog in our community can take advantage of this opportunity to ensure the safe return of their dog that may go missing through the use of this free app,” Muñoz said. “We receive approximately 500 pets a week at the shelter and the Finding Rover app is an important technological tool that can help us reunite lost pets with their owners.”

Since implementing the app in March 2015, Muñoz said the county has had four successful pet/owner reunions.

“The majority of these are dogs,” Muñoz said of the 500 pets that enter the shelter every week. “Some of the dogs are abandoned, but there are also many dogs that for some reason or other have wandered away from home and become lost. Our mission is to save the lives of the abandoned animals in our care, reunite lost pets with their owners, protect the people and pets in our community from health-related issues, and ensure the public’s safety. The Finding Rover app is an important technological tool that helps us fulfill the part of our mission to reunite lost pets with their owners.”

The Finding Rover app has also partnered with animal services divisions in San Antonio and San Diego, and expects to gain more traction in the coming year. It currently has facial recognition only for dogs, but cats will be added within the next few months. You can find more about it at findingrover.com.
Conclusion

A New Era for States and Local Governments

“Governments will always play a huge part in solving big problems. They set public policy and are uniquely able to provide the resources to make sure solutions reach everyone who needs them. They also fund basic research, which is a crucial component of the innovation that improves life for everyone.”

— BILL GATES

In this guide, we focused on 16 innovations at the state and local levels, but the 16 represent only a small drop in the number of innovations coming out of municipalities nationwide.

State and local governments get the privilege of working directly with their customers — citizens — who live and work in their communities. And as a result, they get to bear witness to the impact the government has.

While not perfect, state and local governments have come a long way in the past year, and we can’t wait to see what else is around the corner.
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 200,000 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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