INSIDE:
GovTech100 Companies to watch in this emerging marketplace.

Tech on a Micro Scale Small cities set big digital examples.

GROUNDING
ARTIFICIAL INTELLIGENCE IS THE NEXT RUNG IN HUMANITY’S DIGITAL PROGRESSION, AND IT’S CLOSER THAN YOU THINK.

PLUS: What analytics look like in New York City.
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The next rung in humanity’s digital progression, artificial intelligence is both less awesome and more near than most people realize. In fact, many in government and the private sector are already using it.
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Evolving Market
Open data has become big business. What you need to know about the marketplace.

Chief Data Scientists
We examine what this role looks like in the public sector.

“You can only grow the quality of data by using it,” says Amen Ra Mashariki, New York City’s chief analytics officer.
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The City Accelerator is an initiative to speed the adoption of local government innovations to improve cities and the lives of their low-income residents.

Five cities – Albuquerque, Atlanta, Baltimore, New Orleans, and Seattle – are developing new practices that better engage low-income residents in civic life and public decision-making.

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Meaningful Engagement Matters.

The City Accelerator is an initiative to speed the adoption of local government innovations to improve cities and the lives of their low-income residents.
Who’s Who in the GovTech Marketplace

Consumers of media love a list. In the Information Age, sources are plentiful and most people are almost always plugged in, scrolling through scores of stories for their next must-read. And they seem to gravitate toward numerical groups of things — even subjects that might not normally grab their attention are more likely to if neatly packaged in this way: “10 New Year’s Resolutions Worth Keeping,” “7 Reasons You’re Not Sleeping,” or in the case of Government Technology readers, “4 Technologies CIOs Should Plan for in 2016,” etc. Who can resist?

Government Technology’s parent company, e.Republic, has recently embarked on a new initiative you may not yet be aware of. e.Republic Labs, led by Chief Innovation Officer Dustin Haisler, builds on our shared mission to help drive innovation in the public sector. Editorially, we’re fortunate to tell the stories of often-unsung public servants using technology to not only maximize efficiencies, but also deliver an improved brand of public service befitting the expectations of the 21st-century citizen. But things are changing and we have entered a new era where innovation can also be catalyzed through the private sector’s work with government. This is a new age, born out of e-governance — welcome to the GovTech marketplace.

It seems fitting to kick off the New Year with our inaugural list of GovTech100 companies (see page 28). These are companies formed as recently as 2015 and as long ago as 1951 — not all startups, to be sure, but with an average age of nine years. And while they run the gamut in their areas of focus, they have a couple of critical things in common. They all do most of their business with government, using technology to help improve internal operations or service delivery. Together, they provide clues as to where government is going — and where entrepreneurs are placing their bets about where it should be going. They also reflect a shared purpose in making communities work better — where government may not be at the center of every interaction but co-creators of a future that people want and expect.

The GovTech100 are active in four key public-sector market segments — civic tech, service delivery, and administrative and intelligent infrastructure — and many operate in more than one. They’re putting open data to work, securing information assets, enabling the mobile public-sector workforce, helping government go digital, simplifying citizen engagement, encouraging energy efficiency and much more. Chances are, you’ve heard of many of them, and may work with a handful as well. But our hope in assembling the list is that a lot of these companies are new to you. One just might be the critical partner you need to help get your next idea over the finish line. Once you read the story, visit govtech.com/100 for more information. Let us know if we missed anyone we ought to consider the next time around. As lists go, this is one worth bookmarking.
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United IT

In late 2015, Seattle started a three-year transition toward a consolidated IT office that’s designed to circumvent the shortcomings of the city’s siloed IT agency arrangement. The Seattle Information Technology Department (Seattle IT) will officially come into existence on April 6, 2016, and the city will gradually knead its resources into the new agency until the end of 2018, at which time it hopes to be working with technology more diligently, more efficiently and more securely. Right now, Seattle is wasting some of the talent of its estimated 700 IT professionals, said CTO Michael Mattmiller — and this consolidation will change that.

“We’ve made a commitment that there will be no layoffs as a result of the consolidation effort,” Mattmiller said. “We recognize as a city that we’ve made a level of investment in IT professionals, and we would like to see that investment fully realized by creating capacity.”

Florida’s Tech Reboot

The recession and bureaucratic shuffling were hard on Florida IT, but state officials are seeing a change. On Nov. 23, Gov. Rick Scott released his recommendations for the state’s 2016-2017 budget, which include a $4.3 million increase in IT funding. Florida’s technology office relaunched in 2014 as the Agency for State Technology (AST) and is now led by CIO Jason Aitken. The additional funding will give AST a chance to fix agency soft spots, tighten cybersecurity efforts, address growth and standardize business processes.

Among the governor’s proposed budget allocations are $594,000 for IT supporting agency growth, $992,000 for cybersecurity, and $733,000 to fix broken or ineffective systems and standardize business processes.
Q&A: Taking the Complexity Out of Court Case Management

The court system in the U.S. has long been seen as a complex dance of paper and processes that consumes vast amounts of time and taxpayer dollars. Traditional practices do not keep pace with increasing amounts of data and case volumes, creating an inefficient, over-burdened court system. John Chatz, justice and public safety practice lead for Hewlett Packard Enterprise (HPE), discusses HPE’s Justice Case Management Solution (JCMS), a standout technology that refines court processes and expedites the judicial system through automated functions, simplified case processing, information sharing and data analytics.

Q: What features allow JCMS to modernize court case management?
John Chatz: JCMS has many differentiators. For instance, the complexity of case scheduling and hearings has been a pain point for years, but JCMS can solve that problem. If you have a court hearing with a judge and several attorneys representing multiple parties, picking a date that suits everyone — especially with an older system — is never an easy process. JCMS will provide multiple hearing options immediately upon entering a case name and search terms, such as a particular date, and built-in logic takes into account days that won’t work for everyone.

In addition, the user interface allows users to work within one screen — regardless of whether they are on a laptop, PC, smartphone or other mobile device — or even pull up screens from different parts of the court system on that same page. Performing activities such as data entry or research on one screen allows court staff to complete tasks and provide assistance to customers more efficiently.

Other differentiators include drop-down menus and designated tabs for frequently searched documents or issues within a case — eliminating scrolling through years of case activities. And because JCMS has native integration, users can work within Outlook rather than toggling between it and another system for different functions. The solution is intuitive and easily configurable for unique requirements.

Q: What can this system provide in the way of metrics and data analytics?
John Chatz: JCMS provides real-time data to users so they don’t have to rely on already encumbered IT departments for information. Court managers can monitor case activity via personalized dashboards and create reports to update superiors about personnel and workflow issues. Staff with appropriate security levels can quickly provide up-to-date information to journalists writing about specific trends, or elected officials who need it for speeches and decision-making. With our solution’s business intelligence features, called Court Intelligence, users can be self-sufficient and confident the data they deliver is timely and reliable.

Q: What benefits can JCMS provide for jurisdictions dealing with legacy systems and tight budgets?
John Chatz: HPE’s approach is always to build a “best of breed” solution that can interface with any kind of legacy system, so agencies don’t have to overhaul their existing infrastructure. JCMS is deployed to deal with a specific problem, or more broadly, to handle an entire business requirement — whether for a court or even a department of justice within a state or county. JCMS can integrate with multiple agencies’ systems using established interoperability standards. As a complement to JCMS, we can take a look at an agency’s IT setup and bring in experts and knowledge to help transform court systems and court operations.

Q: How does JCMS benefit constituents and the courts as an investment?
John Chatz: JCMS serves taxpayers and the public sector by streamlining case initiation and management, creating efficiencies that didn’t exist previously. It optimizes information and improves the experience of those who work within the court system — clerks, judges, law enforcement administrators — and the constituents who access their services.

Since HPE is a purpose-driven company, we considered the impact JCMS could have on those outside the court system when architecting it. We spent time to ensure our portals are efficient, accurate and simple enough for anyone, including individuals using public access kiosks who are not represented by attorneys. We considered and blended all these needs to build a system that can vastly improve the processes and services that touch courtroom and constituents alike — saving time and financial resources.

To learn more, visit: www.hpe.com

John Chatz
Justice and Public Safety Practice Lead, HPE

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Data’s Force Multiplier

Standards are crucial to successful open data policies.

I n the past decade, the city of San Francisco has committed to being one of the first adopters of open data and has adopted a restaurant inspection data standard that it developed with Code for America, Yelp and Socrata. The Local Inspector Value-Entry Specification (LIVES) standard simplifies inspection ratings into an easily understandable and accessible metric available on a restaurant’s Yelp page. Sarah Schacht, Socrata’s public health data adviser, is committed to championing this program. She got food poisoning twice after dining at restaurants that had been rated poorly by local food inspectors, but those scores were difficult to understand, not to mention difficult to access. She paid a steep price in hospital bills as a result. Now Schacht advocates for LIVES as a transparent, intuitive and consistent rating into an easily understandable metric available on a website that this data actually reaches customers, who can make more informed dining decisions as a result.

Open data policies are becoming the norm for municipalities nationwide. This unprecedented access to public information stands to transform civil society entirely, but its value hits a ceiling when that information cannot be easily exchanged. Open data must also be sharable, and cities like San Francisco, companies like Socrata and people like Schacht are leading the way with data standards. These investments signal a maturation in municipal data strategy, which will lead to the harmonization of intergovernmental data and cross-jurisdictional analytics that can begin to address the more complex problems facing the public sector today.
Thinking about implementing a body-worn camera program?

Join the one-third of public safety agencies nationwide that are actively planning or have already implemented an initiative. Many are already starting to see positive results:

- In a year-long experiment, the Rialto, Calif. Police Department saw a 60 percent drop in use-of-force incidents, and complaints about officer conduct declined by nearly 90 percent.
- In Phoenix, information from officers suggested a number of citizen complaints were not pursued because the incident was recorded on video.

Before you begin, your agency needs to carefully consider the policy, technology infrastructure and operational decisions necessary for an effective program. A new Emergency Management and Government Technology handbook, underwritten by Insight Public Sector, focuses on the interplay of body camera policies with technology and operational strategies to help agencies future-proof their body-worn camera initiatives.

Read the handbook to:
- Discover key planning questions agencies should consider
- Learn insights from agencies initiating their own programs
- Find checklists and resources to help further an agency’s exploration in each planning area

Download the handbook now at:
www.emergencymgmt.com/body-camera-handbook
Space: The Next (Robot) Frontier

Seeing humanoid robots as a potential key element in the journey to Mars, NASA has enlisted the help of two universities to advance the research and development of its high-tech prototypes. With the thinking that robots could potentially replace — or at a minimum help — astronauts, the federal agency’s R5 robot (pictured here) could progress beyond its original goal of aiding disaster relief to assist in extreme space environments. The Massachusetts Institute of Technology and Northeastern University were chosen in November to advance the work by giving the robots more autonomy through the creation of better software.
How do analytics support economic development in New York City?

MODA takes on agencies as clients around analytics projects. We put together a suite of analytics projects in partnership with the Small Business Services agency, and one of those projects is Business Atlas. If you’re a large company, you have access to a lot of market research resources. If you’re an entrepreneur, you may or may not have access to those types of resources. So we work with about nine agencies, including the state liquor license organization as well as federal organizations like the Census Bureau, to get data. Then we use analytics to create a map so that anyone can put an address in and get all sorts of information around income, the age group of the people that live in that area, what businesses are in that area. … We bring it all together to help entrepreneurs make better decisions when opening up businesses.

What has the impact been?

Our engagement with the agencies allows them to more smartly engage around the impact. When we were building the Business Atlas tool, there were short sprints in which they would put it out and then come to us and say, “Hey, we would like to focus it this way” because they know their audience. They know the New Yorkers they are trying to reach, and so the most feedback we get was around the best way to build out the tool. And the agency is working with their audience to tailor it.

How are your efforts helping the city work more efficiently?

For one, I think of illegal conversions. The challenge came from FDNY wanting to better identify illegally converted buildings, because they’ve seen that where people have illegally converted buildings, there is a higher likelihood of fire. It’s not that we’re doing any magic, but we’re helping investigators think about their jobs differently. They’re still the key personnel making decisions about where to investigate. We’re just taking a large city, a large data set, and making it that much smaller and usable for investigators. They went from a 13 percent vacate rate prior to working with us to 70 percent because they’re targeting where they go to investigate.

How will New York City’s open data initiatives evolve?

Open data shouldn’t just be about us taking data and then releasing it. MODA is all about sharing data — getting data from one agency that can be used by another to meet their missions and goals. You can only grow the quality of data by using it, by engaging with it. When you grow the quality of open data, more people are likely to use it, not only New Yorkers but other agencies. By using it more for analytics projects, you can expand the use and impact of open data.

— Steve Towns, Deputy Chief Content Officer
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THE NEXT RUNG IN HUMANITY’S DIGITAL PROGRESSION, ARTIFICIAL INTELLIGENCE IS BOTH LESS AWESOME AND MORE NEAR THAN MOST PEOPLE REALIZE. IN FACT, MANY IN GOVERNMENT AND THE PRIVATE SECTOR ARE ALREADY USING IT.
Grounding AI

Artificial intelligence (AI) is not some Asimovian fantasy, nor an extravagance best left to starch-smocked scientists clinking beakers together in an underground laboratory. AI is an opportunity to create tools that save money, save lives and improve life in ways that can’t be measured.

A COMPUTER BY ANY OTHER NAME

A computer with a consciousness or human-like executive function doesn’t exist yet, so strong AI remains the purview of Hollywood and the Centre for the Study of Existential Risk. Today’s humanist concerns himself with weak AI applications, the kind of smart software with narrowly defined functionality that increasingly pervades daily life across economic classes. Google uses AI to power speech and imaging processing, language translation, and answer billions of ambiguous search queries daily. Google also recently opened the source code for TensorFlow, an engine that will make it easier for people to insert AI modules into their applications, a landmark in artificial intelligence accessibility sure to elevate the competence of the average app. Tesla’s autopilot feature learns driver habits. Law enforcement agencies catch serial killers using models of honeybee movement patterns. Netflix users watch movies and Amazon users read books based on recommendations delivered by smart algorithms. Cybersecurity companies use AI to scan millions of simultaneous events in less than a second. Game theory, machine learning, deep learning, reinforcement learning, neural networks, fuzzy logic, data analytics, data mining and two dozen more buzzwords represent the disciplines that constitute artificial intelligence. Distinctions between them exist, but are trivial for the end user and dull for everyone but philosophers and pedants. The term “AI” can be rightfully applied to any system that inhabits those corridors typically reserved for human wisdom and experience.

Today’s AI fills the computational gaps in human ability, and where computers fail to exercise executive function, humans are standing by to hold the flight controls, a symbiotic relationship and an augmentation of human endeavor that under-mines the tale perpetuated by those with a flair for the dramatic. Guarding against a robotic uprising is prudent, but such Terminator-esque imagery distracts from the positive influence of today’s AI.

Climate change, rising sea levels, unsustainable population growth, pollution, Kanye West, disease, war, greed and willful ignorance could well combine forces to end humanity, but if AI is to have a role in that play, it’s not the role of bad guy. It’s that of a beacon that guides Earth to safety.

NOT CARPENTERS

Lead poisoning is a dreadful fate made worse by the fact that it mostly affects children. If lead doesn’t kill a child, it can damage nearly every part of him. Lead can cause blindness, deafness, memory problems, headache, delirium, cognitive deficits, slurred speech, limb pain, altered skin color, impaired coordination, seizure and hallucination. The effects are irreversible, and each year, an estimated 600,000 children globally are diagnosed with cognitive disabilities caused by lead poisoning. About 140,000 children die from it. The millions of buildings that were treated with lead paint before it was outlawed in the U.S. in 1978 make prevention an onerous task, said Rayid Ghani, research director at the University of Chicago’s Computation Institute and director at the Center for Data Science and Public Policy.

Agencies like the Chicago Department of Public Health deal with lead by waiting for a kid to get sick or get detected during routine screening, and then they go to the house and fix the problem. But a new research project run through a program called the Eric & Wendy Schmidt Data Science for Social Good Fellowship at the University of Chicago may soon allow cities to predict instead of react.

Using today’s methods, the department’s chance of proactively finding lead is about 2 percent, rendering most proactive inspections pointless, Ghani said. Using a predictive model powered by 20 years of blood test data and home lead inspection records, researchers are “fairly confident” they can improve their proactive home inspec-
point to potential solutions. If officers are found routinely getting into scuffles after six or more domestic abuse calls, a department can take actions to mitigate risk like spreading those calls around or offering more training.

“The idea is to build the system in one department, test it out in three or four other departments — small, large, medium size — and then see what it takes to scale to a more national system,” Ghani said.

THE POWER OF AI

Artificial intelligence systems can be placed in four common categories of use: prevention, resource prioritization, policy formation and benchmarking. But whatever the goal, even the most skilled or experienced people can enhance their work with AI, said Alan Krumholz, principal data scientist at G2 Web Services. G2 makes software that does things like predict how likely it is that someone will default on a loan, or how likely it is that a given website contains illegal content, like child pornography or drugs. For the past decade, G2 researchers have been labeling websites as having or not having certain content. And the company is only able to forge such predictive models, Krumholz said, because it has tons of reliable label data and scientists who are skilled at the art of training their algorithms.

“If you look at where things are today, present-time tournaments, the best chess players playing alone and the best supercomputers playing alone cannot compete with regular chess players with regular computers helping them make decisions,” Krumholz said. “The team between computer and human is where the power of AI is.”

In September, a team of researchers at the University of Michigan led by Satinder Singh Baveja, electrical engineering and computer science professor, began a multi-year project funded by IBM to create an AI that students can talk to when they need advising.

“AI is making the biggest advances in things like speech recognition, computer vision problems and processing millions of images very fast,” Baveja said. “A lot of it’s driven by much faster processing, much cheaper processing and having much more data.”

Within a year, the team hopes to have an early version of the tool that students can use to receive a customized list of classes they should take based on their unique circumstances. Human advisers will remain essential, Baveja said, but humans suffer from constraints such as limited time and availability.

And while human advisers are good at recognizing contextual information like a student’s emotional state, even the most experienced adviser doesn’t have in mind a statistical overview of all student and class data enriched by concomitant patterns and trends. This system will be designed as a task-driven conversation simulator that asks questions and then draws from a massive database that includes information like the trajectories of past students, correlation between course and career, ratemyprofessors.com scores, historical feedback on course difficulty, and degree requirements.

The idea is to create a first point of contact for students that can be accessed at any time, and if they don’t get the help they need, then they can make an appointment with a human adviser. Improving the quality and accessibility of advising at a large institution like the University of Michigan, Baveja said, will help students feel better supported with customized advice that puts the school’s data stores to work. If governments are using boxcutters to unpack their data today, AI is a blowtorch. Gathering even more data through Internet of Things devices is an enticing and common proposition these days, said Chad Kenney, chief performance officer at the Office of Performance and Data Analytics in Cincinnati, but cities still need to leverage the data they already have.

“I come at it from a very operational standpoint in that whatever insight is generated via analytics and data science, it’s really important to think through the whole value chain of that insight and figure out how that insight is actually going to be used to change behavior,” Kenney said. “Stop one has been [to] figure out what the mission is of any given part of the organization and make sure we’re asking the right questions of that organization.”
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Through a partnership with Ghani’s team at the University of Chicago, Cincinnati completed a pilot around blight prevention last summer. A predictive model drawing from data including property values, taxes, water shut-offs, citations, crime records and permits boosted proactive inspection hit rates from 43 to 78 percent, Kenney said. The city is now working to mature the model and embed it in its operations.

“Whereas a lot of municipal operations are still very reactive, I think this is the mechanism that has the power to help municipal governments become proactive,” Kenney said. “Government always gets this reputation for being 20-plus years behind the private sector, but in a weird way, I feel like municipal governments have an opportunity to be at the cutting edge, because we have access to all this interesting data, we have the really challenging problems, and we have a strong locus of control in that we can have a direct effect on quality of life if we’re leveraging this stuff properly.”

Government’s onus to fix society’s problems with one hand tied behind its back is what makes a tool like AI so enticing to today’s leaders. Predicting early which kids will drop out of school, spotting neighborhood crises before they explode and quelling the state’s opioid epidemic are the reasons Boston is now planning its first AI projects, said the city’s CIO, Jascha Franklin-Hodge.

“One of the big challenges in the human services space is that, inevitably, you don’t have enough resources to reach every possible person that you might want to reach,” he said. “How do you identify the places where you’re going to have the biggest impact? If we can only help 10 percent of the population that we’re trying to serve, what’s the 10 percent where it’s going to make the most difference to get some kind of intervention?”

AI can augment any endeavor, but it thrives where human expertise is scarce. Computer science and ornithology teams at Oregon State University and Cornell University are using AI to make predictions about continental bird migration patterns, a field with relatively few experts. Originally funded by a National Science Foundation grant in 2008, the team’s algorithms and processing capabilities are approaching the first opportunity at which the system could be used for decision-making, said Thomas Dietterich, Oregon State University distinguished professor of computer science and director of Intelligent Systems.

The system is powered by data gathered and submitted through Cornell’s eBird portal. The AI then accounts for things like length of travel per day, rest time or hours in the day to evaluate each case. The Code Enforcement Abatement Tool draws from a dozen criteria and estimates when and where the birds will be. Outside of bird watching, reliable migration predictions can be used to plan wind turbine installation, shut off turbines to protect birds or inform the military where it might avoid flying at night. Similar partnerships already exist between bird watchers and the military in both Israel and the Netherlands, Dietterich said.

“We can answer our scientific questions without ‘private’ data for an individual bird, and the same techniques might be useful in other settings, like traffic, where you have anonymous count data but you would like to make inferences without violating anyone’s privacy,” he said. “Our ultimate goal is to get on the Weather Channel and just have our predictions out there as a [free] Web service that all these different potential customers could get access to.”

In post-Hurricane-Katrina New Orleans, urban blight remains an unwieldy task, but a new AI model launched under the city’s NOLAlytics program reduced a backlog of 1,800 cases to zero within 90 days of the program’s February 2015 launch. Through a partnership with profi bono partner Enigma.io, the city found a solution to a tedious problem for which there weren’t enough qualiﬁed workers or hours in the day to evaluate each case.

The Code Enforcement Abatement Tool draws from a dozen criteria and

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exploding and quelling the state’s opioid epidemic are the reasons Boston is now planning its first AI projects, said the city’s CIO, Jascha Franklin-Hodge.

“One of the big challenges in the human services space is that, inevitably, you don’t have enough resources to reach every possible person that you might want to reach,” he said. “How do you identify the places where you’re going to have the biggest impact? If we can only help 10 percent of the population that we’re trying to serve, what’s the 10 percent where it’s going to make the most difference to get some kind of intervention?”

AI can augment any endeavor, but it thrives where human expertise is scarce. Computer science and ornithology teams at Oregon State University and Cornell University are using AI to make predictions about continental bird migration patterns, a field with relatively few experts. Originally funded by a National Science Foundation grant in 2008, the team’s algorithms and processing capabilities are approaching the first opportunity at which the system could be used for decision-making, said Thomas Dietterich, Oregon State University distinguished professor of computer science and director of Intelligent Systems.

The system is powered by data gathered and submitted through Cornell’s eBird portal. The AI then accounts for things like length of travel per day, rest time or hours in the day to evaluate each case. The Code Enforcement Abatement Tool draws from a dozen criteria and estimates when and where the birds will be. Outside of bird watching, reliable migration predictions can be used to plan wind turbine installation, shut off turbines to protect birds or inform the military where it might avoid flying at night. Similar partnerships already exist between bird watchers and the military in both Israel and the Netherlands, Dietterich said.

“We can answer our scientific questions without ‘private’ data for an individual bird, and the same techniques might be useful in other settings, like traffic, where you have anonymous count data but you would like to make inferences without violating anyone’s privacy,” he said. “Our ultimate goal is to get on the Weather Channel and just have our predictions out there as a [free] Web service that all these different potential customers could get access to.”

In post-Hurricane-Katrina New Orleans, urban blight remains an unwieldy task, but a new AI model launched under the city’s NOLAlytics program reduced a backlog of 1,800 cases to zero within 90 days of the program’s February 2015 launch. Through a partnership with pro-bono partner Enigma.io, the city found a solution to a tedious problem for which there weren’t enough qualified workers or hours in the day to evaluate each case.

The Code Enforcement Abatement Tool draws from a dozen criteria and


generates a numeric score that tells the city whether a structure should be demolished or sold. This model is more rigorous and transparent, because previously it was just one person making decisions that weren't necessarily quantifiable, said Oliver Wise, director of the New Orleans Office of Performance and Accountability.

“The algorithm is modeled to mimic what a human would do if they had lots and lots of time, because we don’t have lots of time,” said Wise. “There’s all sorts of areas where government decision-makers have to make hard decisions, but kind of repetitive decisions, and I think projects like this can be applied in a whole host of areas.”

Starting in 2011, a series of resource allocation models developed by a team at the University of Southern California began ensuring that security teams around the nation are making the best use of their limited resources. The U.S. Coast Guard, the Los Angeles Sheriff’s Department, the Federal Air Marshal Service, the Los Angeles Airport Police and the Transportation Security Administration use models developed by the team of Milind Tambe, computer science and engineering professor at the university.

The models schedule random security patrols in ports, airports and cities to avoid being predictable, while still prioritizing the most important locations. This kind of scheduling is already a complex task, Tambe said, but it’s made more difficult without AI because people are terrible at being random. The type of high-impact crime that these patrols are designed to prevent, like terrorism, makes it difficult to estimate the impact of using these models, but the time saved to human schedulers and improved resource allocation prove the tool’s worth, Tambe said. And the models are now being applied to similar disciplines, like anti-poaching efforts.

Tambe’s team is planning to begin a five-week pilot in January in cooperation with the university’s School of Social Work to understand which homeless people would be most effectively recruited for HIV education campaigns. Using an AI equipped with knowledge of the city’s homeless social networks is more effective than using heuristics like choosing the most popular individuals or those most centrally located in the network, said Tambe. Each week of the pilot, the team will recruit new peer leaders to provide information that will be fed back into the model to improve its accuracy and the campaign’s efficacy.

“We are very interested in things that will have a positive impact socially,” Tambe said. “Whether it’s protection of environment, forest, fish and wildlife, or problems such as water levels rising and climate refugees, to problems related to health, I think AI is going to really have a significant positive impact and allow us to assist humanity in solving some of the major challenges we face.”
JUST BECAUSE A CITY IS SMALL DOESN'T MEAN IT CAN'T BE INNOVATIVE. HERE ARE SIX WAYS THAT CITIES WITH A POPULATION UNDER 100,000 PEOPLE ARE USING TECHNOLOGY TO PROVIDE CREATIVE AND FORWARD-LOOKING SERVICES BOTH INTERNALLY AND FOR CITIZENS. FROM TRANSPARENCY TO CONNECTIVITY TO RETHINKING THE CUSTOMER EXPERIENCE, THESE LOCAL GOVERNMENTS PROVE THAT SIZE DOESN'T MATTER. READ THE COMPLETE CASE STUDIES AT: WWW.GOVTECH.COM/THINKINGBIG
EVERY YEAR, Manassas has a different collection schedule for leaf pickup. So every year, the Public Works Department gets a wave of calls with people asking when they should have their leaf piles out on the curb for collection. But those people had other questions too — when do the garbage trucks come by? What about recycling? Where can old computers be dumped?

So Manassas decided to answer all those questions at once. In October 2014, the city launched an online map where residents enter their address and get a carousel of information like when city contractors will come by to pick up trash, recycling, leaves and yard waste.

It’s a means of improving the customer experience by streamlining the process of determining when to do what, according to Manassas GIS Coordinator Margaret Montgomery. It’s also a big improvement over how the city used to do things.

“For one, they don’t have to call only during business hours,” Montgomery said. “Our Public Works Department is only open 7 to 4. I know I don’t only think about my trash collection during those hours.”

And for trash pickup, the answers about scheduling weren’t as easy as for leaf collection. “We had a paper map from 2007,” she said. So if a resident called in asking about collection times for a place built in 2008 or later, the employee on the phone had to either try to remember the answer or make an educated guess. For a long time, there was an employee around who could usually answer these questions. But she retired in 2014. The online map, then, represents the digitization of institutional knowledge.

So far, Montgomery said the program has been successful and residents have embraced the app. In a city of nearly 42,000 people, the app has received 1,900 views in its first year. Just under half of those came during October 2015. And the city has ideas for expanding the app in the future to include other government services citizens might have questions about.

BEN MILLER

MANASSAS, VA.

WIKIPEDIA

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916-932-1300
www.erepublic.com
HOW TO BE TRANSPARENT

Albany, Ore.  POPULATION: 22,000

FOR LEADERS IN ALBANY, serving the
public and starting a transparent dialog
meant opening city data clearly and
concisely while staying within the bounds
of their limited financial means.

The result of the extensive city effort
was a publicly accessible online portal
where constituents can view the latest
budgets and daily updates to expenditure
data, and monitor the programs their tax
dollars ultimately pay for.

Assistant City Manager and CIO Jorge
Salinas said the city had been looking at
an open data initiative as a means to make
the local government more transparent for
several years.

“We started back in 2009 with a home-
grown application, where every financial
transaction that the city made was pushed
through this app,” he said. “Now we are at
the point where we want to move our data
to be more visual. We’re trying to find the
best breed of vendors out there that can
help us achieve these goals.”

Through the municipality’s suite of
online tools, citizens can now delve into
how the city is allocating project funding
and spending taxpayer money. City expen-
ditures are updated daily at the close
of business and available for the public
within a few hours of the upload.

After the city’s data was published
online, formatting it in a more digest-
ible, visual way became the focus of staff
and a third-party vendor. “We had to
engage other departments to help fund
this approach. There are always challenges
because of the budget. We have a finite
amount of dollars, and we have to make
sure those are used to provide services for
the citizens. This is a piece of that where we
are actually providing financial information
for citizens to be able to view at any time.”

A collaborative approach among all city
departments helps meet budget targets
while ensuring the resource needs of the
transparency initiative are weighed against
other vital city projects.

EYRAGON EIDAM
HOW TO INNOVATE
Palo Alto, Calif.

THINK STARTUPS. Think Google. Think incubators. That’s the vibe at 250 Hamilton Avenue. Yet here’s the hook: This is City Hall. Welcome to Palo Alto’s first Civic Technology Center. In April 2015 the center opened its doors as a hub for municipal innovation initiatives and city IT services. The vision for the center is to become a co-creation space. Here, companies and startups can pitch partnership ideas. Citizens can participate in hackathons and meetups. Staff can find tech support via an Apple-like “Genius Bar.” It’s all the amenities of a startup but packaged for government.

“When people come to see me at City Hall,” said Jonathan Reichental, Palo Alto’s CIO, “they check in electronically at our reception desk and they do a double take. They’re like, ‘Wait, is this City Hall?’ Because it doesn’t look or behave like it.”

Not long after joining the IT department, Reichental began monthly field trips to Silicon Valley tech companies. His team visited Apple, Facebook, Google and a slate of others to ideate on potential civic tech. Recalling, Reichental said the trips were spirit lifters, inspiring, semi-revelatory and all of a sudden grievously dismal. For no sooner would they return to their offices, then a pall would settle. Two narratives had collided. What the Civic Technology Center represents, Reichental said, is an attempt to “systematize” the current drive for innovation with a design that pairs efforts with a functional office space and aesthetic. “It’s like government as a startup,” he said.

JASON SHUEH
HOW TO DO CONNECTIVITY
Shawnee, Kan.

POPULATION: 64,000

BIG CITIES PLAN FOR GROWTH because they have to, but when smaller cities do it, a world of opportunities opens up. Shawnee is reaping the benefits of a fiber master plan that dates back more than a decade. Creative partnerships and modest annual investments provide the city with a broadband network that supports schools and businesses, enables potential upgrades to cutting-edge technologies, and allows opportunities for continued growth.

After partnering with a local broadband provider known in 2005 as SureWest (now called Consolidated Communications), the city began building a private network to power its business applications. When Google selected Kansas City as its first Fiber city in 2011, nearby Shawnee saw an opportunity to expand its network further. In 2014, the city continued building, extending four more miles of inner-city fiber. Shawnee is now partnering with Unite Private Networks to add nine additional miles of fiber to connect local schools, and city administrators say their network will make it possible to adopt new traffic management and surveillance systems if they so desire.

Shawnee's blueprint for broadband was what officials call their Fiber Optic Master Plan, a long-term strategy that established how the city would pay for the upgrades and prevent management from losing focus over time. Getting executives to understand the importance of treating broadband as a central component of a city's infrastructure can be difficult, said Mel Bunting, director of Shawnee's Information Technology Department, but with the right people championing the broadband cause, it can happen anywhere.

COLIN WOOD

HOW TO HELP RESIDENTS LOCATE SUSTAINABLE HOUSING
Bloomington, Ind.

POPULATION: 83,000

IF A RENTER PAYS for electricity, why would the landlord pay for energy-efficiency improvements? And if a landlord pays for electricity, why would their tenants cut their energy usage?

For a person like Jacqui Bauer, whose job title includes the word “sustainability” and who works in a town where two-thirds of the housing consists of rentals, those questions posed a bit of a problem. So she looked for a way to bridge the gap between tenants and landlords — and found a method she thinks will help.

Using grant money, Bauer built a website that puts information in renters' faces that they otherwise might not consider. She had survey results from the students and knew that they care a lot about how much their rent is going to be at any prospective house or apartment. But most of the time, they didn't think much further than that.

“There were big components of living costs that weren’t registering in their thinking,” said Bauer, Bloomington’s sustainability coordinator. “That includes things like the cost of electricity, water, gas and transportation. So on the website, Bauer’s development team built all those details — or the capability to publish those details, anyway — into a map. Anyone can go to RentRocket.org and see a list of rental properties that includes photos, rental price and the number of bedrooms and bathrooms, as well as details like utility costs and recycling availability.

The idea is that if more renters in a city start asking landlords about utility costs, or demanding lower utility costs through market trends, it will influence landlords to make energy-efficient improvements. The link there has been demonstrated nationwide, in general terms: The Institute for Market Transformation, which advocates for open access to building energy usage statistics, has noted several studies that show that buildings with lower power costs tend to have higher rents and lower vacancy rates.

“This information has never been available before,” Bauer said. “So our hypothesis is that with better information, tenants are going to demand better housing.”

BEN MILLER
Two texts. That's all it takes to avoid potential stomach pains in Evanston.

Or at least, that was the goal behind an endeavor that pairs the city’s restaurant inspection scores on Yelp with text message alerts for diners. When the SMS program launched early in 2015, it was a quiet release. In fact, Erika Storlie, Evanston’s deputy manager, described the undertaking as more of a four-month side project than anything else.

The city had just completed a project with Yelp to feed restaurant inspection scores to the review site and wanted to investigate joining the scores with its 311 non-emergency texting app. The problem was, Evanston’s 311 app required a person on the other end to retrieve or record data and submit replies.

“That began the exploration of, ‘Well, wouldn’t it be cool if we could text the restaurant name to 311 and automatically get the inspection score back?’” Storlie said. “It kind of came from the fact we were using these two different types of technologies and we wanted to marry them.”

The program launched without much fanfare in February 2015; however, subtleties aside, now it appears this texting service may have bested Yelp in sheer practicality.

“I just know that with the advent of open data initiatives and these third-party services, they’ll allow you to publish data in formats that can be interpreted by anyone that wants to read them,” said Roger Wood, the city’s application analyst who coordinated much of the initiative. “The sky’s the limit I think.”

The proof is in the app. Whether it’s Evanston’s Kafien coffeeshouse on Chicago Avenue or the Peckish Pig on Howard Street, accessing scores is simple. While Yelp’s mobile app compels users to tap and swipe their way to a restaurant’s “More Info” tab, where they meander through a list of miscellaneous data, diners can just text “food” to the city’s 311 number, and after a prompt, enter a restaurant name. They’re rewarded with its most recent score and inspection date.
By Dustin Haisler and Paul W. Taylor

Next Wave of Civic Innovation

The public-sector technology market has evolved to be broader and more robust, to the tune of $1 billion in private capital investment. Here we unveil the GovTech100 — the top 100 companies focused on government customers.

Something happened to civic tech in 2015. It grew up quickly. And changed its name. What emerged in its place was the GovTech market — broader and more robust than civic tech had been originally defined, a namesake of its own dedicated venture capital fund, and indicative of new opportunities for transformational change in the public sector.

Seen as a market, government technology as a whole is an industry that accounts for $180 billion in state and local government alone, according to analysis by the Center for Digital Government.

This new GovTech slice has come into its own, emerging as a stand-alone industry composed of hundreds of startup companies even after no fewer than 23 acquisitions, and having attracted $1 billion in private capital investment.

The editors of Government Technology together with e.Republic Labs, a sister organization focused on civic innovation and new market entrants, have developed the inaugural GovTech100, a listing of the leading 100 companies focused on government as a customer, having developed an innovative or disruptive offering to improve or transform government, or having created new models for delivering services. These companies are active in one or more market segments: administrative, service delivery, intelligent infrastructure and civic tech focus areas.

The companies in the GovTech100 are, on average, 9 years old and together span most of what government does — promising greater productivity, improved workflows, automated processes, mobile-equipped workforces, data-informed decision support, mutual aid, and sharing of facilities and equipment. The open data movement fueled many of the startups with many new transparency-related services offering a hedge against waste, fraud and abuse.

This first effort at compiling the GovTech100 reflects hundreds of hours of work to identify, verify and qualify companies using publicly available information, media reports and interviews with parties familiar with the market. We are confident that it is a good list — one that can introduce you to otherwise unknown players that may have a fresh approach to a problem you are trying to solve. That said, we know subsequent iterations of the GovTech100 can be better. We want to hear from you about companies that are helping you do the public’s business in new and better ways. Our crowdsourcing of a full inventory of the GovTech space is already underway at govtech.com/100 — we welcome and value your help.

Until now, there has not been a single place to discover innovative companies in the GovTech market. This year’s GovTech100 is a down payment in that effort. It comes as 41 states are on track to meet their revenue projections and as city revenues have returned to near pre-recession levels — giving them some margin to deal with pent-up demand to make their communities better for the people who live there. At the same time, the expectations of residents are being shaped by their experience in the wider marketplace, with companies such as Amazon, Uber and Apple. It is against that backdrop that GovTech companies offer new capabilities and capacity to help government get stuff done.

As the GovTech market continues to grow and mature, it is important for those working inside government to have a mechanism to keep up with startups that could change the world … or, at least, your community. And that is our purpose in presenting the first annual GovTech100.

On the following pages you will find a list of the 100 GovTech firms featured in alphabetical order. There is also an expanded view of these companies available online at govtech.com/100.

GovTech Company: A company that has state, local and federal government as its primary market focus and derives the majority of its revenues from the public sector.
<table>
<thead>
<tr>
<th>COMPANY NAME</th>
<th>YEAR FOUNDED</th>
<th>DESCRIPTION</th>
<th>WEBSITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2FA</td>
<td>2006</td>
<td>2FA Inc. is a veteran-owned cybersecurity company created on the single vision of simplifying authentication.</td>
<td><a href="http://www.2fa.com">www.2fa.com</a></td>
</tr>
<tr>
<td>Accela</td>
<td>1999</td>
<td>Accela software helps government agencies automate transactions and service delivery in land management, asset management, licensing, and public health and safety.</td>
<td><a href="http://www.accela.com">www.accela.com</a></td>
</tr>
<tr>
<td>Aecosoft</td>
<td>2014</td>
<td>Aecosoft software helps governments minimize manual workflows and go paperless.</td>
<td><a href="http://www.aecosoft.com">www.aecosoft.com</a></td>
</tr>
<tr>
<td>Appalicious</td>
<td>2009</td>
<td>Appalicious creates open data visualization products for government agencies on its proprietary platform.</td>
<td><a href="http://www.appalicious.com">www.appalicious.com</a></td>
</tr>
<tr>
<td>AppCityLife</td>
<td>2009</td>
<td>AppCityLife provides an end-to-end platform for developing city- and agency-specific mobile apps.</td>
<td><a href="http://www.appcitylife.com">www.appcitylife.com</a></td>
</tr>
<tr>
<td>ArchiveSocial</td>
<td>2011</td>
<td>ArchiveSocial provides cloud-based social media archiving for records management, regulatory compliance and e-discovery. (Disclosure: The parent company of Government Technology is an investor in ArchiveSocial through e.Republic Ventures.)</td>
<td><a href="http://www.archivesocial.com">www.archivesocial.com</a></td>
</tr>
<tr>
<td>Aunt Bertha</td>
<td>2010</td>
<td>Aunt Bertha helps people find social services and education programs in their neighborhood by ZIP code.</td>
<td><a href="http://www.auntbertha.com">www.auntbertha.com</a></td>
</tr>
<tr>
<td>AutoGrid</td>
<td>2011</td>
<td>AutoGrid Systems analyzes the large amounts of data generated by smart meters, building management systems, voltage regulators, thermostats and other equipment, allowing public utilities to monitor usage and automate controls.</td>
<td><a href="http://www.auto-grid.com">www.auto-grid.com</a></td>
</tr>
<tr>
<td>BasicGov</td>
<td>2010</td>
<td>BasicGov helps streamline revenue management for state and local government.</td>
<td><a href="http://www.basicgov.com">www.basicgov.com</a></td>
</tr>
<tr>
<td>Bidgely</td>
<td>2010</td>
<td>Bidgely helps governments monitor and manage energy use.</td>
<td><a href="http://bidgely.com">http://bidgely.com</a></td>
</tr>
<tr>
<td>BlueLine Grid</td>
<td>2013</td>
<td>BlueLine Grid helps first responders find each other and collaborate in the field.</td>
<td><a href="http://www.bluelinegrid.com">www.bluelinegrid.com</a></td>
</tr>
<tr>
<td>Boundless</td>
<td>2002</td>
<td>Boundless provides commercial open source maintenance, spatial IT infrastructure, and data management and analysis tools.</td>
<td><a href="http://www.boundlessgeo.com">www.boundlessgeo.com</a></td>
</tr>
<tr>
<td>BS&amp;A Software</td>
<td>1987</td>
<td>BS&amp;A Software provides municipalities with a suite of management tools in public finance, property tax and assessment, and building inspection.</td>
<td><a href="http://www.bsasoftware.com">www.bsasoftware.com</a></td>
</tr>
<tr>
<td>Buildingeye</td>
<td>2011</td>
<td>Buildingeye maps planning application data in cities, allowing planners, businesses and the public to see what is being planned in their area.</td>
<td><a href="http://www.buildingeye.com">www.buildingeye.com</a></td>
</tr>
<tr>
<td>Citizinvestor</td>
<td>2012</td>
<td>Citizinvestor is a crowdfunding and civic engagement platform for local government projects.</td>
<td><a href="http://www.citizinvestor.com">www.citizinvestor.com</a></td>
</tr>
<tr>
<td>CityScan</td>
<td>2011</td>
<td>CityScan helps inspect, observe and predict street-level activity and changes that impact cities.</td>
<td><a href="http://www.cityscan.com">www.cityscan.com</a></td>
</tr>
<tr>
<td>CitySourced</td>
<td>2006</td>
<td>CitySourced helps cities and utilities manage their assets, ensure regulatory compliance, improve safety and respond to customer requests.</td>
<td><a href="http://www.citysourced.com">www.citysourced.com</a></td>
</tr>
<tr>
<td>Cityzenith</td>
<td>2009</td>
<td>Cityzenith allows cities to see, manage and use the disparate data they hold through its proprietary platform.</td>
<td><a href="http://www.cityzenith.com">www.cityzenith.com</a></td>
</tr>
<tr>
<td>COMPANY NAME</td>
<td>YEAR FOUNDED</td>
<td>DESCRIPTION</td>
<td>WEBSITE</td>
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<tr>
<td>CivicPlus</td>
<td>1994</td>
<td>CivicPlus builds custom websites for city and county governments.</td>
<td><a href="http://www.civicplus.com">www.civicplus.com</a></td>
</tr>
<tr>
<td>Civil Maps</td>
<td>2013</td>
<td>Civil Maps brings artificial intelligence to the collection and analysis of spatial data held by cities.</td>
<td><a href="https://civilmaps.com">https://civilmaps.com</a></td>
</tr>
<tr>
<td>Civinomics</td>
<td>2011</td>
<td>Civinomics helps communities improve civic decision-making by using digital tools to bring people into the deliberative process.</td>
<td><a href="http://www.civinomics.com">www.civinomics.com</a></td>
</tr>
<tr>
<td>Compology</td>
<td>2012</td>
<td>Compology builds WasteOS, a dynamic routing system built around the unique needs of the waste industry.</td>
<td><a href="http://compology.com">http://compology.com</a></td>
</tr>
<tr>
<td>ConnectedBits</td>
<td>2003</td>
<td>Connected Bits brings artificial intelligence to the collection and analysis of spatial data held by cities.</td>
<td><a href="http://www.connectedbits.com">www.connectedbits.com</a></td>
</tr>
<tr>
<td>coUrbanize</td>
<td>2013</td>
<td>coUrbanize develops mobile applications to connect governments and other organizations with their communities.</td>
<td><a href="http://www.courbanize.com">www.courbanize.com</a></td>
</tr>
<tr>
<td>Court Innovations</td>
<td>2013</td>
<td>Court Innovations Matterhorn platform enables self-service for resolving disputes and minor criminal cases entirely online.</td>
<td><a href="http://getmatterhorn.com">http://getmatterhorn.com</a></td>
</tr>
<tr>
<td>CrimeStar</td>
<td>1999</td>
<td>CrimeStar provides investigation and records management software for law enforcement and the courts.</td>
<td><a href="http://www.crimestar.com">www.crimestar.com</a></td>
</tr>
<tr>
<td>DataMade</td>
<td>2012</td>
<td>DataMade helps people track and understand what is happening in their community through data visualization and story telling tools.</td>
<td><a href="http://www.datamade.us">www.datamade.us</a></td>
</tr>
<tr>
<td>Department of Better Technology</td>
<td>2013</td>
<td>The Department of Better Technology is a forms software platform to foster greater engagement and operational efficiency.</td>
<td><a href="http://www.dosft.co">www.dosft.co</a></td>
</tr>
<tr>
<td>DoubleMap</td>
<td>2012</td>
<td>DoubleMap provides a dynamic vehicle location platform to university and public transit systems.</td>
<td><a href="http://www.doublemap.com">www.doublemap.com</a></td>
</tr>
<tr>
<td>Dropcountr</td>
<td>2013</td>
<td>Dropcountr is an app-based technology for utilities and their customers to help conserve water.</td>
<td><a href="http://dropcountr.com">http://dropcountr.com</a></td>
</tr>
<tr>
<td>eGov Strategies</td>
<td>1999</td>
<td>eGov Strategies provides governments with enterprise payment services, content management and additional interactive service delivery tools.</td>
<td><a href="http://www.egovstrategies.com">www.egovstrategies.com</a></td>
</tr>
<tr>
<td>EngagePoint</td>
<td>2007</td>
<td>EngagePoint provides multi-program enrollment and case management, along with enterprise invoicing and payment processing for government.</td>
<td><a href="http://www.engagepoint.com">www.engagepoint.com</a></td>
</tr>
<tr>
<td>Enigma</td>
<td>2011</td>
<td>Enigma software allows governments to discover, surface, manage and analyze public data sources.</td>
<td><a href="http://enigma.io">http://enigma.io</a></td>
</tr>
<tr>
<td>Esri</td>
<td>1969</td>
<td>Esri provides a geospatial platform and related tools for public agencies.</td>
<td><a href="http://www.esri.com">www.esri.com</a></td>
</tr>
<tr>
<td>EvoGov</td>
<td>1997</td>
<td>EvoGov provides CMS, e-government software and custom Web development to municipalities.</td>
<td><a href="http://www.evogov.com">www.evogov.com</a></td>
</tr>
<tr>
<td>FireStop</td>
<td>2013</td>
<td>FireStop helps firefighters share critical response information in real time through its mobile software platform.</td>
<td><a href="http://www.firesopapp.com">www.firesopapp.com</a></td>
</tr>
<tr>
<td>FiscalNote</td>
<td>2013</td>
<td>FiscalNote applies artificial intelligence, big data and predictive analytics to help public agencies in decision-making.</td>
<td><a href="http://www.fiscalnote.com">www.fiscalnote.com</a></td>
</tr>
</tbody>
</table>
AS AGENCIES LAUNCH INNOVATIVE TECHNOLOGIES to deliver citizen services in an increasingly digital world, their storage needs continue to grow. To keep up with demand, agencies need a scalable infrastructure. By moving to flash storage, agencies not only achieve performance gains, but also reduce costs and decrease their data center footprint. With the cost of all-flash technology now on par with spinning disk, government organizations don’t have to settle for 30-year-old technology or manage the complexity of a hybrid storage solution.

DELIVERING PRIVATE SECTOR-LIKE EXPERIENCES
Flash storage accelerates the development and delivery of critical online applications. Whether those applications are citizen facing or internal, the speed of those services is critical to productivity, efficiency and citizen satisfaction. Even legacy applications run better on flash. Flash storage can also make a dramatic difference on database performance. Usage reports that usually take hours to process can be delivered in minutes, providing decision-makers with quick insights and saving IT staff time.

REAPING THE BENEFITS OF THE CLOUD WHILE KEEPING DATA SECURE IN HOUSE
With Pure Storage’s all-flash array, agencies can leverage the benefits of the cloud and an on-premises data center. Pure Storage allows customers to purchase storage once and pay a flat maintenance rate annually. With hardware and software upgrades included in that plan, customers can maintain a modern storage infrastructure that is always ready for future growth. This model not only lengths the depreciation timeline, but eliminates the need to rip and replace storage. Pure Storage’s all-flash arrays can be managed through the cloud remotely, from any device. There aren’t any dedicated management servers or software to purchase or install.

STORAGE HAS NEVER BEEN EASIER
Pure Storage’s solutions were designed to remove the complexities of traditional storage. Pure Storage’s all-flash solutions are simple to install and maintain — in fact, the instruction manual for a flash array fits on one business card. The array is built with the functionality state and local governments need (such as data-at-rest encryption), which means there are no third-party add-ons that increase storage complexity or cost.

Accelerate Possible in Government

Pure Storage (PSTG) is the #1 recommended technology vendor (based on Satmetrix 2015 NPS Global B2B Benchmarks). To learn more about how Pure Storage can help your agency accelerate what’s possible, visit: www.purestorage.com/government
<table>
<thead>
<tr>
<th>COMPANY NAME</th>
<th>YEAR FOUNDED</th>
<th>DESCRIPTION</th>
<th>WEBSITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>GovDelivery</td>
<td>1999</td>
<td>GovDelivery manages email and other communications for public agencies.</td>
<td><a href="http://www.govdelivery.com">www.govdelivery.com</a></td>
</tr>
<tr>
<td>GovQA</td>
<td>2000</td>
<td>WebQA provides multichannel customer service workflow, portal and social-networking technologies to governments.</td>
<td><a href="http://www.govqa.com">www.govqa.com</a></td>
</tr>
<tr>
<td>GovSense</td>
<td>2014</td>
<td>GovSense is cloud-based permitting, licensing and financial software for state and local government.</td>
<td><a href="http://www.govsense.com">www.govsense.com</a></td>
</tr>
<tr>
<td>Granicus</td>
<td>1999</td>
<td>Granicus is a cloud-based platform for government transparency, legislative efficiency and citizen engagement.</td>
<td><a href="http://www.granicus.com">www.granicus.com</a></td>
</tr>
<tr>
<td>iWorQ</td>
<td>2001</td>
<td>iWorQ Systems provides municipal management software.</td>
<td><a href="http://www.iworq.com">www.iworq.com</a></td>
</tr>
<tr>
<td>Junar</td>
<td>2010</td>
<td>Junar is a cloud-based open data platform used by public agencies to share the public data they hold.</td>
<td><a href="http://www.junar.com">www.junar.com</a></td>
</tr>
<tr>
<td>LocalData</td>
<td>2012</td>
<td>LocalData software helps municipalities collect and analyze information about their urban infrastructure.</td>
<td><a href="http://www.localdata.com">www.localdata.com</a></td>
</tr>
<tr>
<td>Localisto</td>
<td>2011</td>
<td>Localisto's civic engagement mobile app allows government to crowdsourced data about civic projects.</td>
<td><a href="http://www.localisto.org">www.localisto.org</a></td>
</tr>
<tr>
<td>Loci Controls</td>
<td>2012</td>
<td>Loci Controls helps municipalities extract energy from trash in their landfills.</td>
<td><a href="http://locicontrols.com">http://locicontrols.com</a></td>
</tr>
<tr>
<td>Loveland</td>
<td>2009</td>
<td>Loveland is a collaborative platform for gathering, using and presenting information about properties.</td>
<td><a href="https://makeloveland.com">https://makeloveland.com</a></td>
</tr>
<tr>
<td>Mark43</td>
<td>2012</td>
<td>Mark43 software allows police to collect, manage, analyze and share information.</td>
<td><a href="http://mark43.com">http://mark43.com</a></td>
</tr>
<tr>
<td>Maximus</td>
<td>1975</td>
<td>Maximus (NYSE: MMS) software and services help governments administer health, child, family and community development programs.</td>
<td><a href="http://www.maximus.com">www.maximus.com</a></td>
</tr>
<tr>
<td>Metropia</td>
<td>2012</td>
<td>Metropia manages individual and community incentives to change commuter behavior.</td>
<td><a href="http://www.metropia.com">www.metropia.com</a></td>
</tr>
<tr>
<td>MetroTech</td>
<td>2011</td>
<td>MetroTech helps municipalities use data from video cameras and sensors to manage traffic.</td>
<td><a href="http://metrotech-net.com">http://metrotech-net.com</a></td>
</tr>
<tr>
<td>MeWe</td>
<td>2014</td>
<td>MeWe provides workflow software for government inspectors.</td>
<td><a href="http://www.mewe.io">www.mewe.io</a></td>
</tr>
<tr>
<td>Munetrix</td>
<td>2010</td>
<td>Munetrix provides tools for visualizing and using financial information from municipal governments.</td>
<td><a href="http://www.munetrix.com">www.munetrix.com</a></td>
</tr>
<tr>
<td>Municibid</td>
<td>2006</td>
<td>Municibid provides a platform for public agencies to sell surplus and forfeited property.</td>
<td><a href="http://www.municibid.com">www.municibid.com</a></td>
</tr>
<tr>
<td>Municode</td>
<td>1951</td>
<td>Municode provides legal, editorial and publishing services for managing city codes.</td>
<td><a href="http://www.municode.com">www.municode.com</a></td>
</tr>
<tr>
<td>MuniLogic</td>
<td>1973</td>
<td>MuniLogic provides property management and administration software.</td>
<td><a href="http://www.munilogic.com">www.munilogic.com</a></td>
</tr>
<tr>
<td>MuniRent</td>
<td>2014</td>
<td>MuniRent helps local governments rent underused equipment to and from one another.</td>
<td><a href="http://www.munirent.co">www.munirent.co</a></td>
</tr>
</tbody>
</table>

**Average GovTech Company Age: 9 years old**
<table>
<thead>
<tr>
<th>COMPANY NAME</th>
<th>YEAR FOUNDED</th>
<th>DESCRIPTION</th>
<th>WEBSITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>mySidewalk</td>
<td>2010</td>
<td>mySidewalk’s platform allows cities to use aggregated demographic and</td>
<td><a href="http://www.mysidewalk.com">www.mysidewalk.com</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>socioeconomic data in planning and operations.</td>
<td></td>
</tr>
<tr>
<td>Neighborly</td>
<td>2012</td>
<td>Neighborly curates opportunities for direct individual investments in public</td>
<td><a href="http://www.neighborly">www.neighborly</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>projects and civic infrastructures.</td>
<td></td>
</tr>
<tr>
<td>Neighborland</td>
<td>2011</td>
<td>Neighborland enables residents and civic leaders to collaborate on matters</td>
<td><a href="https://neighborland.com">https://neighborland.com</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>of common interest using a common set of design tools.</td>
<td></td>
</tr>
<tr>
<td>Nextdoor</td>
<td>2010</td>
<td>Nextdoor is a neighborhood-specific private social network.</td>
<td><a href="http://www.nextdoor.com">www.nextdoor.com</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>mobile apps and secure payment processing for government clients.</td>
<td></td>
</tr>
<tr>
<td>OpenCounter</td>
<td>2012</td>
<td>OpenCounter helps new businesses obtain their permits from city hall.</td>
<td><a href="https://opencounter.com">https://opencounter.com</a></td>
</tr>
<tr>
<td>OpenGov</td>
<td>2012</td>
<td>OpenGov software allows interested parties to access, explore and share</td>
<td><a href="http://www.opengov.com">www.opengov.com</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>finance and budget information held by government.</td>
<td></td>
</tr>
<tr>
<td>Opower</td>
<td>2007</td>
<td>Opower (NYSE: OPWR) is a cloud-based technology for utilities and their</td>
<td><a href="https://opower.com">https://opower.com</a></td>
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<tr>
<td></td>
<td></td>
<td>customers to help conserve energy.</td>
<td></td>
</tr>
<tr>
<td>Opportunity-</td>
<td>2013</td>
<td>OpportunitySpace provides an online marketplace for undervalued and</td>
<td><a href="http://www.opportunityspace.org">www.opportunityspace.org</a></td>
</tr>
<tr>
<td>Space</td>
<td></td>
<td>abandoned urban real estate.</td>
<td></td>
</tr>
<tr>
<td>OppSites</td>
<td>2014</td>
<td>OppSites’ platforms bring together cities and investors on underexposed</td>
<td><a href="http://www.oppsites.com">www.oppsites.com</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>development opportunities.</td>
<td></td>
</tr>
<tr>
<td>Peak Democracy</td>
<td>2007</td>
<td>Peak Democracy offers a cloud-based online civic engagement platform called</td>
<td><a href="http://www.peakdemocracy.com">www.peakdemocracy.com</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Open Town Hall.</td>
<td></td>
</tr>
<tr>
<td>Placemeter</td>
<td>2012</td>
<td>Placemeter helps cities measure movement of people and vehicles.</td>
<td><a href="http://www.placemeterholdings.com">www.placemeterholdings.com</a></td>
</tr>
<tr>
<td>Pondera</td>
<td>2011</td>
<td>Pondera helps public agencies use analytics to identify and remediate fraud,</td>
<td><a href="http://www.ponderasolutions.com">www.ponderasolutions.com</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>waste and abuse in large government programs.</td>
<td></td>
</tr>
</tbody>
</table>

GovTech Company Acquisitions: 23

<table>
<thead>
<tr>
<th>COMPANY NAME</th>
<th>YEAR FOUNDED</th>
<th>DESCRIPTION</th>
<th>WEBSITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PostCode</td>
<td>2013</td>
<td>PostCode is best known for NextRequest, a service for managing public records</td>
<td><a href="http://www.postcode.io">www.postcode.io</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>requests.</td>
<td></td>
</tr>
<tr>
<td>PredPol</td>
<td>2012</td>
<td>PredPol identifies the highest risk times and places for criminal activity</td>
<td><a href="http://www.predpol.com">www.predpol.com</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>in near real time.</td>
<td></td>
</tr>
<tr>
<td>ProductBio</td>
<td>2012</td>
<td>ProductBio informs the procurement process, including how products align</td>
<td><a href="http://productbio.com">http://productbio.com</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>with city preferences related to environmental, social and fiscal compliance</td>
<td></td>
</tr>
<tr>
<td>ProudCity</td>
<td>2015</td>
<td>ProudCity offers open-source hosted websites for local government agencies.</td>
<td><a href="http://www.getproudcity.com">www.getproudcity.com</a></td>
</tr>
<tr>
<td>Recoveries</td>
<td>2011</td>
<td>Recoveries provides a website for community-by-community disaster relief.</td>
<td><a href="http://www.recoveries.org">www.recoveries.org</a></td>
</tr>
<tr>
<td>Remix</td>
<td>2014</td>
<td>Remix allows city transit planners to see the cost, demographic and fiscal</td>
<td><a href="http://getremix.com">http://getremix.com</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>impact of proposed route changes.</td>
<td></td>
</tr>
<tr>
<td>COMPANY NAME</td>
<td>YEAR FOUNDED</td>
<td>DESCRIPTION</td>
<td>WEBSITE</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>Revelstone</td>
<td>2010</td>
<td>Revelstone’s data analytics and reporting platform is scaled for small and medium sized jurisdictions.</td>
<td><a href="http://www.revelstonelabs.com">www.revelstonelabs.com</a></td>
</tr>
<tr>
<td>Seabourne</td>
<td>2010</td>
<td>Seabourne provides data integration, consolidation and visualization tools for the public sector.</td>
<td><a href="http://www.seabourninc.com">www.seabourninc.com</a></td>
</tr>
<tr>
<td>SeeClickFix</td>
<td>2008</td>
<td>SeeClickFix allows residents to report non-emergency neighborhood issues through its Web tool, which are then communicated to local governments.</td>
<td><a href="http://www.seeclickfix.com">www.seeclickfix.com</a></td>
</tr>
<tr>
<td>SmartProcure</td>
<td>2011</td>
<td>SmartProcure aggregates the purchase histories of public agencies.</td>
<td><a href="http://www.smartprocure.us">www.smartprocure.us</a></td>
</tr>
<tr>
<td>SnapSense</td>
<td>2011</td>
<td>SnapSense provides dashboards to track data about what communities want.</td>
<td><a href="http://snapseNSE.co">http://snapseNSE.co</a></td>
</tr>
<tr>
<td>Socrata</td>
<td>2007</td>
<td>Socrata provides data discovery services for government.</td>
<td><a href="http://www.socrata.com">www.socrata.com</a></td>
</tr>
<tr>
<td>StreetCred Software</td>
<td>2010</td>
<td>StreetCred Software helps police departments understand officer behavior, clear warrant backlogs and aggregate investigative data.</td>
<td><a href="http://www.streetcredsoftware.com">www.streetcredsoftware.com</a></td>
</tr>
<tr>
<td>Taser</td>
<td>1993</td>
<td>Taser (NYSE: TASR) provides electronic control devices to law enforcement and corrections agencies.</td>
<td><a href="http://www.taser.com">www.taser.com</a></td>
</tr>
<tr>
<td>TransparaGov</td>
<td>2011</td>
<td>TransparaGov provides analytical, management and outcomes measurement software to governments.</td>
<td><a href="http://www.transparagov.com">www.transparagov.com</a></td>
</tr>
<tr>
<td>TriTech Software Systems Inc.</td>
<td>1991</td>
<td>TriTech provides computer assisted dispatch, records management and EMS billing.</td>
<td><a href="http://www.tritech.com">www.tritech.com</a></td>
</tr>
<tr>
<td>Urban Engines</td>
<td>2012</td>
<td>Urban Engines helps cities understand how residents are using transit services, and how those systems are performing.</td>
<td><a href="http://urbanengines.com/cities">http://urbanengines.com/cities</a></td>
</tr>
<tr>
<td>ViewPoint</td>
<td>1995</td>
<td>ViewPoint provides online permitting, licensing, inspections and code enforcement for local governments.</td>
<td><a href="http://www.viewgov.com">www.viewgov.com</a></td>
</tr>
<tr>
<td>Vision Internet</td>
<td>1995</td>
<td>Vision Internet builds custom websites for city and county governments.</td>
<td><a href="http://www.visioninternet.com">www.visioninternet.com</a></td>
</tr>
<tr>
<td>WaterSmart Software</td>
<td>2009</td>
<td>WaterSmart Software uses mobile and online technology to help utilities and their customers monitor use and conserve water.</td>
<td><a href="http://www.watersmart.com/home-texas">www.watersmart.com/home-texas</a></td>
</tr>
<tr>
<td>WiredBlue</td>
<td>2010</td>
<td>WiredBlue helps police departments connect with their communities and lets residents communicate with them securely.</td>
<td><a href="http://www.wiredblue.co">www.wiredblue.co</a></td>
</tr>
</tbody>
</table>

To follow expanded profiles for each of these companies or to tell us about your GovTech company, visit govtech.com/100
No Unicorns to Be Found

Some candidate companies for this year’s list were acquired by other startups and incumbents alike. Motorola, Autodesk and GovDelivery picked up one each. For its part, Accela bought three companies that would have made the list in their own right — Springbrook (public finance), Civic Insight (building and construction project data) and PublicStuff (service requests). Significantly, there is not a unicorn in the whole bunch. In fact, taken together, GovTech100 companies represent a cumulative market cap of $1,004,628,345, just over the magical $1 billion threshold for a single company to be regarded as a unicorn (profitably) with new sources of energy, new medical technology, new ways to clean the environment and new ways to help the sick and disabled."

In the absence of unicorns, scrappy GovTech companies are eschewing mythical imagery in favor of focusing on the work, solving real problems close to the ground and extending the reach of government agencies — all with the potential of having an outsized impact in creating meaningful change in the communities they serve.

The inaugural GovTech100 is just the beginning of the story of this nascent innovation marketplace. We also identified a handful of deserving early stage companies that merit mention as five to watch that are already writing the next chapter of public-sector innovation.

CityGrows 2015
CityGrows makes collaboration and transparency software for governments. http://citygro.ws

ClearGov 2015
ClearGov helps citizens better understand how their tax dollars are spent and gauge the performance of their local government. www.cleargov.com

One Concern 2015
One Concern software helps municipalities manage risk assessment and damage/loss estimation. www.oneconcern.com

ProudCity 2015
ProudCity offers open-source hosted websites for local government agencies. http://getproudcity.com

SABR.IO 2015
SABR software locates, monitors and investigates users of bitcoin and other blockchain-based digital currencies. http://sabr.io
Braking for Innovation

Why you should slow down in order to speed up smart government.

All around the world, technology leaders are trying to work smarter, innovate and do more with less. From the Internet of Things to smart cities, from big data collection to connected drones, everyone’s trying to gain that competitive edge. And at the same time, it’s becoming increasingly difficult to stay current with emerging technologies while mitigating security vulnerabilities. What can be done to keep up? Surprisingly it may be best to slow down, look around and catch your breath. That’s right — if you want to speed up innovation, many experts suggest slowing down first.

Why? To rethink, re-examine, realign and refocus your strategic plans related to emerging tech and innovation.

A study by the Harvard Business Review found that companies that “slowed down to speed up” performed much better — averaging 40 percent higher sales and 52 percent higher operating profits over a three-year period. Why did they do so well?

“Higher-performing companies with strategic speed made alignment a priority. They became more open to ideas and discussion. They encouraged innovative thinking. And they allowed time to reflect and learn.”

While there are many helpful lessons learned. As I look back at successes and failures in technology management during my 30 years within the public and private sectors, there are five action steps that consistently helped to improve the status quo through implementation of new, innovative technologies. The repeatable process includes:

1. Establish (or update) your strategic IT plan. A new plan is usually required at least every four years, with major updates every two years and annual adjustments. This can also be aligned to election cycles. Typically this includes help from outside (unbiased) resources that can benchmark against public- and private-sector peers. Regardless, pause to assess enterprise progress and risk levels.

2. Establish your technology vision based on input from important internal and external customers. Examine industry best practices in specific areas of interest. Review the National Association of State Chief Information Officers awards and industry best practices and white papers to help. Make sure the right people are in the room from all parts of your organization.

3. Set clear, achievable technology innovation goals and metrics using the business strategy. Enterprise progress and risk levels.

4. Establish (or update) your strategic IT plan. A new plan is usually required at least every four years, with major updates every two years and annual adjustments. This can also be aligned to election cycles. Typically this includes help from outside (unbiased) resources that can benchmark against public- and private-sector peers. Regardless, pause to assess enterprise progress and risk levels.

5. Honour the best projects with internal awards and recognition, with the expectation of winning national recognition. As the Harvard study explains, getting beneficial outcomes requires people, process and technology being aligned to meet business needs. This methodology is similar to building a winning college football program that expects to win and builds a positive reputation that lasts, despite occasional setbacks. This means that everyone is not only striving to improve, but management actively encourages new ideas. Welcome creativity and incorporate innovation into the way things get done.

Technology leaders can make a huge difference by setting the example and walking the talk of innovation and collaboration. Staff needs time to reflect, learn, prepare and innovate. As Alabama's great coach Bear Bryant once said, “It’s not the will to win that matters — everyone has that. It’s the will to prepare to win that matters.”
To download a complimentary copy, visit: www.centerdigitaled.com/reports/q4-2015

Matt Townsley, Director of Instruction and Technology, Solon Community School District, Iowa

The move toward personalized learning is enabling students to guide their own education experience. However, the traditional education structure in the U.S. does not generally accommodate different learning needs, which is required in a personalized learning model. By teaching to the average student, schools and universities can fail students on opposite ends of the spectrum.

The Center for Digital Education’s (CDE) most recent Special Report helps bridge the gap between the goals of personalized learning and cultural barriers by identifying innovative approaches and case studies, and providing potential solutions to the challenges institutions face on the path to student-centered learning.
A Vote for Openness

Will presidential candidates commit to setting the default to open?

The 2016 presidential campaign is well underway. U.S. Senate and House campaigns are gearing up and candidates from both parties are testing their vision for the future. Battle lines are tightly drawn around issues like immigration, the economy and foreign policy, but there’s one topic on which both parties can work together: open government and open data.

To restore public trust in government, currently at a historic low, our next president and Congress should embrace the principles of openness and transparency. Candidates should have robust policy platforms that explicitly commit to a more open and data-driven government that embraces the emerging field of civic tech.

Here are six action items candidates should incorporate into their visions for the future.

- Institutionalize new approaches to increase open technology processes. More people in government must recognize civic technology’s importance. Under Obama, efforts like the U.S. Digital Service and 18F have become valuable assets, helping the federal government improve how it interacts with citizens. For example, in November, 18F launched a beta website for the Federal Election Commission to make campaign finance and elections data more accessible.

- Reveal the true extent of federal data holdings while ensuring that agencies maintain and release data in machine-readable, electronic, nonproprietary formats. In response to a Freedom of Information request from the Sunlight Foundation, in early 2015 the federal government released inventories of the data collected and held by major agencies. By establishing a record of what the government actually has, we can better evaluate data quality and how it’s being used.

- Open up government spending information by fully implementing the DATA Act and continuing to release more data about grants, contracts and other spending. The 2014 Digital Accountability and Transparency Act was a landmark piece of bipartisan legislation that would — if well implemented — ensure that all Americans have timely access to accurate information about government spending. Implementing this complex law will require a strong commitment from the next administration.

- Take the necessary steps to ensure that vital electronic records are managed and stored in a way that guarantees their availability to future generations and, where appropriate, released in the short term under FOIA. Recent news stories have revealed the shaky system of electronic records management that’s supposed to ensure that historically relevant government documents are preserved. Emphasis must be put on the systems that manage their long-term preservation, but the next administration also must make sure valuable information isn’t withheld from the public in the short term by limiting agency reliance on FOIA exemptions. Government should make it policy to proactively release data where appropriate.

- Make the White House more open and ethical by releasing visitor logs more quickly. The public deserves to know who the president and top advisers are meeting with. Visitor logs should show the lobbying and influence that happens at the highest level.

- Continue to participate in global efforts to promote open government — like the Open Government Partnership — and turn this participation into actionable change.

Chris Gates is the president of the Sunlight Foundation, a nonpartisan nonprofit that advocates for open government globally and uses technology to make our governments more open, accountable. Gates is a thought leader in the fields of democratic theory and practice and political and civic engagement.
Tablet Search

The 10-inch Google Pixel C tablet features a full Bluetooth keyboard, 308 pixel-per-inch display, 64-bit NVIDIA X1 quad-core processor and 256-core Maxwell GPU graphics. The keyboard connects to the anodized aluminum tablet via magnets and charges wirelessly when the tablet is closed. The Pixel C uses the Android 6.0 Marshmallow operating system and offers 32 GB or 64 GB storage. There is an 8-megapixel rear camera and 2-megapixel front camera. The Pixel C contains ambient light, gyroscope, accelerometer, compass, hall and proximity sensors. It uses a USB Type-C charger. https://pixel.google.com

Light Bright

With its bright LED light, the Zinteh 3-D illusion lamp is energy-efficient, provides up to 50,000 hours of light and won’t overheat. This optical illusion LED light is the result of the latest software and laser technologies, combined with high-quality materials including LED strip lights and acrylic. The Lotus lamp measures 120 mm x 180 mm, and is 5 mm thick. Each lamp is handmade in Bulgaria. www.zintehlighting.com

HD Body Cam

The Reveal RS2-X2L body camera features eight hours of battery life and up to 32 GB recording capacity, allowing 34 hours of audio and video to be recorded. The camera has a front-facing screen and can record in full 1080p high definition. Stealth mode enables recording without the screen or lights. Specifically designed for law enforcement, users can’t delete or overwrite footage on the camera. Each video has the date and time stamped on every frame, a tamper-proof digital fingerprint, and encryption that prevents the videos from being viewable on unauthorized computers. www.revealmedia.com
Rise of Quadcopter Legislators
Will ‘helicopter policymakers’ stifle new technology over the long term?

After a decade as the freshman dean at Stanford University, Julie Lythcott-Haims recently wrote a book detailing how “helicopter parents” have succeeded in raising a new generation of students who are highly accomplished in some respects, but over-dependent on their parents and therefore ill-prepared to face life on their own. A similar phenomenon can be found when state lawmakers and regulators have over新兴 technologies instead of letting them develop independently. The short-term results may be gratifying, but the long-term cost may be troubling.

The causes of helicopter parenting -- fear of harmful consequences, anxiety about the future and peer pressure -- are likely the same sources of helicopter policymaking. Take drones. There are several reasons policymakers intervene -- some justified, some not. First and foremost, policymakers want to prevent physical, economic and social harms, like ensuring drones don’t crash into people. This makes sense. But sometimes policymakers want to alleviate anxiety about future conditions, which often manifests itself in calls for laws that will create “trust” in a particular industry. For example, some legislators have called for drone privacy laws despite states’ existing laws against stalking, harassment, peeping and other potential concerns. This is likely a case of being overly protective.

Then there are cases where policymakers may see other states passing laws or regulations and think they should too. To date, 32 states have enacted laws or resolutions relating to the operation of drones, and in 2015 alone, 45 states considered 168 different pieces of drone legislation. While some of these legislatures are probably just showing a healthy level of interest in new technology, others might be showing themselves to be a new breed of “quadcopter” legislators. Of course, many policymakers (and parents) take a very different approach. The opposite of helicopter parenting is “free range” parenting, where children are encouraged to exercise their independence and parents (or their child) can handle the challenge.

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These are times that force reflection and assessment of risk. (And, to be fair, some people call this normal parenting.) Not surprisingly, many people are uncomfortable with the ambiguity inherent in a more hands-off approach. In particular, their patience for this method is tested most severely when something goes wrong and they must wait to see if the private sector can handle the challenge. These are times that force reflection and growth, and lead to greater self-reliance. For example, autonomous vehicles promise to save thousands of lives by improving driving safety, but inevitably some will be involved in fatal accidents. When this happens, how will policymakers react? Just as parents shouldn’t neglect their children, this isn’t to suggest that legislators shouldn’t legislate or regulators shouldn’t regulate. There are times when policymakers should intervene, but they should show restraint and choose those cases carefully, such as if inaction would otherwise result in concrete harms or if industry is ignoring legitimate public concerns. In the case of drones, it makes sense for regulators to create new rules to ensure public safety and prevent accidents. Moreover, free-range policymakers aren’t mere libertarians; they actively support and champion innovative technologies and provide the nourishing environment that will let them flourish, such as by investing in research and making government an early adopter.

It isn’t just that policymakers should adhere more closely to the ethos of “permission-less innovation” because unnecessary policies may do more harm than good in the short term, but that interference may create an unhealthy dependence on government regulation to solve industry problems. For example, businesses may use early challenges to develop industry consortiums that later serve to create and share solutions to more complex problems that the industry will face in later years. Indeed, the healthy development of the Internet can be attributed, at least partly, to the strong problem-solving capabilities built by voluntary organizations like the Internet Engineering Task Force.

Many exciting innovations are coming of age, like the Internet of Things, the sharing economy and telehealth services. Some of these technologies will stumble as they grow. When they do, are policymakers prepared to let them regain their footing on their own?
Off to the Roboraces
Starting this year, autonomous vehicles will get a new driving platform: racing. Driverless electric cars will take to the track in the Roborace, with 10 teams competing in one-hour races. While each team will use the same type of car, the competition requires using real-time computing algorithms and artificial intelligence to maneuver the vehicle to victory.

STEP TO IT:
Ever wanted to answer your phone with your foot? Researchers at the MIT Media Lab are developing a wearable device that turns foot movements into commands for smartphones. The KickSoul system, which uses a gyroscope and accelerometer sewed into the shoe’s insole, analyzes motions and sends the data to a phone via Bluetooth. By pushing an imaginary item away or pulling it closer, users can accept or reject a call, scroll, zoom in and out on a map, or save or delete a file.

SOURCE: NEW SCIENTIST

Powering Up with Sodium
Based on batteries used by the Tesla Model S, laptops and LED flashlights, a team of researchers in France has created rechargeable batteries using sodium ions in the 18650 industry format. Traditional batteries use lithium, which is lighter than sodium but also more rare. In contrast, sodium is abundant, making up more than 2.6 percent of the Earth’s crust. The proof of concept, announced in November, could mark a revolution in batteries as the researchers hope to bring an inexpensive sodium-ion option to the European market as soon as possible.

SOURCE: GIZMAG

Sit. Stay. Breathe. To help people who are blind more easily monitor the well-being of their guide dogs, North Carolina State University researchers developed a device that tracks and shares the four-legged companions’ health-related data with their owners. “Our goal is to let guide dog handlers know when their dogs are stressed or anxious,” says Ph.D. student Sean Mealin, who is blind. A specialized handle equipped with two vibrating motors attaches to the dog’s harness — one motor vibrates in sync with the dog’s heartbeat and the other with its breathing, helping the handler to know if the animal is stressed or potentially experiencing other health issues.

SOURCE: TREEHUGGER

Send Spectrum ideas to Managing Editor Elaine Pittman, epittman@govtech.com, twitter @elainerpittman
Social Prep
How to take advantage of your social media downtime.

Your public agency’s social media program is in a good place. You have already developed a social media policy, implemented strategy, trained staff and are posting regularly using a social media management platform. What to do now that you’re done? The truth is that social media is never actually “done,” but here are three things you can work on when the rest of the process seems to be running smoothly.

Work on a process for resolving issues.
What is your customer service process for responding to inquiries that are sent to your agency via social media? Do you have a 100 percent response rate displayed on your Facebook business page? Practicing and testing your citizen response process is something you can always work on.

Ensure that your process for answering citizen questions on social media has been made clear. Your profile pages should explain the timeframe in which accounts will be monitored, how quickly to expect a response, and include alternative methods of contact if necessary. Internally, staff members should understand the workflow for responding to inquiries and be ready to do their part.

Craft crisis messages.
Something big might happen in your community on your watch. It could be a major weather event, large-scale accident or something more nefarious such as a major shooting. When a crisis happens, the onset is usually swift and you’ll have little time to sort out what to say on social media.

While most communications your agency makes on social media will be very specific to the crisis, there are some messages that you can write in advance. These pre-written crisis communication templates are better handled in your social media downtime, not during the disaster.

Consider the first thing your entity should say to your citizens on social media when a crisis happens. Your first response should include a statement that your agency is aware of the situation. You also want to let them know that you’re in the process of looking at it. Finally, your last two elements of that first message should be to express that you care and state that they will hear back from you.

While the particulars of these four points will change based on the crisis, the basic template can be prepared ahead of time.

Make a list of influencers.
Social media influencers are important because their networks tend to be large, so they might be able to help grow your reach by sharing or drawing attention to your posts. Cultivating a decent list of influencers is a good use of your downtime.

How can you find key influencers? Jet down who any influencers might be as it relates to your agency, department or program. Those might be people of recognizable status in the community, leaders of boards and commissions, or active participants at public meetings. Search Twitter and Facebook to see if the size of their social media followers reflects their offline status. If so, make an online connection with them.

Perhaps the key online influencers in your community are entirely different than the major players offline. You can use free online tools such as Social Mention or Topsy to discover the handles of online influencers. Simply search for hot topics in your community and take note of the active users. Many times, these individuals are happy to help share or retweet posts by your agency if they align with the type of messages they typically send.

Your work is never “done.”
Hopefully these ideas will kick-start your approach to social media downtime and get you thinking about other ways to strategically use these quieter intervals. Remember, you are actually in a lucky position that many social media managers never get to experience.
Freedom of Information/Public Records Request

Part I: I hereby request: ☑️ Inspect ___ Copy ___ the following records:
(please be specific and include names, dates, keywords, and name of record type where possible).

Please provide all records relating to the gun buyback event sponsored by the Santa Barbara Police Department, including all social media posts and comments.

Part II: What format do you request?

Part III: Name of individual(s)

Address: 1076 Freedom
Phone: (210) 867-5309
Email: jpublic1@gmail.com

For Internal Office Use Only

Date Request Received: July 1, 2014 Request Status: Pending

Notes: Staff has invested more than ten hours scrolling through social media pages and collecting stored screenshots from department hard drives. Citizen comments no longer available, City Attorney issued subpoenas to social network - response still pending after four weeks.

HOW WILL YOU RESPOND?

ArchiveSocial automates the capture and retrieval of records from social networks including Facebook, Twitter, YouTube, Instagram, and LinkedIn for compliance with state and federal public records laws.

http://archivesocial.com/respond
SWITCH TO NETAPP FLASH STORAGE AND GET 3X THE PERFORMANCE. GUARANTEED.*

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